

Assessment of settlement models for engagement of communities in
forest land under claim in Jessievale and Roburna communities in
Mpumalanga, South Africa

^{1*}Paxie W. Chirwa, ¹Samkelo Mamba, ²Samuel O.M. Manda, ^{1,3}Folaranmi D. Babalola

¹University of Pretoria, Forest Postgraduate Programme, 5-15 Plant Science Complex, Hatfield,
Pretoria, South Africa

²Medical Research Council, Soutpansberg Road, Pretoria, Private Bag x385, 0001 Pretoria, South
Africa

³Forest Resources Management, University of Ilorin, Nigeria

*Corresponding author: paxie.chirwa@up.ac.za, Tel +27 12 420 3213/3177

RESEARCH HIGHLIGHTS

1. In South Africa, an estimated 40% of privately owned plantations are subject to land claims, and 70% of State-owned forest plantations are under claim
2. Future engagement in forestry in these areas was aimed at bringing sustainability to forestry while ensuring economic empowerment of the communities with land under claim
3. Several models were used and attempts have been made to assess how beneficial and sustainable the different models are for the affected communities.

The choice of model between the communities for future forestry development engagement

Settlement Model	Roburna % (n=131)	Jessievale % (n=100)	Total % (n=231)
Sales and lease back	5.3 (7)	5.0 (5)	5.2 (12)
Management assistance plan	3.8 (5)	6.0 (6)	4.8 (11)
Plantation and management plan	2.3 (3)	7.0 (7)	4.3 (10)
Timber supply agreement	5.3 (7)	3.0 (3)	4.3 (10)
Project grow	0.8 (1)	7.0 (7)	3.5 (8)
Joint venture	29.8 (39)	23.0 (23)	26.8 (62)
Lease agreement	19.1 (25)	18.0 (18)	18.6 (43)
Funded purchase of trees	1.5 (2)	1.0 (1)	1.3 (3)
Conventional lease	1.5 (2)	0.0 (0)	0.9 (2)
Other	30.5 (40)	30.0 (30)	30.3 (70)

4. While communities were interested in getting their land back, demand for land may be driven more by other land use options such as land for expanding new homes and grazing agricultural farming.
5. Future forestry models should clearly address land ownership and accommodate other land use options.

Assessment of settlement models for engagement of communities in forest land under claim in Jessievale and Roburna communities in Mpumalanga, South Africa

Abstract

An estimated 40% of privately owned plantations are subject to land claims, and 70% of State-owned plantations are under claim in South Africa. The study therefore identified the settlement models for future engagement of communities in forestry with forest land under claim. In total, 231 households were purposively sampled at Jessievale (n=100) and Roburna (n=131) where the primary data was collected through questionnaire administered to household heads. In general, 70% of the respondents indicated that they would opt for a settlement model that involves forestry. About 27% chose joint venture model, whereas 19% chose the lease agreement model. The joint venture model was the most preferred due to its ability to transfer the land to the claimants, in addition to opportunities such as transfer of management skills, job creation and empowerment of local communities. Age and possession of forestry skills significantly ($p < 0.01$) contribute to the choice of the different models. While communities were interested in getting their land back, they were not fully utilizing the small portions of land currently available to them for agriculture. Hence, demand for land may be driven more by other land use options such as land for expanding new homes and grazing. In conclusion, communities were still interested in forestry as a land use option. However, future forestry models should clearly address land ownership and accommodate other land use options.

Keywords: benefits; communities; forest plantations; forestry model; land claim

1.0. INTRODUCTION

1.1. Background

In South Africa, an estimated 40% of privately owned plantations are subject to land claims, and 70% of State-owned plantations are under claim. Joint ventures and strategic partnerships are increasingly being adopted and promoted in land claim settlements (Clarke, 2006). This initiative is in the interest of forestry companies to ensure that forest land transferred to claimant communities continues to be managed sustainably and productively. The post land settlement arrangement was aimed at fulfilling the developmental objectives of the Forest Sector Charter by building capacity for members of claimant communities through the transfer of skills and creation of business opportunities (Dubbelman, 2011). According to Clarke and Lapata (2007), land transfers through restitution and redistribution has potential to change the patterns of forest resource ownership and management while at the same time bringing a lot of impoverished communities into development.

The emergence of land disputes among the actors, especially between the communities and forestry companies, in the process of implementing the land restitution policy in South Africa resulted in the formulation of a generic model by the Department of Land Affairs in collaboration with the forestry companies. The model was aimed at bringing sustainability to forestry while ensuring economic empowerment of the communities with land under claim (SAFCOL, 2010). The basic model was structured in a way that it would allow land transfer to the claimants while not compromising the sustainable production of the forest in the claimed land (Department of Water and Forestry, 2005). Based on the generic model, different companies developed more relevant settlement models to address claims in their respective forestry companies (Ojwang, 2000).

1.2 Forestry industry's post-settlement management models under land restitution in South Africa

Various generic models have been proposed for adoption by private and corporate forestry industries in response to land claim settlement. The different models endorsed by the different forestry companies are presented in Table 1. The models bring community members together for discussions on how the forest could be run and operated for the benefit of both the company and the community. Through these models, communities undoubtedly earn some recognition in the management of forest resources transferred to them either directly or indirectly (Ham and Chirwa,

2007). In some cases, communal property associations (CPAs) and community trusts (CTs) are employed to provide community representation. As defined in the Community Property Association Act No. 28 of 1996, CPAs are constituted with prime intentions “to acquire, hold and manage property on a basis agreed to by members of a community in terms of a written constitution; and to provide for matters connected therewith”. In this regard, Hall (2007) strongly indicated that involvement of the claimant community members in decision making activities had positive results in beneficiaries’ livelihoods and success of partnership arrangements. Moreover, delegation of authority with clearly set responsibilities for the community members may encourage them to participate rigorously to attain project targets sustainably.

1.2.1. Sale and leaseback agreement model

Sale and leaseback agreement model was developed by Mondi, a big corporate company involved in forestry in South Africa, to provide continuous access to land and management of trees for lease periods of at least 20 years. Mondi was the first forestry company in South Africa to successfully settle land claims without contestations under land reform (SA Forestry Magazine, 2010). Under this model, the government purchased land from rightful owners, or the claimant communities, and then Mondi negotiated lease agreements with the communities. In the agreement, the beneficiary communities are provided with technical opportunity and involved in management of the plantation on their claimed land as contractors. This is done under the supervision of the company’s foresters who provide mentorship to the contractors who are the beneficiary communities. In addition, the communities are rewarded financially through the payment of annual rentals consisting of 7% of the value of planted trees and 2% of the stumpage fee of harvested timber (Sustainable Development Report, 2011).

Moreover, the company also established Mondi Forestry Partners – a wing aimed at supporting all the beneficiary communities of the land with technical and financial management skills to sustain the productivity of the land transferred to them (SA Forestry Magazine, 2010). The management wing of Mondi essentially empowers the beneficiary communities to become successful in their forestry business ventures. On the other hand, the effort goes parallel with the government transformation and land reform policy objective to empower local communities (Underwood *et al.*, 2007). The company also provides bursary support to all the students from the beneficiary communities who matriculate with mathematics and science subjects to undertake formal forestry training at identified institutions of higher learning. Through such efforts, Mondi provides support programmes that include institutional development of businesses and training. The company also provides other capacity building activities and incentives such as planning, technology transfer, sourcing of funding from financial institutions and government departments, preparation of cash flow projections and feasibility studies, and other inputs that contribute to the growth, development and sustainability of forestry enterprises in the communities.

1.2.2. Outgrower model (Project Grow)

The outgrower scheme model was perceived by companies as a suitable vehicle that is able to improve rural livelihoods by addressing the economic status of the local people (Mayers *et al.*, 2001) as well as expansion of timber production areas (Van Loggerenberg and Mandondo, 2008). The outgrower scheme-owned plantation assets account for about 3% of the total South African forestry industry plantation assets (Dlomo and Pitcher, 2003). The model allowed the community to participate as part of the tree growing community in partnership with either corporate or private timber company. Due to the implementation of the land reform programme, the forestry industry has also become accustomed to this model as best suited to address community empowerment and sustainability of the industry in terms of the quantity of timber supplied to timber mills annually (Underwood *et al.*, 2007).

Similar to the outgrower scheme model is the “Sappi Project-grow” which is also aimed at assisting beneficiary communities of the land restitution programme or community members who might have benefited from the land redistribution programme. In this model, Sappi provides technical and financial assistance (subsidised loans, interim payments to ease cash flow challenges, technical

input, assistance with land preparation, tree seedlings, fertilisers and skills transfer), institutional assistance (establishment of communal property association or community trusts) and marketing assistance (guaranteed market where the timber from beneficiary communities is sold at competitive market prices). In return, at the end of the rotation, the company secured the right to buy all the timber from the beneficiaries of the land. In addition the company provides the extension support services to the beneficiary communities wherein one of the silvicultural foresters is attached to the project. The project is conducted under a lease agreement arrangement with community or individual owning land suitable for tree growing purposes.

1.2.3. Cooperative model

Cooperative model has received more attention from the government as an intervention to community empowerment, coupled with availability of funding opportunities. This model provides an option to the beneficiary communities or individual land owners to voluntarily come together and form a cooperative in order to produce timber for a competitive market. The aim of this model is to ensure that large quantities of timber are supplied to the market as a result of the amalgamation of individual members' production from small land holdings. As reported by Mayers and Vermuelen (2002), cooperative model has successfully contributed at least 10% of South African produced timber per annum. The success of this model, in particular, is marked by extension support services that large corporates provide to the small plantation timber growers. This support ranges from extension services (technical silvicultural skills to raise and manage trees), provision of financial support in the form of soft loans and provision of quality seedlings material. According to DAFF (2010), the cooperative model affords direct and indirect benefits with regard to improvement of the level of socio-economic status of the members and also the potential to reduce poverty in general. Moreover, the cooperative, as the business model, has the potential to provide employment and create opportunities for generating income to rural community members. In addition, women get more participation opportunities through the cooperative model and this translates to the improvement of their economic freedom.

1.2.4. Joint venture forest management model

Since 2009, the South African government has placed rural development as a priority thereby calling for new approaches that will enable rural communities to participate, own, control, use and produce on their land (Hall, 2009). Consequently, approaches that encourage community private-public partnership emerged with the aim to economically empower rural communities. Additionally, considering the extent of productive land under claim by rural communities, government and the private sector considered a means to continuously sustain production. In this regard, the joint venture model was introduced to create cooperation between the private sector, government, non-governmental organisations and rural community towards development of rural communities (Tapela, 2005).

INSERT Table 1: Characteristics of models used by SAPPI, MONDI and SAFCOL for land claim settlements

1.3. Issues in sustainability of post-settlement management models

Evidently, reports have revealed that the majority of the community projects failed due to a lack of business management, technical and financial skills (Godsmark, 2008; Pogue, 2008). DAFF (2010) concluded that lack of capacity amongst agricultural community project members has been the main challenge to the realisation of better production results and sustainability due to poor governance, technical and financial skills. Moreover, the report also indicates that the challenge of lack of skill further disadvantages the beneficiaries of the land from infiltrating the market and their development as entrepreneurs as anticipated. Similarly, as observed in other African countries, community-based forest policies have existed over many decades (Peter, 2009). As a result, the major challenge that remains is that policies have not been put into place due to poor administration, and technical abilities of the community-based forest user and producer groups (Johansson *et al.*, 2012). Likewise in the South African land reform programme, communal

property association conflicts also contributed to the failure of most land restitution projects (Manenzhe and Lahiff, 2007).

Attempts have been made to assess how beneficial and sustainable the different models are for the affected communities. A number of challenges and disagreements ensued in the process of implementing the respective models endorsed by the forestry companies, especially in sharing of the benefits among the claimants in the communities. This study therefore evaluates the perception of the communities regarding the different models for the post-settlement of claims on forested land. In addition, the study tries to ascertain the perception of the communities on the forestry industry and the future land use option for forestry land under claim.

2.0. METHODS

2.1. Study area

The two study sites selected for the study were Roburna and Jessievale in Mpumalanga Province in South Africa. These communities were purposively chosen as areas of study because they have the highest percentage of land under forest plantation affected by the land claim and were adjacent to each other. The plantation areas in Roburna and Jessievale were claimed in 2002 by the Dhladhla clan and the Eludlambedlwini tribe, respectively. Jessievale, with a total population of 4 000, clustered into 7 sub-communities (Ferniehaugh, Umpilusi, Issabelladale, Middeldrift, Craigielea, Mount Denny and Rinkink) covers a total land area of 11017.08 ha of which 9839.37 ha is under claim. Roburna on the other hand has 5 sub-communities (Marrieklof, Indlovudwalile, Stafford, Chue and Northdene) and 362 households that claim a total land area of 8002.86 ha with 7989.64 ha of this land also currently under plantation. In both areas, the claims were lodged against the South African Forestry Company (SAFCOL). While a common agreement has been reached, there has not been any land transfer made at the time of the study.

The Dhladhla clan was moved from the Jessievale area since 1978 to live in various areas around Mayflower until 2002. In Roburna, a number of households were moved from the area to live in various places around Amsterdam and also in Mayflower. Figure 1 shows the plantation areas from which the two communities were moved and areas where they are currently living. Most people in these areas rely on social grants but some household members are involved in forestry either directly or indirectly. There is very limited agricultural production and some community members have a few livestock to supplement their livelihood. Communities also depend on forestry for construction timber and wood fuel as a source of energy for heating and cooking. This is a general trend in rural Southern Africa where most households depend on the forest resource to their livelihoods (Ham and Chirwa, 2007).

INSERT Figure 1: Map of Mpumalanga showing locations of Jessievale and Roburna with inset map of South Africa

2.2. Method

A total number of 131 and 100 households were respectively selected in Roburna and Jessievale communities. Households were used as sampling units of study and the household heads or an elder were interviewed as household representatives. A questionnaire was used to collect the data from sampled households. The questionnaire was interpreted in the native language of the respondents "Siswati language". The models were explained and lamely elucidated for the community members to have a clear understanding of each model. The questionnaire had questions on the perception of the communities on the future land use option for forestry land under claim and the

evaluation of the existing relationship between claimants and forestry companies. Additional information included socioeconomic profile of the study area. More than 15% of the total population was covered to represent the communities. This sampling intensity was in line with the recommended Ad-Hoc sample size ranging from 10% to 30% for a best representation of the total population (see Shackman, 2001).

2.2.1. Statistical Analysis

Comparisons of households' socio-economic profiles and the settlement models between the two communities were conducted using Chi-squared test for categorical variables and two sample t-tests for continuous variables. The outcome variable was settlement model, which was polytomous (Sales and lease back, Funded purchase of trees, Conventional lease, Project grow, Plantation and management plan, Management assistance plan, Timber supply agreement, Lease agreement, Joint venture and Other option). In this case, 'other option' referred to options such as getting compensation, alternative land and/or given back the land among others. In order to identify independent predictors at the household level of choice of a settlement model, a multinomial regression model was used where the 'other-option' category was used as a reference outcome value (see Sharma et al. 2013). The multinomial regression is an extension of the well-known logistic regression for a binary (dichotomous ($k=2$)) outcome variable where the odds ratios are used to measure the effect of predictors for outcome of interest ($y=1$) versus $y=0$. In a multinomial regression, we have a k -category outcome and the odds ratios compare effects of likelihood of each of the ($k-1$) outcome categories to the reference outcome category.

3.0. RESULTS

3.1. Household Characteristics

Table 2 shows the household characteristics between the two communities. In general, there were more individuals in the 30-59 age group than in the 18-29 and over 60 year age groups. The significant difference ($p<0.01$) in the age of the household heads between the two sites may have been due to the higher number of individuals over 30 years at Roburna (44%) compared to Jessievale (26%). The level of education was very low at both sites with more than 70% without no formal education or having attained only primary level of education. The significant difference between the two sites were mainly attributed to the higher number of individuals with no formal education at Roburna (26%) compared to Jessievale (9%). The results further showed that there was a significant difference ($p<0.01$) in size of land used for agricultural purposes such as small gardening and/or plots for vegetables. Jessievale had more ($13.5m^2$) land available for gardening than Roburna ($2.2m^2$). However, only 39.8% of the available land was utilized efficiently in both areas. In both sites, nearly 68% of the households possessed forestry skills and 64% farming skills. Furthermore, there was a significant difference ($p=0.02$) in the amount of monthly income received through employment with an income of R1056.11 (USD 123) received in Roburna compared to only R490.40 (USD 56) received in Jessievale. Both sites receive the income from family business, other income generating activity and social grants.

INSERT Table 2: Mean household characteristics in Roburna and Jessievale communities

3.2. The choice of settlement model in the communities

The respondents were asked for their choice of the settlement model if they were to be involved in forestry on the land that is currently under claim. There was no significant difference in the choice of settlement model between the two areas. Table 3 shows that on average, 26.8% of the households

preferred the joint venture model followed by the lease agreement (18.6%). The rest of the settlement models accounted for 19.4% of the preference of the households. These models were therefore, in subsequent analyses, pooled together into one option and were collectively termed “other forestry settlement model”. It was noteworthy that 30% of the respondents preferred other options than any form of involvement in forestry through the listed settlement models.

INSERT Table 3: The choice of model between the communities for future forestry development engagement

3.2.1. Factors influencing the choice of settlement model

As described in section 3.2, the “other option” was used as a reference in subsequent analyses, when comparing the household effects that influence a choice of a different settlement model. The different categories are shown in Table 4 and include: area of location, gender, age, education, forestry skills, farming skills, source of income, employment, family business, income generating activity, social grant, and availability of land (residential land and farming land). The Odd’s ratio was used to measure the certainty of a household effect influencing a choice of a forestry settlement model other than the reference “other-options” category.

The household effects that had a significant influence on the choice of the lease back agreement model included forestry skills ($p < 0.01$) and the family business ($p < 0.01$). However, household income received through family business was the most likely effect ($y = 5.3$) to influence the choice of the lease back model rather than other options. In the case of the joint venture model, the area of location, age and forestry skills effects had a significant ($p < 0.01$) influence on a choice of the joint venture model as opposed to the other option category. In addition, households without formal education showed significant ($p = 0.05$) influence towards selecting the joint venture over other option category. However, the most likely effects to influence the choice of the joint venture model were the location of the area ($y = 3.8$), age ($y = 2-5$) and the unavailability of farming land ($y = 2.4$). As for the other settlement models involving forestry, the household effects that had a significant influence on the choice of the model included age ($p < 0.01$), income generating activity and unavailability of farming land ($p < 0.04$). In fact all these effects were most likely to influence the choice of the other settlement model option ($y = 2.5-7.3$).

INSERT Table 4: Household effects influencing choice of a settlement model

3.3. Benefits to households from forestry on land under claim

Table 5 presents the results of the benefits respondents get from forestry. The most important contribution of forestry at both sites was on job creation (58%). There was a significant difference between the two areas in perception on job creation ($p < 0.02$), contribution to food security ($p < 0.03$) and improved infrastructure and increased social services ($p < 0.01$). In Jessievale, 71% of the households revealed that there was job creation due to forestry compared to only 48.1% in Roburna. More than 40% of the households in Jessievale felt that there was improved infrastructure and increased social services compared to only 20% at Roburna (Table 5). There were significantly more ($p < 0.01$) respondents in Roburna (25%) who felt that they did not get any benefit from forestry compared to those in Jessievale (9%).

INSERT Table 5: Benefits derived from the current forestry development in land under claim

4. DISCUSSION

4.1. Land use option on forest land under claim

1. The study shows that both Jessievale and Roburna utilize only about 39.8% of the available land because of its poor productivity. This is in contrast to the general notion that there is demand for

forest land driven by urbanization process and farming practices. This demand for land may be mostly as result of the need to redress past injustices on land allocation. Hoole (2008) stated that the native people of South Africa were unlawfully dispossessed and moved from their land to the Bantustans (a partially self-governing area set aside during the period of apartheid for a particular indigenous African people; a so-called homeland) which were areas with very low productivity and limited space to support the families. Indeed, there was an apparent poor relationship between communities and the companies emanating from the influence of past land disputes. Households in both areas were reported to have been dispossessed from their land since 1974 until 2010. This has negatively impacted on collaborative working relationship between companies in forest land under claim and the communities (see Borrás and Franco, 2010).

4.2. Contribution of forestry to communities

Respondents in Jessievale perceived that there were more benefits with respect to job creation, improved infrastructure and social services due to forestry compared to those in Roburna. This perception on the beneficial contribution of forests towards development in Jessievale may be due to the involvement of a Community Property Association (CPA) which facilitates the development strategies with the local forest company. According to Lahiff et al. (2012), the use of community development structures such as committees (Community Property Associations – CPAs), trusts or representative committees has resulted in ease of transference of development strategies to most communities. However, Anseeuw and Mathebula (2008) contend that the community Trusts or CPAs have caused more problems and lack transparency on beneficiaries' funds and socio-economic transfers in land reform cases. Notwithstanding, De Villiers and Van Den Berg (2006) reported that Hazyview farms in Mpumalanga Province of South Africa were returned to the Giba community in 2003 and were able to avoid land transfer problems through participatory approaches in the subsequent operations on the land with the land authorities and CPA. In that case, the management was formed by the community members and the labor force was entirely from the community members. In addition, the focus was on training beneficiaries to manage the businesses so that they can run the business themselves. The community had a company of which the shareholdings were divided to CPA, the strategic partner and the workers' trust.

4.3. The choice of a model

The fact that 70% of the households preferred engagement in forestry through a settlement model shows that there is a great interest towards forestry. This was apparent in Jessievale where there was perceived to be more benefits from forestry. This concurs with the findings of Phiri et al. (2012) who showed that communities are willing to participate in some form of joint management of the forest resource as long as there is a perceived benefit. Furthermore, Ham and Chirwa (2011) indicated that introduction of the Broad-Based Black Economic Empowerment (B-BBEE) had enabled more communities in South Africa to get interested in forestry; thus ensuring a possibility of future sustainability and economic empowerment of the communities. However, due to poor forestry skills and lack of knowledge, B-BBEE seems to have been captured more by the elite than the rural communities. There is therefore a strong need to disseminate the strategy and aims of the B-BBEE especially to the rural communities where there are lands under claim.

The study found that most households preferred the joint venture model compared to the other options. This model suggests that the community contributes the land while the forest company contributes the trees. A joint venture would be formulated thereafter in this process; and then an operating company would be established to represent community's interests and to operate the business. This resulted in increased living standards in households, as well as transfer of skills and empowerment of the community members. In addition, the community has leverage in the partnership as they own the land. This therefore addresses one of the basic tenets of the settlement models introduced by Forestry South Africa: *to provide socio-economic development of the affected households and sustainability in forest industry production*. An example of this was the case of Makuleke community in Limpopo province of South Africa which successfully used the joint venture model (Marja et al., 2006).

While the next preferred settlement models were the lease agreement and sales lease back, the communities rather opted for getting compensation, alternative land use and/or given back the land, among others. It can be inferred that the models that were preferred provided the claimants full ownership of the forest land; but also allowed continuation of forestry while at the same time giving communities access to the land for other land use options. A study by Clarke (2006) also found that repossession of land by claimants requires transference of full control of the land and increased benefits for the communities. An example was the case of the Bجاتladi community in Limpopo where they were willing to enter into a development program through the use of their land for citrus plantations while being allowed to use part of the land for other livelihood activities (De Villiers and Van Den Berg, 2006).

4.4. Factors influencing the choice of a settlement model

The study found that choice of a forestry model that takes into consideration the involvement of communities may be influenced by various household effects including area of location, age, level of education, employment income, forestry skills, farming skills possessed, availability of residential land and availability of farming land. Similarly, Sanchez et al. (2006) showed that relevant variables that contribute towards households' decisions over given dependent variable were: household head's age, level of education, skills possessed, agricultural land size, location and benefits. The old aged group had more interest in other options than any settlement model that involves forestry. This maybe because of the low level of education and also the need for an immediate solution such as compensation or alternative land use options to derive their livelihood. On the other hand, those with different skills including forestry tended to have a positive consideration for forestry in some of the proposed settlement models. Interestingly, there were no apparent association of land availability and the choice of a model, implying that the need to have the land back may not be the main driver of the land claims in forestry plantations. The main reason could be the resentment of the fact that land was previously dispossessed in a wrongful manner (Kahn, 2007). The source of income had mixed influence on the choice of the model. For example, social grants may have had a negative influence as there was an assured source of income for some respondents whereas those respondents who derive their income through forestry were more likely to have opted for a settlement model that allows forestry to continue in the land under claim.

5. CONCLUSION

The study found that the joint venture model was the most preferred due to its ability to transfer land to the claimants, in addition to opportunities such as transfer of management skills, creation of jobs and empowerment of local communities. The results further showed that age of the individuals, possession of forestry and farming skills significantly contributed to the choice of the forestry settlement model and should therefore be carefully considered in future.

While communities were interested in getting their land back, they are not fully utilizing the small portions of land currently available to them for agriculture and that the demand for land may be driven more by other land use options such as land for expanding new homes and grazing. On the other hand, there may be an opportunity for communities to be involved in forestry in the future provided they are well informed about the different models of engagement and their associated benefits. It is therefore recommended that the Government through the B-BBEE Charter and Forestry South Africa should in the future be more proactive in disseminating information on different forestry models and associated benefits of forestry development to the communities in forest plantation areas under land claim.

ACKNOWLEDGEMENT

The first author would like to thank the South African Forestry Company Limited (SAFCOL) for providing a scholarship that enabled this research study to be undertaken. The cooperation of colleagues from the Komati Land Forest Company is also greatly appreciated. The views expressed in the paper are those of the authors and do not reflect any views of the funders.

REFERENCES

- Anseeuw W, Mathebula N. 2008. Evaluating land reform's contribution to South Africa's pro-poor growth pattern. South Africa's economic miracle-has the emperor lost his cloths? TIPS. Annual Forum.
- Borras Jr. SM, Franco J. 2010. Towards a Broader View of the Politics of Global Land Grab: Rethinking Land Issues, Reframing Resistance. Initiatives in Critical Agrarian Studies, Land Deal Politics Initiative and Transnational Institute. ICAS Working Paper Series 001.
- Cairns R., 2000 Outgrower Timber Schemes in Kwazulu Natal: Do They Build Sustainable Livelihoods and What Interventions Should be Made? A Contribution to the IIED-CSIR coordinated project: Instruments for Sustainable Private Sector Forestry Report.
- Clarke J, Lapata M. 2007. Modelling compression with discourse constraints. In Proceedings of EMNLP/CoNLL
- Clarke J. 2006. Trends in forest ownership, forest resources tenure and institutional arrangements: Are they contributing to better forest management and poverty reduction? A case study from South Africa, <http://www.fao.org/forestry/12510-0bf4e5f3c791fcb54e6ff81004ba6c9da.pdf> Accessed 26 April 2013.
- De Villiers B, Van Den Berg M. 2006. Land reform: Trailblazers Seven successful case studies. Konrad Adenauer Stiftung, Johannesburg.
- Department of Agriculture, Fisheries and Forestry (DAFF) (2010). Annual report on the status of agricultural co-operatives. Republic of South Africa.
- Department of Water Affairs and Forestry. 2005. Assignments and delegations to ensure sustainable forest management. Annual report. [Online]. Available at: <http://www.dwaf.gov.za>, (13.09.12).
- Dlomo M, and Pitcher M. 2003. Changing ownership and management of state forest plantations: South African's experience international conference on changing ownership and management of stated forest plantation: issues, approaches, implementation Cape Town, South Africa, 06-08 November 2002.
- Dubbelman B. 2011. The Free State provincial government: Mahashule, State of the Province address by the premier, Bloemfontein.
- Hall R. 2009. A fresh start for rural development and agrarian reform? Policy brief 29. PLAAS, University of Western Cape.
- Ham C, Chirwa PW. 2007. Forestry and Poverty Case Studies: Raising the Contribution / Profile of Forestry to Rural Development. Compiled for the FAO National Forest Programme Facility and the Department of Water Affairs and Forestry. Department of Forest and Wood Science, Stellenbosch. University
- Ham C, Chirwa PW. 2011. Forest resource use in southern Africa. In: Masters L & Kisiangani Emmanuel (Eds.). Natural Resources Governance in southern Africa. Africa Institute of South Africa, Pretoria, South Africa, 67-94.
- Hoole R. 2008. Land reform and the municipal property rates act, the Department of Land Affairs, South Africa, 1-3.
- Howard M, Matikinca P, Mitchell D, Brown F, Lewis F, Mahlangu I, Msiman A, Nixon P, Radebe T. 2005. Small-scale timber production in South Africa: What role in reducing poverty? A discussion paper.
- Kahn N. 2007, Land and Agrarian Reform in South Africa: Policy: issues and actors Centre for Policy Studies Johannesburg, 20: 3-4.
- Lahiff E, Davis N, Manenzhe T. 2012. Joint ventures in agriculture: Lessons from land reform projects in South Africa. London.
- Makhathini M. 2010. Mondi's sale and leaseback model in South Africa. Mondi South Africa Division Mondi's "sale and leaseback" model in South Africa. In: Alternatives to land acquisitions: Agricultural investment and collaborative business models, eds. L. Cotula and R. Leonard. London: IIED/ Berne: SDC/ Rome: IFAD/ Maputo.

- Marja S, Wels H, van de Waal K, Robins S. 2006. Transfrontier tourism, relations between local communities and the private sector in the Great Limpopo Transfrontier Park. In: Hottola, P., (ed.) *Tourism Strategies and Local Responses in Southern Africa*. Wallingford: CABI.
- Mayers J, and Vermeulen S. 2002. *Company-community forestry partnerships: From raw deals to mutual gains?* Instruments for sustainable private sector forestry series. International institute for Environment and Development, London.
- Ojwang A. 2000, Community-company partnerships in forestry in South Africa, An examination of trends, a report prepared as part of the South Africa Country study for the international collaborative research project steered by IIED, Instruments for sustainable private sector forestry.
- Phiri M, Chirwa PW, Watts S, Syampungana S. 2012. Local community perception of joint forest management and its implications for forest condition: the case of Dambwa Forest Reserve in southern Zambia. *Southern Forests: A Journal of Forest Science* 74: 51-59.
- Sanchez S, Reyes O, Singh J. 2006. Making it in college: The value of significant individuals in the lives of Mexican American adolescents. *Journal of Hispanic Higher Education* 5: 48-67.
- SAPPI. 2008. Sappi forests, land reform, Sappi forests, small enterprise development, SA Forestry. [Online]. Available at: <http://www.sappi.com>, (9.03.12).
- Shackman G. 2001. Sampling size and design effects, albany chapter of American Statistical Association. [Online]. Available at: <http://faculty.smu>, (24.08.11).
- Sharma CA, Sarvi A, Alzahrani A, De Mara RF, 2013, Self-healing reconfigurable logic using autonomous group testing. *Microprocessors and Microsystems – Embedded Hardware Design* 37: 174-184.
- South Africa Forestry Magazine. 2010. Land and community: Mondi partners with forestry land reform communities.
- South African Forestry Company. 2010. South African Forestry Company (SAFCOL) on its 2010/11 annual report.
- Sustainable Development Report. 2011. Mondi claims and business development – a synergistic partnership approach.
- Tapela BN. 2005. Joint ventures and livelihoods in emerging small-scale irrigation schemes in Greater Sekhukhune District: Perspectives from Hereford. Programme for Land and Agrarian Studies.
- Underwood M, Blakeway F, Khumalo P, Längin D, Louw J, and Mack R. 2007. South African Forestry, Integrating the First and Second Economies: a Curriculum Template for African Forestry: *An Invited Presentation given at the First Global Workshop on Forest Education, Nairobi*.
- Van Loggerenberg C, and Mandondo A. 2008. A study of outgrower Forestry in Southern Natal; exploring practice, perceptions, and prospects for SAPPI Project Grow.

Table 1: Characteristics of models used by SAPPI, MONDI and SAFCOL for land claim settlements

Model	Arrangement involved	Challenges/outcomes
Joint venture ¹	<ul style="list-style-type: none"> -community contributes the land and KLF contributes the trees. -joint venture would be formulated thereafter in this process - operating company would be established to represent community's interests and to operate the business 	<ul style="list-style-type: none"> -household income, skills and empowerment would be transferred to the community members -community would have leverage in the partnership as they owned the land
Lease agreement ¹	<ul style="list-style-type: none"> -commissioner decides to purchase the land for the community; -forest company would then enter into a lease agreement with the community -that lease agreement would be for a period of at least two rotations with lease fees ranging from 6% to 10% of the value of the permitted land 	<ul style="list-style-type: none"> -community would also receive a risk free, annual lease income -the community members are eligible to even utilize the open areas on the plantation for multiple land-use activities
Resumption lease ¹	<ul style="list-style-type: none"> -community would own the land and forestry company would have to lease the land for a rotation -at maturity company would harvest the plantations -community can decide to continue leasing the land for forestry or use it for other purposes -they had an option also to decide to lease with another company 	<ul style="list-style-type: none"> -model more in favor of the community than the forestry company -advantages of this model are that supply was certain for one rotation -communities would see the benefits of using the land for forestry -rental would provide a regular income for the duration of the arrangement -the disadvantage was that there was long term uncertainty regarding the supply of the resource
Plantation management plan ¹	<ul style="list-style-type: none"> -land is owned by the community as well as the trees -community does not have management expertise and financial resources to manage the forest enterprise 	<ul style="list-style-type: none"> -the forestry company manages the plantations on behalf of the community for a minimum period of one rotation, at a fee agreed upon.
Total package ¹	<ul style="list-style-type: none"> -Land Claims Commission (LCC) buys the land and trees for the community -claimants get full ownership -have the ability to sell timber on the open market 	<ul style="list-style-type: none"> -disadvantage of this model was the high risk of failure if the business was not well supported by (SAFCOL/KLF/MONDI/SAPPI/DWAF) -high cost to the state for purchasing both trees and land
Funded purchase of trees ¹	<ul style="list-style-type: none"> -community owned the land and purchase the trees -an institution funds the purchase of the trees and a forestry company manages the plantation on behalf of the community -claimants receive full ownership and have the ability to sell timber on the open market 	<ul style="list-style-type: none"> -disadvantage is that the acquisition of trees was funded and claimants would therefore have to pay interest on the purchase -tree growers would lose the benefit of being part of a large concern such as KLF
Conventional lease ¹	<ul style="list-style-type: none"> -community owned the land and leased it back to the forestry company -the LCC buys the land; forest company retains ownership of the trees and pays a market rental for the use of the land 	<ul style="list-style-type: none"> -claimants are guaranteed an annual income at market rental -this could be expanded to ensure empowerment, employment, skills transfer and socio-economic development -the disadvantage would be limited empowerment of communities unless a well-structured programme was in place. -little involvement in the operations unless well structured.
Sale and lease	<ul style="list-style-type: none"> -model involved the transfer of the land 	<ul style="list-style-type: none"> -this model was chosen for this settlement

back ²	<p>ownership to the claimant communities</p> <ul style="list-style-type: none"> -the payment of market price for the land from the South African government to a forestry company -company's leasing of the land from the claimant communities based on a contract between company and the communities -this model was chosen for this settlement because of its ability to respond to the aspirations of the negotiating parties and of the government 	<p>because of its ability to respond to the aspirations of the negotiating parties and of the government</p> <ul style="list-style-type: none"> -appetite of claimants to resettle the land, geographic location of claimants, the need to continue the business, claimed land extent, nature of the plantation, real needs of claimant communities, land as an emotional issue, claimant business capacity and levels of skills and sophistication
Business model ¹	<ul style="list-style-type: none"> -community owns the land on which trees are planted but the company retains ownership of the trees. -unsuitable land for forestry such as unplanted and implantable land within the forest plantations can be used by the community for activities such as grazing cattle but this has to be in compliance with forestry standards 	<ul style="list-style-type: none"> -community has an obligation not to disturb the operations in the forests -the forestry business is owned by the forestry company who uses the contracting company owned by the community for operations
Outgrowers scheme ³	<ul style="list-style-type: none"> -forestry company enters into partnership arrangements with growers who have access to land where timber can be grown -land owners in turn provide land and labour thereafter sell the trees to the processing company at a market related price 	<ul style="list-style-type: none"> -forest company in this case provides technology, in the form of improved genetic seedlings or clones -technical forestry advice, a cash loan, in the form of an advance against completed silvicultural operations and local timber collection points where the growers can deliver their timber and complete the sales transaction
Project grow ⁴	<ul style="list-style-type: none"> -an existing program to support smallholder growers in tree farming 	<ul style="list-style-type: none"> -where money earned from trees is paid to an individual farmer -technical assistance, provision of free seedlings, interest -free payment for silviculture work completed prior to harvest and a guaranteed market -in return, the community signs an agreement committing the harvest to Sappi who pays market related prices for the timber
Management assistant plan ¹	<ul style="list-style-type: none"> -assumption is that the community owns the land and also the timber and it has got expertise and business management to manage the plantation 	<p>In this case, a forestry company would provide only the technical assistance.</p> <ul style="list-style-type: none"> -if necessary, the company will provide seedlings for the community, and they would then get a market for the timber -the company may as well provide financial assistance at an arranged payback period of a loan
Timber supply agreement ¹	<ul style="list-style-type: none"> -community has the technical assistance, business assistance and sufficient funds -forest company in this case will enter into a business with the community in agreement of purchasing their produce 	<ul style="list-style-type: none"> -company provide technical assistance if there is a need -would supply the community with seedlings for a long term arrangement
Other	<ul style="list-style-type: none"> -involves any other land use option than forestry that was chosen by the community members. 	<ul style="list-style-type: none"> -community would be given back land for practicing other enterprises such as agricultural farming, housing settlement etc.

¹ SAFCOL (2010), ²Makhathini (2010), ³Howard et al. (2005) and ⁴SAPPI (2008)

Table 2: Mean household characteristics in Roburna and Jessievale communities

Characteristics	Roburna (n=131)	Jessievale (n=100)	Total	p-value
Percent (number) of age of household heads:				
18-29	12.6(29)	16.9(39)	29.4(68)	<0.01
30-59	25.1(58)	17.3(40)	42.4(98)	
60 and above	19.0(44)	9.1(21)	28.1(68)	
Percent (number) of male head in household	28.1 (65)	18.2(42)	46.3(107)	NS
Percent (number) of highest education level of household heads:				
No formal education	26.4(61)	9.1(21)	35.5(82)	<0.01
Primary	18.2(42)	21.6(50)	39.8(92)	
Secondary	7.8(18)	5.2(12)	13.0(30)	
High school	2.6(6)	5.6(13)	8.2(19)	
Tertiary	1.7(4)	1.7(4)	3.5(8)	
Mean (SD) household size	7.2 (13.4)	6.7 (10.8)	7.0 (12.1)	NS
Average (SD) agricultural land (m ²)	13.5 (46.5)	2.2 (3.2)	8.4 (24.8)	0.04
Percent (average) agric. land under use	46.6 (2.7)	33.0(0.07)	39.8(1.39)	NS
% (n) households with forest skills	35.9(83)	30.7(71)	66.7(154)	NS
% (n) households with farming skills	39.4(91)	24.7(57)	64.1(148)	NS
Mean (SD) employment income	1056.11 (2198.84)	490.40 (955.42)	811.21 (1790.21)	0.02
Mean (SD) family business income	425.88 (2627..35)	339.50 (1425.07)	388.48 (2187.78)	NS
Mean (SD) generating activity income	222.14 (2187.74)	178.00 (634.02)	203.03 (1696.09)	NS
Mean (SD) social grant	796.18 (577.21)	818.60 (642.91)	808.88 (605.27)	NS

NS = no significant difference; Standard Deviation (SD); Number of respondents (n)

Table 3: The choice of model between the communities for future forestry development engagement

Settlement Model	Roburna % (n=131)	Jessievale % (n=100)	Total % (n=231)
Sales and lease back	5.3 (7)	5.0 (5)	5.2 (12)
Management assistance plan	3.8 (5)	6.0 (6)	4.8 (11)
Plantation and management plan	2.3 (3)	7.0 (7)	4.3 (10)
Timber supply agreement	5.3 (7)	3.0 (3)	4.3 (10)
Project grow	0.8 (1)	7.0 (7)	3.5 (8)
Joint venture	29.8 (39)	23.0 (23)	26.8 (62)
Lease agreement	19.1 (25)	18.0 (18)	18.6 (43)
Funded purchase of trees	1.5 (2)	1.0 (1)	1.3 (3)
Conventional lease	1.5 (2)	0.0 (0)	0.9 (2)
Other	30.5 (40)	30.0 (30)	30.3 (70)

Table 4: Household effects influencing choice of a settlement model

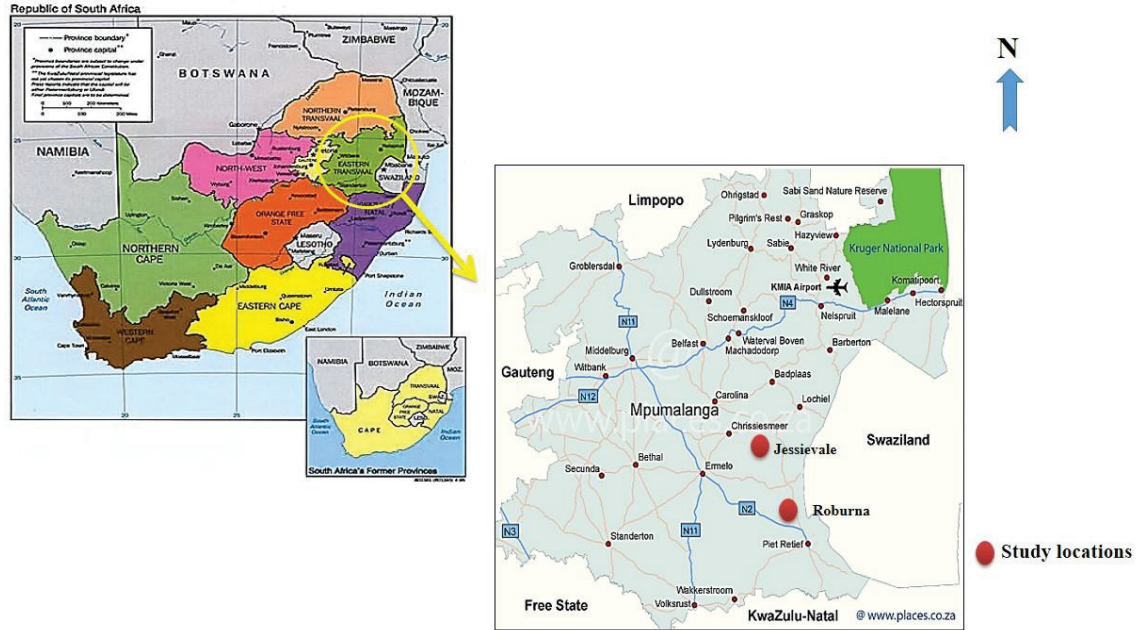
*Settlement model	Household Effect		Odds Ratio	95% Confidence Interval		p-value
				Lower	Upper	
Lease back agreement	Area	Roburna	1.020	0.156	6.679	0.984
		Jessievale	(1)			
	Gender	Male	1.220	0.248	6.012	0.807
		Female	(1)			
	Age	18-29	2.152	2.010	2.203	0.908
		30-59	2.497	2.191	2.317	0.919
		60 and above	(1)			
	Education education	No formal	0.259	0.002	4.344	0.588
		Primary	0.063	0.001	6.175	0.238
		Secondary	0.172	0.001	3.688	0.513
		High school	4.728	0.031	30.329	0.546
		Tertiary	(1)			
		Forestry skills	0.002	0.007	0.039	<0.01
		Farming skills	2.155	0.372	12.475	0.392
		Employment	1.681	0.286	9.876	0.566
		Family business	5.304	4.480	6.278	<0.01
		Income generating activity	2.583	0.234	28.532	0.439
	Social grants	1.942	0.330	11.440	0.463	
	Unavailable residential land	1.022	0.904	1.156	0.727	
	Unavailable farming land	0.818	0.090	7.389	0.858	
Joint venture	Area	Roburna	3.804	1.404	10.304	<0.01
		Jessievale	(1)			
	Gender	Male	1.129	0.455	2.801	0.794
		Female	(1)			
	Age	18-29	2.297	2.430	4.362	<0.01
		30-59	4.878	4.430	6.430	<0.01
		60 and above	(1)			
	Education education	No formal	0.047	0.002	1.004	0.050
		Primary	0.293	0.015	5.919	0.424
		Secondary	0.236	0.009	6.100	0.384
		High school	0.733	0.022	24.943	0.863
		Tertiary	(1)			
		Forestry skills	0.092	0.016	0.528	<0.01
		Farming skills	1.365	0.536	3.477	0.514
		Employment	0.373	0.145	0.956	0.040
		Family business	0.788	0.282	2.205	0.650
		Income generating activity	0.643	0.199	2.076	0.460
	Social grants	1.319	0.483	3.601	0.588	
	Unavailable residential land	1.022	0.904	1.156	0.727	
	Unavailable farming land	2.428	1.017	5.793	0.046	
Other settlement model involving forestry	Area	Roburna	1.382	0.566	3.377	0.477
		Jessievale	(1)			
	Gender	Male	1.404	0.621	3.171	0.415
	Female	(1)				

Age	18-29	7.300	2.232	23.872	<0.01
	30-59	5.537	1.917	15.994	<0.01
	60 and above	(1)			
Education education	No formal	0.411	0.019	8.944	0.571
	Primary	0.543	0.025	12.012	0.699
	Secondary	0.290	0.010	8.422	0.472
	High school Tertiary	1.222	0.035	43.113	0.912
Forestry skills		2.066	0.824	5.181	0.122
Farming skills		1.757	0.751	4.111	0.194
Employment		0.633	0.275	1.455	0.281
Family business		1.488	0.609	3.638	0.383
Income generating activity		3.816	1.075	13.540	0.038
Social grants		1.602	0.644	3.983	0.310
Unavailable residential land		0.993	0.774	1.273	0.953
Unavailable farming land		2.456	1.033	5.841	0.042

*The reference category (1) is: Other options [settlement arrangement/model that does not involve forestry].

Table 5: Benefits derived from the current forestry development in land under claim

Benefits	Roburna % (n=131)	Jessievale % (n=100)	Whole sample % (n=231)	p-values
Job creation	48.1 (63)	71.0 (71)	58.0 (134)	0.02
Food security	24.4 (32)	32.0 (32)	27.3 (64)	0.03
Improved infrastructure	23.7 (31)	48.0 (48)	27.7 (79)	<0.01
Increased social services	17.6 (23)	43.0 (43)	15.5 (66)	<0.01
No benefits	25.2 (33)	9.0 (9)	18.1 (42)	<0.01
Other benefits	15.3 (20)	15.0 (15)	16.0 (35)	NS



Source: Adapted from www.googlemap.com, 2012

Figure 1: Map of Mpumalanga showing locations of Jessievale and Roburna with inset map of South Africa