

Comparison of the socioeconomic development roles played by different forestry companies in rural communities of Mkhondo local municipality in Mpumalanga Province, South Africa.

By

Walter Nicola Msitsini

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In the Faculty of Natural and Agricultural Sciences

University of Pretoria,

South Africa.

Supervisor: Dr. R.P. Tshidzumba

Co-Supervisor: Prof. P.W. Chirwa

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DEDICATION

This thesis is dedicated to my father John Makhukhubala Msitsini and my late mother Nelisiwe Betreece Tsabedze. Also, to my beautiful daughter Temaphephetse Habeeba Msitsini and my brother Bhekimusa Tiger Msitsini for their love and support which made it worthwhile during this lengthy endeavor.

DECLARATION

I, Walter Nicola Msitsini, declare that the thesis, which I hereby submit for the degree MSc in Forest Management and Environment at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

Signature.....

Date.....

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ABSTRACT

Forest plantations are usually located in deep rural areas of South Africa. Meanwhile, rural communities within and adjacent to these forest plantations are still underdeveloped. Although rural people are mostly employed to work in the plantations by various companies, the expectation of the companies in addressing communities' problems such as low level of education, exposure to risk, voicelessness, material deprivation, among others, are still lacking. Therefore, this study assessed the roles played by various forestry companies in improving the livelihoods of the people in these areas by identifying the socio-economic impacts of having commercial forests in the surrounding rural communities, as well as weighing the level of engagement between forestry companies and rural communities.

The study was conducted in two purposefully selected study communities, which included the Sappi community at Adalia and the Normandien community at Wolvenkop situated near Piet Retief in the Mkhondo Local Municipality in the Mpumalanga province. The households were randomly selected with sample size of 128 at Sappi community and 108 at Normandien community

Furthermore, using a mixed method approach, qualitative data were collected using a structured questionnaire, while a focus group discussion and key informant interviews were used for collection of qualitative data. The Statistical Package for Social Sciences (SPSS) software (version 20) was used for the computation of descriptive analysis, including frequencies and Chi-square test of independence to understand the relationship between perceptions of respondents about socioeconomic roles that are played by forestry companies in the study communities. An ordinal logistic regression (PLUM Procedure) model was also adopted to estimate whether the explanatory variables had statistically significant effect on respondents' ratings of company responses in response to community requests and concerns.

The findings of the study revealed that the respondents from Sappi community (83.3%) and the Normandien community (68.5%) agreed that forestry companies conducting businesses in their localities play a big socioeconomic role in improving the local livelihoods. The findings also showed that there were highly significant differences between socioeconomic benefits provisioned by different forestry companies for both Sappi ($X^2 = 713,979$, $p < 0.001$) and Normandien ($X^2 = 492.820$, $p = 0.001$) communities. In addition, results showed different engagement experiences

between the two study communities and forestry companies, wherein an open-door policy contributed positively to the sustainability of both the forestry Company and the community agenda. In contrast, none open-door policies negatively impacted communities, mostly favoring forestry companies. As a result, community concerns were not addressed.

The study concluded that forestry companies played positive socioeconomic roles that have improved the rural livelihood of both study communities, though not at the expected level. Therefore, it would be critical for the forestry companies to consider partnering with the local government to increase their funding for further improvement of their socioeconomic roles. Lastly, the study recommends that the Normandien forestry company should consider working closely with their community to create a good relationship. This will improve community-forestry company engagements for sustainability purposes as demonstrated by the Sappi community.

Keywords: Forest Plantations, Forestry Companies, Rural Livelihood

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LIST OF ACRONYMS

CSR	: Corporate Social Responsibility
DAFF	: Department of Agriculture Forestry and Fisheries
FAO	: Food and Agriculture Organization
FGD	: Focus Group Discussion
FSA	: Forestry South Africa
FSC	: Forestry Stewardship Council
SFM	: Sustainable Forest Management
GDP	: Gross Domestic Product
MDGs	: Millennium Development Goals (MDGs)
N2	: National Road Number 2
NTFPs	: Non-Timber Forest Products
SAFCOL	: South Africa Forestry Company Limited

CHAPTER1: INTRODUCTION

1.0 Introduction

This chapter contextualizes the study, beginning with the background information which introduces the topic, its importance, and its significance. Furthermore, it explains the research objectives and the research questions that the study solicited to address the specific objectives. Additionally, it includes the study rationale, which discusses the theoretical reasons for conducting this study. It then shows the conceptual framework detailing how forestry companies and rural communities benefit from forest plantations. Finally, this chapter concludes with a brief overview of the dissertation structure.

1.1 Background information

Around 1800, the South African Government formally introduced the planting of non-native timber species in forest plantations mainly to ease the reliance on natural tree species and timber imports (Clarke, 2018). This encouraged sawmilling investment particularly from the private sector (Owen *et al.*, 2000), and created jobs specifically for poor white people (Sass, 2013; Mabece, 2016). The climatic conditions of South Africa allowed *Eucalyptus* and *Pinus* species to dominate the introduction of exotic species with *Acacia* (wattle) introduced at a later stage (Sass, 2013). According to Godsmark (2010), planted *Eucalyptus* contributes 40.4%, pines 51%, *Acacia* (wattle) 8.2% with all other species at 0.4% of the South African national distribution of plantation species.

The South African forest plantations are second highest ranked in terms of land cover, with a coverage of approximately 1.27 million hectares, which is 1.1% of the South African land area compared to maize, which is ranked first, covering approximately 3.2 million hectares (Godsmark, 2013; Robertson, 2018a), leaving no room for unsustainable practices (DAFF, 2016; Robertson, 2018b). Majority of them are located within the wetter eastern seaboard and mountain slopes of Mpumalanga (624 000ha) and KwaZulu Natal (532 000ha) (Bethlehem *et al.*, 2007) as cited by

Mamba (2013), with the remaining in the Limpopo, Western and Eastern Cape Provinces. According to Clarke (2018), Robertson (2018a) and Robertson (2018b), forest plantations of South Africa have declined with nearly 7.7% due to delineation within water sources (riparian zones) regardless of picking up during the 1990s, and this is due to water scarcity in the country (Mayers *et al.*, 2002; Dobson, 2017). The forest plantations of South Africa are ranked 13th globally in terms of timber plantation area (led by India, China, USA and Russia) supplying 0.5% and 2% of global sawlog and pulpwood respectively, showing high productivity levels attained by local timber growers (Sawmilling South Africa, 2014), in Clarke (2018).

The forestry sector contributes immensely to the South African economy, with an export value of R38.4 billion of GDP (Gross Domestic Product) which is 9.8% of the agricultural GDP and totaling only up to 4.9% in the manufacturing GDP of South Africa (FSA, 2020). Robertson (2018a) described this industry as being well-developed, possessing exciting downstream specializations in manufacturing of different products inter alia sawmilling, pulp and paper, furniture and wood chipping. Sappi and Mondi represent South Africa as local companies and global players for the pulp and paper business (Robertson, 2018a).

High appreciation of forest (indigenous, commercial forests and savannah) benefits to the surrounding communities and society at large has been expressed for some time now (Shackleton, 2004). Forest plantations are of crucial importance in resources needed for satisfaction of human needs environmentally, socially and economically (Robertson, 2018a; Ahammad *et al.*, 2019). This includes prevention in case of erosion of soil and adaptation and reduction of the changing climate; needs which may include wealth creation, employment, and recreation; and materials such as paper and wood (Richardson, 2005; Robertson, 2018a and Robertson, 2018b).

Forest plantations are owned by both private (large, medium and small timber growers) and state companies. Majority is privately owned in remote areas (FSA, 2012), where most rural people reside. Ordinarily, this defines areas to be having low infrastructure, government services (Ofoegbu *et al.*, 2019), markets and jobs, making most communities adjacent to commercial forests

vulnerable to deficiency and scarcity of livelihood opportunities (Wunder, 2001; Ofoegbu *et al.*, 2016; Jagger *et al.*, 2022; Mendako *et al.*, 2022), thereby raising concerns on the roles played by forest plantations and forestry companies on the livelihoods of rural communities. Firstly, on whether both forest plantation and forestry companies play any role in satisfying the needs of rural local communities. Secondly, on whether forest plantations and forestry companies offer limited options to local people, which then contribute to poverty (Shackleton, 2004). Poor people of approximately 1.6 billion in the world depend on forest resources for survival to date. Statistically, about 40% of very poor people residing within and adjacent to forests is estimated to be relying on forest products and services (Siry *et al.*, 2005; Sass, 2013).

Different partnerships of private forestry companies and communities have been increasingly receiving attention across the world (Mayers *et al.*, 2002). Chen *et al.* (2012) found that Community Based Co-Management increased livelihoods for residents. However, the economic benefits are often not enjoyed uniformly within the communities because certain groups are less likely to participate, although community projects are open to all. Partnerships of local actors and the private sector have become more common in recent years (Makhathini, 2010; Chirwa *et al.*, 2015; Tshidzumba *et al.*, 2018). The increase in pressure of the land claim from the local communities has been the cause for the partnership. However, these relationships are not always beneficial for both forestry companies and the local people (Mayers, 2000). In the community-based Co-Management, companies have considered agreements to protect their land use right and to have labor force, and a constant wood supply as well as to showcase their Corporate Social Responsibilities (CSR). Communities got into agreements for mainly access to different forests resources, employment, social services, infrastructure, sources of income, and technology (Mayers *et al.*, 2002).

1.2 Study rationale

Contributions of forestry companies are expected in addressing societal problems which among other things include the low level of education, exposure to risk, material deprivation, vulnerability, powerlessness, voicelessness, and all other concerns hindering the maintenance and

development of economic, ecological, human, and social capital in local communities (Pasaribu *et al.*, 2020). Cavaye *et al.* (2019), argued that community developments improve their adaptive capacity as they experience major changes and as a result, they become resilient.

According to Robertson (2018a), forestry industry plays a big role in improving rural dwellers livelihoods and this is done through fostering rural economic upliftment and development as well as creating economic opportunities in areas where economic empowerment remains uncommon. Among other things, the contribution of the forestry industry in improving rural communities reduces the in-equalities between rural and urban areas (Robertson 2018a). However, the same industry has been associated with the encouragement of paying low wages which fail to sustain rural livelihood development, and also subjecting employees to poor working conditions in certain parts of rural areas of South Africa (Mayers, 2006). Above that, houses in some villages within or adjacent to forest plantations were found to be constructed by stick and mud specifically those not provided by forestry companies to employees or community members (Ofoegbu, 2014).

On the same note, Clarke (2000) asserted that the Forestry Stewardship Council (FSC) which mostly regulate the operations of the forestry industry in South Africa was weak on social related matters, seeing the need of involving stakeholders on development of codes and standard of practice leading the social aspect of the forestry operations (Sass, 2013). Ham (2000) was also of the same view, stating that social codes of practice and standards for forestry operations are difficult to understand in comparison to those concerning the environment. Seemingly, there is no common understanding on the contributions made by forest companies in improving rural livelihoods of communities that are within and adjacent to their different forest plantations. There was therefore a need to carry out this study of assessing the socioeconomic roles that are played by different forest companies in rural communities that are within and adjacent to their different forest plantations.

1.3 Objectives and research questions

The main objective of the study was to assess socioeconomic development roles played by forestry companies in contributing towards the improvement of rural livelihoods within and adjacent to their forest plantations.

1.3.1 Specific objectives and research questions

Objective 1: To assess the socioeconomic benefits of forest plantations to the surrounding rural communities.

Research question

- What kind of benefits have been afforded to rural communities by forestry companies?
- Has the rural livelihood of rural communities that are within and adjacent to the forestry plantations improved?

Objective 2: To evaluate the level of forestry community-company engagements in rural communities.

Research question

- Are there any engagements between communities and forestry companies that have contributed to the improvement of rural livelihoods in communities that are within and adjacent to their forest plantations?

1.4. Dissertation structure

This dissertation is made up of five chapters. The first chapter covers an introduction research and context, outlining objectives and research questions. Additionally, it gives the study rationale together with the conceptual framework of the study.

Chapter 2 presents the reviewing of literature, which focuses socioeconomic impacts of forest plantations in South Africa, forest related income role and corporate social responsibility of forestry companies in rural households.

Chapter 3 presents the methodology of the study, with a description of the study area, sampling design and size, data collection (household survey, focus group discussion and key informants' interviews) and statistical analysis.

Chapter 4 presents results, including the demographics and socioeconomic status of communities. Furthermore, focus on socioeconomic roles of forestry companies in rural livelihoods upliftment, and respondents' perceptions regarding those roles focusing on acquired improvements during the past 10years. In conclusion, the chapter presents the community forestry-company engagements.

Chapter 5 discusses the results from the main results of the research study in comparison to previously conducted research studies on the same topic.

Chapter 6 provides the conclusion and recommendations of the research study.

CHAPTER2: LITERATURE REVIEW

2.1 Socio-economic benefits of forest plantations in South Africa

Most poor rural people in South Africa largely depend on forests and forest products for both survival and well-being (Ofoegbu, 2014), ensuring that people do not slip into deep poverty (Shackleton *et al.*, 2006; Mendako *et al.*, 2022). About 83.33% of global poor people in rural communities largely rely on forest resources in order to live (Fedele *et al.*, 2021; Jagger *et al.*, 2022), estimated to be approximately 350 million of the world's population living in or near forests (Chao, 2012). Shackleton *et al.* (2007) and Arjumand *et al.* (2022), found that charcoal, fuelwood, livestock fodder, compost/organic matter, and timber used for construction (poles for housing, kraals and fences) are amongst the variety of woody plant resources used by communities in remote areas. Ham (2000) reported that approximately 80% or more of rural South African households use fuelwood as a main energy source, and this constitutes one of the largest forest products uses (Ofoegbu, 2014). Similarly, Toth *et al.* (2019), stated that fuelwood is amongst the most traded products in Malawi, contributing significantly to employment creation and GDP of the country. Arjumand *et al.* (2022) suggested that community woodlots should be given priority in land use option to ensure livelihood security for rural communities.

Forest plantations may be viewed as basis of the forest value chain in South African by the timber, paper, and pulp industries. This is all due to the provision of natural forest resources for downstream processes including the manufacturing of paper, manufacturing of furniture, sawmilling, milling, and pulp milling (Chamberlain *et al.*, 2005). Communities that are adjacent to forest plantations and the society at large get several benefits from the plantation forests. Such benefits can be consumptive benefits, employment benefits, aesthetic benefits, spiritual needs, and ecological services such as water provision and carbon sequestration (Shackleton *et al.*, 2007). Charnely (2005), found that a huge volume of timber is supplied by forest plantation at low costs for the following reasons; to meet construction and pulp industry needs, for foreign exchange and revenue generation for local governments and to provide employment opportunities for local people. Moreover, forest plantation provides residues and by-products left infield after harvesting operations.

About 25% of the rural people's total income stream come as a contribution of forest resources (Ntsona, 2002 in Lewis *et al.*, 2005). According to Lewis (2005), timber for construction, medicinal plants, fuelwood, fodder for animals, and craft materials were found to be the five highest-ranking benefits that communities obtain from forest plantation. Neighboring communities to forest plantations benefit poles and fuelwood from plantation woodlots. Ham (2000) observed the provision of these poles in Kentani of the Western Cape Province to be around 8,334 from each woodlot in a month. Approximately 185 large poles per annum may be used by households for construction and fencing (Shackleton *et al.*, 2007). Internationally, 120 million households of India were reported to be using fuelwood in 2011 as the main source of cooking energy in association to 100million households reported in 2001 (Singh *et al.*, 2021). Fedele *et at.* (2021), found that 30% of societies in the tropics rely on fuelwood and thatch for cooking energy and building materials respectively.

According to Lewis *et al.* (2005), harvesting of poles of particular types (i.e., sizes and species) might have a major influence on natural forest ecology through the reduction of specific age classes that are mostly demanded. However, an observation has been made on the reduction of indigenous forest exploitation since woodlots assisted in poles and fuelwood provision (Ham, 2000). Furthermore, job opportunities of several categories to rural people are also provided by plantation woodlots (Arjumand *et al.*, 2022). With the exception of workers involved in the management of the woodlots or direct job opportunities, indirect jobs to timber merchants who are involved in bulk buying and selling of poles are provided (Ham, 2000).

The forestry sector provides other benefits besides income and employment to the local communities (Ofoegbu, 2014). These makes plantation forests to be a vital part of a rural setting where a combination of community settlements, plantations, and other agricultural activities form a mosaic of land uses due to a number of benefits provided by the forestry sector of which include income and employment for the neighboring communities (Lewis *et al.*, 2005). Shackleton *et al.* (2007), argued that large forestry companies make a provision of pre- and primary school as well as clinic to areas where they have more employees. When forestry companies provide housing for their employees', more other required services are also provided.

2.1.1 Forest plantations and employment benefits

Forest plantations are noticed to be the most proficient way of yielding natural, renewable fiber on a restricted piece of land in meeting the demand of the fast growing and industrializing global population. Moreover, to ease the burden on natural forests contributing to landscape restoration and to generate rural employment at the same time. Many job opportunities are mostly created during establishment and harvesting operations, with little during the growing period. Forest plantations that are replacing degraded or previously unused land may present a high level of employment benefits (Mayers, 2006; Clarke, 2018). In argument, the extension of land to plant more oil palm is blamed to be the main reason of natural forest destruction, biodiversity loss, forest fires, and social conflict in Indonesia (Pasaribu *et al.*, 2020).

According to Cossalter *et al.* (2003) forest plantations contribute one third of job opportunities created in the forestry industry. Aldwell *et al.* (1984), reported that forest plantations in New Zealand hire four to four and half times more labor in a hectare than in agriculture. Nonetheless, such jobs might be the result of other job losses from the land and poor in terms of distribution as they are focused only in areas with processing facilities (Mayers, 2006). Shackleton *et al.* (2007), reported that in the forestry sector, almost all big companies together with their contractors adhere to the levels of minimum wage as set by the government. This also includes further employee benefits as per labor law. About 63% of employees working in forest plantations are given accommodation with water services, sanitation, as well as electricity. It is also reported that servicing and maintaining of these houses have generated other benefits and jobs falling outside forestry for residents of local communities (Ofoegbu, 2014).

In areas with a lack of houses, financial assistance is usually offered to employees by large forestry companies in purchasing houses that are closer to working areas. The provision of houses by forestry companies is accompanied by other services and facilities needed which may be needed by both urban and rural communities. Hence, clinics and educational facilities are offered in places having a high total number of employees. Likewise, transport is provided for areas where workers' houses are not reaching the threshold of building a school or a clinic (Shackleton *et al.*, 2007).

The South African forest plantation industry is in line with the global business trend in outsourcing most of the work. Most operations have been outsourced to contractors over the last fifteen years. This has resulted in 35 000 workers around the country being employed by over 300 forestry contractors. As a result, commercial forestry industry has been charged for paying wages below minimum to production employees and depriving working conditions. These problems have reflected broader socio-economic conditions which cannot be put at the helm of commercial forest companies alone. Certain companies surely realize the demanding challenges that they are facing. Management inside Mondi has mentioned the need of the corporate company to go an extra mile in investing in the creation of more proper jobs that are having a lasting relationship with contractors, and small timber growers (Mayers, 2006). However, several studies have revealed that forest plantations are a major source of debate due to existing employment effects across a collection of factors (Karumbidza *et al.*, 2009). These factors may include employment of locals against non-local workers, the gender balance issue, capacity building and opportunities for advancement, the permanence or seasonality and quality of work including health and safety (Karumbidza *et al.*, 2009) Apart from job creation and employment, forest plantations also provide cultural and spiritual benefits to rural livelihoods.

2.1.2 Spiritual and cultural benefits

Rural communities recognized and admired certain holy sites contained in woodlands and forests which were identified by top members of local traditions as spiritual sites a long time ago which are currently seen as taboo or used for certain ceremonies. Moreover, gravesites of past loved ones and leaders (Shackleton *et al.*, 2007). Such sites may include the sacred pools in Xhosa regions and the sacred forest in Venda (Ealey *et al.*, 2004). Moreover, the association of specific clans with animal and plant totems (Bernard *et al.*, 2004). Prehistoric people had a high demand for timber for smelting and construction in South Africa. Hence, most of their sites are found in woodlands biomes. Certain sites within the Kruger National Park are used as main examples which were restored recently at Thulamela. Such sites are used for cultural and traditional reasons including access to medicinal plants (Shackleton *et al.*, 2007).

2.2 Role of forest related income in rural livelihoods

Rural households have improved immensely as compared to the past even though poverty has not been eradicated (FAO, 2003) to ensure food security for all (Shackleton *et al.*, 2007). In a number of poor regions, earnings from forestry are an important part of rural livelihoods (Ofoegbu, 2010). Awono *et al.* (2009) found that forest related products contributed 40% of the total household income in a study carried in the rural areas of Cameroon. This has immensely contributed into meeting many targets of the MDGs (Millennium Development Goals) (Tieguhong *et al.*, 2012). There are three different roles played by forest earnings that have been picked out in rural livelihoods and they are:

- Safety nets
- Support for current consumption
- Poverty reduction (Ofoegbu, 2010; Mendako *et al.*, 2022).

Table 2.1: Direct roles of forests in household livelihood strategies (Source: Ofoegbu, 2010)

Poverty functions	Function	Description
Safety nets	Insurance	Cash income and food in times of un-predicted income and food shortfall.
Support current consumption	Gap-filling	Regular (seasonal, for example) deficit of income and food.
	Regular Subsistence uses	Medicinal plants, wild meat, fuelwood, etc.
	Low-return cash activities	An extensive variety of extractive or “soft management” activities, generally in economies with stumpy market integration.
Poverty reduction	Diversified forest Strategies	Forest activities that are maintained in economies with great market integration.
	Specialized forest Strategies	Forest activities that form most of the cash income in local economies with high market integration.
	Diversified economy	Forest activities are maintained even in situations with a high degree of market integration.

2.3 Cooperate social responsibility (CSR) of forestry companies in rural communities

Forestry companies have been accused and criticized for high greenhouse gases (GHG) emissions, unsustainable use of forest resources, high energy consumption as well as the pollution of water by the public around the globe (Yanli *et al.*, 2019). As a result, CSR has become a common practice by large forestry companies to address socioeconomic and environmental challenges (Panwar *et al.*, 2010). Beddewela *et al.* (2016) claimed that CSR can be of great assistance in maintaining legitimacy of forestry companies and in improving their stakeholder relationships. Moreover, with the achievement of competitive advantage (Arikan *et al.*, 2016; Nikolaou, 2017), and the realization of sustainable development (Nikolaou, 2017).

The Chinese government has used CSR for environmental protection after their large forestry companies were blamed of exhausting enormous amount of un-certified timber. Making CSR a threshold of accessing both domestic and international timber markets for their forest companies mainly to increase the government's environmental efforts, as well as improving its green trade barriers (Yanli *et al.*, 2019). The CSR has also considered employees. However, paid less attention on rural communities (Yanli *et al.*, 2019), regardless of the forestry industry being the most important role player in maintaining rural local livelihoods (Sass, 2013).

According to Smit et al. (2005), CSR refers to the accountancy of companies towards their influence on ecological and social environment they operate within. Moreover, to both their stakeholders and shareholders for making use of resources for productivity. This also include how they treat their consumers/customers.

Within the concept of CSR, contributions of forestry companies are usually beyond what the above stated definition covers. Among other things, companies consider voluntary implementation of socioeconomic benefits to communities that are within and adjacent to their area of business units. Du Toit (2009), argues that forestry companies have the authorization of following their own different cultures on implementing and prioritizing CSR since they are not obliged.

Sappi and Mondi have agreements within systems that are rooted in contract farming with rural communities and small-scale timber growers. These growers are assisted with all necessary inputs which among other things include credits and mentorships in establishment and taking care of the small eucalyptus woodlots (Robertson, 2018b). In benefit, these corporate companies have access to all matured trees as harvests at the end of six years and seven years on the coast and inland respectively. Project Grow was introduced by Sappi as social responsibility and Khulanathi was introduced by Mondi as a business venture. Motivational factors are noted to be the schemes among wide objectives to contract out operations in forestry. Another motivational factor is the enlightened company image presented by schemes as well as for scoring some political benefits (Mayers *et al.*, 2002).

2.4 Conceptual Framework

2.4.1 Theoretical framework of the study

According to Serrat (2013), the theory of livelihood includes the abilities, resources and all actions required for living means. Sustainability is when one is able to survive from shocks and stress, at the same time enhancing assets, activities and capabilities for both present and future purposes without depleting natural resources. Serrat (2017) suggested that progressive thinking is required to address the challenges of poverty. Among other things, the theory focuses on the importance of structural and institutional issues, bringing forward activities that are people based to develop their lives responding to their issues in partnership with both the public and the private sector through policies. Furthermore, companies go beyond policies and laws in improving rural livelihoods wherein they offer benefits to communities without any expectation of benefiting in return. Mohammed (2020) argued that societies are continuously demanding that companies must contribute to livelihood improvement and they are encouraging employees, consumers and investors to use their individual powers to negatively impact non-contributing companies. This is viewed as part of Corporate Social Responsibility (CSR) as supported by Carrol (1999), that companies must also do what is required by global stakeholders. The theoretical livelihood framework also assists in the organization of factors which further improve the livelihood opportunities and illustrate their relationships. These factors include capital assets (human,

financial, natural, physical and social) which are differently accessed by different households. Any change on the external environment affects the well-being of communities resulting into vulnerability mostly brought by shocks and seasonality.

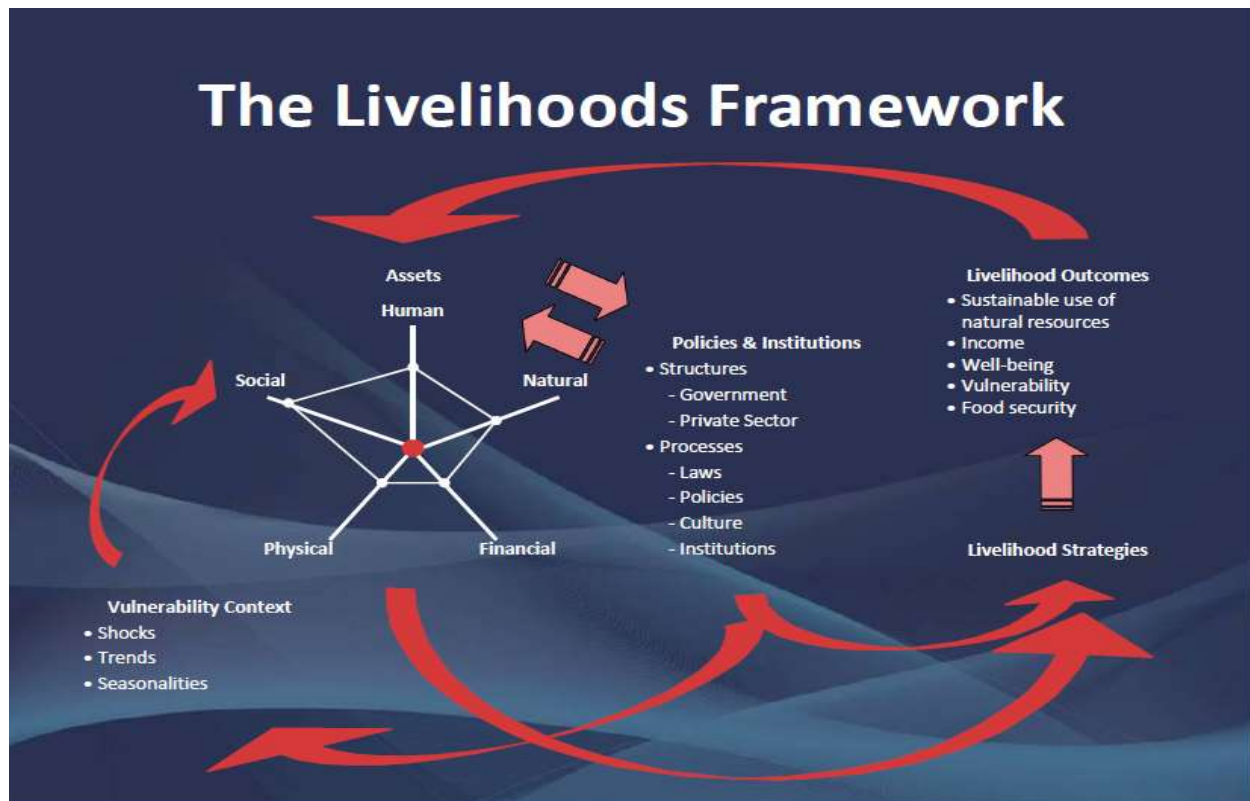


Figure 2.1: The livelihood framework (Source: Serrat, 2013)

2.4.2 Conceptual framework of the study

Forest plantations are centers of forestry resources where both forest companies and rural communities acquire resources. The commercial forestry companies' focus is mainly on timber related resources while rural communities are interested in getting Non-Timber Forest Products (NTFPs) which may include wild fruits, wild vegetables, wild meat and thatch grass. In order to accrue human satisfaction environmentally, socially and economically, forest plantations are of great value in the provision of different services (Richardson, 2005). As expected, benefits accrued by forest companies should assist rural communities to grow and achieve sustainable development (Cavaye *et al.*, 2019). The contribution of forestry companies towards rural livelihood upliftment

has a potential of ensuring that rural people also partake in protecting forest plantations with the understanding of benefits accrued from forestry companies conducting business in their localities. Water supply, employment opportunities, local business opportunities and sources of power (fuelwood) form part of the benefits provisioned by commercial forest companies to enhance social and economic wellbeing of rural communities as part of their social responsibility (FSC, 2015).

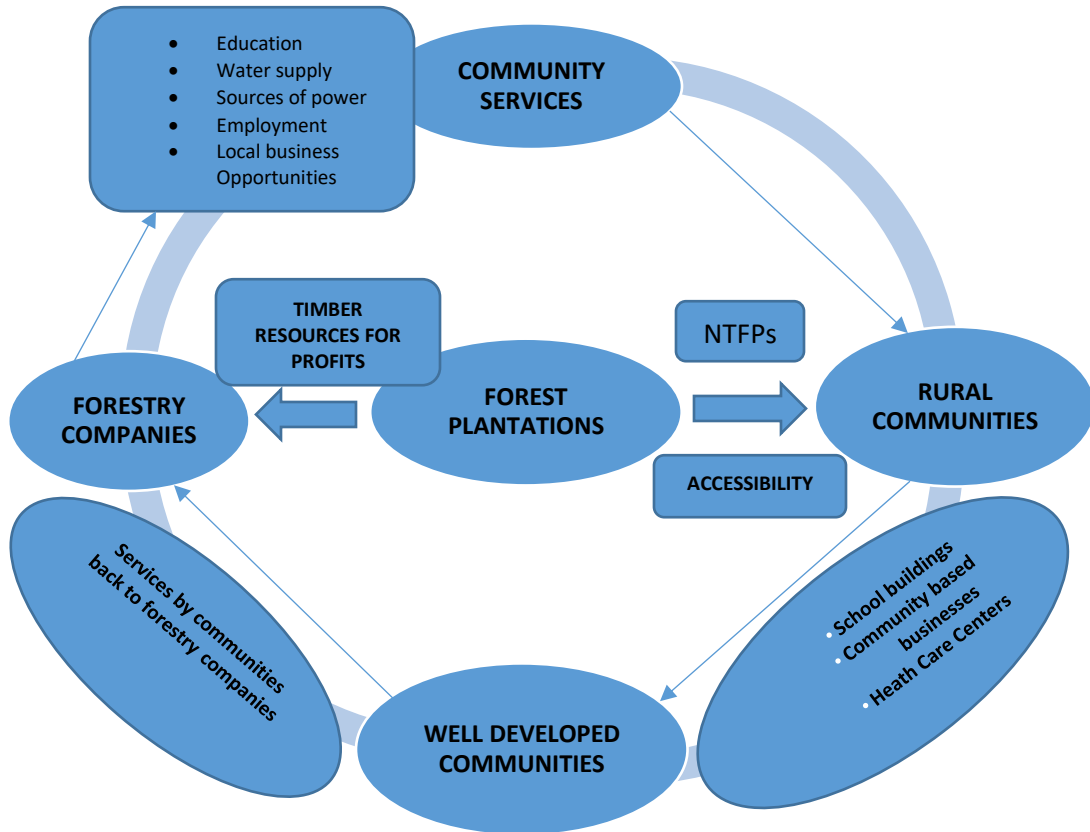


Figure 2.2: Conceptual framework of roles played by forestry companies through forest plantations to improve socioeconomic development of rural communities (own creation).

CHAPTER3: METHODOLOGY

This chapter provides a general description of the study area in terms of location, landscape characteristics, and socio-economic characteristics. It outlines the research design, methods used for sample selection and size, household surveys, and focus group discussions. The chapter also describes the statistical analysis methods used for the different tests that were performed.

3.1 Description of study area

The study was conducted at Piet Retief and Amsterdam under the Mkhondo local municipality in Mpumalanga. The Mkhondo local municipality is located on the N2 road where the R543 (Volksrust-Swaziland) and R33 (Vryheid-Amsterdam) intersect. Most of the economic activities in this municipality come from forestry as a larger part of the land has forest plantations. There are few timber production companies located within the municipality, including Tafibra, PG Bison and Normandien Farms which are national businesses. Forest plantations in this municipality include plantations of Mondi, Sappi, Normandien, Creydt Timbers and others. Mondi is the dominating company across the municipality with approximately 75 000 hectares of land servicing the Mondi Packaging mills with pulpwood at Piet Retief (Mondi Business Paper [MBP], 2005) as cited by Ofoegbu (2010). Within the municipality, there are rural communities which are within and adjacent to the different forest plantations of different forest companies. Only households within and adjacent to Sappi and Normandien Farms Forest plantations were selected for data collection.

3.1.1 Brief description of the households within study areas

Households from both study sites (Sappi and Normandien forest plantations) consists of a majority of poor black people mostly living in stick and mud houses. They are characterized by a high rate of unemployment, high level of HIV/AIDS due to limited basic health care, low levels of education, lack of access to basic infrastructure and low-income levels (Mondi Business Paper [MPB], 2005). Under Sappi and Normandien forest plantations (within and adjacent), there are 194 and 149 households consisting of an approximate population size of 680 and 767, respectively.

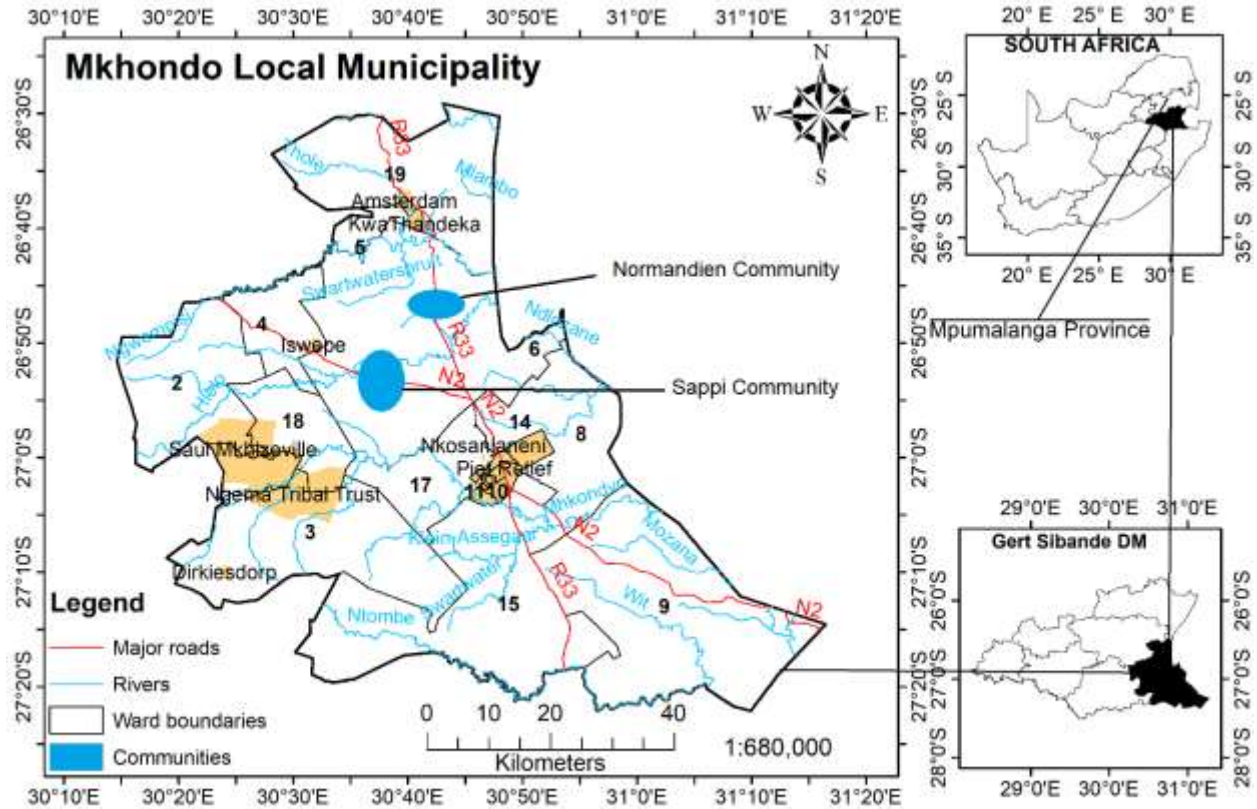


Figure 3.1: Mpumalanga municipality map showing the study area

3.2 Research design and sample size

In this study, a combination of qualitative and quantitative research methods was used for data collection to comprehend insights and understandings from participants (Creswell, 2014; Makhubele *et al.*, 2020), and for the purpose of representing all responses (Martin, 2011; Tshidzumba *et al.*, 2018). Sampling of the study was purposive on the basis that sampled households were in communities that were within and adjacent to forest plantations of Sappi and Normandien Farms. All households within or adjacent to Sappi Hlelo Forest plantation were grouped as the Sappi community and all households within or adjacent to Normandien Farms Forest plantations were grouped as the Normandien community. Probability sampling was used for both the Sappi and the Normandien community separately (Onwuegbuzie *et al.*, 2007), and this ensured that all households within these two communities stood an equal chance of selection (Leavy, 2017; Makhubele *et al.*, 2020; Pokwana *et al.*, 2021).

The sample size represents the over-all participant units that should be included to answer the research questions and for the purpose of the study (Noordzij *et al.*, 2011). It contributes to the accuracy of the study, affecting it positively or negatively depending on its size being smaller or larger. According to Cornish (2006), a smaller sample size has low chances of being an accurate representative of a study population while a large sample size has higher chances of producing results that are precise and more statistically significant. On the same note, having a large sample size that is not necessary can be time consuming and a waste of resources (Pokwana, 2019). Noordzij *et al.* (2011) argues that an increase of sample size decreases the estimation of error while increasing the estimation of precision. A 95% confidence level and 5% confidence interval were used for the household survey when deciding the sample size for both Sappi and Normandien community through the use of the following formula in view of the known total number of households.

$$S = \frac{X^2NP(1 - P)}{d^2(N - 1) + X^2P(1 - P)}$$

S = Sample size required,

X = Z value of 1, 96 for 95% of the confidence interval, N = population size (N for this study was 194 and 149 for Sappi and Normandien community respectively), d = degree of accuracy (0.05), a margin of error.

The total number of households were used to decide the required sample size in each study community. The sample size for Sappi community (128) and Normandien community (108) was determined from the total population of 194 and 149 households, respectively. In agreement with Munyanduki *et al.* (2016), these sample sizes were enough to answer the research questions since most researchers contend with a minimum sample size of 30 – 100.

3.3 Data collection

3.3.1 Household survey

For the household survey, administration of the semi-structured questionnaire was carried out through interviewing household heads or their representatives with the minimum of 18 years or older. The questionnaire was divided into three sections, the first section was for understanding the rural people's biographical information. The second section focused on benefits of having forestry companies in improving rural livelihoods or socioeconomic profile of households in study areas. Specifically, the questionnaire addressed improvements over the years as a result socioeconomic benefits offered by forestry companies to the study communities. The last section explored community forestry-company engagements focusing on existing meetings between communities and forestry companies looking into the future of forest plantations and rural livelihood upliftment.

Before the commencement of the interviews, the traditional leadership informed community members in study areas about the research study, its objectives and aims. Local community members with matric certificates were used to administer the questionnaire as well as to easily identify the randomly selected households (Nyariki, 2009), with the assistance of the researcher. In line with Makhubele *et al.* (2020), training of assistants was conducted for proper administration and interpretation of the questionnaire to obtain effective and dependable data (Li *et al.*, 2020). Moreover, the questionnaire was pre-tested at Tower Forest plantation (Mondi) to ensure that intended scope was covered by the data collection process in June 2021 (Collins 2003; Mathers *et al.*, 2007; Nyariki, 2009; Tshidzumba *et al.*, 2018).

3.3.2 Focus group discussion and key informants' interviews

Focus Group Discussions (FGD) were carried out to gather more information about benefits that have been afforded to rural communities by forestry companies and have improved rural livelihoods. Furthermore, to check discussed contents in joint sittings with forestry companies looking into the future of forest plantations and rural livelihood upliftment. FGD were conducted

in all villages falling within the study areas with a minimum of 10 people representing elderly and youth which were household heads and lasted for about 3 hours. An audio record was used to capture qualitative data together with written word and that greatly helped in capturing every voiced word by the participants (Sutton *et al.*, 2015). Consistency of the gathered data was attained through follow-up questions during the discussions. Key informants' interviews were also carried out to accumulate data from forestry managers and traditional leadership in both study areas, mainly to enable in-depth insights of stakeholder views (Patton, 2002). Company one (For Sappi community) and company two (Normandien community) were purposively selected as specific focus of the interviews, falling within the two study communities.

3.4 Data analysis

SPSS (Statistical Package of Social Science), version 20 was used to conduct the coding and analysis of data (IBM Corporation, Armonk, NY, USA, 2011). Descriptive statistics was then used to perform the quantitative data analysis by generating frequencies and percentages using cross-tabulations for the analysis of household demographics and proportions of community socioeconomic benefits. The Chi-square test of independence was also used for the inferential statistical analysis (Anon, 2012; Morgan *et al.*, 2011), to test the significant relationship in responses about the socioeconomic services from forestry companies between household heads from Sappi and Normandien community. In addition, the Friedman's test mean ranking was used for non-parametric analysis to test the significant difference in responses about services provisioned by forestry companies in the last 10 years between the two study communities. Moreover, this statistical test was performed to rank the mean scores of different responses to see the highest and least provisioned socioeconomic benefits, along with different community improvements. For the mean ranking analysis, the following formula was used.

$$F = \frac{12}{bk(k+1)} \sum_{j=1}^k R_j^2 - 3b(k+1)$$

Where b represents the number of scores in a group and k represents the number of groups.

In addition, an ordinal logistic regression (PLUM Procedure) model was also adopted to estimate whether the explanatory variables had statistically significant influence on respondents' ratings of company responses in response to community requests and concerns. The adoption of this analysis was due to the fact that dependent variable was ordinal on a five Likert scale ranging from poor to very excellent (Tshidzumba, 2019). The dependent variable responses were ordered the value 1 to 5, in which value 1 represented very excellent and 5 represented poor. The explanatory variables used included age, gender, marital status, level of education assist during engagements, forestry income generated linked to household socioeconomic status, forestry income generated linked to household socioeconomic status, livelihood better off without forestry companies conducting business in your area, bursary for local people, water supply, transport to the nearest town, sponsoring of local sports, employment of local people, carrier guidance programmes and food grocery for elderly and funeral supports. All the responses of the explanatory/independent variables were coded 0 and 1 which denoted a Yes and No, respectively. The logistic model equation used in the analysis is as follows:

$$\ln \frac{P}{(1-P)} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k$$

Wherein β denotes the intercept of explanatory variable on the perceived forestry company responses on community requests and concerns, X denotes the explanatory variables used in the model to predict the effect on dependent variable. P is the probability of household experiencing change on company responses and (P/1-P) denotes the estimates on household experiencing change on forestry company responses. Table 3.1 below shows the responses of the explanatory variables used on the ordinal regression analysis.

Table 3.1: Explanatory/independent variables used in the ordinal regression analysis

Explanatory/Independent Variables	Responses
Number of family members per household	Total of household members
Age	18 – 35
	36 – 59
	60 and above
Gender	Male
	Female
Marital Status	Single
	Married
	Widowed
Level of Education assist during engagements	Yes
	No
Forestry income generated linked to household socioeconomic status	Yes
	No
Livelihood better off without forestry companies conducting business in your area	Yes
	No
Bursary for local people	Yes
	No
Water supply	Yes
	No
Transport to the nearest town	Yes
	No
Sponsoring of local sports	Yes
	No
Employment of local people	Yes
	No
Carrier guidance programmes	Yes
	No
Food grocery for elderly and funeral supports	Yes
	No

In line with Nared *et al.* (2020), FGD were conducted to generate deeper and richer data compared to those obtained through one-on-one interviews. Content analysis was used to analyze the complicated qualitative data (Thompson, 2020), through the use of different key categories, themes

or ideas. Identified themes encompassed in-depth information on provisioning of socioeconomic benefits, improvements in community standards in the last 10 years. Furthermore, the relationship between forestry companies and community members looking to the future of rural communities and commercial forests. For credibility and reliability, transcribed data was read several times by the researcher to record similarities and differences from the data for further discussion (Makhubele *et al.*, 2020). This process ensured the reflection of true data.

3.5 Ethical consideration

The ethical clearance application for this study was successfully submitted and approved (NAS355/2020) by the Ethics Committee of the University of Pretoria. The researcher approached community leaders and forestry companies' managers in both study communities (Sappi and Normandien community) before the data collection process could commence to secure permission and consent to proceed with research interviews in their locality. In line with the emphasis by Kaiser (2009), this was done to ensure the prioritization of respondents' confidentiality and interests (Tshidzumba *et al.*, 2022). This was achieved through clarifying the objective of the study from the beginning and using of codes instead of participants names during data collection. Consequently, this was mainly to ensure that unnecessary disputes during and after data collection is avoided thereby protecting the researcher and respondent's interests. In the end, the study was accepted by the traditional leadership four months before data collection in June 2021. Research assistants with grade 12 were then used for the questionnaire administration as well as identification of sampled households.

3.6 Chapter summary

This chapter has detailed the methodology of the study through describing of the study area and socio-economic profiles of the study areas. It went on to describe how the sampling was done and how the data was collected. Furthermore, it described the collected data was analyzed using different analysis to answer the different research questions.

CHAPTER4: RESULTS

This chapter presents the results focusing on the demographics and socioeconomic status of the respondents' including gender, age, education level, marital status, source of income, forestry company employed under, and type of employment within the forestry company as well as the amount of income generated from their sources. It further shows the responses of the respondents on the socioeconomic benefits that are offered by forestry companies in their respective communities resulting into community improvements over the years. This chapter also reveals the community forestry-company engagement with a focus on the relationship between the forestry companies and the two communities (Sappi and Normandien community).

4.1 Demographics and socioeconomic status of respondents

Table 4.1 present the demographic and socioeconomic factors of the household respondent in the study communities. The results revealed that over 50% of the respondents constituted the age category of 36-59 accounting for 56.2% and 69.4% at Sappi and Normandien community, respectively. At the same time, few respondents at Normandien community (13.9%) were at the age category of 18-35 compared to those from Sappi community (23.4%). Similar trend at the age category of 60 and above was found with Sappi community having 20.3% of the respondents compared to the 16.7% from Normandien community. Majority of the respondents from both study communities were single accounting for 82% and 70% for Sappi and Normandien community respectively.

Majority of the respondents from Sappi community (45.3%) attended secondary school education without acquiring matric certificates compared to those from Normandien community (24.1%). In the contrary, Normandien community had more respondents (47.2%) with primary education compared to 31.2% from Sappi community. About 57.8% of the respondents from Sappi community revealed that they had employment compared to 59.3% of those respondents from Normandien community. On the same note, it is evident from the results that majority of the respondents emphasized that they were not employed by forestry companies with those employed by Sappi Hlelo plantation accounting to 28.1% compared to 38.9% employed by Normandien

Farms. Also, majority of the respondents from Sappi community of about 60.9% revealed that they received the income of R3500 and above from various sources of income compared to 53.7% from Normandien community.

Table 4.1: Demographic and socioeconomic status information

Information	Proportions (%) of respondents in two communities	
	Sappi community (N=128)	Normandien community (N=108)
Age category		
18 – 35	23.4	13.9
36 -59	56.2	69.4
60 and above	20.3	16.7
Gender		
Male	46.9	49.1
Female	53.1	50.9
Marital status		
Single	82.0	79.6
Married	10.2	12.0
Windowed	7.8	8.3
Highest level of education		
Uneducated	10.9	21.3
Primary education	31.2	47.2
Secondary school with matric	12.5	7.4
Secondary without matric	45.3	24.1
Source of income		
No source of income	1.6	0.0
Employment	57.8	59.3
Self-employment	6.2	8.3
Social grant	32.0	30.6
Supported by other family members	2.3	1.9
Forestry company employment		
Not working in forestry	58.6	49.1
Sappi	28.1	0.9
Mondi	0.8	3.7
Normandien farms	4.7	38.9
Other forestry companies	7.8	7.4
Amount of money generated from your source of income		
No amount of money generated	1.6	1.9
Less than R1500	2.3	0.0
R1500 – 2500	13.3	17.6
R2500 – R3700	21.9	26.9
R3700 and above	60.9	53.7

4.2 Roles of forestry companies in rural livelihoods upliftment

Table 4.2 present roles of forestry companies in provisioning of socioeconomic benefits to the study communities. The results revealed that the majority of respondents from Sappi community

regarded fuelwood collection as their main benefit constituting of 49.2% followed by wages at 37.5% and grazing for livestock at 11.7%. In comparison, the respondents from Normandien community indicated that wages were, their main benefit constituting 47.2% followed by fuelwood collection (21.3%), mushroom collection (4.6%) and grazing for livestock (3.7%). Furthermore, fewer respondents from Sappi community (1.6%) did not receive any benefits compared to those from Normandien community (21.3%). As emphasized by participants during FGD from the Sappi community, “we were given our own woodlot with *Acacia mearnsii* mainly for fuelwood collection and building material by our forestry company. According to own knowledge, there is no community member that is allowed to collect fuelwood or timber from the community woodlot for business purposes. However, the current Chief has done that only to benefit himself which we consider to be unfair and poor leadership. When we investigated, he responded that he wanted to assist in our local pre-school with the funds generated and that has left us with more doubts since the procedure was not followed (he was supposed to inform the community forum before selling our timber). We are also given time for firewood collection after clear-felling of compartments before slash burns in preparation for the next rotation period”. Furthermore, we are allowed to cut down dry standing timber from compartments that are at maintenance stage and use as firewood.’ Regarding access for livestock grazing and gravesite visits, another participant outlined, “we have access for grazing our livestock in all Sappi compartments excluding ones that were recently established. However, this grazing is controlled through the use of permits, and we are very happy with that since we believe that we have to invest more on livestock. We are also able to visit our graves at any time”. On the other hand, Normandien community FGD participants mentioned. “We do not have any specified woodlot for firewood and building material collection given to us by the forestry company like in other areas under different forestry companies. However, we survive by stealing standing timber from standing compartments for both firewood and building material which get us into trouble when found in position of timber by foresters and security personnel. We are only given time to collect firewood in recently clear-felled compartments to collect firewood before slash burns in preparation for the next rotation period”. Regarding access for livestock grazing and gravesites visits, participants outlined that, “we are not given permission for livestock grazing, we are told that our livestock feed on planted trees (particularly goats) and destroy them. Things have changed from better to worse since the change of forest plantation ownership in our area. The new owners decided to fence their plantations with

our graves inside. Speaking from experience, one community member buried her mother at her current home yard due to access difficulties, her mother's grave is separated from rest of deceased family members and that pains her even today. However, we have reached a mutual understanding and we are now all having access to graves even though we have to get permission first which is still a problem for us. We are also unable to access water streams which we were able to use for our cleansing before and now we walk a distance to do that''.

Results indicated that more than 50% of respondents were not employed by forestry companies from both study communities with Sappi community constituting of 61.7% and Normandien community 51.9%. Fewer respondents from Sappi community (28.1%) were employed to perform silvicultural operations compared to 37% at Normandien community. On the same note, results revealed that respondents from Sappi community were not employed as debarkers compared to only 2.8% from Normandien community. Less than 10% of respondents from both study communities indicated that they were employed as machine operators. Majority of respondents indicated that they are permanently employed by forestry companies accounting for 36.7% from Sappi community compared to 43.6% from Normandien community. Seasonal employment accrued to those from Sappi community (0.8%) while Normandien community had no respondents who were seasonally employed. Those employed as casuals were at 0.8% from Sappi community and 1.6% at Normandien community. About 28.9% of respondents from Sappi community compared to 27.8% from Normandien community indicated that they received training from the forestry companies. Results show less un-trained employees from Sappi community at 9.4% compared to 20.4% from Normandien community.

Results revealed that 38% of the respondents from Normandien community have other family members working for forestry companies compared to only 12.5% from Sappi community. Majority of respondent's family members are employed as machine operators at 10.2% from Sappi community and 36.1% from Normandien community. Only 2.3% and 1.9% of respondent's family members are employed to perform silvicultural duties from Sappi community and Normandien community, respectively. Moreover, none of them are employed as debarkers from Sappi community compared to 0.9% from Normandien community. A majority of respondent's family members working for forestry companies received training for their jobs in both study

communities at 10.9% from Sappi community and at 13% from Normandien community. However, only 1.6% of respondent's family members were un-trained from Sappi community compared to 25.9% from Normandien community. Results also show that more respondents from Normandien community (63.9%) agreed that socioeconomic benefits offered by forestry companies improved rural livelihoods in the past 10 years compared to Sappi community (61.7%).

Table 4.2: The role of companies in the provisioning of socioeconomic benefits

Socioeconomic benefits	Proportions (%) of Community benefits	
	Sappi community (N=128)	Normandien community (N=108)
Main benefit of communities from forestry company		
No Benefit received from forest plantations	1.6	21.3
Grazing land for livestock	11.7	3.7
Collection of thatch grass	0.0	1.9
Fuel-wood collection	49.2	21.3
Mushroom collection	0.0	4.6
Wages	37.5	47.2
Types of jobs offered by forestry companies		
Not working for forestry companies	61.7	51.9
Chainsaw operator	1.6	0.9
Silviculture work	28.1	37.0
Machine operator	6.2	5.6
Debarking	0.0	2.8
Cleaning and gardening services	2.3	1.9
Employment status?		
Not working for forestry companies	61.7	51.9
Seasonal	0.8	0.0
Permanent	36.7	46.3
Casual	0.8	1.9
Offered training by a forestry company		
Not working in forestry	61.7	51.9
Yes	28.9	27.8
No	9.4	20.4
Family members work for forestry companies		
Yes	12.5	38
No	87.5	62
Type of jobs family members are doing		
Not working in forestry	87.5	62
Chainsaw operator	10.2	32.4
Silviculture work	2.3	1.9
Machine operator	0.0	3.7
Debarking	0.0	0.9
Employment status of family members		
Not working in forestry	87.5	62
Permanent	12.5	38
Family members trained for the job		
Not working in forestry	87.5	62
Yes	10.9	13
No	1.6	25

Forestry companies improved rural livelihoods		
Yes	38.3	36.1
No	61.7	63.9

4.3 Perceptions on socioeconomic services provisioned by forestry companies

Table 4.3 presents the proportions of the respondents' perception on socioeconomic benefits provisioned by forestry companies in the study communities. The results showed a statistically significant relationship ($p \leq 0.001$) between households from both communities regarding the provision of transport to the nearest town, food parcels and funeral support, sponsoring of local sports, and the supply of water, respectively. Above 70% of respondents Sappi and Normandien communities indicated that forestry companies assist them with water supply. A total of 100% respondents from Sappi community indicated that they were not assisted with transport to the nearest town compared to 28.7% from Normandien community. This was emphasized during FGD at Sappi community by participants stating that, *‘we are not provided with any form of transport to the nearest town, and we are not concerned about that, forestry companies must deal with serious issues like creation of more employment opportunities. Most of our villages in this forest plantation are along the N2 between Emerlo and Piet Retief which makes it easy for majority of us to get to the nearest town and back’* In the contrary a participant from the Normandien community stated that *‘The forestry company only assist people who are working within their forest plantations with transport to the nearest town. Some of us really need to be assisted with transport at least once a month to be able to buy food. We are very far from the road as you can see about 15 – 20km. It cost us more to get to and from town at about R60 a single trip on top of that we are charged for the items we buy, maize meal as an example because vehicles owners say our gravel roads cause break downs on their vehicles’*.

About 96.1% of the respondents from Sappi community compared to 80.6% from Normandien community indicated that they have received sports support from forestry companies. This was emphasized by participants during FGD on both study communities stating that, *‘forestry companies sponsor our soccer teams with soccer balls, soccer jerseys and do soccer competitions for us every year just before the fire season. This is done mainly for fire awareness campaign which benefits our communities and our forestry companies’* Only 10.2% of respondents from both study communities indicated that forestry companies offered bursaries to local people with

very little carrier guidance programs being offered at 1.6% from Sappi community and at 0.9% from Normandien community. A majority of respondents from Sappi community (66.4%) and Normandien community (73.1%) indicated that forestry companies offer available employment to local people. For other benefits inter alia, food parcels for elderly and support during funerals, more respondents from Sappi community agreed at 26.6% compared to 3.7% from Normandien community.

Table 4.3: Socioeconomic services from forestry companies

Socioeconomic benefit	Proportions (%) of community benefits				Inferential statistics		
	Sappi community (N=128)		Normandien community (N=108)		X ²	df	p-value
	Yes	No	Yes	No			
Water supply	88.3	11.7	72.2	27.8	9.798	1	0.002
Transport to nearest town	0.0	100	28.7	71.3	42.297	1	0.000
Sponsoring of local sports	96.1	3.9	80.6	19.4	14.226	1	0.000
Bursaries for local people	10.2	89.8	10.2	89.8	0.000	1	0.994
Employment for local people	66.4	33.6	73.1	29.9	1.256	1	0.262
Carrier guidance programs	1.6	98.4	0.9	99.1	0.189	1	0.664
Food parcels & funeral assistance	26.6	73.4	3.7	96.3	22.657	1	0.000

Table 4.4 presents the results of household respondent's rankings of forestry companies provisioned socioeconomic benefits in the study communities. The results showed that there were highly significant differences between socioeconomic benefits provisioned by different forestry companies for both Sappi community ($X^2 = 713.979$, $p < 0.001$) and Normandien community ($X^2 = 492.820$, $p = 0.001$). Furthermore, sponsoring of local sports (7.88), water supply (7.52) and employment for local people (6.54) for Sappi community compared to employment for local people (7.71), sponsoring for local sports (7.32) and water supply (6.12) for Normandien community were highly ranked socioeconomic benefits, respectively. However, food parcels and funeral assistance (4.75), bursaries for local people (4.01) and carrier guidance programs (3.63) followed for Sappi community compared to transport to the nearest town (4.78), bursaries for local people (4.18) and food parcels and funeral assistance (3.88) for Normandien community, respectively. Equally, power supply, transport to nearest town, and transport for school kids were

all ranked the least with mean rank of 3.55 for Sappi community compared to Normandien community power supply and transport for school kids with a mean rank of 3.65 below carrier guidance programs (3.70). Most importantly, sponsoring of local sports and employment of local people were highly ranked socioeconomic services provisioned by forestry companies with the mean rank of 7.58 and 7.38, respectively. These were correspondingly followed by water supply (6.38), food parcels and assistance during funerals (4.56), transport to nearest town (4.12) and bursaries for local people (4.11). In addition, transport for school kids and power supply were ranked equally with a mean rank of 4.60 while the least ranked was the carrier guidance programs (3.67).

Table 4.4: Household ranking of socioeconomic services by forestry companies

Socioeconomic benefit	Sappi Community (N=128)				Normandien Community (N=108)				Overall Ranking (N=236)			
	Mean rank	X ²	df	p-value	Mean rank	X ²	df	p-value	Mean rank	X ²	df	p-value
Water Supply	7.53				6.12				6.38			
Power Supply	3.55				3.65				3.60			
Transport to nearest town	3.55				4.78				4.12			
Transport for school kids	3.55				3.65				3.60			
Sponsoring of local sports	7.88				7.32				7.58			
Bursaries for local people	4.01	713.979	8	0.000	4.18	492.820	8	0.000	4.11	1055.387	8	0.000
Employment for local people	6.54				7.71				7.38			
Carrier guidance programs	3.63				3.70				3.67			
Food parcels & funeral assistance	4.75				3.88				4.56			

4.2.2 Perceptions of respondents on socioeconomic services improvement in the last 10 years

Table 4.5 presents the contributions made by forestry companies towards rural livelihoods improvement in the past 10 years. The results revealed that forestry companies offer minimum contribution towards the support of local businesses accounting for 10.9% from Sappi community compared to 13.9% from Normandien community. This was confirmed by participants during FGD at the Sappi community, “*Sappi has sponsored for a chicken and a garden project in the past to our community, with the provision of all necessary equipment for startup. Both of these*

projects failed. Currently the forestry company is offering donations to our local pre-school which has been running from the beginning without failure. Usually, majority of the company staff members get to spend time during the Mandela month at the pre-school bringing along needed items for support''. On the other hand, participants from the Normandien community FGD mentioned that 'Normandien farms bought us tools for silvicultural work to support functioning of our co-operatives within their forest plantations. We were given an opportunity of having three different groups with 15 members each. Currently only two groups are still operating and the other one stopped working''. Over 50% of respondents from both study communities have indicated that a supply of clean drinking water by forestry companies improved. This was confirmed by participants during a FGD for the Sappi community, 'the forestry company bought water tanks for our community which are filled up by company fire trucks for the community to get water. This has helped us improve from manual water boreholes. However, there are challenges in terms of supplying water on time due to other commitments in the forest operations. To resolve that, the forestry company has collaborated with the local Government to find a permanent solution without delays to the supply of water where it is the major contributor to the project with an amount approximately R256 000. The aim of this project is supplying water to each and every household on daily basis'' in comparisons with the Normandien community participants confirmed during a FGD that, 'The forestry company recently bought 2 water tanks with a carrying capacity of 10 000L each for the community. Water is being supplied every Mondays and Fridays into the tanks and flow to each and every household through underground water pipes to their taps in most households within the community. In households where these projects have not reached, water is supplied using water carts every Monday and Fridays''.

On the same note, 55.5% and 57.4% of respondents revealed that forestry employment opportunities improved for Sappi and Normandien communities, respectively. This was confirmed by the key informants representing the forestry company in the Sappi community stating that *''our company has invested more on basic skills development wherein approximately 20 local people were trained for building, plastering and plumbing for them to be employable and take care of themselves. We are also training local people on how to run their own businesses so that they are also able to bid for work in other companies. The failure of the poultry and garden project was an eye opener for us that rural people really need training in terms running businesses''* Moreover,

respondents from Sappi community (60.9%) affirmed an improvement of community roads by forestry companies compared to 45.4% from Normandien community. On the same note, more respondents from Sappi community (27.3%) agreed with an improvement of school buildings compared to only 10.2% from Normandien community.

Fewer respondents from Sappi community (10.9%) and Normandien community (0%) indicated that there was an improvement regarding support of local churches by forestry companies in their communities. Similarly, majority of respondents indicated that no improvement in support of shopping centres accounting for 96.9% and 100% from Sappi and Normandien community, respectively. Above 50% of respondents from both study communities agreed that support from forestry companies towards improvement of sports field improved accounting 60.9% and 51.9% from Sappi and Normandien community, respectively. Results revealed that minimum support by forestry companies towards rural houses improvement in both communities with Sappi community (0.8%) compared to 9.3% from Normandien community. This was emphasized by participants during FGD at the Normandien community stating that, *‘Proper houses were only built for households who were moved from areas which were turned to be compartments for forestry trees. All those who were not moved are still in stick and mud houses’*.

Table 4.5: Services that have improved the livelihood of communities in the past 10 years

Improved socioeconomic benefits compared to the past 10years	Proportions (%) of community benefits				Inferential statistics		
	Sappi community (N = 128)		Normandien community (N = 108)		X ²	df	p-value
	Yes	No	Yes	No			
Support for local businesses	10.9	89.1	13.9	86.1	0.473	1	0.491
Clean drinking water	58.6	41.4	55.6	44.4	0.221	1	0.638
Employment opportunities	55.5	44.5	57.4	42.6	0.090	1	0.765
Community roads	60.9	39.1	45.4	54.6	5.711	1	0.017
School buildings	27.3	72.7	10.2	89.8	10.990	1	0.001
Churches	10.9	89.1	0.0	100.0	12.557	1	0.000
Shopping centre	3.1	96.9	0.0	100.0	3.433	1	0.064
Sports fields	60.9	39.1	51.9	48.1	1.970	1	0.160
Houses for local people	0.8	99.2	9.3	90.7	9.475	1	0.002

4.2.3 The ranking of provision services from the forestry companies

Table 4.6 presents the results of household respondent's rankings of forestry companies' provisioned services in the study communities. The results revealed that there was statistically significant difference on ranking of services offered by forestry companies in the last 10 years for both Sappi community ($X^2 = 517.07$, $p = 0.001$) and Normandien community ($X^2 = 361.47$, $p = 0.001$). Moreover, respondents from Sappi community ranked community roads (7.10) and sports field (7.10) services highly followed by improvement on clean drinking water (6.98), employment opportunities for local people (6.83) and school buildings (5.42), respectively. Similarly, Normandien community respondents ranked sports fields (7.55) highly amongst the forestry company's services provisioned with improvement of employment opportunities for local people (6.95) ranked second followed by community roads (6.82) and clean drinking water (6.38), respectively.

Furthermore, respondents at Sappi community ranked the improvement on support of local businesses (4.60) and churches (4.60) fifth while those from Normandien community ranked church (4.28), shopping centre (4.28) and clinic (4.28) the eighth least forestry company's provisioned services. Respondents from Sappi community ranked shopping centres (4.21), building of houses for local people (4.09) and improvement of local clinics (4.05) as the least forestry company provisioned services. In the contrary, the building of houses for local people was ranked (4.89) fifth by respondents from Normandien community amongst the forestry company's provisioned services followed by school buildings (4.84) and support for local businesses (4.71), respectively. The results revealed that the improvement on sports fields (7.91), community roads (7.03), employment opportunities for local people (6.65) and clean drinking water (6.17) were the most highly ranked forestry companies' provisioned services in the study communities.

Table 4.6: Ranking of services offered by forestry companies in the last 10 years

Services provisioned	Sappi community (N=128)				Normandien community (N=108)				Overall ranking			
	Mean rank	X ²	df	p-value	Mean rank	X ²	df	p-value	Mean rank	X ²	df	p-value
Support for local businesses	4.60				4.71				4.17			
Clean drinking water	6.98				6.38				6.17			
Employment opportunities	6.83				6.95				6.65			
Community roads	7.10				6.82				7.03			
School buildings	5.42				4.84				5.29			
Churches	4.60	517.07	9	0.000	4.28	361.47	9	0.000	4.54	840.11	9	0.000
Shopping centre	4.21				4.28				4.27			
Sports fields	7.10				7.55				7.91			
Clinics	4.05				4.28				4.16			
Building houses for local people	4.09				4.89				4.47			

4.3 Community forestry-company engagements

Table 4.7 below presents the community forestry-company engagements from both study communities. Results revealed that more respondents from Sappi community confirmed the existence of meetings between forestry companies and community members accounting for 88.3% compared to 42.6% from Normandien community. This was confirmed by participants during FGD when they stated that, *“Our forestry company meets with our community forum to discuss our requests and concerns. Moreover, forestry managers are able to come down to us as ordinal members especially when they see the need to us address as a mass. This usually happen when an issue needs to be treated with urgency like forest fires which are believed to often burn as a result of a community concern. There is openness between us and the forestry company”*. In comparison, the Normandien community participants stated FDG that, *“Currently, there are no formal meetings existing between us and the forestry company. We only see the forestry managers requesting to address us mostly when there are concerns and request from their side which does not address our own community related issues. This is very confusing as we used to have formal meetings in the past while we were under a different management. We are not aware of any reason*

why we are unable to talk to them to state our views on all the existing matters that we currently have, inter alia the livestock grazing denial issue. We need to communicate with the forestry company to reach workable solutions for all our problems. We really need to access the forest plantations the same way it used to be happen before. However, the current forestry company does not have an open-door policy like the way we see on other neighboring forest plantations owned by other companies. On the same note, all respondents (100%) from Sappi community confirmed that their community was only represented by committee members in meetings compared to 21.3% and 20.4 % of Normandien respondents who confirmed that their community was represented by committee members and any community members, respectively. More respondents from Sappi community revealed that meetings held between forestry companies and their community were important to them as community members accounting for 74.2% compared to 41.7% from Normandien community. Similarly, more respondents from Sappi community (14.1%) revealed that meetings were not important compared to zero respondents from Normandien community. Moreover, results showed that more respondents from Sappi community (46.9%) confirmed that meetings held by their committee members with forestry companies did not earn them community improvements compared to 32.0% of respondents from Normandien community. Similarly, more respondents from Sappi community revealed that the same meetings earned them community improvements accounting for 41.4% compared to 9.7% from Normandien community.

The results also revealed that 85.2% of respondents from Sappi community viewed their requests and concerns as valued by forestry companies compared to 49.1% of respondents from Normandien community. This was confirmed by key informants' interviews representing the forestry company on the Sappi community stating that, *"We value and respect concerns and requests from our neighboring communities as our stakeholders. We try and support them in every way, as long as it is within the norm and culture of our company. We believe that a good relationship with our communities will always help us to grow. Moreover, there is no forestry without the surrounding communities, they need us as much as we need them and therefore, we cannot exclude them as part of Sustainable Forest Management (SFM)"*. Majority of respondents rated company responses towards their concerns and request to be poor accounting for 31.2% from Sappi community compared to 50% from Normandien community. On the other hand, results revealed that 13.3% of respondents from Sappi community rated company responses as fair

compared to 12.7% of respondents from Normandien community. On the same note, 21.1% of respondents from Sappi community rated company responses to be good compared to 15.3% from Normandien community. Results also showed that a majority of respondents from Sappi community accounting for 25% viewed company responses to be excellent compared to Normandien community which only accounted for 15.3%. Similarly, results showed that 9.4% of respondents from Sappi community perceived company responses to be very excellent in comparison to 6.8% of respondents from Normandien community.

Results showed that majority of respondents stated that it would be difficult to survive without forestry companies in their localities from both study communities accounting for 88.3 for Sappi community and 68.5 for Normandien community. This was emphasized by participants during FGD at the Sappi community stating that, *“We cannot imagine our lives without forestry companies conducting businesses within our locality. They are of great assistance to our community even though other socioeconomic benefits fail to reach their destination (community) due to greediness of certain members of the traditional leadership. We are seeing a potential of reaching greater heights together with the forestry company due to the commitment they have shown us”*. In comparison, FGD participants from the Normandien community emphasized that, *“Surviving without the forestry company is difficult and we still believe that things can improve for our community. We are still going to push for them work closely with us in order to get the other lacking socioeconomic benefits (access for livestock grazing). Moreover, improve our relationship with them*. On the same note, results show that above 90% of respondents from both study communities agreed that a better level of education would have assisted them to better engage with forestry companies in order to play a significant role in community socioeconomic status. On the other hand, results revealed that only 43.8% of respondents from Sappi community agreed that income generated from forest companies was directly linked with their household socioeconomic status, compared to 58.3% from Normandien community.

Table 4.7: Details of community forestry-company engagements

	Proportions (%) of responses from two communities	
	Sappi community (N=128)	Normandien community (N=108)
Meetings between community members and forestry companies in your community takes place		
<i>No</i>	11.7	58.3
<i>Yes</i>	88.3	41.7
Community members representation in meetings		
<i>No meetings</i>	11.7	58.3
<i>Represented by committee members</i>	88.3	21.3
<i>Represented by ordinary community member</i>	0.0	20.4
Significance of meetings to community member		
<i>No meetings</i>	11.7	58.3
<i>No</i>	14.1	0.0
<i>Yes</i>	74.2	41.7
Meeting of forestry companies and community members result to improvements		
<i>No meetings</i>	11.7	58.3
<i>No</i>	46.9	32.0
<i>Yes</i>	41.4	9.7
Forestry companies value community members concerns and requests		
<i>No</i>	14.8	50.9
<i>Yes</i>	85.2	49.1
Rate the company responses towards your requests and concerns.		
<i>Poor</i>	31.2	50
<i>Fair</i>	13.3	12.7
<i>Good</i>	21.1	15.3
<i>Excellent</i>	25	15.3
<i>Very excellent</i>	9.4	6.8
Forestry companies conducting business better off community member livelihood		
<i>No</i>	88.3	68.5
<i>Yes</i>	11.7	31.5
Level of education assisted in engaging forestry companies		
<i>No</i>	5.5	6.4
<i>Yes</i>	94.5	93.6
Household socioeconomic status linked with income generated from forestry companies		
<i>No</i>	56.2	41.7
<i>Yes</i>	43.8	58.3

Table 4.8 shows the results on the approaches that are important to achieve improvements on the community development agenda. The results revealed that the respondents' perceptions on the approaches that are important to achieve improvements on the community developmental agenda were statistically significant different ($p=0.001$). Furthermore, respondents highly ranked transparency and honesty of community leadership (3.26) as the most important approach required to achieve improvements regarding community developmental agenda. In addition, second highly ranked approach was companies' adherence to the social responsibility and obligation (3.14),

followed by demands and forces by community members (2.95), rapid implementation of meeting resolutions (2.86), and the least ranked approach was emphasis on leadership accountability (2.79).

Table 4.8: Ranking of approaches that were important for improvements on the community agenda improvements

Respondents' reasons for achieving community improvements agenda	Mean ranking	X²	df	p-value
Transparency and honesty of leadership	3.26			
Rapid implementation of meeting resolutions	2.86			
Emphasis on leadership accountability	2.79	70.495	4	0.000
Companies' adherence to its social responsibility and obligations	3.14			
Through demands and forces by community members	2.95			

Table 4.9 presents the factors that influenced the household respondents' rating of company responses towards community requests and concerns. The results revealed that age category of 18–35 (1.673) and 36–59 (1.441) were significantly ($p < 0.002$) more likely to rate the response of forestry company responses on requests and concerns of the community very excellent compared to the age category 60 and above. At the same time, males (0.305; $p < 0.304$) who are either single (0.188; $p < 0.747$) or married (0.304; $p < 0.672$) were not significantly more likely to rate responses of the forestry company on community requests and concerns very excellent compared to females.

On the other hand, the respondents who indicated to have received water (-1.770; $p < 0.001$), employment for local people (-1.271; $p < 0.001$) and food grocery for elderly and funeral supports (-0.985; $p < 0.008$) were significantly less likely to have an influence on rating company responses very excellent on requests and concerns of the community. Similarly, the respondents who indicated that their livelihood could be better off without forestry companies conducting business in their area were significantly less likely to rate the responses of the forestry company on requests and concerns of the community very excellent. In the contrary, the respondents who indicated that forestry companies provisioned transport to the nearest town (1.885) were significantly ($p < 0.001$)

more likely to rate the responses of the forestry company on requests and concerns of the community very excellent.

Table 4.9: Factors influencing the respondents' rating of company responses on requests and concerns of communities (Sappi and Normandien)

	Estimate	df	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Number of family members per household	.023	1	.604	-.063	.108
Age (18 – 35)	1.673	1	.002*	.613	2.734
Age (36 – 59)	1.441	1	.002*	.545	2.338
Gender (male)	.305	1	.304	-.276	.886
Marital Status (single)	.188	1	.747	-.956	1.332
Marital Status (married)	.304	1	.672	-1.100	1.707
Level of education assists during engagement (Yes)	2.572	1	.030*	.243	4.902
Forestry income generated linked to household socioeconomic status (Yes)	.408	1	.217	-.240	1.055
Livelihood better off without forestry companies conducting business in your area (Yes)	-1.853	1	.000*	-2.803	-.904
Bursaries for local people (Yes)	.037	1	.935	-.846	.920
Water supply (Yes)	-1.770	1	.000*	-2.687	-.853
Transport to the nearest town (Yes)	1.885	1	.000*	1.011	2.760
Sponsoring of local sports (Yes)	.476	1	.308	-.440	1.391
Employment for local people (Yes)	-1.271	1	.000*	-1.960	-.583
Carrier guidance Programs (Yes)	.363	1	.769	-2.057	2.783
Food grocery for elderly and funeral supports (Yes)	-.985	1	.008	-1.718	-.252

* Denotes statistically significant difference

CHAPTER5: DISCUSSION

This chapter discusses the results presented in the previous chapter. It seeks to explain the benefits and roles of forestry companies in their respective communities. In the process the findings are compared to other findings in literature that are on a similar subject matter. The chapter commences with the discussion of demographics and socioeconomic status of the communities. Other aspects include the discussion different socioeconomic benefits offered by the different forestry companies. It also includes the respondents' perceptions regarding the roles being played by the forestry companies and also discuss the community improvements due to assistance brought by forestry companies in past 10years. In conclusion, these chapter discusses the relationship between study communities and forestry companies, focusing on accessibility of forest plantations by communities for socioeconomic uses.

5.1 Demographics and socioeconomic status

The study found that the majority of people residing in both study communities derive their livelihood from employment (Table 4.1), which is mostly provided by forestry companies on permanent basis. This is in agreement with an observation made by Chamberlain *et al.* (2005) that large proportion of forestry companies turn to be working full time, specifically employees in nursery production, harvesting contractors and those that are involved in chemical spraying. For example, approximately 65% of people residing within and adjacent to forest plantations were reported to be employed by forestry companies (Ofoegbu, 2014). Similarly, Mamba (2013) argued that forestry companies provide about 78% of secured forestry employment.

This is in contrast to the observations made by Clarke *et al.* (2005), FSA (2012) and Robertson (2018a) that forestry companies mostly offer seasonal and casual jobs for the rural communities of South Africa which fail to provide stable source of income. However, this study is in agreement with Clarke (2018) that forestry companies still need to create more job opportunities for rural communities. This was highly stressed by participants of Sappi community during a FGD stating that, '*we appreciate what has been done by our forestry companies so far in terms of water supply and all other benefits they have offered to us. However, without enough employment in our days*

we are nothing. For example, with the provided fuelwood and water, which food are we going to cook? Furthermore, we cannot pay school fees for our kids and buy them school uniforms with fuelwood and water. We are very concerned because things have changed and education is a need for our kids'' similarly stated by participants of Normandien community during FGD stating that, *‘we need forestry companies to create more jobs for us and change their employment recruiting strategy. There are families with almost all family members being employed by forestry companies and there are also families without even one family member working either for the forestry company or any other company. This is not fair, and things cannot be like that forever, this is not working for us as a community in comparison to the past years maybe before 1994, where forestry managers ensured that at least one family member per household was employed in order to support his or her family. Moreover, they had an ability to see a responsible family member before employing him or her. Today our kids get employed in this forest plantations and drink alcohol with their money, failing to take care of their families’’*. These findings suggest that even with the available employment opportunities, the Normandien community is not certain with the way companies have recruited employees which they view as unbalanced.

The study also revealed that the majority of working community members earned above R3700 per month showing a compliance by forestry companies to the minimum wage policy, which is R23.19 per hour translating to R185.52 for every worked 8 hours and R3710.40 for every worked 20 days in a month (SA Forestry, 2022). Forestry companies might have paid more than the required minimum wage to employees as part of CSR, which is in agreement with Mohammed (2020) that anything done by a firm without being forced by the law and which is of no benefit to it is CSR. This is of huge importance to these communities since they are in remote areas where other employment opportunities are lacking (Shackleton, 2004). Furthermore, with the consideration of forest related income as a key source of income for rural communities contributing immensely towards the reduction of rural inequality and poverty (Nhem *et al.*, 2018).

These findings are in line with Ofoegbu (2014) in the sense that forestry companies adhere to the minimum wage regulations and significantly contribute more to improve working conditions. This might have been influenced by the introduction of a sectoral determination for forestry employees in 2006 where in a legal minimum wage was set together with other minimum working conditions

(Clarke, 2018). Moreover, this could have been influenced by unionization of the workplaces and stricter legal compliance brought by the Forestry Stewardship Council (FSC) in monitoring of forestry contractors which were mostly associated with workers exploitation. According to Ledger (2017), the South African forestry industry is rated amongst the best in the world in terms of FSC certification at 85% and has grown over the years since 1996 when the first certificate was afforded to SAFCOL (SA Forestry, 2014).

According to Robertson (2018a), before a company is declared to be FSC certified, certain minimum requirements must be met inter alia adhering to labour laws, economically support workers, and respect indigenous people's rights. Therefore, FSC approval for any forestry company ensures the contribution towards economic development of rural communities (Robertson, 2018a), which might be within or adjacent to forest plantations owned by different forestry companies. Moreover, the chain of custody principle ensures sustainability to the uncertified forest plantations as big buyers are expected to only purchase from sustainably managed forest operations (DAFF, 2015; Robertson, 2018b). However, this has been viewed to carry associated risk on job losses (Clarke, 2018; Hall, 2014), where mechanization increase mostly for corporate companies (Louw, 2006).

This was emphasized by participants during FGD of the Normandien community stating that, *“before the minimum wage requirement policy came into effect, majority of us were employed to work in forest plantations compared to nowadays. Employers made us choose whether to continue earning less and have majority of us employed or to be paid according to the government laws and have few people employed as they were not going to be able to pay us. Unfortunately, we chose to be paid according to the minimum wage policy and that was followed by retrenchment for most of us. Tractors are currently used for slashing and chemically spraying in this forest plantations instead of people like it used to happen before”*.

In line with Munyanduki *et al.* (2016), Long (2018), Pokwana *et al.* (2021), and Tshidzumba *et al.* (2022) for studies carried out in rural communities which are mostly within and adjacent to forest plantations, this study revealed lack of highly qualified residents specifically with tertiary education. This finding is also supported by Statistics South Africa (2016) for the Mpumalanga

province of community surveys which found only 3.9% of people who attended institutions under the Mkhondo Local Municipality. This might be a contributory factor influencing the majority of residents from both study communities to be employed as general employees. Moreover, this might have contributed immensely to un-employment rate that was found to be above 30%, which is more than the national average 27.1% (Clarke, 2018), and lower than that of the provincial rate at 41.1% (Statistics South Africa, 2016). However lower than claims made by Davies (2012) that rural un-employment is higher than the national average, exceeding 50%. As highlighted during FGD by participants at Sappi community, *“the forestry company needs us to write and submit good business proposals stating our intentions clearly as a community since they have a budget specifically for community development every year. However, due to lack of necessary skills we fail to do that, and our budget gets forfeited. we are the ones who fail to do what is required in order to create more employment in our community”* similarly FGD participants at Normandien community stated that, *“The forestry company gave us an opportunity to have three contactors operating under a co-operative led by us for silvicultural operations and we created them. However, due to lack of management skills one of them failed and our community members who worked for this contractor remain un-employed even today”*.

This is further supported by Tshidzumba *et al.* (2022), who found that lack of tertiary education contributes to high un-employment rate in rural communities. Similarly, Belcher *et al.* (2015) suggested that people with tertiary education in areas with high un-employment stand better chances to access income generating resources compared to those that are less educated. This is also supported by Byrne (1999) as cited by Arrikum (2014) stating that, education plus training become pre-conditions of job creation improvement. Moreover, Arrikum (2014) argued that failing to address these issues lead to insignificance of job readiness amongst local unemployed people resulting into outsiders taking available new jobs.

5.2 Socioeconomic services provisioned by forestry companies

The study found that the forestry companies in both study communities gave permission and offered community members time for collecting fuelwood from all harvested compartments before prescribed burning in preparation for the next rotation period. This study further revealed that only

the Sappi community was offered a community woodlot specifically for collecting fuelwood and timber for building houses with no permission to sell, which is similar to findings by Ofoegbu (2014) that community members were not allowed to sell timber and poles but only benefit through cash savings as it was offered for own use. Moreover, this is in line with the argument made by Chirwa *et al.* (2017) that fuelwood is largely used for subsistence reasons with little/no exact consumption statistics recorded. Long (2018) considered these to be of huge importance to rural households. This can be very true for this study, when considering the high un-employment rate. People can use the money saved on energy to finance other households' needs.

However, in line with Mamba (2013), Chirwa *et al.* (2015) and Tshidzumba *et al.* (2018), this study found that elites, specifically the traditional leadership enjoyed more of this benefit compared to ordinary community members, through harvesting timber from the community woodlot mainly to sell for personal gains. Tshidzumba *et al.* (2022) argued that this form of conduct was perpetuated by the African cultures, particularly Zulu and Xhosa, which dictate ordinary community members to respect members of royal families. Community members viewed this act as having bad leadership skills and agreed during FGD through participants for the Sappi community that, '*It is difficult to obey rules made by leaders who cannot follow them*'. This study also revealed that the Sappi community was allowed to cut down standing dry dead timber from old compartment and use as fuelwood. Furthermore, the study found that the forestry company under the Sappi community gave access for free livestock grazing (except in young tending compartments), thatch grass and mushroom collection within their forest plantations.

In comparison, this study found that the Normandien community was not allocated any woodlot for the collection of firewood and building material. The community relied on harvesting residues and stealing of dried standing timber from old compartments. For this, they could be imprisoned for, if found by the managers and/or security personnel servicing the forestry company. Normandien community was also not given any formal access for livestock grazing due to the damages of young, planted trees as reported by the forestry company. These findings are not unique to this study, Lewis *et al.* (2005) reported damage to crops in forest plantations caused by wild animals and livestock grazing in forest plantations which negatively impacted forestry

company finances. However, Cairns (2000) reported that the refusal of livestock grazing was one of the causes for disputes between forestry companies and rural communities in South Africa. This may also be viewed as deprivation of income diversification for the rural communities since they usually trade livestock for cash in difficult times (Shackleton 2004; Ofoegbu 2014) and positively contribute to poverty alleviation in the rural areas.

The study also found that there was no formal access given for the collection of mushroom and thatch grass for the Normandien community, which is in line with claims made by Roberson (2018a) on forestry companies that deny rural communities access to collect edible fruits and medicinal plants, fish and hunt wild animals from the forest plantations. This has also seen forest plantations commercializing areas of cultural and recreational significance (rivers and mountain trails) and only allowing access to tourist willing to pay an access fee. This infringes the rural community right of connecting with the traditional landscape and supplementing their nutritional needs. This finding might have been influenced by the lack of recognized community representatives engaging with forestry companies on behalf of the entire Normandien community. On the other hand, the study found that certain community members from Normandien community were able to access all three benefits without access permission, in comparison to the Sappi community members who only utilized the grazing benefit while granted accessibility for collecting Non-Timber Forest Products (NTFPs), which is very surprising.

Majority of respondents from both study communities perceived that forestry companies offered more benefits with respect to sponsoring of local sports, water supply and employment for local people. The study also found that the forest company in the Sappi community usually offer groceries to pensioners once a year (in December). Moreover, they provide support during funerals which was also revealed by respondents from the Normandien community. Forestry companies might have been influenced by the understanding that remote areas lack basic human needs specifically in areas where majority of them conduct their businesses and create economic activities.

According to Lewis *et al.* (2003), rural communities are associated with high level of poverty inter alia, lack of access to clean piped water despite the presence of industries and forest plantations within these communities. This is supported by an observation from Shackleton (2004) that forest economic opportunities fail to improve the livelihood of the local communities. On this note, Clarke (2018) suggested an extension of forest plantations and more industrialization of the forestry value chain highlighting that this can contribute to employment creation for rural people, as this was proven on the Amabandla case study. However, this has not been replicated in other areas which is very surprising (Clarke, 2018), which might have been caused by afforestation restrictions in the country due to water scarcity (Dobson, 2017).

5.2.1 Perceptions of respondents on socioeconomic services improvement in the last 10 years

This study found that forestry companies have significantly contributed to the improvement of community roads, sport fields, provisioning of clean drinking water, which is supported by Statistics South Africa (2016) with 85.4% of access to clean drinking water under Mkhondo Local Municipality, and creation of more employment opportunities for local people in both study communities. In comparison, the study revealed that Sappi community slightly ranked more on the improvement of clean drinking water supply and improvement on community roads compared to Normandien community which slightly ranked more improvement of sport fields and creation of more employment opportunities for local people. The findings on creation of more employment are not unique to this study. A study by Arrikum (2014) found that SAFCOL started beekeeping, nursery and a timber frame structures projects mainly to create employment for local people of the Vhembe local municipality. These improvements might have been influenced by sustainable forest management practiced by forestry companies which cannot exclude the needs of communities living within and adjacent to forest plantations (DWAF 2005). Moreover, this could have been influenced by Principle Four of the FSC principles (specifically for FSC certified forest companies) which states that, *Organizations shall contribute to maintaining or enhancing the social and economic wellbeing of local communities*, this is clearly stated by criteria 4.3 which states that, *the organizations shall provide reasonable opportunities for employment, training and other services to local communities* (FSC, 2015). Clarke (2018) claimed that South Africa is

amongst the best countries in producing FSC certified timber giving a better positioning in terms of accessing global markets.

According to Gordon *et al.* (2012), forestry companies implement their corporate social responsibility (CSR) following the guidance of forest certification which is having certain requirements to be followed in order to obtain the certification against environmental, social and economic criteria. In addition, certain forestry companies have documented policies of CSR, which are accounted for by managers every year depending on different corporate cultures to be in line with values and norms of the company (Maon, *et al.*, 2009). This could have a potential of resulting into sustainable forest management particularly when members of rural communities as stakeholders, see the benefits of having forestry companies in their localities. Hence, they begin to protect the investments (planted trees) of forestry companies specifically from un-necessary forest fires that may be caused by frustrated community members due to lack of basic human needs in their localities. According to Sunderlin *et al.* (2008) and Mawa *et al.* (2021), recognizing rural communities as part of the forestry business encourage them to conserve forests for enhanced livelihoods benefits. This was supported by Makela *et al.* (2010) who argued that forestry companies are obliged to understand their stakeholders in order to have long term business success without conflicting issues. Moreover, Gordons *et al.* (2012) emphasized that forestry companies having good relationships with rural communities within and adjacent to their forest plantations are those that understand their needs better and suggested that forestry companies need to assist communities with exactly what they need instead of what forestry companies believe is needed, thus reducing conflicts.

Similarly, the study revealed that forestry companies contributed to the improvement of local businesses, local churches, local schools and building of houses for poor local people in both study communities, even though at minimal level. These findings are in agreement with those by Arrikum (2014) who reported that SAFCOL brought many benefits for the Vhembe community in the Limpopo Province, which among other things, included upgrading of school infrastructure and early childhood development centres. Moreover, Shackleton *et al.* (2007) argued that large forestry companies provide pre and primary schools, and clinics to areas where they have high concentration of employees. This is also in agreement with the suggestion of Clarke (2018) that

businesses within forest plantations poses a high potential of positively impacting livelihood of local communities. On the other hand, the observed little contribution by forestry companies might have been influenced by failure of previously sponsored community projects particularly for the Sappi community due disputes among community members. However, the contribution currently made by the South African government on provisioning of school transport for pupils or children from isolated rural areas to more improved schools may have been the reason for companies to provide support at minimum rate. Hence, forestry companies see no need of getting involved in things that are accessible.

5.3 Rural communities and forestry company engagements

The study found that both good and poor relationships existed between forestry companies and communities within the selected study areas. The Sappi community had a good relationship with their respective forestry company, engaging through community representatives and the traditional leadership. Community members considered these engagements to be very important, as they resulted in attainment of community improvements that were mostly funded by the forestry company though limited. Therefore, concluding that the forestry company valued their request and concerns, and treated them with respect. As a result, the forestry company experienced limited forestry fires around their forest plantation as outlined by one of the key informants that, *‘we experience limited forestry fires in our plantation due to the good relationship that we have with our surrounding community. Fires usually occur when an employee has been dismissed by one of our contactors due to misconduct. Other fire cases wherein the community is not happy as a collective are very rare’*. These findings are in agreement with the assertion of Munyanduki *et al* (2016) that, incorporating local community aspirations and needs within forest management leads to an increase of positive impacts as compared to negative impacts, therefore resulting into effective community engagement. In the same vein, Dare *et al.* (2012) asserted that a long-term sustainability of forest plantation management when an opportunity to acquire, process and address concerns of local communities is offered by community engagements. Gordon *et al.* (2013) argued that community engagement, which brings social responsibility is currently an important component for the forestry industry and other organizations to ensure the in-corporation of stakeholder concerns.

In comparison, the study found that the Normandien community had a poor relationship with their forestry company. This was revealed by the poor communication between them and the forestry company through dis-organized meetings which were attended by both committee and any other ordinary community members, mostly when forestry companies had concerns and request to make. Though, the forestry company made provisions of benefits, they were mostly not influenced by engagements between the two stakeholders. However, the Normandien community was keen to have proper meetings with the forestry company considering them to be very important as they provide platform for discussion with positive impact on sustainability.

According to Burchell *et al.* (2006), engaging with rural communities raises expectations and therefore require tangible outcomes. Hence, forestry companies fail to see the need of engaging in the request they are likely not to support to avoid making empty promises (Gordons *et al.*, 2012). The lack of proper engagements between the Normandien community and the forestry company might have been influenced by lack of social investment funds from the forestry company. In support, Arrikum (2014) found tight budget to be one of the factors which limited SAFCOL's contribution towards promotion of sustainable livelihoods in the Vhembe communities. However, Vanclay *et al.* (2011) did not support the idea of forestry companies not engaging with rural communities stating that disputes are likely to occur and suggested that such issues should be rectified.

Consistent with Yanli *et al.* (2019), this finding could have also been influenced by the size, profit margins and the wideness of stakeholders of the companies within the selected study communities. There was a confirmation of positive significant association between the level of contributions towards rural livelihood improvements and company sales by Han *et al.* (2012). Companies with high profit margins were reported to be having significant contributions towards rural livelihoods improvement compared to those with low profit margins. On the same note, big companies with wide stakeholders are more likely to be socially responsible compared to small companies who gain less recognition from playing significant roles on rural livelihoods improvement (Yanli *et al.*, 2019). Therefore, this makes a lot of sense when comparing a global corporate forestry company

from the Sappi community compared to a private forestry company from the Normandien community which only exist in South Africa.

Both study communities confirmed that their livelihoods were largely dependent on forestry companies conducting businesses in their localities. Hence, they recognized that a better level of education would have been of great value in ensuring significant contribution of forestry companies into the socioeconomic status of rural communities. The positioning of Sappi community, just adjacent to the national road (N2) leading to other industries might have contributed to the diversification of income sources for the community members. Hence, they viewed income generated from forestry companies not to be always linked to their household socioeconomic status. The opposite could be true in relation to the Normandien community positioned at about 15-20 km away from the national road, thus, they considered income generated from forestry companies to be always linked to their household socioeconomic statuses.

5.3.1 Factors influencing respondents rating of company responses on requests and concerns of Sappi and Normandien community

The study found that both young and old people from the two study communities, who were ranging between the age category of 18-35 and 36-59 were dominated by females. At the same time, these age categories were significantly more likely to influence the rating of forestry company responses very excellent. This could mean that majority of females from both communities, who were still able and preferred to work in forest plantations were more likely to see the positive impacts of having forestry companies within their communities due to the employment opportunities they were getting compared to old people of age category of 60 and above. However, this is in contrary with arguments by Kumar *et al.* (2017) and Murungani *et al.* (2014), who stated that women prefer projects that have the potential to improve food security through agriculture as compared to earning income from forest plantations in rural communities.

The study also found that majority of respondents who stated that their livelihoods would be better off without forestry companies conducting businesses in their communities, were significantly less likely to influence the ratings of company responses to be very excellent towards their requests

and concerns. Majority of those could be the old people who were unemployed due to age limitation. Moreover, these could be respondents who did not receive any transport benefit to the nearest town since it was only afforded to those who worked for the forestry companies specifically within the Normandien community, therefore seeing no benefit of having a forestry company within their community. These could also be community members with a poor socioeconomic status preferring a different land option for the same piece of land compared to commercial forestry as done by the forestry companies from both study communities. Mkodzongi (2013) argued that land use option is influenced by the socioeconomic status of a community. These could mean that, those lacking income may prefer using the same piece of land for agriculture in order to generate income and improve their livelihoods, as compared to community members who are employed, who wish for the sustainability of forestry companies in order for them to continue benefiting or receiving wages.

CHAPTER6: CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusion and recommendations based on study findings and discussion. The main objective was to assess socio-economic development roles played by forestry companies in their contribution towards improvement of rural livelihoods of the Sappi and Normandien community. This was achieved through the assessment of socioeconomic provisions that are made by different forestry companies and improvements brought by forestry companies in the past 10 years.

The findings of this study revealed that forestry companies played a positive socioeconomic role in maintain a good stakeholder relationship with rural communities that are within or adjacent to their forest plantations. This was achieved by ensuring that the forestry companies provisioned several benefits as well as opening up engagements platforms for both parties to discuss matters of concern. As a result, positive transformation of rural livelihoods, through preference towards locals over non-locals for employment opportunities, skills development, and funding for business opportunities was prioritized. This was driven by the belief that community members turn to protect forest plantations belonging to different forestry companies once they view them as being part of their rural livelihoods, and greatly assisting them. However, the study also revealed that this was not the same for both study areas and to the expected level due to funding limitations. Furthermore, the fact that forestry companies were not compelled to give back to their respective rural communities but assisted them out of willingness.

In comparison, the study revealed that the forestry company within the Sappi community offered more socioeconomic benefits compared to the forestry company within the Normandien community. Among other things, this was noticed on the access for livestock grazing, and offering of community woodlot for fuelwood and building material, which were mostly or only offered by the forestry company within the Sappi community as compared to the forestry company within the Normandien community.

In the same vein, the study showed that the forestry company within the Sappi community valued engagements with community members, which has contributed to the transformation of rural

livelihood as compared to the company within the Normandien community. This was noticed through the findings of the open-door policy which existed between community members of the Sappi community and their forestry company as compared to the none open-door policy which existed between the community members of the Normandien community and their forestry company which might have contributed to the limited transformation of rural livelihoods. Furthermore, the meetings which were held between Sappi community members and forestry company whenever there was a need, initiated by either the community members or forestry company as compared to the meeting which were only held when initiated by the forestry company within the Normandien community.

It is recommended that the forestry companies existing within both study communities should consider partnering with their respective local governments in order to increase their funding and further transform rural livelihoods of people living within and adjacent to their respective forest plantations. In addition, the government (policy makers) should consider the development of a standardized Corporate Social Responsibility policy for all forestry companies conducting businesses in different rural communities since they have a potential of transforming rural livelihoods for the better. It is also recommended that the CSR policy should consider conducting yearly audits to identify whether relationships are existing between forestry companies and their respective rural communities with the aim to solicit tangible compliance evidence.

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APPENDICES

FIELD SURVEY QUESTIONNAIRE

Comparison of the socioeconomic development roles played by different forestry companies in the rural communities of Mkhondo local municipality in Mpumalanga Province, South Africa.

A questionnaire survey to seek data as part of MSc study in forestry. Information is for Research only and every identity will be kept confidential.

Section 1: Demographics	
1.1 Respondent Age Class: 18 – 35	<input type="checkbox"/>
36 – 59	<input type="checkbox"/>
60 and above	<input type="checkbox"/>
1.2 Gender: Male	<input type="checkbox"/>
Female	<input type="checkbox"/>
1.3 Marital Status: Single	<input type="checkbox"/>
Married	<input type="checkbox"/>
Divorced	<input type="checkbox"/>
Widowed	<input type="checkbox"/>
1.4 What is the total number of members in your household.....	
1.5 Education Level: Uneducated	<input type="checkbox"/>
Primary School	<input type="checkbox"/>
Secondary School with Matric	<input type="checkbox"/>
Secondary School without Matric	<input type="checkbox"/>
Certificate/diploma/degree	<input type="checkbox"/>
1.6 What is your Source Of income?	
Employment	<input type="checkbox"/>
Self Employment	<input type="checkbox"/>
Social grant	<input type="checkbox"/>
Support from other family members.....	
1.6.1 If your source of income is employment, which forestry company are you employed under?	
(i) Sappi	

- (ii) Mondi
- (iii) Tekwani
- (iv) Other please specify.....

1.6.2 How much money do you generate from your source of income per month?

- (i) Less than R1500
- (ii) R1500 – R2500
- (iii) R2500 – R3700
- (iv) More than R3700

Section 2: Companies role in the provisioning of socio-economic Benefits

2.1 What is your main benefit from the forest plantation? Cross (x)

Type of benefit	Cross(x)
Grazing for livestock	
Collection of thatch grass	
Fuel wood collection	
Mushroom	
wages	
Other, please specify.....	

2.1.1 In case you working in forest plantation, what kind of job are you doing? Choose below.

Chainsaw operator Silviculture work Machine operator Staking Debarking Other, Please specify.....

2.1.2 Is your Job seasonal, permanent or casual? Choose one (x)

Seasonal Permanent Casual

2.1.3 Did you receive any formal training for the job you are doing as part of skill improvement?

Yes No

2.1.3 Do you have someone else in your family working for forestry companies? Yes No

If yes, what kind of work is she/he doing? Chainsaw operator Silviculture work Machine operator Staking Debarking Other, Please specify.....

2.1.3.1 Is his/her job seasonal, permanent or casual?

Seasonal Permanent Casual

2.1.3. Did she/he receive any kind of formal training for his/her job?

Yes No

2.2. Which benefits do forestry companies offer to rural households as part of rural livelihood upliftment? Cross below.

TYPE OF BENEFIT	Cross(x)
Water supply	
Power supply	
Transport to nearest town	
Transport for school kids	
Sponsoring of local sports	
Bursaries for local people	
Employment for local people	
Carrier guidance Programs	
Other, please specify.....	

2.3 Looking into 10 years back, would you say the forestry company in your area have improved rural livelihoods?

Yes No

2.3.1 If yes, what has improved? Please select things that have improved by making a cross below:

Type of improvement	Cross (x)
Local Businesses support	
Clean Drinking Water	
Employment Opportunities	
Roads	
School Buildings	
Churches	
Shopping Centre	
Sports Fields	
Clinics	
Others, Please specify.....	

Section 3: Community forestry-company Engagements

3.1 Are there any meetings held between community members and forestry companies in your area?

Yes No

3.1.1 If yes, how are the community members represented?

COMMUNITY MEETING REPRESENTATIVE	CROSS(x)
Chiefs	
Induna	
Community committee	

Any community member	
Other, please specify.....	

3.2 Are these meetings important to you as a community member? Yes No

3.3 Is there any form of rural community upliftment that has been achieved through this community meetings with forestry companies in your area? Yes No

If yes, what would you say was done right to achieve the rural community upliftment agenda.

- (i) Transparency and honesty of leadership
- (ii) Rapid implementation of meetings resolution
- (iii) Emphasis on leadership accountability
- (iv) Companies adherence to its social responsibility and obligations
- (v) Other, specify.....

3.4 Are your concerns and requests valued by forestry companies in your area? Yes No

How would you rate the forestry company responses to your concerns and requests?

Poor Fair Good Excellent Very excellent

3.5 Do you think a better level of education would have assisted in engaging with forestry companies to play a significant role in household socioeconomic status?

Yes No

3.5 Do you agree that income generated from forestry companies is directly linked to your household socioeconomic status?

Yes No

3.6 Do you think you will be able to survive or your livelihood will be better off without forestry companies conducting business in your area?

Yes No

3.6 Do you think fires and timber theft incidences are as result of dissatisfaction of rural people on expected roles that should be played by forestry companies in uplifting livelihoods or socioeconomic status?

Yes No