

FOREST STEWARDSHIP COUNCIL  
CERTIFICATION AND ITS APPLICABILITY  
TO SMALL-SCALE TIMBER GROWERS

A case study involving small growers in KwaZulu Natal, South Africa

By

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## TABLE OF CONTENT

SECTION A INTRODUCTION BACKGROUND	1
1 Introduction	1
1.1 Aim	2
1.2 Objectives	2
1.3 Research Methodology	3
1.3.1 Introduction of survey team to communities	3
1.3.2 Selection of areas	3
1.3.3 Categories of respondents	4
1.3.4 Nature and mode of information gathering	4
1.3.4.1 Questionnaire	4
1.3.4.2 Survey	5
2 History of small grower forestry	6
2.1 Supply of timber for local construction purposes	6
2.2 Introduction of timber mills	6
2.3 Assistance obtained during plantation establishment	6
3 Land tenure in small grower communities	8
4 Local institutional arrangement and support for small grower schemes	8
4.1 Small grower associations	8
4.2 Small grower Co-operatives	9
4.3 Training and capacity development	9
4.3.1 Training of wattle growers by SAWGU	9
4.3.2 Training of small to medium scale growers by the Forestry Training Services	10
4.4.3 Training of Committee members by KwaZulu Training Trust (KTT)	10
4.4 Government support structures	10
4.5 Non government support structures	10
4.5.1 South Africa Wattle Growers Union (SAWGU)	10
5 Laws and regulations relevant to small growers	11
5.1 National Water Act No. 36 of 1998	11
5.1.1 Previous requirements related to small-scale forestry	11
5.1.2 Current requirements under the National Water Act	11
SECTION B: RESULTS	12
6 Introduction	12
7 Household socio-economic responses	12
7.1 Household structure and level of dependency on trees	12
7.1.1 Household structure	12
7.1.2 Household socio-economic asset alternatives	13
7.1.3 Other household activities	13
8 Development of forestry activities and assistance received	13
9 Education levels of growers	14
10 Plantation sizes	15

11	Technical level of operation of growers	16
12	Employee health and safety measures	17
13	Awareness and compliance with laws and regulations	17
14	Marketing trends and agents	18
14.1	Marketing agents	18
14.1.1	NTE (Natal Tanning Extracts)	18
14.1.2	NCT (NCT C-operatives)	18
<b>SECTION C: DISCUSSIONS</b>		<b>21</b>
15	<b>ENVIRONMENT PRODUCTION ISSUES</b>	<b>21</b>
15.1	Scale of production	21
15.2	Infrastructure in plantations	22
15.3	Land preparation and planting	22
15.4	Weed/disease/pest control	22
15.5	Harvesting	23
15.6	Environmental awareness	24
16	<b>SOCIAL ISSUES</b>	<b>24</b>
16.1	Community benefits and perceptions	24
16.2	Safety and emergency measures	25
16.3	Labour issues	26
17	<b>ECONOMIC ISSUES</b>	<b>27</b>
17.1	Economic viability	27
17.1.1	Model 1: Growers who harvest their plantation	27
17.1.2	Model 2: Growers who sell their timber to contractors	28
17.1.3	Model 3: Contractors	29
18	Quality assurance measures	30
19	Literacy levels and capacity to undertake intensive silvicultural practices	30
20	Capacity to engage in certification	30
21	Information and knowledge gaps	31
22	Institutional arrangement and grower organisation	31
<b>SECTION D: CONCLUSIONS AND RECOMMENDATIONS</b>		<b>32</b>
23	Level of dependency and perception of forestry	32
24	Environmental impacts of small scale forestry	32
25	Social issues	32
26	Marketing issues	33
27	Economic issues	33
28	Institutional and organisational issues	34
29	Scale and technical level of operation	34
30	Concluding remarks	34

## **LIST OF TABLES**

Table 1 Application procedure and criteria for evaluation	7
Table 2 Wattle bark associations in the study area	8
Table 3 Summary of grower household social characteristics	9
Table 4 Summary of grower household economic responses	9
Table 5 Categories of respondents	14
Table 6 Educational standards of growers	15
Table 7 Plantation sizes of growers in the survey area	15
Table 8 Implements and machinery used during forest operations	16
Table 9 Health and safety responses	17
Table 10 Forestry related Laws and grower awareness	17
Table 11 NCT membership of small growers	19

## **SECTION A: INTRODUCTION AND BACKGROUND**

### **1 INTRODUCTION**

Plantation forestry is an economic activity widely undertaken in many provinces in South Africa. SAPPI and Mondi are the largest commercial forestry operators in KwaZulu Natal. Both SAPPI and Mondi have a small grower scheme (SAPPI Grow and Khulanithi respectively) that is geared towards developing and strengthening the participation of small-scale timber growers in the forestry sector. The classification of growers into large and small-scale, depends on a combination of factors including the total land area under tree plantation, and the extent of socio-economic dependence of the grower on trees. One of the principal objectives of the small grower scheme is to optimise benefits and participation of forest dependent people and communities living in association with forests. A number of small growers in the province also undertake small-scale forest activities independently of small grower schemes to supply domestic timber requirements such as firewood and building poles and as a source of income.

The extent of dependency of a grower on trees is governed by factors such as:

- The tree species under cultivation (wattle trees have shorter maturity and rotation period 8-12 years than pine 22-25 years)
- The different age groups of trees which will be a determinant of the rotation period
- The technical level of forest operation
- The long term security of the forestry enterprise in terms of whether the land on which the plantation is established is free hold or is under tribal authority (Dladla, 2000 *pers. comm.*).

For the purposes of this study a small grower is one who owns and manages a forest plantation of total size of 50 hectares or less with tree species predominantly of short-term maturity (8-12 years) such as wattle. However, a plantation of total size up to 200 hectares predominantly of short maturity period 8-12 years which is established on tribal land and employs low level of technical forestry operation is also considered a small scale grower.

The development of forestry in South Africa has been associated with the development of marketing institutions that provide the necessary marketing support particularly for the small-scale timber grower industry. Thus, in addition to SAPPI and Mondi, are organisations such as NCT Co-operative, Natal Tanning Extracts (NTE), and the South Africa Wattle Growers Union (SAWGU) that regulate the activities of wattle growers and processors of wattle bark. These marketing and regulatory institutions have played major roles in the development of small-scale timber plantations in KwaZulu Natal.

The small grower produces the timber or timber product (e.g. wattle tree or wattle bark) and the marketing agent either buys (e.g. NTE buys wattle bark) or sells the timber on behalf of the grower (e.g. NCT sells timber on behalf of the grower). Consequently, other integral components of forestry such as environmental integrity and social welfare of

forest dependent people may not have received the required attention.

Particular attention must be given to the impact of forestry on environmental, social and economic resources in small grower communities. Sustainable development is becoming increasingly important for modern development planning. The principle of sustainable development emphasises that the components of development i.e. social, economic and environmental are capital resources, which must be used effectively by the present generation in such a way that the ability of future generations to use them is not compromised. Reduction of capital in any one of these resources will invariably lead to unsustainable development. This principle also applies to small grower communities in that social, economic and environmental capital, are all necessary for sustainable timber production. These resources need to be harnessed appropriately if benefits from timber production are to be optimised in small grower communities.

Owing to concerns regarding environmental degradation associated with commercial forest production the international community through the Forest Stewardship Council (FSC) has developed standards against which forest management practices may be judged (Appendix 2). These standards which are enforced through certification, aim to ensure due diligence to environmental quality and social welfare of forest dependent people. Certification will result in market conditions that will restrict the saleability of non-certified timber on the international market. Locally, operational standards and processes for forestry are being drafted to ensure compliance with certification standards.

A crucial question is whether these local and international standards have taken into account the capacity of small-scale timber growers and forest dependent people to meet and sustain those standards. Has there been enough input to the decision making process from the small grower category to ensure the viability of compliance by this category, that ensures they will not be excluded from timber production ?

### **1.1 Aim**

The broad objective of this study is to identify key issues surrounding the potential and actual impacts of certification on small scale timber growers, with an emphasis on understanding the practical applicability and implications of the certification process, and concomitant adherence to FSC standards to small-scale timber growers in South Africa.

### **1.2 Objectives**

In order to achieve the aims of this study the following set of objectives were set out:

- Verification of the household structure of small growers and their level of social, economic and cultural dependency on forestry
- Identification of the appropriate environmental, social and economic parameters within which small growers operate and understanding the extent to which they know the contribution these factors make to forestry development

- Identification of information and knowledge gaps and capacity of small growers to comply with certification requirements
- Identification of the organisational and institutional requirements to facilitate the process of certification among small growers.

### **1.3 Research Methodology**

Critical to the FSC principles and criteria for certification is its emphasis on environmental quality, social responsibility and economic viability of forest operations. Thus, this study has a primary objective of obtaining data regarding the environmental, social, and economic status and perceptions of forest dependent people and how forestry activities by this group impact on these factors. This survey was therefore based on the investigation of small growers and small grower communities.

#### **1.3.1 Introduction of survey team to communities**

A Development Forester working for NCT who is known to the growers initially contacted one grower in each of the selected communities and introduced the survey team telephonically to the grower. Additional telephone numbers, where available, were obtained from NCT and appointments and interview schedules were made through the contact person within the community concerned. In this way the research team was introduced and accepted by the communities.

An interpreter and facilitator, familiar with the socio-cultural dynamics of the rural communities and who also has a background understanding of forestry and rural community development, assisted in the administration of questionnaires.

#### **1.3.2 Selection of areas**

Three different geographical areas (Greytown; Wartburg; and Howick) where small scale forestry activity is prevalent in KwaZulu Natal were selected for this study. Four communities with high concentration of small growers were randomly selected from these areas for the purpose of this study. These communities and areas were:

- Matimatholo and Mapumulo communities in the Greytown area, approximately 120km and 166km north of Pietermaritzburg respectively
- Ndwendwe community in the Wartburg area approximately 100km to the north east of Pietermaritzburg;
- Norttingham Road in the Howick area, approximately 30km to the north west of Pietermaritzburg.

The selection of this wide distribution of grower communities was used to obtain a broad

overview of small grower activities and perceptions. In addition it aided verification of whether the activities and perceptions recorded during the survey were related to site specific issues and conditions or whether they applied to small growers in general.

### 1.3.3 Categories of respondents

Respondents within the categories were randomly selected from the communities. A total of 39 people were interviewed during the survey. These people were categorised into five categories according to the nature of forestry related activity in which they are engaged. The respondents selected for this survey included both growers registered with a marketing agent (NCT) and growers not registered with any marketing agent. In addition a sample survey of non-growers was undertaken. Particular attention was paid to the NCT member small growers in this study because NCT is the dominant marketing agent in these areas.

These categories included:

- Growers who engages in plantation activities from planting through to harvesting  
This category of respondents grow trees and undertake all the necessary silvicultural practices. At maturity, they harvest and sell their own trees to marketing agents. Seven respondents fall into this category.
- Grower contractors  
This category of respondents are those who, in addition to growing and harvesting their own timber, also buy mature timber from other growers, to harvest and sell the products. Seven respondents fall into this category.
- Growers who sell standing plantations to contractors.  
This category of respondents grow trees and undertake all the necessary silvicultural practices. However, at maturity they do not harvest the timber themselves for sale but sell the plantation to contractors. Twenty respondents fall into this category.
- Contractors  
This category of respondents is those who do not grow timber but buy mature plantations from small growers, then harvest the trees for sale. Three of the respondents fall into this category.
- Non-growers or contractors  
This category of respondents consists of community members who do not own plantations or trade in timber but who benefit from forest plantations through employment and resource utilization. Two of the respondents fall into this category.

### 1.3.4 Nature and mode of information gathering

#### 1.3.4.1 Questionnaire

An open ended semi-structured questionnaire was used for information gathering. Earlier studies (Othusitse, 1997) indicated that this method was essential in order to minimise generalisations and to ensure that hidden differences among respondents and prevailing situations are captured.

Interviews were pre-arranged telephonically through a contact person identified by the Development Forester from NCT. Appointments and interview schedules were then made with the consent of growers through the contact person within the community concerned.

#### 1.3.4.2 Survey

A pilot survey was conducted for the following reasons:

- to ensure adequacy and relevance of questions
- to ensure an appropriate information gathering mechanism
- to familiarise the interpreter with questions so as to ensure that interpretation of questions and responses from interviewees are accurately undertaken

Outcome of the pilot survey indicated that information could be grouped into two categories as:

1. information specific to individual growers such as household numbers and economic status, highest education standard attained, plot sizes, *etc.*
2. uniform information relating to forest operations such as production process labour relations, harvesting practices, training, knowledge and information gaps, awareness and perceptions of social, economic, environmental and health and safety issues.

Using this information, the main survey was structured in such a way that information relating to issues in category one was captured on an individual basis and presented in this report in a table for each community. For the second category of issues, group discussions were encouraged and responses recorded generally for the specific category of operation. These methods of information gathering and presentation were found to be appropriate because it saved time and avoided repetitive recording of similar responses.

## 2 HISTORY OF SMALL GROWER FORESTRY

### 2.1 Supply of timber for local construction purposes

Many of the longest established plantations surveyed were inherited by the current owners from their parents. These plantations, were reported to have been established in the 1920s and 1930s to supply timber resources for local use such as building poles, and firewood. The growers reported that the incentive to plant trees and to engage in formal timber trade had been hindered by factors such as isolation of rural communities, lack of information regarding access to marketing opportunities and restriction of timber sale by past government policies.

### 2.2 Introduction of timber mills

Small grower interest in timber production was stimulated in 1962 when timber processing industries such as Natal Tanning Extracts (NTE) based in Hermennsburg, and Union Co-operative Limited (UCL) based in Dalton were established in the area. The owners of the timber mill launched a tree planting campaign, and provided interested rural community members with seeds to establish primarily wattle plantations. Many households converted either all or part of their crop land to trees. At the time of this tree planting campaign, the owners of the timber mill also planted large areas of wattle. Interest in tree planting dwindled when the growers realized that there was limited marketing opportunity for their wattle bark because of competition from the plantations of the mill owners. Additionally, the growers had no market for the timber from wattle after debarking. Even when marketing avenues for timber sale were found, the returns were low (Feely, 2000 *pers. comm*).

Interest in tree planting was revitalized in the communities by the South African Wattle Growers Union (SAWGU) in 1994 with the establishment of additional wood processing plants, such as coal plants at Arenes (Phama, 2000 *pers. comm*). In addition, the easing of government policies regarding racial segregation opened up new opportunities for small growers. Interested households converted portions of their agricultural land into wattle plantation, while others obtained additional land from the tribal authority for the establishment of timber plantations (Phama, 2000 *pers. comm*)

### 2.3 Assistance obtained during plantation establishment

The South African Wattle Growers Union instituted a loan scheme in 1994 that was referred to as *Pesikhonkono*. This scheme was developed to assist individual wattle growers during the establishment of their plantation in the areas surveyed (Feely, 2000 *pers.comm*). The procedure for loan application and criteria for evaluating applications are indicated in Table 1.

Table 1: Application procedure and criteria for evaluation

Application procedure	Evaluation criteria
1. The grower completes an approved application form	
2. The plantation site is inspected by SAWGU	<ul style="list-style-type: none"> <li>• Rainfall suitability</li> <li>• Soil depth</li> <li>• Slope characteristics</li> <li>• Conservation status of vegetation to be disturbed</li> </ul>
3. Application is screened by a committee consisting of the tanning industry, SAWGU, local SAWGU chairperson and Committee members	<ul style="list-style-type: none"> <li>• Reliability of applicant to undertake and complete forestry project</li> <li>• Relationship of applicant with community members</li> <li>• Residential status of applicant in community</li> </ul>

Loans are given in the form of materials for plantation establishment. The maximum cash equivalent of the loan at the inception stage of the scheme was R800. The loan is disbursed as follows:

- Seed                    R100.00
- Seedling             R240.00
- Fertilizer            R330.00
- Fencing wire        R230.00

Once the loan was approved SAWGU liaised with the tanning industries (Natal Tanning Extracts and Union Co-operative Limited), which supplied the materials listed above in stages to local collection points. These materials were distributed to approved growers by SAWGU in the following stages after inspecting each stage:

- The grower prepares the land, then the industry supplies fencing wire
- The grower fences the land, then the industry supplies seed (mostly) or arranges for seedling
- The grower grows the seeds or seedling and SAWGU provides technical advice on silvicultural practices.

Loans are recovered after 8 to 12 years when the wattle bark is sold to the turning industry (SAWGU, undated; Feely, 2000; Ncgobo, 2000 *pers. comm.*).

The introduction of this credit scheme and technical advice to assist small growers resulted in an increase in the number of small-scale wattle growers from 1964 in 1992 to 2801 in 1998. This accounts for an increase in land area cultivated from 3240 ha to 4760 ha from 1992 to 1994 (Feely, 2000 *pers. comm.*). Although this scheme is still in

operation, assistance could not be extended to successful applicants for the year 1998/99 owing to the introduction of afforestation permit requirement for small-scale forestry. In 1999, 35 afforestation permit applications were made to the Provincial Department of Water Affairs and Forestry in accordance with to the permit requirements but these have not been approved at the time of conducting this survey (Feely 2000, *pers. comm.*).

### 3 LAND TENURE IN SMALL GROWER COMMUNITIES

Land tenure is a critical issue in the small growers communities. Land is a communal resource which is allocated to individual households by the *Izinduna* for household construction and for agricultural purposes. However, if additional land is required for long term land use, a request is made to the local *Nkosi*. This land may however, be redeemed at any time by the *Nkosi* in consultation with his council (Ncgobo, 2000 *pers. comm.*). Growers do not have permanent ownership to land so they have limited control over the land on which they have their plantations. Owing to the lack of ownership rights over land, growers do not have the right to engage in any capital investment activities such as road construction on plantations (Othusitse, 1997). Land tenure is thus, an important factor that determines the willingness of rural community members to make long term investments such tree planting (Othusitse, 1997).

### 4 LOCAL INSTITUTIONAL ARRANGEMENT AND SUPPORT FOR SMALL GROWER SCHEMES

#### 4.1 Small grower associations

The South Africa Wattle Growers Union assisted wattle growers in KwaZulu Natal including the areas surveyed to form local associations. The existing associations in the areas surveyed are shown in Table 2:

Table 2: Wattle bark associations in the study area

Area	Community	Name of Association	Number of Members	Estimated number of growers in the community
Greytown	Matimatolo	Qalokusha Club	196	240
	Mapumulo	Phakamani	230	650
Wartburg	Ndwendwe	Hlanganani	346	500
Howick	Nortingham Road	Vulindlela	46	Unknown

Source: Information extracted from SAWGU data-base; (Feely *pers. comm.*)

Membership to these associations is open to all growers in the area as well as growers from other areas. These associations are channels through which members sell bark to the tanning industry. The associations are also channels through which forestry related negotiations and consultations may be carried out with SAWGU. Each association is

represented by a five member committee consisting of a chairperson, a secretary and three other members. Activities of these associations have revolved around the sale and prices of wattle bark for their members. However, the associations in the communities studied, have not developed to the point of being registered as co-operatives.

#### 4.2 Small grower co-operatives

Owing to the small plantation sizes of small grower schemes growers are unable to supply bulk timber on a sustainable basis. For this reason growers in some areas within KwaZulu Natal have form co-operatives through which timber is marketed (Norris, 2000 *pers. comm.*). The advantages of being a member of a local co-operative are:

- The co-operative is registered with a marketing agent as a member and pays the required membership fee. Members of the co-operative therefore sell their timber through the co-operative without paying any further membership fees to the marketing agent.
- Collective bargaining for timber price can be undertaken

In 1999, NCT through its Development Forester introduced the concept of co-operatives to the timber growers in the areas where it operates (Greytown, Dalton, and Richards Bay), including all the areas sampled for this study (Dladla, 2000 *pers. comm.*). Interest from growers in Nkandla and KwaMbonambe led to the formation of Nkandla Co-operative and Umbonambe Co-operatives respectively. Dladla (2000, *pers.com.*) reported that co-operatives have not been formed in the Matimatolo, Mapumulo and Ndwendwe communities where this study was conducted because growers in these communities had not yet shown any interest in the formation of co-operatives.

#### 4.3 Training and capacity development

##### 4.3.1 Training of wattle growers by SAWGU

SAWGU began a three year training programme in 1994 for wattle growers in KwaZulu Natal (Feely, 2000 *pers. comm.*), including areas where this study was conducted. The training programmes were organised for wattle growers but this did not exclude interested community members who were not yet growers. The training involved 'mock' field work where a suitable portion of land within the community was selected. Demonstrations ranged from land preparation to planting. Other phases of plantation activity were demonstrated by adopting standing plantations in different areas. All of the growers interviewed indicated that they had an opportunity to undergo training relating to tree planting either before the inception of their forestry operations or at some stage after forest establishment. This training has been restricted to basic principles of plantation silviculture such as: planting distances, methods for thinning and pruning of trees and fire control mechanisms. The three years formal training programme ended in 1996. However, SAWGU still provides extension services to new growers on an informal basis.

#### 4.3.2 Training of small to medium scale growers by the Forestry Training Services

The Forestry Training Services, was an organisation that offered training to small and medium scale timber growers. Training was offered in basic plantation silviculture and technical advice was given to small and medium scale tree growers on behalf of commercial forestry companies such as SAPPI, Mondi and SAFCOL. Even though this training programme was targeted for growers associated with commercial companies, non member growers also benefited from it. However, this training programme which began in 1988, was discontinued during the second half of 1999 due to lack of trainees (Feely 2000, *pers. comm.*).

#### 4.3.3 Training of Committee members by KwaZulu Training Trust (KTT)

In 1994 the KwaZulu Training Trust, an organisation based in Richmond under the former KwaZulu Government offered formal training to committee members of small grower associations. The training involved basic book keeping and principles relating administration of associations and co-operatives. This training programme has since been discontinued owing to lack of financial support (Feely 2000, *pers. comm.*)

#### 4.4 Government support structures

Until 1994, the former KwaZulu Department of Forestry was responsible for the development and management of small grower forestry in the then designated KwaZulu areas. Technical assistance were provided to small growers by the KwaZulu government. However, marketing of timber was the responsibility of the grower. This service from the KwaZulu Government ceased in 1994 when the KwaZulu Forestry Department was incorporated into the Department of Water Affairs and Forestry (DWAF) (Feely, 2000 *pers. comm.*). The Department of Water Affairs and Forestry has not developed similar relationships with small growers in the study area (Feely, 2000).

Department of Water Affairs and Forestry has however recognised that community forestry (small scale forestry) in South Africa like in many parts of the world is difficult to sustain and that community forestry needs government support (White Paper on sustainable forestry development, 1997). Section 2.6 of the White Paper on sustainable forestry development (1997), describes government's role in community forestry as one of "providing the necessary leadership in community forestry". Implicit in these statements is government's recognition that small-scale forestry development is an important factor for rural development and for securing socio-economics of rural households.

#### 4.5 Non-government support structures

##### 4.5.1 South Africa Wattle Growers Union (SAWGU)

The South African Wattle Growers Union has been the main source of support for the small scale wattle growers in KwaZulu Natal. SAWGU has encouraged the formation of

18 grower associations in the province with a coordinating committee to administer equity in the sale and trade of wattle bark.

## **5 Laws and regulations relevant to small grower schemes**

### 5.1 National Water Act No 36 of 1998

#### 5.1.1 Previous requirements related to small scale forestry

Prior to 1998, permit for afforestation was only required from potential commercial forestry operations.

#### 5.1.2 Current requirements under the National Water Act

The new National Water Act No 36 of 1998 brought about changes that affect small scale grower forestry. Section 21 of the Act defines water use categories that require permit as:

- Taking water from a water source
- Storing water
- Impeding or diverting the flow of water in a watercourse
- Engaging in stream flow reduction activities
- Irrigating land with waste water or water containing waster
- Altering the bed, banks course or characteristics of a water course
- Using water for recreational purposes.

This definition is relevant to forestry because, in terms of section 36 of the National Forestry Act, forestry has been classified as a activity that has the potential to reduce stream-flow. Thus, with the inception of the new National Water Act, the control of forestry activities for its impact on water resources is no longer governed by the Forest Act but is exercised by the new National Water Act (Forestry and the National Water Act 1998, 1999).

Small-scale forestry falls under the classification of 'stream flow reduction activities' and accordingly, growers in this category require permit to plant. However, the permit application for growers of less than 10 hectares are addressed locally by the local Department of Water Affairs and Forestry.

## SECTION B: RESULTS

### 6 INTRODUCTION

The preceding sections provided a background information and a framework within which small-scale plantation forestry operate. The next section presents results from the survey conducted.

### 7 HOUSEHOLD SOCIO-ECONOMIC RESPONSES

Table 3 and Table 4 summarise responses from growers regarding household socio-cultural and economic issues

Table 3: Summary of grower household social characteristics

Issue	Number	%
Average Household size	9	
Average of household persons who assist on plantation	3	33.3
Average hours spent on plantation per day per household during peak activity seasons	6	75
Male headed households	22	64.7
Female headed households	12	35.3

Note: The % average hours spent per household is calculated on an 8hr/day basis

Table 4: Summary of grower household economic responses

Income generating activities	Number	%
Crop production	33	97.1
Tree production	34	100
Cattle	4	11.8

None of the growers interviewed reported that they were involved in trading activities outside of forestry (e.g. crop sales). In addition, 91.2% of the grower households interviewed has no family members employed in the formal sector.

#### 7.1 Household structure and level of dependency on trees

##### 7.1.1 Household structure

Approximately 34% of the timber growing households interviewed were female headed. Although the predominant household composition consists of 'a husband, wife and children', there are some households with an extended family structure i.e. households with relatives living with them.

Household labour is important for socio-economic activities in rural households. Othusitse (1997) indicated that tree planting is a long-term socio-economic investment that entails labour input at various stages of development the tree plantation. Thus, given that labour is a cost input in tree production, the number of dependants in the household that contribute to the labour needs of forestry may influence the cost of labour for tree planting.

An average of 33.3% of household members for each household interviewed assist in plantation activities. The growers interviewed reported that approximately 8 hours per day is spent working. The female household members and children spent approximately 3 hours of the day on plantations. The remaining working hours is spent working on crop fields. The male and female plantation owners reported that they spend 6 to 8 hours on their plantation. However, during peak activity seasons mainly planting, weeding, and harvesting, all household members spend an average of 6 hours on their plantation.

#### 7.1.2 Household socio-economic asset alternatives

Four small grower households (11.8%) in the communities interviewed have cattle as a form of long term socio-economic asset. The growers reported that, cattle used to be the main asset for households. However, growing demands for crop land over the years resulted in the loss of grazing fields and a consequent reduction in the potential for households to keep cattle as security.

All of the growers interviewed indicated that trees have become an important asset and probably more dependable than cattle. Growers indicated that trees have become important components of their livelihood because they depend on income from the trees to address significant family issues that require considerable financial input for example, the payment of bride price and support for children at higher levels of education. They also use their trees as collateral in times of urgent financial need. All of the growers interviewed indicated that they would sacrifice cropland for trees if they were to make the choice.

#### 7.1.3 Other household activities

The growers reported that approximately 2 out of every 10 (20%) households grow trees. Of the estimated 34 growers interviewed 32 of them (approximately 94.1%) also engage in food crop production. All the 'crop-producing-timber-growers' interviewed indicated that food crops grown are exclusively for domestic consumption and are not marketed for sale.

## **8 Development of forestry activities and assistance received during the establishment of plantation**

The 34 small growers interviewed during the survey can be grouped into three categories according to their responses to the development of their plantations, related to the period

when the plantation was established. These categories and the respective periods are indicated in Table 5

Table 5: Categories of respondents

<b>Category</b>	<b>Period</b>	<b>Number</b>
Forest owners who inherited plantation from their parents	Before 1960	11
Forest owners who developed their own plantations without training in silvicultural or forestry	1961 to 1992	13
Forest owners who obtained assistance in establishing their own plantations	From 1993	10

The response to questions relating to forestry development from growers is related to the period when the plantation for the respondent was established. These responses were similar for growers within the same category.

In the categories identified above, category 1 plantation owners, which constitute 32.4% of the growers sampled, had not planted the trees they own. It was reported that the trees they own were grown by their parents to provide building poles firewood for the family. It was reported that before the 1970s tree planting in the communities was not commercialized other than for local building purposes. They said that they believe their parents did not have any assistance or training in tree planting during the establishment of the plantations. They all reported that they had inherit the trees (between 1978 and 1989) so they did not voluntarily plant the trees. However, they reported that the plantation has become a household asset.

Category 2 plantation growers planted their own trees without any prior silvicultural knowledge. This category reported that they chose to plant trees for the following reasons:

- They were encouraged by white farmers in the region to plant trees. Thirteen members of this group, which constitutes 38.2% of the growers sampled gave this response. They fall in the year category of between 1961 and 1992.
- They were encouraged through training and demonstrations in tree planting related by the South African Wattle Growers Union to plant trees. Ten of the growers (29.4% of the sample surveyed) said that they received training before engaging in tree planting.

## **9 Educational Levels of growers**

Table 6 summarizes information relating the education standards of growers sampled.

The survey indicated that 32.4% of the growers sampled had no formal education. Only 11.4% of the 34 growers sampled had grade 12. The majority of the growers in this sample (41.2%) had elementary education between grades 4 and 7 with female growers constituting 29.4% of the group.

Table 6: Educational standards of growers

Gender	Level of education											
	Elementary education								Secondary education		Totals	
	No education		Grades 1-3		Grades 4-7		Grades 8-9		Grades 10-12			
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Male	7	20.6	3	8.8	4	11.8	1	2.9	4	11.8	19	55.9
Female	4	11.8	1	2.9	10	29.4	0		0		15	44.1
Totals	11	32.4	4	11.7	14	41.2	1	2.9	4	11.8	34	100

## 10 Plantation sizes

A total of 476.48 hectares of timber was recorded for the 34 growers sampled during the survey. Of this total hectares, three growers (8.82%) account for 430 ha (90.3%) and 31 growers (91.2%) own a total of 46.48 ha (9.8%). The smallest plantation size in the sample surveyed is 0.2 ha and the largest is 200 ha.

The distribution of plantation sizes for growers by communities is given in appendix 1. The size distribution and percentages given in Table 7 below is based on the total size of 46.48 ha for 31 growers.

Table 7: Plantation sizes of 31 growers in the survey area

Plantation	Number	% of total size
0 to 1 ha	19	61.3
1.1 to 2 ha	3	9.7
2.1 to 3ha	6	19.4
3.1 to 4 ha	1	3.2
4.1 to 5 ha	0	0
5.1 to 6 ha	0	0
6.1 to 7 ha	1	3.2
7.1 to 8 ha	0	0
8.1 to 9 ha	1	3.2

## 11 Technical level of operation of growers

Basic implements and machinery are used during forestry activities of small growers and there is little mechanisation. Equipment used, harvesting procedure, and transport of timber, are fundamentally similar for both local contractors and forest owners. Table 8 provides information regarding technical level of operation of both growers and contractors.

Table 8: Implements and machinery used during forest operation

<b>Major forestry activity</b>	<b>Implements used</b>
Land preparation	<ul style="list-style-type: none"> <li>• Hoes</li> <li>• Digging mattock</li> <li>• Cutlass</li> </ul>
Weed control	<ul style="list-style-type: none"> <li>• Hoes</li> </ul>
Harvesting	<ul style="list-style-type: none"> <li>• Chainsaw</li> <li>• Handsaw</li> <li>• Axe</li> <li>• Cutlass</li> </ul>
Transport of timber	<ul style="list-style-type: none"> <li>• Pick ups</li> <li>• Tractors</li> <li>• trucks</li> </ul>

Implements used by growers depended largely on scale of the operation. Weeding is undertaken with hoes. No chemical weed control measures was reported. Only two of the growers reported that they had chainsaw. Other growers who do their own harvesting, hire chainsaw from those who have them. Transport of timber from the plantation site is undertaken by head to the nearest road, from where they are transported to timber depots by pick-ups or tractors. Two of the growers interviewed had their pick-up and two had trucks. Only one grower owned a tractor

## 12 Employee health and safety measures

Table 9 Summarizes responses from small growers regarding health and safety issues

Table 9: Health and safety responses

Health and safety issue	Requirements	Compliance	% Yes/No	Reasons for non use
Protective clothing	<ul style="list-style-type: none"> <li>• Helmet</li> <li>• Overalls</li> <li>• Hand gloves</li> <li>• Boots</li> <li>• Goggles</li> </ul>	Yes No No No No	29.4 100 100 100 100	Growers and contractors thought that it was Not their responsibility to provide or insist on use
First aid box	<ul style="list-style-type: none"> <li>• Bandages</li> <li>• Disinfectants</li> <li>• Cotton wool</li> </ul>	No No No	100 100 100	Growers and contractors thought that it was Not their responsibility to provide or insist on use
Emergency telephone Numbers	<ul style="list-style-type: none"> <li>• Umbulance</li> <li>• Fire brigade</li> </ul>	No No	100 100	Growers and contractors thought that it was Not their responsibility to provide or insist on use

The responses regarding technical level of operation, harvesting, and health and safety issues from growers also apply to contractors. Additionally, report from the contractors indicates that an average of 15 ha of plantation is harvested each year.

## 13 Awareness and compliance with laws and regulations

Table 10 provides information on the relevant laws for plantation forestry and awareness of growers of these laws and regulations.

Table 10: Forestry related laws and grower awareness

<b>Law or regulation</b>	<b>Awareness</b>	<b>% Aware</b>	<b>Compliance</b>	<b>% Compliance</b>
Planting distance from water bodies	Aware	100	Comply	29.4
Planting on steep slopes	Aware	100	Comply	29.4
Afforestation permit	Not aware	100	Do not comply	100
Environmental management plan	Not aware	100	Do not comply	100

## 14 MARKETING TRENDS AND AGENTS

### 14.1 Marketing agents

#### 14.1.1 NTE (Natal Tanning Extracts)

The Natal Tanning Extracts currently buys wattle bark from the growers but does not buy the timber that is left. All wattle growers in the areas surveyed indicated that the bark from their wattle trees is sold to NTE. Prior to 1994, NTE had no involvement with the growers apart from buying wattle bark. There was no material, financial, managerial or administrative support available to the growers from NTE (Feely 2000, *pers. comm*).

From 1994 however, SAWGU in relationship with NTE began a development programme for small scale forestry. Due to oversupply of wattle bark, SAWGU instituted quotas to individual growers for the sale of bark. The quotas for individuals are proportional to the total size of the plantation he or she owns. Sale is made directly to NTE by the farmers themselves.

#### 14.1.2 NCT (Natal Cooperative Timber Association)

NCT is increasingly responding to the needs of small growers and with its current close linkages with small growers NCT has a potential role to play in formulating the potential guidelines that would shape the process regarding certification of small growers. NCT was therefore, key to providing information on developments among small growers to date. The relationship that a grower may have with NCT can be described at three levels:

- NCT member growers (shareholders)  
This level of 'NCT-small grower' relationship involves small growers who have paid their membership fees or bought shares to the value of R200.00. Registered members go through a probation period within which period they are expected to demonstrate commitment to the relationship by attending meetings and supplying timber consistently in order to be confirmed as shareholders (Dladla, 2000 *pers. comm*).

- NCT member growers (non shareholders)  
This level of NCT-small grower relationship involves small growers whose membership application have been approved but who have not paid their registration fee of R200.00.
- Non registered members  
This group of small growers either have not applied for NCT membership or have applied but are awaiting approval of their application.

Table 11 provides information regarding small growers and whether they are members of NCT or not.

Table 11: NCT membership of small growers

<b>Level of relationship</b>	<b>Number</b>	<b>%</b>
NCT member growers (shareholders on probation)	2	5.9
NCT member growers (non shareholders)	12	35.3
Non NCT members (applied for membership)	9	26.5
Non NCT members (has not applied for membership)	11	32.4

None of the growers interviewed during the has full membership status with NCT. Of the 34 small growers interviewed, 5.9% have shareholder membership status at the probation level. Approximately 35% are registered non-shareholder members of NCT. 58.9% of the growers interviewed does not have membership status with NCT. However, 26.5% indicated that they have applied for NCT membership. The marketing relationship of NCT with growers depends on the level in which a small grower falls. For example, in times of poor marketing opportunities, preference is first given to confirmed shareholders and then shareholders on probation before registered member non-shareholders.

The relationship of small growers with NCT has evolved over a number of years. An informal relationship existed during the apartheid era. During this periods the small growers reported that NCT was unreliable because after de-barking wattle trees, NCT often delayed in giving approval for the sale of timber resulting in loss of timber quality and consequent financial loss to the growers. For approximately 32.4% of the small growers, formal relations with NCT began in 1994. This group of small growers falls into the category of non-shareholder NCT members. Documentation during the establishment of this relationship involved only a membership form by which one expressed his or her willingness to sell timber through NCT. No contractual agreements were entered into and thus, no legal obligations bound both the farmer and NCT to each other in the current relationship. NCT determined the price and markets timber on behalf of the small grower. NCT currently does not undertake any services or partnerships with small growers other than marketing if timber. Small growers reported that information relating to social and environmental development as far as forestry is concerned, is not communicated or discussed with them. NCT member small growers who are registered but without shareholder status (35.3%) and non members who have applied for membership (26.5 %) expressed dissatisfaction in their relationship with NCT for the following reasons:

- Slow response from NCT to processing membership requests
- Slow response from NCT to issuing harvesting permits
- Imposition of harvesting quotas by NCT in a given season.

NCT reported that the responsibility of the organisation was to identify market sources and opportunities for the sale of timber for members. In recent years the market for timber has been over supplied with the result that NCT could not undertake to sell all the timber it had. Therefore, in order to satisfy all member growers the quota system was introduced to ensure that total market demand for timber is distributed proportionately according to supply levels of growers. NCT believes that the market demand for timber is rising and that all supplies of timber from growers may be marketed in the current year (Keywoth, 2000 *pers.comm.*).

Keywoth, (2000 *pers.comm.*) indicated that a programme for developing management performance regarding timber growing has been followed for its big growers. NCT admitted that this programme has not been extended to the smaller growers mainly because it could not be conducted in the Zulu. However, efforts are being made to establish a communication link with the small growers. As an initial step in the small grower development programme, NCT recently employed a Development Forester who relates with small growers on matters regarding timber prices and market trends. It is the intention of NCT to produce information material in the local language so as to engage small growers in issues regarding management performance.

## **SECTION C: DISCUSSIONS**

### **15 ENVIRONMENT AND PRODUCTION ISSUES**

#### **15.1 Scale of operation**

The extent of the impact on the environment may be directly proportional to the scale and technical level of operation of a given activity. Thus, the larger the scale and the more technical the operation, the greater the potential impact on the environment. Large scale timber plantation is defined as a plantation consisting of a continuous stretch of trees on a land area of 1000 ha or more which is harvested on a sustainable basis. (Norris, 1999; Dladla, 2000; Feely, 2000; *pers. comm.*). For such scale of plantation, the technical level of operation is high. The relevant FSC principles and criteria for certification regarding scale and technical level of operation is contained principle 6.1 (Appendix 2)

The scale of forestry in small grower communities is however low. The characteristics of land distribution and development in small grower communities effectively reduces the possibility of any one individual having a large continuous stretch of plantation occurring in the same area. An individual who owns a 7 hectare plantation would usually obtain land in portions of about 1 to 2 hectares at a time over a number of years. Those areas would be interspersed with land owned by people for alternative purposes. As a result, individuals own small patches of forest either as single standing plantation or distributed over two or more plots in different areas. These plantations are interspersed by other land use activities, predominantly housing and agriculture.

The average plantation size for growers interviewed is 1.5 hectares. Except for very few individuals, total plantation sizes per grower seldom exceeds 5 hectares. In only a few cases in the Ndwendwe community, were total plantation sizes recorded as 90 ha, 140 ha, and 200 hectares. Owing to limited technical knowledge among small growers regarding plantation silvicultural practices, timber is not always of the best quality and are not of uniform sizes and heights at the time of harvest. Thus, many farmers indicated that, selective harvesting is normally carried out in which case, a rotation period of three years followed by a fallow period of three years occurs per hectare of plantation. Given that, the total harvest per season is small and that the rotation is interspersed by fallow periods, the potential cumulative intensity of harvesting pressure on the environment is likely to be low.

Characteristic of the dimensions of these parcels of plantation is their rectangular shape, which many growers say is designed to facilitate easy harvesting and transportation of timber. Owing to the small plantation sizes of small growers, the extent of environmental degradation that occurs at individual plantation sites may be low. However, cumulative impacts of small-scale forestry operation in a particular area may be high. Thus, requirements for certification need to consider the scale of small grower activities and appropriate guidelines suitable to the scale of operation of the small grower need to be developed.

## 15.2 Infrastructure in plantations

Certification standards are set to help minimise and monitor the impact of infrastructure such as roads and storage facilities typical of large plantations (FSC principle 6.5, Appendix 2). However, small scale growers and contractors do not have major infrastructure such as roads through plantations. Plantation sizes are small so it is relatively easy to transport timber to the nearest road where timber is loaded onto trucks or pick-ups without the need of roads through or to the plantation. Very often tracks probably passable by tractors and trucks only, run close to the edge of plantation. Approximately 70% of the growers do not have roads leading to their plantations. These plantations are sited at distances ranging from an estimated 200m to 1.5km from the nearest access road.

Since no major infrastructure development occurs on plantations disturbance of the natural environment due to infrastructure development is limited. Thus principle 6.5 of the FSC requirements may not be currently relevant to the small grower industry.

## 15.3 Land preparation and planting

Land preparation is one of the activities during forest plantation establishment that may pose significant environmental impact. The use of machinery such as bulldozers and ploughs, and movement of vehicles may cause significant disturbance of the soil and may lead to soil erosion and consequent pollution of water bodies (FSC principle 6.5).

However, land preparation and planting in small scale grower communities tends to have low environmental impact. Growers reported that land preparation is made easier as a result of the dying off of vegetation during the winter period preceding the planting season. They indicated that vegetation is only removed from areas to be used for planting of seeds or seedlings, which take place at the onset of the raining season. Hoes are used to clear vegetation along a pre-marked track. Digging mattocks are used to dig holes in which the seeds are planted. Extra trees are thinned with axes and cutlasses between 6 months to 2 years after planting. Therefore, disturbance to the natural environment is likely to be limited.

Potential impacts from this low level of operation is likely to be insignificant. Thus, FSC principle 6.5 may not be relevant to the small grower.

## 15.4 Weed/disease/pest control

In the case of large scale commercial plantations, weed and pest control is undertaken using chemicals. This process has potential environmental consequences as air and water pollution may occur. Additionally, the use of chemicals is potentially hazardous to the workers administering the chemicals and to other forms of wildlife. Thus, the principles of certification regarding weed control (principle 6.6 and 6.7, Appendix 2) are aimed at protecting the physical environment and as well as the labour force.

However, small growers interviewed reported that no chemical weed control measures are employed. Majority of the small growers interviewed indicated that when weeding is carried out on their plantations manual methods are used i.e. hoeing or cutting. However, weeding on their plantations is seldom undertaken. Growers claim they have never encountered any diseases in their plantations since they started forestry. It is noted however, that since the farmers lack the appropriate knowledge, they may not be in the position to identify any diseases even if they existed. Therefore should knowledge of disease be developed among small growers they may employ chemical control measures and a potential for pollution could also arise. Thus, even though the FSC principles 6.6 and 6.7 may not be relevant to small growers in the study area presently, they may become important for small growers in the future.

### 15.5 Harvesting

In large-scale commercial forestry, harvesting is the phase during the production cycle of trees when most environmental damage is done. Environmental damage potentially arises from the use of machinery such as chainsaw, tractors, loaders *etc* on site and the potential erosion effects of timber transporting. Furthermore, transport and storage of oil and lubricants on site may have potential environmental consequences in case of possible spillage. Harvesting guidelines are therefore provided by FSC Principles 6.5 and 7.1 (i) (Appendix 2) to minimise potential environmental damage.

In the small-scale grower forestry sector mechanisation is limited. Harvesting implements consists of chainsaw used for felling and chopping of trees into 8metre lengths. Trimming and debarking, if necessary, is done by the use of axes and cutlasses. Trees are not treated with chemicals. Branches are collected and stored for use as firewood by community members, and brushes are heaped up and burned. This harvesting procedure and implements used is similar for both forest owners who fell their own trees and contractors.

Potential problems regarding environmental management could arise due to the fact that most of the harvesting contractors are not residents of the communities. They are 'migrant contractors' who reside temporarily in the community concerned for the harvesting period and migrate to other areas. Moreover, since these contractors often move from one position to the other the chances of the 'migrant contractors' developing and implementing environmental management programmes for their operations is slim because monitoring their activities will be difficult.

In commercial plantation the movement of vehicles and haulage equipment for timber are potential sources of environmental degradation at plantation sites during harvesting. However, in small scale forestry timber is transported by head from the harvesting site to the nearest point accessible to vehicles. Approximately 60% of the individuals (both growers and contractors) who sell timber reported that timber is transported by pick-up vehicles belonging to timber contractors. Approximately 20% afford to hire a truck to transport timber. Only 2 of the growers and contractors interviewed have trucks to transport timber to sale depots. Activity of vehicles at the plantation sites is very minimal

and thus the potential impact of small grower transport operations on the environment is likely to be low. The FSC requirements under principles 6.5 and 7.1 (i) may not be applicable for small growers in these areas studied.

### 15.6 Environmental awareness

Small growers appear to have little insight into environmental issues regarding forestry practices. In addition growers appear to have minimal knowledge or understanding of environmental policy governing forestry production. All of the growers surveyed indicated that they are aware of regulations regarding planting distances from water-courses, but could not tell what this distance should be. For example when asked what distance from a water course they will plant if they were planting a new plot their response was that they will plant as close to the water course as possible. It is likely that the intention of growers to plant as close to water bodies as possible as they indicated is not to obtain adequate water for their trees but to use as much available land as possible. In addition, they do not practice any environmental management procedures such as erosion control. Although no erosion control measures are practiced, there was little evidence of erosion in the plantation areas i.e. there were no activities that required the application of erosion control measures.

It was observed that the level of forestry practiced by the small growers does appear not to entail significant environmental problems. For example no chemicals are used in the entire cycle of plantation activities; harvesting and transport of timber is on a small scale such that the potential impacts on vegetation is likely to be low. It appears that owing to the low level of forestry operations small growers do not place emphasis on environmental management. In order to promote the level of environmental management required by the standards of FSC certification, environmental awareness among small growers need to be raised in the following areas:

- environmental policies and regulations relevant to forestry
- environmental management

## 16 SOCIAL ISSUES

### 16.1 Community benefit and perception

There is the danger that where there is no trust between forest owners and neighbouring community members, antagonistic tendencies such as destruction of forest by the community and denial of access to forest and forest resources by forest owners may be prevalent. Dependable and trustworthy social bonds and relationships between members of a community are important for the viability and sustainability of forestry because both parties derived mutual benefits from the forest.

It is common with small-scale growers in the communities studied to sow more than enough seeds per hole as security against non-viable seeds, possible death of trees at early ages, and more especially to provide extra trees for domestic use. Extra trees are thinned and used for building and firewood. Interested community members are usually

invited to assist in the thinning process and in return are given wood.

Two of the respondents in the survey were community members who did not own forests or engaged in 'contractorship'. Since forestry is one of the diverse land uses in the area, community members live in close proximity to the forests. In spite of the closeness of forests to homes, community members reported that the existence of the forest near their homes does not negatively affect them. However, it was reported that the growth of crops near forests is affected.

The non-grower respondents reported that, they derive benefits such as access to wood for building and domestic energy (firewood) from the forest. It was reported that the trees act as shield for buildings during severe storms (this argument was based on relative number of houses affected by storm in forested areas and in areas without forests). Forestry also provided jobs both on the plantations and at the wood processing industries in the neighbourhood. It was reported that forest owners willingly provided timber for the repair of buildings damaged by storm and other disasters and also for the burying of the dead. Thus, forestry in the communities benefits the broader through provision of important resources in accordance with principle 3.1 of the FSC principles and criteria for certification.

The growers interviewed reported that about 2 out of every 10 households (about 20%) of in the sampled communities grow trees. The community members who did not own plantations reported that they were interested in tree planting but could not do so because of lack of land. In the absence of the opportunity to grow trees, an alternative entrepreneurial opportunity offered by forestry would have been 'contractorship' to forest operations. However resident reported that this opportunity is rather undertaken by people from other areas of KwaZulu Natal. The resident members of the community therefore do not take full advantage of the benefits available to them through the entrepreneurial opportunities offered by the forestry activities in the area. The application of FSC principle 4.1 and 5.4 (Appendix 2) will strengthen the local economy and avoid dependence on establishing forests.

## 16.2 Safety and emergency measures

The use of machinery and chemicals in large plantations often exposes workers to accidents and health problems. The assurance of workers health and safety (Principle 4.2) is therefore part of the FSC requirements for certification.

All the contractors and growers alike expressed the awareness of the potential accident that could occur during harvesting and said that, only the chainsaw operator uses a helmet because he is considered to be the one at highest risk. However, field observation revealed that safety equipment was not always used. No helmets were available at any of the harvesting sites visited. The use of protective clothing other than overalls, was not reported by the workers. Growers reported that it is the worker's responsibility to provide working uniforms. Even though both contractors and growers indicated that accidents had been recorded in the past, they do not have any emergency preparedness measures such

as first aid kits and emergency telephone numbers.

These deficiencies are indications of the rudimentary level of management that occurs at the small grower forestry level. Issues such as health and safety are important to the growers and contractors but are handled as they occur. Contractor and growers supported the idea of implementing health and safety preparedness measures. However, it would take a structured programme to bridge information gaps among the growers for them to achieve the required FSC health and safety standards of certification owing to limited knowledge of health and safety issues.

### 16.3 Labour issues

Very few small growers hire permanent labour force. One grower surveyed who has a plantation size of 200 hectares has a permanent labour force of about 30 workers. A second contractor has a permanent labour force of 15 people. These workers do not have any training relating to the work they do. The grower and contractor reported that training of their workers is undertaken on the job. Currently they do not encounter any problems regarding productivity. FSC principle 4.1 requires that training opportunities should be given to people working on forest plantations. Therefore, application of the FSC principle 4.1 regarding training may improve the productivity of the workers.

All other small growers interviewed use labour of family members and hire additional labour during major activity seasons. On average, the household head spends 5 hours and the other household members 3 hours per day during non-peak activity periods. The rest of the day is spent working on food crop fields. During peak activity periods, e.g. harvesting, the household spends about 6-8 hours per day on the plantation. An average of about 6 hours per day over a 6 month period is spent on the plantation by the household. This is an indication that, forestry activities constitutes a significant component of the total time of the small grower and his or her household.

Much of the work on the plantation such as weeding (rarely undertaken), thinning, creation of firebreaks, and harvesting are contracted out (hired labour) to community members. On average 60% to 70% percent of the work in the plantations is contracted out to local labour. The cost of hiring labour accounts for approximately 30% to 40% of the total income generated from trees. On average, 26 people are employed per hectare for at least 6 weeks every year. The size of the plantation largely determined the labour force, that an individual grower employed.

The worker/grower/contractor relationship tends to be informal. Work seekers simply go to sites where a forest activity e.g. weeding or harvesting is to take place and work is given on a first come first served basis. The number of people employed depended on the quantity and nature of work available. Workers bring their own working implements. Apart from the chainsaw, no payment is made for implements. Wages are paid daily and thus, a worker is not committed to giving notice for withdrawal of his or her services. It is however, unlikely that growers who employ labour on an adhoc basis would be committed to training their workers who are not under obligation to work for their

employer. Thus, the labour relation between small growers and their casual employees need to be addressed in order for the small growers to be able to meet the training requirements of FSC certification.

## 17 ECONOMIC ISSUES

### 17.1 Economic viability

The sustainability of forestry to a large extent depends on the economic viability of the forestry operations. For small-scale forestry, capital input into forestry operation is limited owing to lack of credit facilities and low household income. Majority of the small-scale growers reported that they diverted financial and material resources meant for domestic use into the establishment of their plantations at the inception stages. This initial sacrifice, often a decision taken by the household head, resulted in severe economic hardship for the household. Some claim they have not yet recovered from the financial strain resulting from their decision.

Approximately 70.6% of the growers interviewed indicated that they had no financial or material assistance during the establishment of their plantation. Approximately 29.4% had material assistance provided by SAWGU. An exception however, was one of the interviewees (with a plantation size of 200 hectares) who has had both material and financial support from marketing agents and from the Land Bank.

Characteristic of forestry operations among the small growers is a uniform financial input and output. The only variable factor is the scale of operation, which in turn varies the labour force. The financial analysis presented below is based on information obtained from the growers interviewed and figures obtained from SAWGU and NCT. Calculations are based on a plantation size of 1 hectare for the sake of simplicity.

#### 17.1.1 Model 1: Growers who harvest their own timber

- Production per season ( this occurs once in an 8 year cycle)

Average tonnage of timber/hectare	64
Average tonnage for bark	20

- Costs (occurs once in 8 years)

Land preparation and planting R20.00/person/day X 4 people for 10 days	=	R800.00
Weeding and thinning R12.00/person/day X 10 people for 10 days	=	R1200.00
Fire breaks R40.00 X 100m X 4 sides of plantation	=	R160.00
Cost of labour (harvesting) R20.00/person/day X 8 people X 5 days	=	R800.00
Cost of machine (chainsaw) R100.00	=	R100.00
Cost of transport for bark R500.00	=	R500.00

Cost of transport of R228.00/load of about 8 tones timber for 64 tons	= R1710.00
Total cost	= R5270.00
• <u>Income (occurs once in 8 years)</u>	
Sale of wattle bark R128.00 per ton X 20 tonnes	= R2560.00
Sale of timber R226.00/ton X 64 tonnes	= R14,464.00
Total income per hectare	= R17024.00
(Net income – Net cost) per hectare (R17024.00 – R5270.00)	
Net Profit	=R11754.00

#### 17.1.2 Model 2 : Growers who sell their timber to contractors

• <u>Production ( occurs once in eight years)</u>	
Average tonnage of timber/hectare	64
Average tonnage for bark	20
• Costs	
Land preparation and planting R20.00/person/day X 4 people for 10 days	= R800.00
Weeding and thinning R12.00/person X 10 people for 10 days	= R1200.00
Fire breaks R40.00 X 100m X 4	= R160.00
Total cost	= R2160.00
Price at which wood is sold	= R10,500.00
Net profit	R(10 500.00 – 2160.00) = R8340.00

These growers harvest timber once in an eight year cycle. Considering that the average plantation size for small growers is 1.5 ha, the potential net annual profit for small growers are:

• Growers who harvest and sell their timber	(1.5 ha X R11,754.00)= R17 631.00
R17631.00 divided by 8 years	= R2203.9
• Growers who sell their plantation to contractors	(1.5 ha X R8340.00) = R12 450.00
R12450.00 divided by 8 years	= R1556.25

These financial models indicate that small growers obtain minimal returns from trees. Thus, if the establishment and maintenance of management systems required by FSC for certification would increase the cost of production of trees, small growers may not be able to develop and sustain such management systems.

### 17.1.3 Model 3: Contractors

- Costs (occurs every year)

Cost plantation	R10,500.00	
Average tonnage of timber	64	
Average tonnage for bark	20	
Cost of labour	R20.00/person X 8 people X 5 days	= R800.00
Cost of machine	R100.00	= R100.00
Cost of transport for bark	R500.00	= R500.00
Cost of transport of timber	R228.00/load of about 8 tones for 64 tons	= R1710.00
Total costs per hectare		= R13 610.00

- Income (occurs every year)

Sale of wattle bark	R128.00 per ton X 20	= R2560.00
Sale of Timber	R226.00/tonne X 64	= R14,464.00
Total income		= R17,024.00
Net profit per hectare	= R(17,024.00-13,610.00)	= R3414.00

From the financial analysis, it appears that the most profitable category of those involved in forestry operations is the contractor category. Given that an average 15 ha of plantation is harvested per year, the net income of the contractor per year is R 51 210.00 whereas that for growers is R1556.25.

The financial models presented above may not be entirely correct for the following reasons:

- The low literacy levels of growers may lead to the provision of inaccurate information relating to the financial aspects of timber production
- Growers do not keep records of financial input and out put of their forestry operations and therefore, they may not have provided reliable figures

## **18 Quality assurance measures**

Growers reported that they are very particular about the quality of trees they produce because the marketing agents only sell timber that meet certain specifications. Thus, considerable effort is applied to maintaining and adhering to silvicultural practices that would produce the best quality timber. Growers agreed that the production of good quality timber is only possible if the resources on which trees depend are maintained and managed properly. It was also accepted that, a major contributor to good quality timber is a management programme and implementation guidelines that specifies the right time to engage a particular activity. For all growers indicated that poor timing for thinning and pruning often resulted in poor quality timber. They reported that even though this is a recurrent case, they are unable to determine the best timing for specific operations in the planting cycle. Having been made aware of the environmental, social and economic factors that promote good quality timber, growers recognised that, a combination environmental, social and economic issues embodied in a management programme is important for the production of good quality trees.

## **19 Literacy levels and capacity to undertake intensive silvicultural practices**

Approximately 32.4% has no formal education at all and 41.2% has education only at the level of between grades 4 and 7. This low level of educational standards could effectively preclude the timber growers from meaningful debates regarding certification and to take advantage of potential development opportunities that forestry certification might offer. Given that, the current standards of certification as set by FCS involves highly technical and administrative procedures, the small growers in this region may require administrative and financial support to develop, implement and sustain management systems that will meet the requirements of FSC certification since they are academically ill-prepared to do so.

## **20 Capacity to engage in certification**

FSC certification is such that considerable time, money and administrative input are required. Additionally, proponents of certification need to have adequate background technical knowledge regarding forestry to be able to establish the rigorous standards and management systems.

Currently, small growers may not have the capacity to engage in certification because:

- The scale of operation is small and the resources used is rudimentary
- Growers have a low level of education
- Growers have limited knowledge of their environmental and social responsibilities

Growers stated that safety of the work force is an important factor for the successful implementation of their operation. However, limited safety measures are currently employed. Growers did indicate that accidents that occurred during forest operations in

the past considerably slowed down work and resulted in the loss of quality of timber and that implementation of health and safety measures would be to their benefit. The implementation of FSC principles could therefore improve social conditions of the growers and workers.

## **21 Information and knowledge gaps**

Small growers appear to have limited knowledge and information relevant to environmentally sustainable forestry practices. Growers are currently largely unaware of the issue of certification and the requirements thereof. Furthermore, they are unlikely to be able to follow the processes involved in certification owing to their low literacy and education levels. It is obvious that apart from severe limitations imposed by the existing low levels of formal education among the growers, there exists a large knowledge and information gap, which needs to be filled if small growers are to engage in processes that lead to certification.

## **22 Institutional arrangement and grower organisation**

The basis for organising and co-ordinating small grower activities already exist in the small grower communities by way of associations. However, existing associations are poorly managed and there appears to be no leadership drive. This is likely to be a result of a lack of a structured and recognised institution that can coordinate the affairs of the small grower forestry sector. The levels of responsibility and roles of government and non government institutions towards small growers is not clear. However, if small growers are to be able to engage in certification and to benefit from the process, then it would be necessary to establish relevant institutional structures to address issues relating to small grower schemes.

Growers require additional training to enable them to identify potential social and environmental problems and means of mitigating them. Additionally, growers need to be equipped with the necessary management tools and administrative skills to engage in forestry related activities at the marketing level.

## **SECTION D: CONCLUSIONS AND RECOMMENDATION**

### **23 Level of dependency and perception of forestry**

#### *Conclusion*

Small growers view forestry as a potential means of long term economic security. Much of their financial and material resources, and about 6 hours per day of their time are devoted to forestry. Household needs that require large amounts of money come from resources obtained from sale of timber. Thus, the dependency of the small grower on trees is high. However, existing land tenure system discourages commitment to proper land care practices. Growers require longer term tenure security of land to enable them undertake effective land management and development practices that would meet the requirements of FSC certification.

#### *Recommendation*

- Verification of protocols to streamline land tenure systems in small grower communities

### **24 Environmental impacts of small scale forestry**

#### *Conclusion*

Growers have limited awareness of their environmental responsibilities. However, owing to the low scale and technical level of forestry operations in small grower forestry environmental impacts due to forestry activities appear to be low. Thus, the environmental standards required by FCS for certification purposes are largely not applicable to the current small scale forestry sector in the study area. If strict adherence to the existing FSC environmental standards is demanded from the small growers then their environmental awareness and commitment would need to be augmented through additional training and institutional support.

#### *Recommendation*

- Level of environmental awareness among small growers and their ability to meet environmental requirements need to be investigated
- Small grower awareness of environmental standards and responsibilities need to be improved through education

### **25 Social issues**

#### *Conclusion*

Community empowerment initiatives to optimise opportunities provided by forestry appears to be inadequate. Although training regarding tree planting has been given growers are still not adequately prepared to understand and manage environmental related aspects of their forestry activities. Thus, the level of participation of the growers in the debates relating to forest certification is likely to be low.

*Recommendation*

- Additional training in forest management is required for communities to take advantage of entrepreneurial opportunities offered by forestry in the region and to enable them to meet the FSC requirements regarding their social responsibilities.

*Conclusion*

Growers and contractors recognise the importance of health and safety. However, they do not implement health and safety practices during forest operations. Additionally, growers and contractor do not provide formal training programmes for their employees. The implementation of FSC requirements regarding health and training for workers is likely to enhance management and worker performance in the small grower sector

*Recommendation*

- Awareness need to be created among the growers to be able to implement FSC requirements for worker training and health and safety related issues.

**26 Marketing issues***Conclusion*

There is an acute lack of information flow between marketing agents small growers. It is noted that small growers have been isolated from the economic aspect of forestry for a long time and have been denied access to market opportunities and information related to standards. It is under these backgrounds that small farmers are confused about marketing relations and trends, what constitutes a good marketing agent, and why certification is necessary. However, NCT is initiating procedures to reach the small growers both on economic and management level.

*Recommendation*

- Marketing agents also need to be information agents for the small growers. A structured information dissemination programme need to be instituted to inform small growers about market trends and conditions.

**27 Economic issues***Conclusion*

It was expressed that growers tend to depend on trees for long term financial security. However, owing to small plantation sizes and longer rotation periods the economic return from forestry is not as high as would have been otherwise expected. Contractorship appears to be a more rewarding aspect of the timber trade but this opportunity is not fully exploited by growers themselves.

*Recommendation*

- Growers need assistance take entrepreneurial opportunities offered by forestry. This will optimise socio-economic benefits of forestry in the communities studied.

## **28 Institutional and organisational issues**

### *Conclusion*

There is poor institutional support for the small grower forestry sector. DWAF is not explicit regarding its responsibility towards small grower forestry thus, it is not clear whose responsibility the small grower is at the national level. Furthermore, there appears to be an institutional vacuum between the policy making body (DWAF) and the small grower forestry sector.

### *Recommendation*

- If small growers are to be able to engage in certification, then it would be necessary establish relevant institutional structures to address
- Institutional arrangement and roles and responsibilities of institutions towards small grower forestry from the national, provincial and local levels need to be defined.

## **29 Scale of and technical level of operation**

### *Conclusion*

Many of the FSC certification requirements may not be relevant to the small-scale grower operations considering the fact that the scale of operation is small.

### *Recommendation*

- Alternative procedures and standards for certification for small growers need to be tailor made to suite the scale of their operation; the financial benefits derived from forestry operations; and the significance of impacts of small grower schemes on the socio-cultural and physical environment.

## **30 Concluding remarks**

This research was conducted with limited input from other forest related stakeholders. Furthermore, the scope is limited to a few small grower communities. There is the likelihood that apart from issues raised in this study, other significant issues would have been identified and potential differences in forestry characteristics exposed, should the research have had a wider stakeholder participation and broader geographical coverage. It is therefore suggested that, further studies should be conducted on a wider scope and with more stakeholder participation in order to draw better conclusions from on the issues identified in this study.

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