

Small scale timber farming in Entembeni Community – exploring sustainability and possibilities for leisure and tourism

Isaiah Mahlalani Mahlangu
Graduate School of Business
University of KwaZulu-Natal

Prof Betty C Mubangizi¹
School of Management, Information Technology & Governance
University of KwaZulu-Natal
Mubangizib@ukzn.ac.za

Corresponding author*

Abstract

This study investigated the viability and sustainability of commercial small-scale timber production in Entembeni, a rural community located in the KwaZulu-Natal province of South Africa. Random mushrooming and proliferation of small-scale timber production in KwaZulu-Natal and lack of available literature on how small-growers perceive sustainability of their own practice prompted the study. Based on a qualitative research design, a stratified, random sampling was used to select a representative sample. The study found that small-scale timber production is either hindered or enhanced by the nature and effectiveness of existing institutional arrangements. Distribution of assets is characterized by social inequality based on gender and social status. Small-growers who are motivated by the prospects of increased income but lack entrepreneurial development fail to meet anticipated targets. It was also found that small-growers lack skills, expertise, land and infrastructure to effectively participate in commercial timber production. Partnerships with the private sector would ensure that small-growers have access to loans, expertise and markets. The study concluded that viability and sustainability of small-scale timber production can be enhanced through a holistic land use plan and management that provides alternative land use options and, particularly, contribute to leisure and tourism.

Key words: Community Economic Development, Sustainable Livelihoods, Small-scale timber, tourism, South Africa



Source: www.csir.co.za

Introduction

An evaluation of how people use and manage natural resources forms an integral part of the current global debate on sustainable development and environmental management. As a contribution to the debate on sustainable development, this study used small-scale timber production to explore how people manage and utilize natural resources with a view to explore the link to leisure and tourism. The study is underpinned by the Sustainability Livelihood Framework (SFL). This paper is divided into five parts. The first part sets the contextual background within which timber production occurs. This part discusses the evolution of timber production in South Africa. The second section presents the conceptual framework that underpins the study. This is followed by a discussion of the research method utilised and the presentation of the findings. Lastly, conclusions are drawn with recommendations on how to address the identified challenges.

The landscape for timber production in South Africa

The need for timber production in South Africa can be traced back to the sixteenth and seventeenth centuries. The arrival of Portuguese navigators, and later Jan van Riebeck in 1652 at the Cape, led to unprecedented over-utilization of indigenous trees for building ships among others (Lükhoff, 1973). Uncontrolled utilization of indigenous trees led to depletion of natural vegetation and shortages of good timber. South Africa first experienced shortage of timber resources during the First World War (Malherbe, 1973). Government intervention involved policy formulation aimed at responsible management of natural vegetation. It was also geared towards supplementing indigenous timber with exotic plantations. This took the form of rehabilitation and provision for future needs (Malherbe, 1973).

In the past, afforestation programmes in the Cape were the exclusive preserve of the government (King, 1938). Afforestation

spread from the Cape to the then Zululand and Transvaal areas, now KwaZulu-Natal and Mpumalanga provinces, respectively (Lükhoff, 1973). Increased demand for timber, and prospects of profits attracted private sector initiatives. Currently, the private sector owns 78.2% of the existing forestry plantations in South Africa (Forestry South Africa, 2010). Afforestation was initially incorporated into state policies as a response to over-harvesting of indigenous trees (Bosch & Hewlett, 1980; Department of Waters Affairs and Forestry, 1995; 1996; Foy & Willis, 1998; Harrison & Herbohn, 2002; Muir, 1992). The South African government established community forest programmes with the intention of helping rural communities meet their needs for firewood and building materials sustainably. With no consensus regarding the appropriateness of terminology, different literature refer to such plantations as farm forestry, agroforestry, community or village planting, woodlots and woodland management by rural people, as well as tree-planting in urban and peri-urban areas (Department of Waters Affairs and Forestry, 1996). With the understanding that these plantations were established by or on behalf of the community to serve their needs, the concept 'community forest' is adopted in this study. According to South Africa Year Book (2014:55), "Community forestry is implemented by communities or with the participation of communities, and includes tree-centred projects in urban and rural areas, woodlots, and woodland management by communities and individuals"

The government approach to community forest development was based on the model of community ownership, which emphasized shared responsibility and distribution of benefits to the community. With regard to shared responsibilities, the model assumed that community members would work collectively to manage and protect forests (Ham & Theron, 1999). Material benefits such as firewood and building materials were, according to this model, are shared under traditional leadership. The establishment of community forests was premised on the

assumption that the success of one community forest would encourage other communities to participate in forest-based development. The notion of community ownership is misleading as it is unable to identify who really owns the forest. If the true beneficiaries cannot be identified, it is difficult to hold anyone responsible for its management and protection. By the same token, the distribution of benefits becomes complicated. Community-owned projects could be characterized by lack of ownership, and uneven distribution of inputs and benefits (Ostrom, 2002; Ostrom & Ostrom, 2014).

According to Ham and Theron (1999), the first community forests were established in 1893 near King William's Town. Since then, community forests development grew slowly, but accelerated in the 1970s and early 1980s, particularly in Transkei. Community forestry among Africans has had little success, except in some parts of the Eastern Cape where community forest establishments around indigenous forests has helped conserve natural forests (Department of Water Affairs and Forestry, 1996).

Emergence of Small-scale Timber Production

The failure of community forests led to the suspension of community forest programmes in most parts of South Africa (Ham and Theron, 1998). As the model of community forest declined, a new approach (the model of individual ownership) emerged. This coincided with a shift from non-industrial to industrial small-scale timber production. The commercialization of plantations began to attract independent small-growers in the early 1980s when "commercial forestry companies saw an opportunity in making communities their business partners. Sappi entered into the arena of small grower schemes in 1982 and since then this type of scheme has picked up momentum" (Ham and Theron, 1999, p. 76). By 1999, there were four main schemes running in KwaZulu-Natal province: Sappi's Project Grow, Mondi's Khulanathi, Lima Rural Development

Foundation schemes and the South African Wattle Growers Union's Loan Scheme (Ham and Theron, 1999).

The current democratic government of South Africa has an interest in promoting small-scale timber growing because it has the potential to create jobs and thus deal with issues of poverty in rural areas. Commercial timber production has the potential to generate benefits at two levels. These are the 'upstream-flow-effects' and the 'downstream-flow effect' (Harrison & Herbohn, 2002). An example of the upstream-flow-effect is benefit to nursery operators through employment creation. The 'downstream-flow-effect' includes opportunities created in harvesting processing industries including tertiary processing such as furniture manufacturing (Harrison & Herbohn, 2002). Corollary to this however is the potential offered by timber production to developing leisure and tourism for economic growth and sustainable livelihoods. This aspect however has not been hitherto explored.

Legal Framework of Forestry in South Africa

Since the emergence of timber production resulted from policy intervention, it is important to explore the framework within which the establishment of plantations takes place. Afforestation is subject to a range of legislations. In the case of KwaZulu-Natal, land tenure in rural areas is under the direct control of the *Ingonyama* Trust in terms of the KwaZulu Ingonyama Trust Act 3 of 1994 (RSA, 1994). At the tribal level, the *Inkos*² and the tribal council administer the land. The function of the *Inkosi* and the *Izinduna*³ is, among other things, to confer land on individual household heads for residential and production purposes through tribal customary laws (Lipton, De Klerk, & Ellis, 1996; Thorp, 1997). Negotiations for

² 'Traditional Leader or Chief'. He or she serves as the presiding officer of a Tribal Authority

³ Second in command to *Inkosi*. In each Tribal Area there may be as many *Izinduna* as there are wards (subdivisions of the total tribal authority area)

accessing land starts with an *Induna* who refers the matter to the *Inkosi* for confirmation. Members of rural communities do not have full ownership of land. Chapter 2 of The Communal Land Rights Act recognizes such tenure arrangements as “illegally insecure” (Communal Land Rights Act No.11 of 2004). To provide for secure land tenure, the Communal Land Rights Act proposes the transfer of communal land, including that which is under the *Ingonyama* Trust, to communities. The Act further recognizes gender equality in terms of land transfer and tenure.

To establish forest plantations, small-growers have to comply with various pieces of legislation. They have to show that their activities will not have a severe negative impact on the environment. The National Forest Act (Act No.84 of 1998) recognizes that “plantation of forests have an impact on the environment and need to be managed appropriately”. The need for appropriate management is addressed by two separate pieces of legislation, the National Water Act (Act No. 36 of 1998) and the Environmental Conservation Act (Act No. 73 of 1989). The National Water Act is concerned with equitable allocation and beneficial use of water in the public interest. Chapter 4, Section 36 (1) (a), of the Act regards commercial plantations as a stream flow reduction activity and regards small-growers as bulk water users (National Water Act, No. 36 of 1998). For this reason, a water-use licence from the Department of Water Affairs and Forestry (DWAf) is a prerequisite for a stream flow reduction activity, such as forestry plantation.

According to the Environmental Conservation Act (Act No. 73 of 1989), environmental authorisation is required for change of land use. To get an environmental authorisation, an applicant has to be registered with Department of Agriculture and Environmental Affairs (DAEA) which may require Environmental Scoping (ES) or an Environmental Impact Assessment (EIA) to be undertaken by an independent environmental consultant. In accordance with the Environmental

Conservation Act, a decision to grow or not to grow, a ‘record of decision’ (ROD) is issued by the DAEA, which might have certain attached conditions. The ROD specifies the list of activities, conditions under which it is granted, and sets requirements regarding management of sensitive areas.

Context of the study

In the past three decades, KwaZulu-Natal has experienced a major shift in rural agricultural patterns with small-scale commercial farming supplementing subsistence agriculture. In some cases, the adoption of cash crops has had serious consequences for subsistence agriculture as the two farming practises compete for the same land. In recent years, there has been a proliferation of commercial timber farming at an alarming rate in the province. In KwaZulu-Natal, about 5.5% (504 393 ha) of the land mass is dedicated to forestry, and about 94% of these are privately (Lükhoff, 1973). Between 1980 and 2009, afforestation in the province increased by 54.3% (Lükhoff, 1973). By 2013, it was estimated that there were about 20 000 small growers in KwaZulu-Natal (SA Forestry Magazine, 2013). Of major concern was that small-scale timber production seems to be taking place outside planned land use making it almost impossible to evaluate the outcomes, manage bad practises and replicate successful practices. It was the need to understand the lived experiences of small-scale timber production and the need to understand the possible extension of timber production to forest tourism that led to this study.

This study was conducted in the rural area of Entembeni Tribal Council (TC) near Melmoth in northern KwaZulu-Natal province (Mthonjaneni Municipality, 2014). With respect to local government jurisdiction, Entembeni falls under Uthungulu District Municipality (DC28) and Mthonjaneni Local Municipality (KZ285). The topography of the area comprises rolling hills, undulating terrains and plateaus deeply dissected by drainage.

The valleys consist of interlinking spurs and steep gradients. Streams and wetlands are common features in the valley. The natural vegetation is a mixture of grassland and bush-veld. Timber production, even at a small scale, has the potential to maintain the aesthetic quality of this rural landscape for the benefit of not only the local population but for tourists who increasingly seek the relative tranquillity that the countryside can offer.

The area has a total population of 47 818 most of whom are unemployed and uneducated. According to the Integrated Development Plan (2013), about 7 569 of the population are employed. Agriculture is a major contributor to employment with an estimated 2 619 employed in the sector in 2001 (Mthonjaneni Municipality, 2014). Basic services such as water are rudimentary with the majority obtaining water from rivers. Apart from timber production, subsistence agriculture and retail of vegetables, fruits and craft at the two local markets form an important part of local livelihoods. Potentially, small scale timber production in this area could contribute to livelihoods by generating income from a wider range of forest resources including tourism and non-timber forest products.

Non-timber forest products

Forest ecosystems are a major integral part of the global ecosystem. Forest and other wooded land has an increasingly important role in providing “non-wood benefits”, both material (food, cork, resin, Christmas trees, etc.), environmental (nature conservation, water and air quality) and social (hunting, leisure and tourism (Martin, 2007; Halla, 2011). Mander (1998), Cocks and Wiersum (2003) and Lenhard (2009) assert that, assert that while households living next to forests in South Africa derive livelihoods from them, it must be remembered that urban populations also make extensive use of forests and forest products in form of leisure and tourism and in maintaining spiritual and cultural beliefs. Shackleton (2004) estimates that the revenue from forest tourism in South Africa’s forest

biomes could be as much as R62 billion annually. The South African Year Book (2014) notes that forestry contributes about 1% to the country’s GDP. In 2012 alone, it was reported that export of forestry related products generated R9,9 billion (South African Year Book, 2014). With a few exceptions most of this value is captured by large commercial operations and not poor rural communities directly. However, Shackleton (2004) also notes that small villages in South Africa such as Hogsback and Sabie are marketed as primary tourism destinations, each with museums, several trails and lodges all adopting forest related marketing profiles and images. There is thus a growing market for small-scale tourism enterprises in small rural areas with potential to offer a range of services including guided trails, transport, and curios markets. Such non-timber products therefore could be leveraged to supplement income from small-scale timber based on the sustainable management and conservation of the natural resource. To explore this, it is important to understand the lived experiences of small-scale timber producers and what challenges they are faced with. It is, in part, against this backdrop that this research was conceptualised with a view to explore the sustainability of small scale timber and possibilities for leisure and tourism. It did so through the lense of small scale timber producers of Entembeni Community near the town of Melmoth in KwaZulu-Natal province of South Africa.

Methodology

Respondents were selected following a simple random procedure. Access to the study area was negotiated with the local *Inkosi* and members of the Traditional Council (TC) council. Negotiations with the *Inkosi* served to introduce the study and to gain the trust and cooperation of local interviewees. According to (Babbie & Mouton, 2010), it is important to gain permission to enter an area as it informs respondents about the project. Negotiations for access also took place at the level of non-growers and small-growers: with *Izinduna* and small-growers

in the Biyela Project and in all four wards of Ekuthuleni, Mfanefile, Ndundulu and Endabazensangu of the Entembeni TC, government officials and other actors in the forestry sector. Gaining permission

entailed ongoing negotiation for permission and cooperation with each and every interviewee since initial permission does not entail permission at the later stage (Bhattacharjee, 2012).

Table 1: List of Respondents

Types organizations	Number in organization/s interviewed	Number of respondents
Small-growers	1 (small growers)	15
Non-growers	1 (non-growers)	10
Traditional leaders	1 (Entembeni TC)	1
CBO	1 (Lindokuhle Craft)	1
Commercial companies	2 (Mondi and Sappi)	2
Marketing cooperatives	3(NCT Forestry Co-operative Limited, TWK Agricultural Limited and Natal Tanning Extract Union Cooperation)	3
NGO	1 (FSA)	1
Local government	1(Mthonjaneni Local Municipality)	1
Government departments	2 (DWAF and DAEA)	4
Total	13	38

Unstructured interviews were used as a tool to collect primary data. This approach allows some flexibility which enables the researcher to further probe issues that emerge during interviews (Babbie & Mouton, 2010; Bhattacharjee, 2012). Observations were also used for data collection. Orientation of the location and patterns of plantations was gained through site visits. Focus group were used as a form of triangulation and allowed comparison with data collected in the interviews.

Findings

The majority (80%) of small-growers interviewed were males. However, most respondents stated that the number of women small-growers was increasing rapidly. Respondents were unanimous on the view that most women growers got involved in timber growing in the place of their husbands who were either dead or working elsewhere as migrant workers. The following sections present findings of the study. Where necessary, direct

excerpts from interviews are quoted to further substantiate themes that emerged from interviews.

Access and ownership of land

The viability and sustainability of a livelihood activity, such as small-scale timber production, depends on the nature of land rights and the function of institutions established to manage land resources. Eighty percent of the respondents (including both small-growers and non-growers) confirmed that access to land was through non-market arrangements, i.e. through negotiations with *Inkosi* based on customary laws. The remaining twenty percent accessed land through market arrangements. According to this group of respondents, the group of local people at Ekuthuleni initially rented land from missionaries. According to growers, non-growers and traditional leaders, land is allocated on the basis of membership of the community. Respondents noted that land is allocated to individual households through a male figure, and households may subdivide

land according to members' needs. Inheritance of land is along patrilineal lines.

Understanding how land rights are practised is important as this influences the *Inkosi's* decisions in land allocation. It appeared that during land allocation, the *Inkosi* takes into account land needs for residential, crop production and grazing. A respondent noted that: "*Our grandfathers were given land by Inkosi, they were given land for building houses and growing food crops. They were also allocated grazing areas for all*". This study had an interest in how land for timber production was allocated, i.e. whether new land was particularly allocated for this purpose. Data analysis showed that small-growers use land already allocated to them by *Inkosi* and do not acquire new land specifically for timber plantation. All respondents (small-growers) confirmed the view that no negotiations were entered into for the acquisition of new land for planting timber. A subsistence farmer who wants to plant timber informs and gets approval from the tribal authority. This was seen not only as courtesy but to put the *Inkosi* in a position to manage conflict that may arise. One respondent said that if the *Inkosi* was not informed of the intentions to grow timber, he may not attend to reports of conflict concerning such plantations.

All respondents indicated that land allocation did not involve formal demarcation. Land allocation is based on verbal agreements between the applicant and the TC. It was found that not even the Permission to Occupy (PTO) was issued to local people. Despite the fact that there are no written-records, respondents indicated that the TC was fully aware of farm boundaries. One respondent indicated that "*Inkosi and Izinduna know which land belongs to whom*." Forty percent of respondents indicated that they dealt with fear of land encroachment by neighbours by keeping the land in constant use.

The study also investigated the availability of land for current small-growers as well

as future generations. In total, 50% of respondents were of the view that there was enough land for current but not future needs. Thirty percent did not have enough land for themselves let alone for future generations while 19% had enough land for themselves and future generations.

While there were variations regarding the size of land, majority of small-growers did not have more than 2ha. Seventy percent of small growers identified scarcity of land as the most important challenge as small-growers were unable to expand their plantations. One respondent observed that land size limits expansion for small-growers. This factor was seen to be a hindrance for the success of both current and future generations.

Our areas are very small. If we had say 5 or 10 ha we could harvest more frequently. As it is most - of us can only harvest once in 7 years because we have small areas, this way you are unable to invest the money that you get.

Respondents indicated that the size of land allocated to an individual was also influenced by an applicant's social status. A distinction was made between '*Umsinsi wokuzimilela*'⁴ or indigenous local people⁵ and '*migrant local people*'⁶. Migration or movement of people is encouraged by the custom of *ukukhonza*⁷, which makes provision for local people to relocate from one tribal council area to another. Social status based on whether one was born in the area or not, or how long one's generation has lived in the area manifested itself through land allocation as it was confirmed that indigenous local

⁴ Umsinsi is 'common erythrina tree'. Umsinsi wokuzimilela, can be translated as a naturally occurring (tree) in the area.

⁵ In this study, indigenous people refer to local people who have lived in the area for many generations.

⁶ In this study, migrant people refer to local people who have settled in the area while belonging to other tribal council areas.

⁷ *Ukukhonza* is system that allows local people from one tribal authority area to migrate to another.

people had bigger pieces of land compared to migrants. This form of social inequality is not random discrimination, but is based on the logic that as new people move into an area, there is less land available for further reallocation. The size of the land therefore varies from one grower to another on the bases of social status.

The size of the area varies, if you are umsinsi wokuzimilela, you have a bigger area, people who just came to live in this area recently don't have big areas.

In addition to social status and population densities, gender also influences land allocation. Discussions on the allocation of land above showed that land is allocated through a male figure. By implication the system of land rights discriminates against women.

Challenges faced by small-growers

Viability and sustainability of timber production among small growers has to be seen in association with two things: firstly, the challenges facing small-growers, and secondly, the ability of small-growers to deal with such challenges. Respondents (both small-growers and commercial timber companies) identified a variety of challenges that face small-growers. These include marketing constraints (100%), harvesting and transportation constraints (100%), coping with risks (100%), scarcity of land (70%), lack of skills (60%), theft (40%), exploitation (40%), runaway fires (30%), and abandoned plantations (30%).

All respondents identified difficulties with regard to coping with risks. The blue gum tree *eucalyptus grandis* is the main forest tree grown in the province and the country. It has a seven-year growing cycle and the researcher had an interest in understanding how small-growers made a living while waiting to harvest the timber. Small-grower respondents indicated that when embarking on timber production, some lands were reserved specifically for food production. While some growers had converted food crop fields to timber

production, subsistence farming was never completely abandoned. It was suggested that that it was essential that small growers reserved land for subsistence farming:

You keep land aside for subsistence farming. There are also places where you cannot put timber – we use these areas to plant crops for home consumption.

Small-grower respondents identified two other sources of income (income from formal employment and loans from out-grower schemes) while waiting for their forest to mature and be harvested. Instead of hiring local labour, small-growers are encouraged to use their own labour or family labour so that they can keep the income within the family. Small-growers can also access loans on an annual basis from commercial timber growers for labour intensive activities.

Perceptions of benefits

With regard to the question of viability, many small-growers do not undertake any form of feasibility study before embarking on timber production. It appeared that on the part of commercial companies, there was no consensus regarding what would be perceived as viable small-scale timber production. Sappi recommended that the minimum size of land should be at least 5 ha. One respondent suggested that it was not justifiable to invest in less than 5ha and that at least 20 ha could be considered economically viable. Commercial companies like NCT noted that at least 60 ha was considered to be viable and sustainable.

An observation was made that small-growers and large-scale growers view benefits differently. On the one hand, commercial timber companies tend to place emphasis on capital investment and the potential income. The limitation of this view is that it ignores all the factors that contribute to productivity and the impact of benefits on livelihood over a period of a seven-year production cycle. Small

growers place emphasis on costs, such as general labour, harvesting, transportation, and paying back loans they incurred. According to small-growers, the actual benefits are less than the cost. One small-grower used two metaphors to explain the benefits from timber. *"It is like something that you can taste in your mouth, but is barely enough to swallow it". "You can make a living out of timber but you never become affluent"*

Small-growers do not have a mechanism or capacity to deal with challenges they face. This makes it difficult for them to optimise the potential of timber. They are unable to decisively negotiate business deals due to poor leadership. The perception of small-growers regarding benefits of timber is such that, although timber makes a contribution to local livelihoods, it fails to meet their expectations. This is because they seem to be incurring more costs than benefits. Yet increasing demand for non-timber products like tourism can be satisfied without a significant impact on the forests' ability to supply wood. Clearly the small-scale timber growers' capacity to provide a range of goods and services is being under-utilised,

Small-scale timber on context of SLF

By way of recapping, SLF assesses a livelihood activity through the understanding of the vulnerability context, livelihood assets, transforming structures and processes as well as the livelihood outcomes. In this section, various components of small-scale timber production are evaluated using SLF.

The vulnerability context examines the conditions (mainly external) that affect performance of a particular livelihood activity. Because the factors are external, the extent to which actors are able to manipulate the situation is often limited. Small-scale timber production at Entembeni is affected by several vulnerabilities, such as scarcity of land, contract farming, exploitation, undulating terrain, theft and runaway fires. Factors

affecting small-scale timber production are located in three distinctive environments. These include the immediate surrounding community, the market environment (within which commercial farming is located) and lastly the natural environment.

The performance of small-growers in both the business and market environments depends on their ability to negotiate with the business community as well as with the government. Findings have shown that small-growers are in a weak position to engage either the market or government. The private sector is in a position to dictate the level of participation of small-growers in timber production as well in accessing the market. With regard to negotiating with the government, small-growers lack a clear understanding of the regulatory framework and procedures. When the processing of applications takes too long, small-growers are unable to be proactive and make follow-up and get feedback from government authorities.

In the case of the immediate environment, findings showed that theft and runaway fires affect small-growers at Entembeni. It was also shown that small-growers do not have effective measures to deal with such shocks. Instead of having some measures in place, small-growers depend on the hope that theft and fire do not occur, and when such shocks do occur, it becomes a major setback. Likewise, there are no measures in place for dealing with natural disasters such as drought or storms that might affect plantation and productivity. Plantations are not covered by insurance policies to deal with such situations as may be caused by natural disasters.

According to the livelihood framework, strengths of human capital refer to skills, knowledge and the ability to provide good labour. It has been shown that a high level of illiteracy affects Entembeni community. Despite the fact that small-growers have extensive indigenous knowledge, and have for decades utilized natural resources as subsistence farmers, they are struggling as commercial farmers. This is because this new practice requires a

new level of expertise in forestry and business management, research and interacting with the market. The gap created because of the lack of such expertise on the part of small-growers, is filled either by the government extension officers or by large-scale growers, creating dependence

Physical capital refers to transport, shelter and roads. With the exception of the road network constructed in and around individual plantations, small-growers do not have road. Poor roads from plantations to loading zones are considered the most important limitation for most small-growers.

In the case of small-growers, social capital refers to membership of networks and leadership structures. Leadership structures are poorly maintained. Coupled with high illiteracy, lack of capacity within leadership structures fail the needs and interests of small-growers in engaging with business partners and the market. Networking with other small-grower structures throughout the KwaZulu-Natal province is non-existent. The nature of weak leadership again creates dependency upon the commercial forestry sector.

Capital investment required for establishing a timber plantation involves land preparation, fire breaks, road networks and actual planting. Machinery, such as tractors, or manual labour may be used to carry out these activities. Either option requires some prior capital investment. Once the plantation has been established, operational costs are required for silvicultural practices, harvesting and transportation. Other than through contract farming, small-growers at Entembeni do not have alternative sources of funding. Small-growers depend on Sappi and Mondi for financial capital. Such capital is often limited to activities related to the establishment of the plantation and the delivery of wood material to the market.

The natural capital base input to timber production includes land, water (both rain and underground water) and seedlings.

The inclusion of eucalyptus trees on the list of natural capital is not contradictory due to the fact that this is an exotic species. However, in terms of this discussion, eucalyptus (however exotic) is regarded as a natural plant. It is important to note that a site earmarked for plantation is part of a particular ecosystem that comprises a range of fauna, flora and avifauna species. Establishment of a plantation causes a certain degree of imbalance to the ecosystem. It is anticipated that critical negative ecological impacts are ameliorated during an environmental scoping process conducted before an ROD is issued. It is also anticipated that an established plantation (wrongly or rightly) becomes part of the ecosystem and may provide habitat to certain species. Alien species are able to provide habitat to some indigenous animals. Further, small-scale timber production has the advantage that in between relatively small plantations, are fields, homesteads and open communal grazing areas. As a result of this arrangement, the total ecosystem is not lost to entire plantations, as it would have been in the case of large-scale farming.

It is important to note that ownership of natural capital by small-growers is mainly based on user rights as opposed to full title deed ownership. The right to use land is determined by the land tenure system. As natural capital, land can be optimized by small-growers through planning the best possible way of planting trees on a given piece of land. Earlier discussions indicated that most small-growers have access to no more than 2ha, and that possibilities for expansion are non-existent. Over and above this, the tenure system in rural contexts is not a secured one. Land cannot be sold or transferred. In the case of water, user rights are determined through a water use licence issued to small-growers by the DWAF. No optimization can really take place in the case of rain and underground water.

Potential structures to transform small-scale timber production include traditional leadership, government structures and the private sector. The role of the traditional

council is limited to the allocation of land, which by its nature is characterized by a lack of vision and planning. This situation prohibits the tribal council's ability to make a proper assessment of proposed development activities, including timber production. It is highly unlikely, therefore, that the decision fully accommodates future land use as well as the carrying capacity for timber production in the area. The role of TC regarding land administration is more suitable for subsistence and not commercial farming.

Livelihood outcomes focus on more income, increased well-being, reduced vulnerability, improved food security and more sustainable use of natural resources. Because small-scale timber production takes place at a small-scale level, has a long cycle and requires input that is sourced from different sectors, outcomes are often limited. Benefits from timber can be viewed from the 'upstream flow effect and the downstream flow effect'. This approach is useful as it considers both the actual and potential benefits. In the case of Entembeni, the benefits accrued from timber can further be divided into benefits enjoyed by small-growers as well as benefits enjoyed by general members of the community, both of which are regarded as the upstream flow-on effect.

A question to be asked is how much of the total outcomes goes directly to small-growers who are supposedly the owners of the means of production. The manner in which small-scale timber production is set up is such that it enables a whole range of role-players to tap into the income of small growers. This is because most small-growers rely on loans from commercial timber growers and source their harvesting and transportation services from SMMEs. Small-scale timber production requires different inputs, such as land, capital, extension services and technical expertise. These inputs are provided by various sectors: land is provided by small growers, capital investment and technical expertise by large-scale growers and marketing cooperatives, and regulatory framework by the government.

The SMMEs do not provide direct inputs required for timber production, their role (harvesting and transport) comes after timber has been produced. Benefits are accrued by different stakeholders in the following manner: small-growers benefit from income earning opportunities, large-scale growers benefit from wood material and, after value adding, marketing cooperatives also benefit from material and profit making, the government's interest is served when poverty is alleviated, and, lastly, small-scale timber production creates business opportunity for SMMEs. It is important to note that livelihood outcomes can be divided into three levels. Firstly, there is direct income to small-growers while large-scale growers and SMMEs enjoy a different level of outputs. Secondly, the sum total of these outputs escapes the small-scale timber production system and goes directly to large-scale growers and SMMEs. None of these outputs are invested back into small-growers. Thirdly, marketing cooperatives also enjoy some outputs. Some of the outputs at this level are redirected back to the small-growers in terms of profit sharing to members of these marketing cooperatives.

The livelihood outcomes of any livelihood activity are supposed to improve the situation of the actors by providing income, increased well-being, reduced vulnerabilities, improved food security and more sustainable use of natural resources. Under the circumstances described above, an improvement in quality of life and food security is minimal. In cases where field crops are converted into timber plantations, the chances of compromising subsistence farming are high. Most important, vulnerabilities such as theft, fire and manipulation by middlemen are not addressed properly, not only because of poor leadership, but also because small-scale timber production is not designed to work in favour of small-growers. Communities also relied on local economic development (LED) and community economic development (CED) programme to address situations of poverty. While LED is a broader concept

within which CED may occur, small-scale timber production has the characteristics of both concepts. In light of earlier discussion, small-scale timber production falls within LED. Participation of subsistence farmers in timber production is initiated from outside the area, initially by the government, and later by the private sector. In both cases, extensive consultation to motivate subsistence farmers is required. Of the two approaches (top-down and bottom-up), timber production has been a result of the top-down approach. The participation of subsistence farmers in timber production is facilitated largely by contract farming, which in this case can be seen as a form of partnership advocated by LED.

Small-scale timber production is considered a CED activity because it is not practised by small-growers solely on business principles. Small-scale timber production takes place as part of multi-sectoral livelihood activities, including subsistence agriculture and labour employment. While LED places emphasis on entrepreneurial development, CED places emphasis on social and economic development, which is what small-scale timber production proves to be. In reality, small-growers are neither genuine subsistence farmers nor are they fully-fledged entrepreneurs.

The paucity of empirical data (e.g. baseline data), makes it difficult to fully discuss the extent to which small-scale timber production is viable. Participants assumed that under normal circumstances, a hectare may produce a certain volume of timber. The danger with this approach is that it is not area-specific and does not account for variations in variables such as climatic conditions and quality of management. Small-growers decide to plant on the basis of two main factors: the willingness to plant as well as the availability of land, implying that potential growers do not consider how much land is needed to reach a certain target.

The SLF sets parameters within which livelihood activities are regarded as

sustainable/unsustainable. In terms of the SLF, small-scale timber production is not resilient to external factors, nor is it in a position to effectively optimize available livelihood assets. There is dependency on external support with regard to capital investment, technical expertise and the markets. Livelihood outcomes are minimal partly because a portion of the potential income escapes small-growers to benefit large-scale commercial growers (as profits) and SMMEs. Small-growers have acknowledged that what they get as outcomes does not compensate inputs.

According to the SLF, small-scale timber production is not sustainable in terms of intra-generational and intergenerational equity. Theories of sustainable development put emphasis on activities that are achieved without compromising the ability of current and future generations to meet their needs. In the case of Entembeni, gender and other forms of social status are used to discriminate against some members of the community regarding access to land. This means that there is no equity amongst the members of the community. Research findings showed that other than assuming ownership of current plantations, future generations will struggle to get new land on which to plant timber.

The main objective of this study was to evaluate whether the transformation of subsistence farmers at Entembeni area to small-scale timber producers is viable and sustainable. This study observed that the introduction of small-scale timber production in rural areas brings about a major shift in agricultural patterns. It was shown that although there is a range of actors responsible for the different roles necessary for timber production, small-growers depend heavily on large scale-growers with whom they enter into a relationship through contract farming due to lack of resources (capital investment and expertise). Initially, subsistence farmers were motivated by the prospects of profits, job creation, and guaranteed access to market in comparison with other cash-crop products. These prospects became illusions as small-scale timber

production became nothing more than a reserve for cheap material for the private sector.

Conclusions

This study maintains that the current approach to introduce timber to subsistence farmers is, for most farmers, not viable or sustainable if timber production is the sole objective. There are several factors that led to this conclusion. Firstly, a decision to participate in small-scale timber production does not involve the consideration of alternative options, both in terms of land use and different models of business partnership. Contract farming, for instance, binds small-growers to a particular partnership that might prohibit them from supplying timber to alternative buyers.

Secondly, the position of small-growers to engage or negotiate with other actors is very weak. This is due to a number of factors. On the one hand, the leadership representing small-growers lacks the capacity to do so effectively. On the other hand, a lack of resources on the part of small-growers creates dependency. Small-growers are, therefore, unable to transform their own activities to profitable ones. Thirdly, according to small-growers, there are not enough benefits from timber production to render the practice successful. On the contrary, often the production cost stifles the benefits. In this context, small-scale timber production almost subsidizes contractors, marketers and commercial timber companies.

Fourthly, small-scale timber growers only participate at a primary production level. This level is the least profitable in the value chain of timber production. In contrast, harvesting and transportation businesses even at a local level are relatively profitable. Real profit is generated by commercial timber companies who are supplied by timber from small-scale growers. In this way small-scale timber growers end up being a cheap source of timber.

Finally, from the sustainable perspective of reaching the current needs without compromising the needs of future generations, small-scale timber production shows little prospect of satisfying the needs of future generations. Land allocations are characterised by social inequalities and are manifested in different sizes of land held by different small-scale growers. Further, small-scale timber production has the potential to undermine subsistence activities, as some crop fields are converted into timber plantations, which ultimately leads to food insecurity in these areas.

There is however a possibility for exploring non-timber forest options such as leisure and tourism. As discussed earlier, tourism is important to rural development and while it may pose risks of despoliation of the countryside by an excess of visitors this can be partly avoided by careful planning.

Recommendations

The findings of this research suggest that the manner in which timber production is introduced to subsistence farmers is flawed due to its excessive focus on timber products at the exclusion of non-timber products that can accrue from woodlots. The approach elevates their expectations and does not create an opportunity for small growers to consider timber production in relation to a range of other options. This approach can be improved by designing small-scale timber production interventions with a view to making it more viable and sustainable. Since timber production is based on a long-term rotation, the establishment of timber plantations should not replace subsistence activities necessary to sustain the community, including small-growers. Further, within the Rural Development Strategy, policies should move in the direction of encouraging more forest tourism. The provision of information should be a transparent process that addresses issues of alternative land use options as well as different types of business partnerships that small growers can choose from. This function could be

the initiative of a neutral body such as the municipality or a government-based community development agent.

Notwithstanding the fact that to start a timber plantation is an individual decision, guidelines regarding the minimum and maximum size of land for viable production is required. Such information packages should also allow continuous feedback from small-growers to different government departments. A land use plan should take into account competing needs. Perhaps this could be the joint responsibility of the local municipality and the TA. The aim of this task would be to try to take an audit of land in order to determine beforehand how much land is available for residential purposes, subsistence and commercial production. The fear arising from not having a proper plan is that in the near future, there will not be enough land for other needs. It is important that this be carried out as part of the integrated development planning (IDP) of the municipality. The inclusion of small-scale timber production in the IDP will help small-growers lobby for municipal support through, for example, the Local Economic Development fund.

Timber production is a long-term process. Considering the fact that some plantations have been grown on land previously used for food production, this arrangement could weaken livelihood activities. It is suggested that when adopting timber production, small-growers should maintain subsistence food production to enhance food security in years when they cannot generate income from timber. Equally, it should be noted that timber production coupled with non-timber items like tourism could provide a more marketable package for small-scale timber producers as it spreads the risks.

Such an approach requires leadership which, sadly, in Entembeni exhibits weaknesses when it comes to engaging and negotiating with the private sector and government. The fact that the commercial growers are currently dictating terms of partnership through contract farming is an indication that they are the dominant

partner. Empowered leadership can however change the balance of this relationship to ensure effective structures capable of minimising vulnerabilities and optimize livelihood outcomes.

Horizontal growth through expansion of plantations due to scarcity of land is not an option for small-growers. On the contrary, small-growers can add value through participating in forms of business other than timber production. This can be done through the establishment of a company owned by small growers that can invest in equipment and infrastructure that promotes leisure and tourism. Small-growers could purchase shares in the company. The company could then provide services, including building roads, harvesting and transporting wood to the mill at a reasonable price. Because small-growers are shareholders of the company, both costs and profits will be divided amongst members.

Small-growers, who planted timber in steep areas, are unable to harvest their wood. In instances where attempts have been made to harvest, woods were left abandoned because they could not be transported out of the plantation. The total size of plantations where harvesting is impossible is not known. Such areas could be put to use and marketed as hiking trails for leisure and tourism.

References

- Babbie, E., & Mouton, J. (2010). *The Practice of Social Research* (12th Ed.). Calif: Wadsworth Cengage.
- Bhattacharjee, A. (2012). *Social Science Research: Principles, Methods, and Practices* (2 ed.). Tampa: University of South Florida.
- Bosch, J., & Hewlett, J. (1980). Sediment control in South African forests and mountain catchments. *South African Forestry Journal*, 115(1), 50-55.
- Department of Water Affairs and Forestry. (1995). *Towards a Policy for Sustainable Forest Management in*

South Africa: A Discussion Paper. Pretoria: Department of Water Affairs and Forestry.

Department of Water Affairs and Forestry. (1996). **Sustainable Forest Development in South Africa: The Policy of the Government of National Unity White Paper.** Pretoria: Department of Water Affairs and Forestry. Retrieved 14 November, 2014, from <Http://www.dwaf.gov.za/Forestry/Forestry%20Policy/Whitepaper.html>

Department of Communications. (2014). South Africa Year Book. Retrieved 21 February, 2015, from <http://www.gcis.gov.za/sites/www.gcis.gov.za/files/docs/resourcecentre/yearbook/2013-4Agriculture.pdf>

Forestry South Africa. (2010). **The South African Forestry and Forest Products Industry 2009.** Johannesburg: Forestry South Africa.

Foy, T., & Willis, C. (1998). A Forest Policy for South-Africa: Why. We Should Have One and What Should It Contain. ***Southern African Forestry Journal, 181(1), 33-37.***

Hall, M. C. (2011). Seeing the forest for the trees: tourism and the International Year of Forests. ***Journal of Heritage Tourism, 6:4, 271-283***

Ham, C., & Theron, F. (1998). Community Forestry—Project Implementation Through Communities as a Whole or Through Interest Groups? ***Southern African Forestry Journal, 181(1), 45-49.***

Ham, C., & Theron, J. (1999). Community forestry and woodlot development in South Africa: the past, present and future. ***Southern African Forestry Journal, 184(1), 71-79.***

Harrison, S. R., & Herbohn, J. L. (2002). The Role of Small-scale Forestry through the World. In S. R. Harrison, J. L.

Herbohn, & K. F. Herbohn (Eds.), ***Sustainable Small-scale Forestry:***

Socio-economic Analysis and Policy. Cheltenham: Edward Elgar Publishing Limited.

Lenhard, N. (2010). ***A Comparative Study of Forest Tourism in Selected Areas of Finland and South Africa.*** Magister Commerci, Faculty of Economic and Management Sciences, University of Pretoria

Lipton, M., Lipton, M., De Klerk, M., & Ellis, F. (1996). ***Land, Labour and Livelihoods in Rural South Africa.*** Durban: Indicator Press.

Lückhoff, H. A. (1973). The Story of Forestry and its People. In Immelman, W. E. F., Wiltch, C. L. & Ackerman, D. P. (Eds.), ***Our Green Heritage: A Book about Indigenous and Exotic Trees in South Africa, About Trees and Timber in our Cultural history and about our Extensive Silvicultural, Forestry and Fimber Industry.*** Cape Town: Tefelberg.

Malherbe, H. L. (1973). Forests: A Growing Assets. In Immelman, W. E. F., Wiltch, C. L. & Ackerman, D. P. (Eds.), ***Our Green Heritage: A Book about Indigenous and Exotic Trees in South Africa, About Trees and Timber in our Cultural history and about our Extensive Silvicultural, Forestry and Fimber Industry.*** Cape Town: Tefelberg.

Martin, S. (2007). ***Leisure landscapes: Exploring the Role of Forestry in Tourism.*** Retrieved 21 February, 2015, from [http://www.forestry.gov.uk/pdf/fcrp011.pdf/\\$file/fcrp011.pdf](http://www.forestry.gov.uk/pdf/fcrp011.pdf/$file/fcrp011.pdf)

Ministry of Water Affairs and Forestry (1997). ***Sustainable Forest Development in South Africa White Paper.*** Pretoria: Ministry of Water Affairs and Forestry. Retrieved 21 February, 2015, from http://www.daff.gov.za/doaDev/sideMenu/ForestryWeb/dwaf/cmsdocs/25___Forestry%20White%20Paper.htm

Mthonjaneni Municipality (2014). ***Integrated Development Plan 2013/2014 Review.*** Retrieved 15 November, 2014,

from

<http://www.mthonjaneni.org.za/Documents/IDP/Final%20draft%202013.pdf>.

Muir, D. P. (1992). *Indigenous forest utilisation in KwaZulu: a case study of Hlatikulu Forest Reserve Maputaland*. University of Natal (Pietermaritzburg).

Ostrom, E. (2002). *The Drama of the Commons*. Washington. New York: National Research Council.

Ostrom, E., & Ostrom, V. (2014). *Choice, Rules and Collective Action*. Colchester: European Consortium for Political Science Research.

SA Forestry Magazine. (2013, April). Small Growers Planning for Bigger Things. *SA Forestry Magazine*. Retrieved 10 November, 2014, from http://www.saforestrymag.co.za/articles/detail/small_growers_planning_for_bigger_things

Shackleton, C.M. (2004). Assessment of the Livelihoods Importance of Forestry, Forests and Forest Products in South Africa. Unpublished thesis. Rhodes University

Shackleton, C. M. (2004). Assessment of the Livelihoods Importance of Forestry, Forests and Forest Products in South Africa. Retrieved 21 February, 2015, from <http://www.daff.gov.za/doaDev/sideMenu/ForestryWeb/dwaf/cmsdocs/Elsa/Docs/Forests/Assessment%pdf>

Thorp, L. (1997). Women, Access to Land: A Rural Perspective on Traditional and Resources. In S. Meer (Ed.), *Women, Land and Authority*. Cape Town: Oxfam.