PREFACE

This report is prepared by the DANCED/DWAF Community Forestry Project in the Bushbuckridge Area (CFPB) to document its experiences and lessons learnt around a particular section of the CFPB's work in order to enable others working in similar fields to benefit from the work undertaken by the Project.

The overall objective of the CFPB is *Improved sustainable natural woodland management and environmental reconstruction,* while the Immediate Objective is *Strengthened capacity of DWAF and rural communities in the Bushbuckridge area to plan and implement community-based tree planting activities and natural woodland management*.

The focus of the CFPB is capacity development, both within the Directorate: Community Forestry (D:CF) of the Department of Water Affairs and Forestry (DWAF) and among residents (communities) in the Project area, towards a system of enhanced and sustainable woodland management. Capacity development is pursued through both formal and informal training, and through implementation of community forestry pilot activities to develop community-based participatory approaches to the sustainable management of the trees and other resources from woodlands in communal areas. To this end the CFPB is piloting new community forestry activities (models) in support of DWAF policies that were being formulated at the time the Project was initiated in August 1996. The CFPB has provided information to the Department on its experience in the implementation of these approaches and activities and this report is a continuation of this process.

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Annexes

ABBREVIATIONS

ANC African National Congress
ARC Agricultural Research Council
BLBSC Bushbuckridge Local Business Service Centre
BNCP Bushbuckridge Nature Conservation Project
CBNRM Community-based natural resource management
CFPB DWAF DANCED/DWAF – Community Forestry Project in the Bushbuckridge Area
CPWP Commercial Products from the Wild Project
Civic A local branch of Sanco
DACST Department of Arts, Culture, Science and Technology
DANCED Danish Cooperation for Environment and Development
DEAT Department of Environmental Affairs and Tourism
D: CF Directorate: Community Forestry
D: IFM Directorate: Indigenous Forest Management
DWAF Department of Water Affairs and Forestry
KNP Kruger National Park
MDC Mhala Development Centre
MMPP Mpumalanga Medicinal Plant Programme
NGO Non-governmental Organisation
NPDA Northern Province, Department of Agriculture

NUM National Union of Mineworkers
PPRI Plant Protection Research Institute
PRA Participatory Rural Appraisal
PSC Project Steering Committee
RDC Reconstruction and Development Committees
Sanco South African National Civic Association
TA Tribal Authorities

1. INTRODUCTION

Community-based natural resource management (CBNRM) aims to combine rural development and natural resource conservation. It is a deliberate shift away from top-down and technical approaches to one where people participate in the management of natural resources to encourage sustainable development. Thus "*CBNRM aims to alleviate poverty and advance conservation by strengthening rural economies and empowering communities to manage resources for their long-term social, economic and ecological benefits*" (Rozemeijer and van der Jagt in Shackleton and Campbell, 2000).

There are many different approaches and models for CBNRM. In South Africa most of these are joint management initiatives between the State and communities where the State has a vested interest in the land and the resources found there – for example, game and nature reserves and State forests. In contrast, this report looks at approaches and processes to CBNRM being implemented in the communal area of Bushbuckridge– part of the former homelands of Gazankulu and Lebowa. While the land technically belongs to the State, it is *de facto* community 'owned'. This alters the relationship between the State and 'communities ' and, inevitably, the approach to and processes of community-based natural resource management.

This report focuses on community forestry activities the DANCED/DWAF – Community Forestry Project in the Bushbuckridge Area (CFPB) initiated in the early years of the Project working with groups who had common interest in an activity. Through a process of adaptive learning the CFPB has tried different methods to encourage collaboration between itself and community-based groups around community forestry activities. The initial method tested by the CFPB was a broad community approach based on Participatory Rural Appraisal (PRA) exercises. This mainly resulted in support to community forestry activities in community gardens, and, through the process, forestry extension officers also developed an understanding of, and ability to implement, participatory approaches to community forestry. Based on the lessons learnt from these activities, the CFPB then began working with smaller resource user groups who approached the CFPB for assistance. The CFPB has also been involved in urban and rural greening activities in relation to Arbor Week, school based activities, and soil erosion control and prevention.

This document is structured as follows:

- Section 1 discusses the context in which the CFPB is implemented. It also discusses the underlying principles and the process of developing approaches to community forestry.

- Section 2 reflects the CFPB's adaptive learning experience through implementing the various community forestry pilot projects – the shift from the broad 'community' approach to the resource user-group approach, as well as the activities with an urban/rural greening focus. Each 'model' or project is discussed as follows: the main target group; the objectives and justification for the activity; a description or history of the project; the lessons learnt from the pilot project; and the conclusions reached.

- Section 3 explores the overarching lessons learnt – in the form of crosscutting themes and issues – that emerge from an analysis of the findings in Section 2.

- Finally, Section 4 presents the conclusions with regard to the implementation of community forestry approaches and activities.

The CFPB has published a number of technical reports on the potential and feasibility of undertaking certain community forestry activities in the Bushbuckridge area. The studies published in support of the pilot activities described in this report are: *Natural Resource Use and Woodland Management in the Lowveld Bushveld*, prepared by MV Gander (August 1997); *The Use and Potential for Commercialisation of Veld Products in the Bushbuckridge Area*, prepared by Charlie Shackleton and Sheona Shackleton (October 1997); *Medicinal Plant Marketing and Strategies for Sustaining the Plant Supply in the Bushbuckridge Area*, prepared by Myles Mander (November 1997); *Potential for Beekeeping and Honey Production in the*

Bushbuckridge Area, prepared by Elize Lundall-Magnuson (July 1998); and *Analysis of the Wood Carving Industry in the Bushbuckridge Area*, prepared by C Steenkamp, T Brinkcate and D Marnewick (November 1998).

1.1 Project Context and Problem Analysis

The CFPB area consists of 2 400km^2 in the communal savannas of Bushbuckridge lowveld in the Northern Province. Poor and unsustainable land husbandry and natural resource management has been identified as a core problem in the Bushbuckridge area. Among the contributing factors to this situation are: the area's historical inheritance, population pressure, low income levels, unclear tenure systems, weak local government structures, conflicting agendas of different service providers, lack of clarity on the mandate of traditional authorities, and low levels of awareness, knowledge and financial resources.

People living in the area were subjected to resettlement and forced removals prior to and throughout the former dispensation. ' Betterment' planning, and the creation of ethnically-based homelands (Lebowa and Gazankulu) resulted in increased population densities, a high degree of social disruption, and the unravelling of social organisation, leading to the breakdown of long-established relationships with the land. Consequently, there is currently little in the way of traditional systems of resource use and management. The democratisation of South Africa and the transformation process has brought new challenges. The creation of new local government structures in rural areas – questioning the role of the Traditional Authorities; changes to provincial and municipal district and local council boundaries; new legislation; restructuring of government departments; and land and tenure reform all contribute to a state of flux and change. The Bushbuckridge area is characterised as open woodland, and is under heavy pressure in the peri-urban areas in the west and near settlements in the eastern parts. Employment opportunities are limited and the local population is dependent on woodland resources to meet a range of needs. Demographic data for the area is notoriously inaccurate, but the population is estimated to be between 700 000 and one million with densities ranging between 150 (in the east) and 303 (in the west) people per km^2. Many Mozambicans have moved across the national border into the area, and, being among the poorest of the poor, are often heavily dependant on the natural resource base. The relationship between the people of Bushbuckridge and their natural resource base is thus shaped by historical, cultural, socio-economic and demographic factors.

Woodland resources, directly and indirectly, make an important contribution to the livelihoods of community members through supplementing household income, providing a source of free products, and enhancing nutrition and food security. With the low level of income of the majority of the population of the area, the natural resource base is crucial for both the subsistence and cash economies.

"*Most households … draw on a range of activities and income sources that bridge the rural-urban divide. These include casual and permanent wage employment, remittances, welfare grants, crop production, animal husbandry, wild resource use, social network transfers and small enterprises*." (Shackleton et al, 2000).

Research carried out in the Bushbuckridge area and in other communal lands in southern Africa (Shackleton et al, 2000) reveals the following:

- The value of livestock to rural households in communal areas includes their use for transport, draught, milk, meat, manure, gifts to bond kinship and community relations, cash (locally traded the price is lower and is thus a savings for the buyer), and as a store of wealth to act as a safety net in times of cash need. Regarding crop production, the staple crop is intermixed with a range of other crops, giving a total yield comparable with monoculture systems. Most of the yield is consumed by the household and crop contributions to total household income range from 7% to 24%.

- The value of natural resources is as much or more than other activities on the land and welfare grants. The direct use (not trading) values of wild resources alone is estimated US$194-US$1114 (R1936.12-R11117.72) per household per year. Most households use products from the natural woodland for, among other purposes, fuelwood, construction, food, medicine, craft, implements and fodder/grazing. This consumption of 'free' goods is a cash savings for households and critical for their survival. These resources are also sold, thus generating an income for households, or exchanged for other goods and services. The harvesting of resources has another value that forms part of the survival strategy – ensuring social networks through the exchange of 'gifts'.

Community-based forestry and woodland management is a new field for DWAF. In the past the Department focused its attention on plantation forestry, and on the preservation of indigenous forests on State land. DWAF staff were trained in silviculture, plantation management and harvesting, and were recruited from the commercial forestry plantations. No strong tradition of

woodland management or the management of trees within farming systems existed. Consequently, when the CFPB started there was limited understanding of the wider socio-economic importance of natural woodland resources to the livelihoods of rural populations, and little experience with working with communities and of participatory approaches in extension work for the planning and management of natural resources and tree-centred development.

The Department has, since 1996, developed policy and legislation promoting conservation and development through participatory, community-based processes that ensure equity and socio-economic and ecological benefits. Three principles underpin this: social development (ensuring services are delivered to those in most need); economic development (income generation through the use of forest and woodland products for enterprise development); and environmental sustainability (ensuring that meeting the needs of the present generation does not compromise the ability of future generations to meet their needs).

Given that the high level of resource utilisation and ineffective management strategies are resulting in local depletion, the CFPB focus is thus on the integration of forestry and tree growing within a wider rural development agenda, including capacity building around participatory management of natural resources.

1.2 Piloting Approaches for Sustainable Environmental Development

Rural populations in the communal lands depend on natural resources for their daily survival – and it is the poorest of the poor (female headed households and the marginalised) who are most reliant on the natural resource base. "*The livelihoods of the poor are complex and dynamic, typified by a diverse portfolio of activities that not only enhance household income but also food security, health, social networks and savings*" (Shackleton et al, 2000).

Different users derive different benefits from natural resources. Benefits from these resources are not limited to a cash value only (contributing household income or as a savings on household expenditure) but include both private and public benefits, ranging from improved soil fertility, shade, soil retention and improved water flow, to recreation, spiritual well-being and sacred places.

To make natural woodland management relevant to an impoverished rural population one cannot simply assume that raising environmental awareness is sufficient to ensure sustainable development. The CFPB strategy thus builds on the recognition that there must be tangible benefits involved and aims to include a range of benefits, underlining the importance of resources in the communal lands to household income and livelihood survival strategies. Attempts are made to identify linkages to natural resource uses and products and ways to strengthen the sustainable utilisation of natural woodland products. The involvement of women, who are often the heads of households and the major gatherers and users of woodland products, is emphasised.

Development thus implies a process of change and includes non-economic factors alongside the economic, political and social and bio-physical factors in each context and society. It's the process of achieving this that is so crucial. Consultation, participation and empowerment form the basis of development.

Capacity development is thus not only about acquiring something. It is also about broadening and deepening knowledge and understanding so that people can make links between different aspects of and in environment. Most important of all, capacity building is about people developing confidence, self-worth, dignity, hope, responsibility and the like. People need to participate in and determine their own development. Without this level of capacity development, there is little likelihood of development occurring. From this understanding of capacity development, it is evident that participation and capacity development are inextricably linked and underpin CBNRM.

Why Participation?

- The CFPB's approach to participation is based on the concept that participation plays a role in human development

through the satisfaction of human needs. These needs are non-observable and include self-esteem, sense of belonging, identity, understanding, respect, recognition, self-reflexivity, dignity, hope, etc. Recognition of values is essential as customs, beliefs and ideas (including language, religion, ethnicity, class, etc.) contribute to identity. Values, unlike human needs, can change over time. Human needs are distinct from wants and basic needs – the latter being a 'shopping list' of socio-economic ills such as inadequate water, shelter, sanitation etc. By merely *providing* people with material relief (meeting basic needs), people's human needs are further eroded. The satisfaction of human needs is achieved through participation, self-reliance and self-determination and this enables development to occur.

- The shift away from top-down, imposed 'development' to participative development means communities should be involved in the planning and decision-making process. They should own the process to advance their dignity, self-reliance, self-determination and empowerment.
- Participation is necessary to meet people's needs as they perceive them and because it is their values and interests that are affected. Their reality – life as it is lived, perceived and experienced; their beliefs, knowledge and understandings - should inform the process (Muller, 1994).
- Participation is seen to contribute to the sustainability of initiatives - because participants own and take responsibility for the process, activities and outcomes - and achieving the desired impacts.
- Participation develops people's capacity through supporting the acquisition of skills, knowledge and understanding.
- Participation is seen to help ensure equity.
- However, because participation can mean different things to different people, it can be used in ways that do not contribute to individual and social development. It is thus important to be clear about an initiative's approach to and application of participation and participatory processes (see Annex 2).

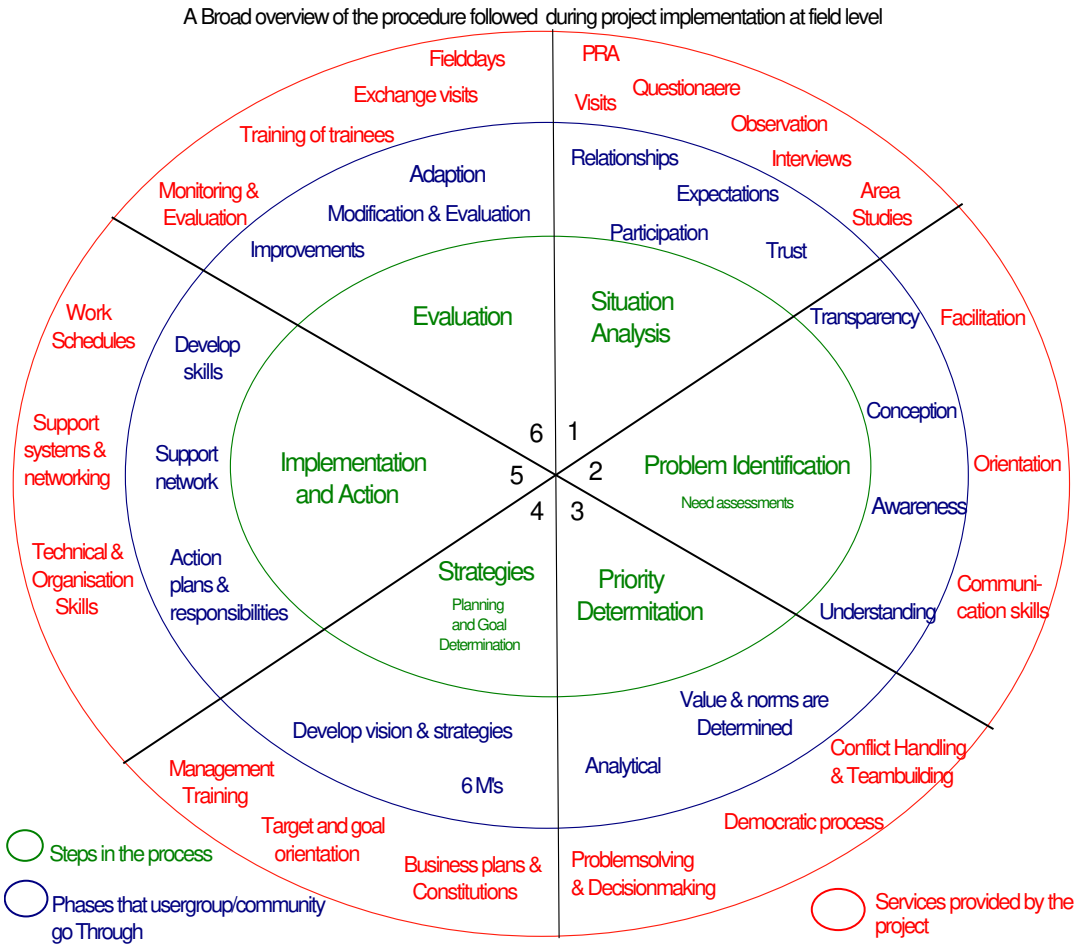
1.3 The Process of Community Mobilisation

The lack of community confidence in DWAF in particular, and governmental institutions in general, was a major challenge to CFPB. The Project attempted to 'open the door' for co-operation with communities initially through PRAs and through existing development initiatives. The process of mobilising interest and gaining the confidence of individuals, specific resource user-groups, larger community groups or communities to engage in community forestry activities has been time-consuming and has required an extensive number of visits and meetings with participants in field activities. The efforts needed in this respect to establish community forestry initiatives on-ground should not be underestimated. The CFPB recognises that the complexities of the Bushbuckridge area have added to that challenge.

In order to mobilise people, participatory planning and management is essential. It is necessary to build participation into every step of the implementation process to ensure ownership, understanding, transparency, awareness, sustainability and growth. The CPFB has attempted to facilitate and support processes of change rather than to pursue fixed and rigid targets. The challenge in facilitating a process is that perceptions and values change over time. New information becomes available and new patterns, relations or interests surface. To support development processes is, therefore, to learn to work with uncertainty, subjective perceptions and values, flexibility and openness, transparency and open communication.

The CFPB has attempted a flexible process responsive to participants' needs and their decisions. The steps it has followed in its approaches to implementation of field activities (pilot projects) described in Section 2 is illustrated in Figure 1. It involves Situation Analysis, Problem Identification, Prioritising, Strategy Development, Implementation, and Monitoring and Evaluation. These steps are dynamic but also depend on the level of intervention. Depending on the situation, the steps/phases can be combined or additional steps/phases added. The purpose of the diagram is not to be prescriptive or to suggest that it can be applied as a general model that will ensure progress or results, but to provide a guideline.

Figure 1.



STEP/PHASE 1: Making Contact / Situation Analysis

This step focuses on obtaining a holistic and clear picture of the systems in a community/ village/area, including the natural environment, the socio-economic and cultural contexts, population profiles, agricultural practices, households, physical resources, and institutions. Forming this picture is aided by a set of "tools" that include PRA techniques (such as mapping, ranking, time-lines, Venn diagrams and semi-structured interviews), observation, and area and research studies. Use of these tools should be flexible. The rationale underlying them is that residents interact with a facilitator/community officer to produce information so that they are able to assess and analyse their own community or village as they are the people most familiar with local conditions. This process enables them to establish ownership of information and potential outcomes. Indigenous knowledge and management systems are an appropriate starting point for identifying problems and solutions.

Trust, or the lack of it, is a real issue, particularly in the former homelands. A history of land dispossession and restricted access contributes to a mistrust of government officials. In Bushbuckridge ethnic-based conflict between the former neighbouring homelands of Gazankulu and Lebowa occurred in the early 1980s and adds to the complexity and dynamics to be dealt with. Emphasis on building trust between departments and communities and within groups is geared towards forming relationships, and developing problem-solving skills.

Participation brings information and ensures it is based on a common understanding of purpose, problems and solutions. People who participate in designing and deciding actions are more likely to understand their purpose, to take ownership and to implement them. The challenge of participation to government departments involves achieving horizontal participation across sectors and geographically and this needs to be complemented by vertical participation from national to grass root level within a department.

STEP/PHASE 2: Problem Identification

Based on information derived from the situation analysis, this step is concerned with understanding the range of problems people face in a particular context or community, and the relationships between different problems (including cause and effect). It is important to determine the real and felt needs of the community. Any intervention must be based on the problems and needs of people and not be used to impose an externally constructed and externally driven process. Group meetings, individual discussions, interviews, role-plays and other tools described above can be used to conduct the assessment.

People understand and can articulate their needs and propose solutions. People' indigenous knowledge and skills, when combined with outsiders' knowledge, accomplish what neither could do alone. The benefits of problem identification, to insiders, are: new perspectives on old problems; new ways to evaluate whether their efforts are worthwhile to continue; how to articulate their needs to outsiders and to better understand outsiders; and they can activate, control and own the information.

Facilitation assists in discussing or resolving issues. It structures discussions to maximise communication and the problem-solving abilities of the parties concerned. The facilitator does not make decisions but assists the parties to reach agreements or determine the course of action for making decisions. Effective communication is achieved when participants exchange information, reach agreements, change or strengthened values, impart knowledge, and can inform others.

The benefits of problem identification to outsiders are a clearer understanding of community needs, how better to meet these needs, constraints

faced by communities, the basis for future collaboration; and whether the project can address the needs and priorities of communities.

STEP/PHASE 3: Prioritising

During this step values and norms are established where community members recognise they are working towards mutual goals. The community learns how to handle conflict caused by differences in values and perceptions, lack of agreement on what should be done, resistance from those threatened by change, and uncertainty about the costs and benefits of alternatives. Two key areas to be dealt with are problem-solving – handling differences (be aware of the use, costs and benefits of power, rights and interests; your own style of handling conflict) - and decision-making – learning to take decisions according to priorities.

Through this the group analyses, judges, and explains to others the value of various options. Values are important because what people do depends on what they believe. The transition to sustainability requires changes in how people perceive each other, how they evaluate their needs and priorities, and how they behave. Consensus does not mean the absence of dissent: different values and perspectives are a fact of life. Nor does it mean the exclusion of minority concerns. Consensus means general agreement: a common understanding of which values are shared and how to behave when values conflict. The ultimate aim is to expand consensus to include all values necessary for sustainability and all interest groups. Projects are more likely to be successful because relevant, useful, valid and legitimate information is available to facilitate decision-making and mediate between conflicting goals and priorities.

Establishing a democratic mechanism that represents the diverse legitimate interests of communities should provide an opportunity for everybody to contribute, and not for powerful individuals to dominate peoples' decision-making.

Concentration on a few priority issues helps forge a unity of purpose among participants, gives focus to the strategy, and prevents it from becoming bogged down by trying to be too comprehensive. It is also easier to monitor and evaluate the strategy, and to keep it on track.

STEP/PHASE 4: Strategy Development - Planning and Goal setting

The focus in this step is developing a vision and strategies to achieve this goal. The process provides participants with a sense of purpose and activities.

Planning: As the saying goes, "if you fail to plan, you plan to fail". The purpose of planning is to develop a framework that can be successfully implemented. Planning is an interactive process that that moves towards a politically and socially accepted, technically feasible and interconnected set of activities and institutions. Planning guides the project with regard to the steps required to achieve results; who is responsible for certain activities; accountability; deadlines for activities; and, if possible, costs of different activities.

Goal setting: The goal is related to the problem the project seeks to address; it is the longer term desired solution or change. All stakeholders should accept the goal. Goals must be specific, clear, measurable in quantitative and qualitative terms (the latter is difficult), have indicators that are realistic, and is time bound.

The purpose of strategies is to mobilise and focus efforts to achieve sustainable development. Strategies provide the means to define choices, targets and standards; illuminate the ethical dimensions underlying choices and goals; identify and evaluate options for addressing priority issues; develop understanding and build consensus; and build capacity to handle complex and interrelated issues. It is easier to get cooperation when participants have the same goals. Later, linkages can be made with other interest groups to broaden the process.

Management refers to the decisions taken on a daily basis by people in their use of resources. It goes beyond descriptive knowledge to include the implementation of decisions and how this affects long-term goals and sustainability. The priorities given to each goal will change depending on the particular circumstances each group faces.

STEP/PHASE 5: Implementation (Action)

In this phase plans are transformed into action. People need room to learn through making mistakes. It is crucial that all members of the group or community adopt plans, participate, co-operate, and engage in effective utilisation of resources and capacity development. Supporting mechanisms that do not create dependency must be built in for long-term sustainability.

An effective way of building capacity is to take action on those aspects of a project to which participants are already committed. The resultant increased capacity should lead to enhanced self-reliance and equity. Actions are likely to be taken if priorities are clear, the actions planned are practical, the actors are identified, and the required resources are specified. The earlier and more directly participants feel the impact of actions, the more they will be committed to the process. Implementation feeds into, and is guided by, regular review and revision. The process of defining and transferring responsibilities, along with capacity development, takes time and needs to be viewed as an inherent part of implementation.

Implementation and capacity development will deepen and be expressed in many ways as different actors take up their roles and responsibilities. It is important to seek co-operation between different actors and, in so doing, establish an action network or core group and reach agreement defining co-operative actions and reinforcing the agreements. Implementation needs to be collaborative, involve interest groups, flexible, adaptive and transparent.

Building capacity is the central task. It requires developing individual and group perspectives, skills and organisational abilities. Capacity relates to ways of changing or strengthening societal values, knowledge, technologies and institutions. Capacitating individuals or communities involves not only technical skills, but also social, organisational, economic and institutional skills. Use of simple, low cost techniques enables accessibility and requires minimum external support.

STEP/PHASE 6: Evaluation

Monitoring and evaluation are essential for the success of any project. Evaluation is an overall look at the project to ascertain whether objectives remain relevant, implementation is efficient, and objectives are likely to be achieved. Monitoring ensures project implementation is on schedule, problems are overcome, inputs are efficiently used and outputs are desirable. Monitoring and evaluation assist in the production of better information to guide adaptive management. The emphasis is on monitoring and evaluating the project, not the people. Negative results are opportunities, and positive results are motivators.

Monitoring and evaluation is an essential part of good management. Useful monitoring and evaluation improves decision-making and facilitates action. Emphasis is on the way things are done rather than what has been done and on modifying and influencing future performance.
Exchange visits can be used effectively as an extension and evaluation tool. This can be a key to rapid adoption of improved traditional or alternative practices. Not only are some local innovations more effective than those introduced by professional outsiders, but people are more likely to listen to other local people than to external messages.

1.4 The Process of Adaptive Learning in Project Implementation

Since its inception, the CFPB has, through a process of adaptive learning, developed various approaches to achieve the Project objectives. This learning process involves a continuous cycle of action, reflection, modification of action, and implementation of modified action to develop both capacity and an understanding of resource use and management, as well as the implementation of approaches aimed at improved natural resource use and management. Strategies are not abandoned: rather the best aspects are adopted and taken forward.

The process involved in developing these approaches is described below and can be illustrated as follows:

Figure 2.

Within this action reflection cycle, the CFPB's initial strategy was to select six 'communities', and undertake PRA exercises and community planning workshops to determine needs, priorities and strategies that would guide the Project in developing an implementation plan for each of the areas. This approach aimed to ensure broad community participation, raise the awareness and understanding of the CFPB and of the 'community', address the needs and preferences of the 'community', and inform the Project of the general status of the target area.

However, the following problems were encountered within this broad-based approach: it was difficult to develop a tangible benefits strategy and to meet everyone's needs; assessing individual understanding and commitment was problematic; community members experienced difficulties in selecting people for various activities identified by participants -such as training, establishing a community garden and nursery, tree planting and fence-making; and community leaders had hidden agendas and sought to control processes and benefits.
After assessing this strategy the CFPB shifted to working with specific resource user groups (for example, people involved in the medicinal plant trade) rather than the broader 'community'. The benefits of this approach are that it is demand driven; group members are more able to participate in developing strategies and plans to meet their needs; the groups have clear objectives and goals; tangible benefits related to natural resources are obvious; there are no critical conflicts; and the members develop a more complex understanding of the role of natural resources, the benefits they derive from the resources, and the broader issues linked to resource depletion. The main drawback to this approach is that if the user-group is seen to be successful, the potential for conflict between a group and the broader community is heightened (this may involve attempts to damage the group's initiative in one way or another - referred to as 'jealousy' or *mona*). Another issue is that in the initial stages of the community forestry activity resource user groups work separately, despite the fact that they impact on one another because they compete for the same resources. However, as the groups develop capacity, processes to deal with the broader issues linked to natural resource use, such as institutional arrangements, are introduced.

This resource user group approach was then assessed, keeping the CFPB's earlier 'community' approach in mind. The experience gained through the two approaches has led to an improved understanding of natural resource use and of 'the community': that resource users are not distinct and separate groups and that a community is neither an amorphous nor an organic whole.

From this new understanding two refined approaches arose which the CFPB has, for clarification, used the terms 'user-group approach' and 'area-based approach' to distinguish between. The two approaches are designed to be flexible and interchangeable to suit different and/or changing contexts. Both aim to achieve improved natural resource use and management; the difference is the route taken to achieve this objective. While the two approaches are not separate and distinct but overlapping and interrelated, this document focuses on the user-group approach.

The CFPB's community forestry activities, as described in Section 2, contribute to urban and rural greening, are demand-driven and emphasise social, economic and ecological benefits to enhance natural resource use and management.

2. COMMUNITY FORESTRY PROJECTS

2.1 Initial Approach to Community Forestry Activities

When the CFPB began, experience in participatory approaches to community forestry was limited. The CFPB thus held a two-week PRA training workshop attended by Project staff and field workers from the Northern Province Department of Agriculture (NPDA) and local NGOs. During the early stages of the CFPB the initiation and implementation of community forestry activities in the Bushbuckridge region were based on PRAs. The purposes for undertaking PRAs were twofold. Firstly, community forestry extension staff would gain an understanding of participation and experience in working in a participatory way. Secondly, the PRAs would help ensure broad participation by community residents and that community forestry activities were based on the needs identified by the participants.

PRAs were carried out in Wales, Cunning Moor B and Dumphries C, three of the six areas that had initially been identified as focus areas. Selection of the six areas, in consultation with the CFPB Project Steering Committee (PSC), was based on the following criteria: water availability, interest by community members, proposals for community forestry activities and relevance of objectives, sustainability, potential for income generation, and geographical equity.

Main Lessons Learnt
The fast, broad adoption of PRA has created some problems around routinised application of participatory techniques. PRA follows no rigid formulae. Practitioners must experiment with, invent, test, adopt, and adapt methods and techniques to improve and strengthen PRA. The use of participatory methods does not guarantee participation and empowerment, and to acquire facilitation and communication skills and to apply them is a challenge. PRA may require practice, as well as long-term commitments, depending on the situation. Care must be taken to ensure community members' expectations remain realistic.

2.1.1 Community Gardens

Target Group
Selected community groups consisting mainly of women

Objectives and Justification

ž The application of greening strategies through agro-forestry technologies and soil erosion prevention and control
ž The introduction of mixed farming and a tree-centred approach to agriculture
ž Raising awareness of natural resource depletion and the need for sustainable natural resource use and management
ž Supplementing household income and providing food for households
Community forestry activities that complement community gardens are introduced (for example, live fencing, soil improvement, erosion control and prevention, parklands, and community-based nurseries). The implementation of these activities raises awareness of natural resource issues. This tree-centred approach is a shift away from conventional agricultural practices: instead of clearing the land, people are encouraged to retain trees in their fields and woodlands (the parklands 'model'); trees are

reintroduced into the farming system; and the concept of mixed farming instead monoculture is promoted. The community-based gardens provide food for families and surplus produce is sold to supplement household incomes.

PRAs were carried out in only three of the six focus areas because, after these three, the CFPB assessed this broad community strategy and decided to alter its approach. Following this process of assessment and refining, the CFPB's involvement in community gardens was:

- In response to requests for assistance from community groups who already had gardens, and
- Where community groups requested assistance with starting a nursery and thereafter the group also developed a community garden.

Through the community gardens the CFPB introduced agro-forestry technologies – for instance, live fencing/boundary planting and soil improvement by planting appropriate indigenous tree species, and other community forestry 'models', such as soil erosion control and prevention, parklands (where trees are retained in the farming system); and community-based nurseries.

Description of the Activities

Following discussions, trees provided by the CFPB for various purposes are planted in and around the gardens. The CFPB also facilitates field days to other community forestry projects, both within the Bushbuckridge area and further afield, so that members can exchange ideas and learn from each other. At least five members from each of the community gardens attend a training workshop on business and management skills development. The garden members are also trained in plant propagation, cultivation and conservation by a community-based trainer in the CFPB's Vukuzenzele medicinal plant garden and nursery and at the Phindulwandle training centre (developed with support from the CFPB), near Malelane. The CFPB, in general, gives limited support to the community gardens because of the strong agricultural focus.

History of the Activities

There are 11 community gardens covering a total area of about 16ha and with a total membership of about 140 people. Each of these pilot projects is described below:

Dumphries C

Dumphries C was the first community the CFPB started working with to introduce community forestry initiatives. In March 1997 a PRA was carried out in Dumphries C as part of the training workshop for extension staff in the D:CF, the NPDA and local NGOs. The concepts of community forestry and participatory approaches were new to the department and it was felt that Dumphries C was the ideal place to start because: a relationship had already been established between the CFPB and the residents; it is a small community of about 950 residents and therefore more manageable for extension officers exposed to community forestry and new approaches for the first time; and during the PRA community members had expressed interest in initiating various community forestry activities. Work with Dumphries C residents started in mid-1997. The community forestry activities identified by residents were: a community garden incorporating agro-forestry techniques; a nursery; tree planting; and improved utilisation of marula trees.

Discussions were held to identify which tree species people required and where they should be planted. It was decided that fruit trees (citrus, litchi, and avocado) should be planted at homesteads, indigenous trees with medicinal and fruit value at Dumphries C's clinic, and indigenous species with medicinal value at the homes of traditional healers.

About 0,8ha of land near a stream was identified for a community garden. Participation in the community garden was open to all households. To fence the area, a group was trained in fence-making and in business management by Mhala Development Centre (MDC – a rural development initiative under the auspices of the Mineworkers Development Agency and National Union of Mineworkers). A fence was then erected, and live fencing planted along this boundary. The community garden committee kept a register of those people who participated in these activities and only those who attended regularly were selected as members of the garden.

After the fencing was completed the fence-making group elected to separate from the community garden group and set up their own business, purchasing a fencing machine through a loan from the CFPB. However, the fence-makers could also be part of the community garden should they choose to be.

The garden was sub-divided into 30 plots – one for each member, most of whom were women. Membership of the garden fluctuates and is currently around 20. However, villagers have since developed additional gardens adjacent to the community garden.

Most of the trees were retained in the community garden, but some were removed. Live fencing was planted around the boundaries of the garden, while trees to improve soil fertility were planted in the garden. Extension officers from the Department of Environment and Tourism (DEAT), Mpumalanga, trained community garden members in permaculture methods.

While the garden is near a stream, carrying water is hard work. In an attempt to deal with this problem, the CFPB experimented with a hand pump but the gradient was too steep which made pumping water more difficult than carrying it in buckets. The water issue has resulted in only a few people growing vegetables in the winter months. The garden is better utilised in the summer months when maize and groundnuts are grown.

The group also constructed a small nursery in the community garden to propagate tree and vegetable seedlings. The nursery in the Dumphries C community garden did not succeed, with the water issue and the theft of the shadecloth being cited as reasons for the nursery not functioning. Another contributing factor is the issue of markets for seedlings. Trade within the village is limited because people are poor, while access to consumers outside Dumphries C is limited because the village, located on the border of the Sabie Sand Game Reserve, is far from other communities and the main road to other settlements. This factor also affects the village's fence-making group, which is finding some customers but is not doing as well as it could.

In terms of survival rates, about 95% of the trees planted at people's homes have survived while about 60% of those planted at the clinic and at the community garden are growing. The trees were provided by the CFPB in order to establish demonstration sites and encourage a tree-centred approach in agricultural practice and to relieve the pressure on the woodlands.

Cunning Moor B

A PRA was also carried out with Cunning Moor B community members, and one of the needs identified by participants was a community garden incorporating a community-based nursery. Community forestry activities implemented at the 2,4ha site include planting live fencing along the boundaries and a fence-making project.

The nursery was not established because the nearby stream only flows in summer and thus there would be no permanent supply of water for the seedlings. Participants had said they could get water, but it emerged that this would involve them illegally tapping into the pipes supplying the area.

During workshops with the group the parkland approach was discussed and, as a result, no trees were cleared from the garden.

Like Dumphries C, the fence-making project is a by-product of developing the community garden. Ten people were selected by members of the community garden to be trained to make diamond-mesh fencing and in business management by the Dumphries C fence-making group and MDC. The rest of the group was responsible for erecting the fence. The fence-making team, which consists of two men and eight women, has, since then, been earning an income by making fences for local residents in the Bushbuckridge area. The fence-makers are successful because they are well situated along a busy road near large villages, because they actively seek business, because there is a demand for fencing, and because the group leader is a highly motivated person.

This division of labour, however, had negative consequences - it created conflict that resulted in the fence-makers initially not being allowed to be a part of the community garden. The reason for the tension was a power struggle, with one man in the fence-erecting group trying to take control of the fence-making project because it generated an immediate cash income. The women aligned themselves to one or other of the men involved in the struggle. The CFPB facilitated discussions aimed at resolving the conflict between the two factions within the community garden, but it was only resolved when the man in the fence-erecting group left the project.

The community garden is being used to cultivate crops, such as maize, groundnuts and cassava. A few members are growing a small quantity of vegetables. Participants were trained in plant propagation, cultivation and conservation and attended a workshop on developing business and management skills through the Bushbuckridge Local Business Service Centre (BLBSC).

There are currently 29 people (five men and 24 women) in the Cunning Moor B project. Their objectives are to "create jobs and business opportunities to fight poverty; for our project to be self-sustaining; and to take care of the environment because we depend on natural resources".

During an evaluation of the CFPB in March 2001, members of the project said they had gained skills and knowledge through formal training, their experience through implementing the various activities, discussions facilitated by the CFPB (for example, on

the community forestry activities and problem solving as well as the PRA), and through field visits to other community forestry projects where they were able to share their experiences and explore alternative methods and ideas. The Cunning Moor B group identified the need to diversify activities and further appropriate training to support this. Limited access to funding and water, as well as limited support from government departments and no co-ordination between these departments, were cited as factors inhibiting them from achieving their objectives.

Hluvukani

A group of women who run Nkwenyani day care centre and have a community garden to provide food for the children approached the CFPB for assistance in urban/rural greening. Live fencing was planted along the boundaries of their garden site. Other trees were planted in the area to provide shade, beautify the area and create a better living environment, improve soil fertility in the garden, introduce species which no longer occur in the area, and to provide indigenous fruit to supplement the children's diet. The CFPB also assisted the group in establishing a nursery. The members consequently worked with the CFPB during Arbor Week to plan and implement tree planting activities in the village. Training provided included business management and plant propagation, cultivation and conservation, and exchange visits to other community forestry projects were also undertaken.

The group, chaired by a highly motivated woman who works for the Department of Health and Welfare, has a membership of 62 (two men and 60 women). The group's objective is to diversify their activities to generate a range of goods for household consumption, to sell the surplus to increase household incomes, and to improve the use of natural resources because deterioration in the resource base has a negative impact on their livelihoods.

They have realised that the nursery alone cannot support all the members, and so have started other activities at the site, dividing the responsibilities between them. The nursery group consists of eight people. The Hluvukani group received an interest free loan from the Project to purchase an initial stock of seedlings. The nursery currently sells fruit trees, but the group would like to introduce indigenous trees. Seven people work in the 0,8ha community garden. The vegetables, maize and groundnuts grown are sufficient for own consumption, while any surpluses are sold to local residents.

With the assistance of the Department of Health and Welfare, funding was secured to start poultry farming, purchase sewing machines and buy two fence-making machines. The poultry group consists of eight people and currently has 30 egg-laying chickens, while the sewing group (18 people) is making and selling dresses, school clothes, curtains and banners. The fence-making project supports 11 people. A portion of the profits from the various activities of the Hluvukani group is reinvested in order to expand these projects, while the remainder goes to the group members.

The group members said during the March 2001 evaluation of the CFPB that they have developed skills and competencies by participating in the implementation of community forestry activities, as well as through formal training and by visiting other projects. This has led to greater confidence and hope that they can "stand on our own feet" and "make a difference" in their community. They, however, emphasised the need for further training to improve their skills (for example, permaculture, business management, product development and marketing).

With regard to environmental issues, group members have expressed that their understanding has increased and have identified measures to help ensure sustainable natural resource use: propagating rare indigenous species and species in high demand (particularly those with medicinal value), improved harvesting techniques to ensure sustainable utilisation of woodland resources, a planting programme around Hluvukani, reintroducing and improving laws and customs linked to natural resources, and discussions with institutions regarding resource use.

The group identified the following factors that would assist in ensuring their success: a reliable water supply and an integrated or team approach from departments (namely the Water Affairs section of DWAF and the departments of Agriculture and Environment.

Brooklyn

This 2,3ha garden was started with support from the Department of Agriculture. There was no tree component in the garden and the CFPB was approached for assistance. After discussions with the group, trees for live fencing and to provide shade were identified and planted in the garden. The members also participated in training workshops and field day exchange visits. The area of the garden was also extended to 4,5ha to better meet the needs of the 40 members (five men and 35 women). An annual stream flows through the garden, reducing reliance on rainfall. The group has constructed a gravity fed irrigation system from the stream and surplus water is channeled back into the stream. The community garden is thus able to produce summer and winter crops in quantities sufficient for household consumption with surplus for selling to local residents.

Alexandria
This 2,1ha garden was started with the involvement of the Department of Agriculture. When the 21 group members experienced problems with cattle entering their garden and sheet erosion in one section, they asked the Department of Agriculture to assist them, but it was unable to do so. The group then approached the CFPB for assistance. The agro-forestry techniques introduced included a hedge of vetiver to combat the sheet erosion, live fencing and droppers to repair the existing fence, and nitrogen-fixing trees in the garden to improve soil fertility. These measures are working and the group would like to introduce additional trees into their garden.

Maotole
Members of the Maotole community garden were initially part of the Green Valley community-based nursery and garden (see Section 2.1.2). However, six of the women lived in an area adjacent to Green Valley and found the distance too far for them to walk there every day. They requested support from the CFPB to start a community garden in their own area. A small garden of 0,9ha was established to grow food. A tree component was introduced – for live fencing, shade and indigenous fruit. The garden is producing vegetables for the six households but is not producing a surplus. Water for the garden is a problem because a dam close to the garden was washed away during the February 2000 floods.

Vukuzenzele
This is a medicinal plant nursery and garden run by traditional healers who, while they specialise in medicinal plants, also grow vegetables and crops and have plants for other purposes in their nursery. Vukuzenzele is discussed in Section 2.2.2.

Main Lessons Learnt
Incorporating trees into the farming system greatly enhances soil fertility. The community gardens have shown that crop yields under these trees are generally higher than in the open field because of microsite enrichment from tree litter and other tree products.

An integrated approach, where the different government departments co-operate with each other, work together and co-ordinate their activities, is necessary for the benefits of community gardens to be realised. Limited capacity, resources and the willingness to work together seem to prevent this from happening.

Through implementing these community forestry activities and through the discussions that accompany these processes, people become aware of natural resource depletion, and the impact of this on their livelihoods. From awareness follows exploration of the issues linked to, and causes of, this problem, and actions to mitigate it.

Introducing new community forestry activities needs the consistent involvement of the external agency. A long-term commitment is necessary because trees take time to establish themselves and only then can people see whether the tree component serves its function and which species are most appropriate. Commitment and consistency is also necessary to ensure capacity is developed and trust is built – these aspects, like trees, take time and attention.

Community gardens need a reliable source of water if they are to expand and become more productive, rather than relying on seasonal rains. However, even if the garden is located near a stream, members find it difficult to carry water up to their plots. If the water supply is above the garden then members can more easily water their plants using a simple gravity-fed system.

Water also affects the development and success of nurseries in community gardens, as shown in the Cunning Moor B example.

Another factor hindering nurseries in community gardens is that while there might be a desire to raise seedlings, this activity is adversely affected by the issues of accessibility and buying power in the Bushbuckridge area, as illustrated by the experience in Dumphries C.

Community gardens tend to have a fairly large number of members in relation to the size of the garden. While the gardens provide food for households, diversification will generate more benefits for the group members. The introduction of other activities builds in a safety net in terms of sustainable livelihoods, since reliance on one activity or crop increases people's vulnerability.

Diversification requires, among other things, additional training and capacity development, product development, access to reliable markets, and access to credit or funding.

The presence of a motivated member in the group who is prepared to seek out solutions to problems enhances the likelihood of initiatives succeeding. For example, in Dumphries C, no member of the garden emerged as a 'leader' or entrepreneur to take up the opportunities opened up by the CFPB's involvement. In fact, once the CFPB reduced its involvement in Dumphries C, life settled back into its normal rhythm with little difference having been made. This contrasts with experiences in Hluvukani and Cunning Moor B.

All the community gardens are divided up into plots and these are allocated to individuals. This illustrates that the understanding of 'community' is flexible and that one cannot assume it implies a close-knit group that co-operates and works together. Rather, it is a collection of individuals who work together when it is to their advantage to do so. Thus members of a community group tend to satisfy their own needs first, but will work collectively if this is required. External agencies should recognise that community groups are made up of individuals each with their own needs and not see them as uniform, homogeneous and equal.

One group consists entirely of women (Green Valley), most of whom are older. The other groups have one or two men as members. In all but one instance (Hluvukani) the men take up the leadership position. Women are socially disadvantaged. In Cunning Moor B the women chose to support the men heading up the two 'factions' rather than challenging the men. The men may have been elected to these positions by the women, but their having been elected is almost irrelevant as it is unlikely a woman would have felt able to take up a leadership position. The explanation given for this is "it is in our culture". The reality is women have a low status in this society. As a consequence, they lack the confidence to take a leadership role, the experience to negotiate or deal with the outside world and institutions, and would find it difficult to think of stepping beyond their culturally determined position and role in society. The woman leader at Hluvukani is employed by the Department of Health and Welfare and, in addition to being highly effective and motivated, is able to access resources. This gives her an advantage over the men in the group. Given the fact that most women are socially disadvantaged, it thus appears to be advantageous to have a couple of men as members of these groups. This is a short-term and expedient approach as the more desirable situation is to develop women's capacity and confidence so that they can operate confidently and effectively in a male dominated society.

Conclusions

Community gardens are successful vehicles for introducing a tree-centred approach to agricultural activities, involving both keeping existing trees within the system and planting trees into the system (live fencing, improving soil fertility, reducing evaporation and water run-off, reducing the loss of soil, windbreaks, shade, fodder, food, etc).

The introduction of a range of activities at the community garden provides a safety net for the participants.

A co-ordinated effort by different service providers will enhance opportunities for members of the community gardens.

Issues around groups – size, gender, individual versus collective needs – and organisational matters (responsibilities, financial arrangements) should be considered as part of the development process.

2.1.2 Community-based Nurseries

Target Group

Interested groups in areas around Bushbuckridge where the potential for markets exists.

Objectives and Justification

ž Provision of an inexpensive and accessible source of seedlings for food, fodder, medicine, timber and beautification of homesteads for people in rural and semi-urban areas in the Bushbuckridge area.
ž Creation of income generating activities and small business enterprises to contribute to sustainable livelihood systems.
ž Nurseries can serve as information centres while trained participants can act as community-based trainers.

When the CFPB began in 1996/7 there were no nurseries in the Bushbuckridge area. The nearest market outlets for seedlings are in the larger towns of Hazyview, Hoedspruit, White River and Nelspruit. There is an obvious demand for trees – fruit trees in particular – but difficulty in transporting seedlings from these former 'white' areas makes these nurseries inaccessible to the majority of the Bushbuckridge population. Encouraging the planting of trees around homesteads is an important step towards creating a culture of establishing a 'greener' environment and is also a cornerstone in a more diverse rural/urban greening initiative.

Description of the Activities

Sites close to a reliable source of water and transport routes are selected for establishing nurseries. Assistance is provided in setting up the nursery and with training in horticultural skills, maintenance of plants and the nursery, marketing and stock-taking. Initial inputs are physical structures, nursery material, sign boards to the nurseries, pamphlets, and stocks of marketable seedlings. Thereafter, a start-up interest free loan to purchase seedling stock is made available through the CFPB's Tree Fund.

History of the Activities

Seven community-based nurseries have been started – at Ga-Joseffa, Cork, Green Valley, Casteel, Dwarsloop, Hluvukani and Thulamahashe (Vukuzenzele) – with a total of 39 members. Simple nursery structures were constructed using shadecloth and eucalyptus poles.

Ga-Joseffa

The nursery is situated near the main road between the towns of Bushbuckridge and Acornhoek. Water is available from a dam about 1km below the nursery and from a nearby house. Fruit tree seedlings to be sold to local residents were acquired by the nursery through the CFPB's start-up loan. Additional seedling stock was purchased with a portion of the profits. Members were trained in plant propagation and cultivation and business management.

The six members, all women, also established a community garden to grow vegetables. Live fencing was planted around the area. The February 2000 floods caused erosion damage to the lower portion of the site. During the rehabilitation of the area, project participants were trained in soil erosion control using low cost low technology methods, including the use of plants.

Youths stole the shadecloth, cut it into portions and sold these to local residents. They also stole a portion of the fencing. The area's police forum (composed of local residents) sentenced the youths to community service. The nursery was reconstructed using sisal poles from the Department of Agriculture's abandoned sisal fields and the fence was repaired with assistance from the CFPB. This alternative method of constructing a nursery works well technically.

Currently, there are only two people involved in the Ga-Joseffa project. The nursery is not being utilised, either for the sale of tree seedlings or to propagate tree and vegetable seedlings, despite it being well located and despite continuous inputs from community forestry extension officers. The 0,6ha garden is, however, being used by the two remaining members to cultivate maize and groundnuts.

A number of problems have contributed to this situation, the main one being conflict between members caused by the chairperson not communicating with or consulting the other members. This lack of ability to act as a leader included her not being willing to share benefits with other project participants. A lack of clarity over responsibilities and financial issues was also part of the problem. In addition, when the idea of starting a nursery was discussed, people's expectations were high but cash returns were regarded as too low for the effort required: the small profit (after repaying the loan) was shared between six people and work in the project is time consuming, competing with and adding to the women's already heavy workload.

Cork

In the early 1990s, prior to the start of the CFPB, DWAF was approached by the Department of Agriculture for assistance in starting a nursery in the southern portion of Bushbuckridge, similar to the nursery in Thulamahashe in the centre of Bushbuckridge. The Cork nursery was closed post 1994 when the Agricultural Department was restructuring, transferring staff and scaling down support to small-scale orchard farmers.

In 1998 a resident in the Cork area approached the CFPB and expressed interest in taking over the nursery as he had previously worked with fruit trees. This was discussed with the Department of Agriculture and the nursery structure was transferred to the family's homestead. The main purpose of the nursery was to provide seedlings to 20 smallscale fruit farmers in that region. The CFPB provided the man and his family members, who also work in the nursery, with an initial stock of 30 grafted fruit trees and an interest free loan to purchase additional stock.

The nursery is struggling because it is competing with Lisbon, a large estate in the area that can sell fruit trees at a lower price than the community-based nursery. The CFPB has suggested the introduction of other products to the nursery, for example, vegetable seedlings for the winter months and other plants that will meet community needs, and that the nursery owner actively markets his products. However, he is showing a lack of enthusiasm and motivation to keep the nursery functioning, possibly because he does not feel the returns would be worth the effort.

Green Valley

Members of a 1,8ha community garden, situated about 5km off the main road to Acornhoek, approached the CFPB for assistance. There were no trees in and around the community garden. Water is supplied from a stream at the lower end of the garden.

After discussions the community forestry activities introduced to the Green Valley site were live fencing, planting trees within the garden to improve soil fertility and reduce erosion, an indigenous fruit tree orchard, and a community-based nursery. Training included workshops in plant propagation, cultivation and conservation, and business management. Members of the project also participated in exchange visits to other community forestry projects.

The nursery structure was erected adjacent to the garden near the homestead of one of the members to discourage theft and to ensure the seedlings were watered. An initial stock of avocado, litchi, orange and mango seedlings were supplied and additional stocks were bought through the CFPB's interest free loan scheme.

The shadecloth was stolen and the CFPB proposed that it be replaced with locally available natural resources - thatch grass that the women would collect and *latte* (thin eucalyptus poles) provided by the CFPB. The purpose of this approach is to discourage theft, introduce the concept of constructing nurseries from low cost or freely available products, and test whether these structures function well as nurseries.

For a number of reasons, the nursery is currently not being utilised. While the nursery is surrounded by a large number of households, they are poor and trees are low on their list of priorities. Coupled with this is the fact the nursery is far from the main road and thus does not attract passing trade. Furthermore, the sale of trees drops off in the winter months. Finally, all the members expected to derive an income from the nursery, but turnover is too small for such a large number of people.

In terms of the other community forestry activities, most of the indigenous fruit trees planted in one section of the garden died because the soil became water-logged during the heavy rains in February 2000. Only those trees able to grow in wet conditions and heavy soils are surviving. The garden is on slopes that channel water into an area that was probably a wetland before it was turned into a community garden.

Most of the live fencing is growing, except for trees near the indigenous fruit tree orchard. A variety of vegetables are grown in the garden. When members experienced difficulties with this activity, the CFPB located the relevant agricultural extension officer and introduced him to the group. Support from this quarter was sporadic, resulting in the community foresters having to advise and assist the group with vegetable production. The vegetables and other crops grown in the community garden are adequate for household consumption. The nitrogen-fixing trees are also growing well.

When the CFPB became involved with the community garden, the membership, comprising mostly older women in female-headed households, grew to 32 people. Over a period of time this number dropped and now fluctuates between 15 and 25.

Despite these problems there have been some positive results. Awareness of natural resource issues has been raised and the group was better able to identify their problems and propose solutions. For example, they see a need to improve natural resource and land use by "rediscovering" indigenous knowledge, extending tree planting and other agro-forestry technologies to their homes, and cultivating medicinal plants. They also regard rural development - the implementation of a wide range of programmes involving diverse government departments and tribal authorities - as essential to deal with poverty and natural resource depletion. However, the group requires constant contact and support from the CFPB. They find it difficult to act on their own initiative and their mobility

and ability to operate in the broader world is limited. Some reasons for this may be because the members are all women, they are older, and their literacy levels are generally low. Thus their confidence to take action is limited not only by few skills but also by cultural factors.

Casteel

The Casteel project, which received its initial funding from Japanese donors and from a local NGO, EcoLink, has a poultry farm, a small irrigation system for vegetable production, two pre-fabricated structures for an office and storeroom, and a nursery structure. The site is situated on fairly steep slopes near a stream. The February 2000 floods damaged the irrigation system and destroyed the poultry farm. The Project only recently started working with the Casteel group, which consists of two men and 18 women, after they sent a letter to the Minister of Water Affairs and Forestry requesting assistance. The CFPB visited the Casteel site and identified four areas in which it could provide support: training in plant propagation and cultivation; an interest-free loan to purchase fruit tree seedlings; the introduction of agro-forestry systems, including erosion control and prevention; and assistance in the restoration of a 2ha woodlot adjacent to the Casteel project (including drawing up management plans and training in planting, pruning and harvesting according to market needs).

Dwarsloop

After discussions with members of the local branch of the African National Congress (ANC) Women's League, a nursery structure was constructed in the town of Dwarsloop, which is situated at the junction of two main roads in Bushbuckridge. The advantages of establishing a nursery there were access to water; a disused building that could be used for storage and other activities; security as the area was already fenced off; and good market potential, with both passing trade and consumers in a relatively wealthy residential area. After attending a training workshop the nine nursery members propagated their own seedlings for live fencing.

Despite these advantages and initial promise shown by the group, the nursery no longer exists. One problem arose when the shadecloth was stolen, but the major cause of the nursery's collapse was financial difficulties. The local municipality said the group would have to pay rates and taxes. This was beyond the means of the group. In addition there were organisational problems. For equity reasons the Women's League decided that the members should come from three different areas around Dwarsloop (three women from each area). The members found the distance from each other and from the nursery affected their ability to plan and communicate with each other, and were unable to be at the nursery every day.

Main Lessons Learnt

Nurseries can act as catalysts to initiate a range of activities - some directly linked to community forestry and some which contribute more broadly to rural development.

Awareness of broader natural resource use problems and issues and the need for improved resource management is also raised. This process takes place over a period of time through discussions, planning sessions, workshops and exchange visits between the different projects.

Nurseries constructed from different natural resources have been tested and proved to be effective. This reduces construction costs and the threat of theft.

A reliable water source is essential.

Profits, after investment in seedling stock and other equipment, can contribute to the incomes of poor households. People want to buy tree seedlings for a variety of reasons, including the beautification of their home gardens, for medicinal purposes, for food, and sometimes because people realise the indigenous trees they remember from their youth no longer occur in the area or are greatly reduced in number.

However, one has to be realistic about the likelihood of establishing a successful community-based nursery in a poor rural community. Various factors limit a nursery's potential cash income. In an area where household incomes are low, spending money on trees comes after people have paid for other essentials such as food, clothing and school fees. Tree seedling sales drop back substantially during the dry winter months, resulting in seasonal cash flow problems. Despite nurseries being located near roads, transporting trees is difficult for consumers who do not own a vehicle as they either have to walk or use taxis.

The ideal size of a nursery group is three to four people. At the start a large group of people express interest and participate in the process of establishing a nursery in the hope of gaining benefits. People's expectations are high, even though care is taken not to

raise these. Profits, after investment in stock and equipment, are shared between the nursery group members and the larger the group the lower the income each member earns. As returns from a nursery are low and slow, interest and participation in the project drops.

It is essential that nursery members initiate a range of activities to create a range of goods for immediate consumption by their own households or to sell to generate additional income. This spreading of the security net, or diversification, is a necessary strategy for survival. Even in wealthier urban areas where conditions are more conducive to establishing a nursery, it takes about four years for a business to successfully establish itself – and these have to diversify their activities by starting food outlets, offering landscaping services, etc.

The CFPB's experience with community-based nurseries in Bushbuckridge has also shown that other activities at the nurseries are required to supplement incomes during the winter months when tree seedling sales are low.

For the nurseries to be financially viable, the propagation of seedlings is required, but it takes time for the seedlings to grow large enough to be sold. The purpose of the CFPB's start-up stock and interest free loan was to assist in bridging this gap.

Organisational development (dealing with group dynamics and gender problems, developing skills like planning and management, clarifying roles and responsibilities, systems for managing finances, etc) is a necessary part of capacity development among nursery groups.

Most nursery members are women. They are socially disadvantaged and they already have a heavy workload – and this affects the management of nurseries.

Creating firebelts by cutting the grass or burning a strip about 2m wide around community gardens helps prevent losses, such as that occurred at the Green Valley garden. *Skoffel* belts (where the vegetation is removed) are not advisable as this contributes to soil erosion.

Conclusions
A feasibility assessment should be carried out before any nursery initiative is started to ensure that reliable markets are available. Cash returns from nurseries are limited in poor rural areas. In addition, a nursery cannot support a large number of people.

Other income generating activities should be developed in addition to the nursery.

Nurseries constructed from low cost, available materials work well with regard to light and shelter. The likelihood of theft is also reduced.

2.1.3 Live Fencing / Hedges

Target Group

Small-scale farmers, community gardens and other community forestry projects.

Objectives and Justification

ž A more permanent solution for the protection of fields, vegetable gardens and homesteads against livestock grazing.
ž Reduce the demand for indigenous poles and other dead-wood material used as fencing to decrease the pressure on the natural woodlands.
ž Depending on species planted, live fencing can act as a windbreak, reduce soil erosion, improve soil fertility, and provide food and fodder.
ž To test which species are most suited for live fencing in the Bushbuckridge area.

Large volumes of wood are cut in the woodlands for fencing around fields, gardens and kraals. However, this fencing provides only limited protection and needs to be replaced constantly after it has rotted, been eaten by termites or destroyed by veld fires. Woodlands are, in certain areas, so degraded that this traditional fencing practice is no longer a feasible option. and people have to collect indigenous poles in other areas by either going there themselves or paying an entrepreneur to harvest and transport the material. Barbed wire and other modern fencing structures may be the preferred alternative in circumstances such as these, but are too costly for most rural dwellers.

Description of the Activity

Species are selected based on discussions with the participants about the desired purposes and products of different species, including serving as a fence. A variety of indigenous species are planted at a distance of 0,75m apart along the boundaries of community-based gardens to provide examples of live fencing. Depending on the species, either seedlings or truncheons are used as planting material. Faster growing species are interspersed with slower growing ones. Growth and hedge formation is encouraged by coppicing faster growing species and inter-weaving lateral branches. Once the live fencing/hedge is established it is cut regularly to maintain the desired height and depth.

History of the Activity

The concept of live fencing as a barrier against livestock was introduced through participatory processes and discussions with members of the community gardens. The seedlings were provided free of charge by the CFPB as initial fences were used as a trial and to demonstrate the concept of live fencing, using multi-purpose trees, in order to reduce impact on the woodlands. The idea of using this material to propagate additional stock for their own purposes was also discussed with the groups.

Live fences have been planted at seven community gardens. The seedlings are watered on planting; no fertilisers are used; and weeds and grass are cleared once a year from around the plants.

A variety of species have been identified for live fencing but also have other uses (see Annex 3) and include the following: *Barleria rotundifolia*, *Canthium inerme*, *Cardiogyne africana*, *Carissa bispinosa*, *Carissa edulis*, *Carissa macrocarpa*, *Chaetacme aristata*, *Commiphora spp*, *Dalbergia melanoxylon*, *Dovyalis caffra*, *Gardenia spatulifolia*, *Oncoba spinosa*, *Tecomaria capensis*, *Xeromphis obovata*, and *Ziziphus mucronata*.

Most of the live fences were planted between one to three seasons ago and none have yet grown sufficiently to form an effective barrier. Overall, the survival rate of live fencing species is fairly high. For example, at the Dumphries C garden the survival rate is about 70%, and at the Vukuzenzele medicinal plant nursery and garden it is about 90%. Survival rates at each of the gardens fluctuate along the four boundaries, according to species planted, slope, and variations in soil and water. Only in one case were the seedlings watered again after they were planted.

Evaluations are required to assess which species are most suitable in terms of survival at this stage and later on as a hedge when the plants have grown. Visits are needed to make recommendations in terms of maintenance (pruning, weeding, and shaping).

Vetiver, planted to combat soil loss at Alexandria community garden, has formed a live fence/hedge, inadvertently preventing access to the eroded area and allowing it to recover. Vetiver is easy to establish, grows fast, is easy to multiply, and is not invasive.

Main Lessons Learnt

Live fencing should be planted only after good rains during the rainy season (November to February) as it is unrealistic to expect garden members to water the plants on a regular basis.

Site species matching would improve survival and growth rates. For example, at Green Valley certain species, such as *Oncoba spinosa* and *Carissa edulis*, did not survive because the soils are heavy and became water logged.

Financial costs would be cut if people cultivated seedlings, but this increases the time it takes to establish a live fence.

Truncheons from suitable species, such as *Erythrina lysistemon, Portulacaria afra, Carissa macrocarpa, Dovyalis caffra* and *Commiphora*, could also be used for live fencing. Examples of *Erythrina* and *Euphorbia* fences growing from truncheons do occur in the area, but were not replicated at community gardens. Using truncheons would cut the financial and time cost of establishing live fences.

Conclusions
Encouraging the concept of live fencing, particularly with multipurpose trees, promotes awareness of the value of trees to people's livelihoods.

The issue of protecting seedlings remains unresolved. Fencing – either using indigenous wood or wire fencing - is required to keep livestock out of a garden and protect the newly planted live fencing. The argument is circular. Most community groups cannot afford wire fencing while theft of fencing is also a problem. Using indigenous wood and thorny branches could be a solution. However, using this deadwood places a demand on the woodlands until the live fences are established. Further, in areas where the resource base is severely depleted, community members would have to harvest in other areas, putting pressure on these woodlands, and pay transportation costs.

2.1.4 Parklands

Target Group
Small-scale farmers and community members involved in community forestry projects.

Objectives and Justification

ž Soil erosion is reduced by protecting soil from the forces of wind and heavy rains and increasing water infiltration into the soil
ž Soil fertility is improved through litter deposited on top-soil and through increasing nitrogen fixing ability
ž Evaporation is reduced by up to 50% canopy shade

The rainfall pattern dominant in the region is characterised by heavy downpours, resulting in a great surface run-off and mechanical force exerted on the top-soil. Arable land without any vegetation cover, even where there is only a moderate slope, is prone to erosion. Maximising the water uptake by crops becomes critical in areas with low annual rainfall, high temperatures and dry spells during the rainy season. A limiting factor for crop production, besides an inadequate water supply, is the poor sandy soil found in the region. Chemical fertilisers are beyond the means of most rural subsistence farmers and organic fertiliser availability is not adequate. A decrease in tree cover adversely affects crops, as well as livestock owners as many of the palatable grasses grow best under trees.

Description of the Activity

The parklands model encourages a shift from an agricultural practice that involves removing natural vegetation to an approach where trees and other plants are retained within the farming system. Trees, particularly those with a non-aggressive root system, moderate shade and which offer community members other benefits, such as food, fodder and medicine, are left in community gardens and farmlands. These species include *Sclerocarya caffra, Trichilia emetica, Diospyros mespiliformis*, and *Faidherbia albida*. Planting of multi-purpose trees is also encouraged.

History of the Activity
The parklands approach has been implemented at all community gardens and nurseries, and with specific resource user groups, such as beekeepers and traditional healers.

At the Vukuzenzele traditional healers' garden trees were retained while others were planted into the system for medicinal purposes and to control soil erosion. However, species to improve soil fertility and reduce run-off have not yet been planted in the area where the members are cultivating various crops.

The beekeepers retained all trees on the site of the bee 'garden' and also planted species rich in nectar and pollen. At Cunningmoor B the community garden members kept the trees intact. Additional trees were not planted in the garden. At Dumphries C community garden some trees were cleared despite discussions on retaining them, and trees were later planted into the community garden.

Brooklyn, Alexandria, Green Valley and Maotole community gardens were started in areas where no trees remained. In these instances the nitrogen fixing *Faidherbia albida* was planted at each member's plot within the garden to improve soil fertility and to control erosion. A variety of other species were also planted for various purposes, such as shade and fruit.

Current support from the CFPB includes evaluation and monitoring, making recommendations to community groups, and continued efforts to create awareness and interest in incorporating trees into farming activities. Further support for the parklands model is necessary in order to continue to introduce a tree-centred approach in the agricultural system.

Main Lessons Learnt
It is difficult to counter the conventional agricultural extension message and practice of land clearing for crop production and to develop an integrated approach with other service providers, such as agricultural extension. In spite of much effort, it has not been possible to establish a solid level of cross-sectoral co-operation for the development of a sustainable and integrated approach to management of resources in farming systems.

Planting is best done during the rainy season, even though community members do tend to water these seedlings more often than they do the live fencing.

Site species matching is essential to ensure a high survival and growth rate.

Conclusions
Community members value trees that have been planted into the gardens, with groups requesting additional seedlings. Soil fertility, and thus crops and grazing, is improved through the retention or introduction of trees into the farming system. Tree litter enriches the soils, while shade reduces evaporation.

The conventional agricultural extension message of land clearing is particularly inappropriate in a region where most rural households survive by harvesting natural resources for immediate use (representing a savings on household incomes) or for trading (to supplement household incomes). Research indicates the value of natural resources to households is as important as crops, like maize, and cattle in terms of monetary value. Crops and vegetables cultivated largely on a subsistence basis play a valuable role to play in household survival strategies and utilising both natural resources and subsistence crops in a way that is sustainable increases the household's opportunities.

2.1.5. Soil Erosion Control and Prevention

Target Groups
Affected communities; schools through eco-clubs and youth clubs; community forestry projects.

Objectives and Justification

ž Arrest soil erosion and rehabilitate eroded areas to improve livelihoods.
ž Raise awareness of the factors leading to soil erosion and of mitigating measures for rehabilitation.
ž Train community groups and extension staff in the causes of soil erosion and methods to combat it
ž Develop low cost appropriate techniques of combating soil erosion

Unsustainable land use practices have resulted in tons of soil being eroded annually and carried downsteam where this results in siltation of dams and the destruction of the freshwater and marine environment. The large population concentrated in Bushbuckridge that is heavily dependent on natural resources has contributed to soil erosion through factors such as land clearing and overgrazing. Soil erosion has a negative impact on the livelihoods of rural communities as it reduces soil fertility.

Erosion rates are determined by land use. When the multi-storey tree canopy is undisturbed in savanna areas then erosion is low,

but in areas of shifting cultivation and deforestation the erosion rate is high and soil fertility is reduced.

Description of the Activities

Addressing the root problem of erosion is crucial to prevent the problem recurring. Rehabilitation is undertaken through various mitigating measures, such as building pathways, creating swales, and halting donga "creep". This is done through the use of low cost appropriate technology - for example, planting suitable trees, shrubs, vetiver and indigenous grasses; using old tyres and bundles of thatchgrass; and manual landscaping - to spread the flow of water and provide ground cover. Members of local NGOs, agricultural extension officers and community foresters are trained in soil erosion prevention and control – the causes of erosion and solutions using low cost, available resources. Community groups participate in on-the-job training with the community forestry extension officers during the rehabilitation of the erosion problem at their project site.

History of the Activities

Soil erosion prevention measures are undertaken with community forestry project groups by raising awareness through discussions of the need to enhance soil fertility for various activities – vegetables, crops, grazing - and through incorporating agroforestry technologies in the projects. Examples include the use of trees and plants to hold the soil, the use of compost and manure and nitrogen-fixing plants to increase soil fertility, and encouraging correct contouring to control water flow and soil loss.

Soil erosion control initiatives have been implemented at a number of project sites. Community members and the CFPB staff worked together in doing the rehabilitation work. The first initiative was at a school in Wales that has an eco-club. Contact with the CFPB was made through the Bushbuckridge Nature Conservation Project (BNCP). Important lessons were learnt from this attempt at erosion control. The school is located on top of a hill. Run-off from building roofs and bare ground and a footpath used by cattle and people were the root causes of the erosion. The footpath leads to a steep slope – the site of the donga. Poles were placed at an angle across the footpath above the donga to slow down and redirect the water flow while a gabion was constructed in the donga. The initiative was relatively successful but could have been improved if the rehabilitated area had been closed off to give it time to recover, species planted, and a gentle slope created at the donga headcut rather than using a vertical gabion. This would also require building an alternative path that included erosion prevention measures, such as leading along a winding route on a gentle slope, using diagonally placed poles and planting a variety of species.

After the project at the Wales school, a training workshop was held. The emphasis was on developing techniques using locally available materials. Short theoretical sessions on the causes of erosion and measures to control it were followed by practical application through rehabilitating a donga.

A large donga at Vukuzenzele medicinal plant nursery and garden was encroaching on the site, resulting in the group requesting assistance in rehabilitating the area. Old tyres were used to create slopes at the donga's headcuts; the steep slopes within the donga were reduced to less than 40 degrees and a mixture of different indigenous grass types and trees were planted there; and bundles of thatchgrass and vetiver grass were placed above the donga. Above the site water run-off, which contributed to the initial development of the donga, has been spread and rerouted. A footpath below the donga, which is used by people and cattle, was also rehabilitated. Here the slopes were reduced, trees and grasses planted, and poles placed diagonally across the path to slow down, redirect and spread the water flow. Work still needs to be done on erosion which is outside the medicinal plant garden and nursery, but which is threatening the project. However, this requires the attention of the Department of Public Works as it is near a road and bridge. Swales and ground cover need to be introduced in sections of the garden, in particular near the medicinal plant trials.

The rehabilitated donga is used to demonstrate how a real problem can be addressed using low cost appropriate technology, and can also serve the purpose of participatory training of community members. It functions as a demonstration site for local residents and teachers, as well as groups visiting the CFPB, including DWAF personnel and other projects on study tours.

At the Ga-Joseffa garden and nursery a donga has also been successfully rehabilitated by the community group, trained and assisted by the community forestry extension staff, using similar techniques to those at Vukuzenzele. The group arrested the erosion at the site of the project. However, work needs to be done by the Department of Public Works on the large donga created by run-off from the road.

The CFPB has also provided assistance to the BNCP that has worked with students from three schools in the Acornhoek area to rehabilitate erosion in and around their schoolyards.

Main Lessons Learnt

Using low technology, low cost material and available resources is a successful approach to controlling erosion. This approach has

been tested to ensure that community members will be able to afford to rehabilitate their land as it is pointless to expect poor people to engage in such processes if expensive machinery and other equipment, including gabions, are required.

Despite the use of no cost materials like old tyres, most community members face difficulties in transporting these to the sites to be rehabilitated.

Community-based nurseries can be used to propagate and cultivate appropriate plant species for erosion control and prevention. Nursery members are only likely to undertake this if there is a local demand (i.e. people are prepared to pay) for these plants. In addition, propagating species takes time and this is a problem if the erosion has to be dealt with before the plants have grown to a size where they can be planted out.

Soil erosion control is hard, physical and time-demanding work. People need to be highly motivated to undertake it.

The work undertaken by the CFPB staff, including the community forestry extension officers, alongside the community members has been highly beneficial because:

- Practical application teaches the forestry extension staff and community members the causes of erosion and how best to control it, and
- Officials gain an appreciation of how physically hard it is for community members to rehabilitate an area. They also become aware of other constraints for community members, like transport and time

Follow-up maintenance of erosion control measures is critical to ensure the area is stabilised.

Unless the root cause is addressed, soil erosion is likely to continue. Thus it is not just the point of the erosion that needs to be addressed, but a much wider area. In some instances this requires working with other government departments.

Co-operative governance is critical to the success of soil erosion control and prevention. This co-operation is, however, not always forthcoming. It is problematic when the cause of the erosion is much larger than can be addressed by the technical knowledge and financial ability available, and when it is not the responsibility of the community group – for example, large dongas caused by roads. The Department of Public Works is not only slow to respond to requests for assistance, but also to repair roads in such a way that run-off does not cause erosion some distance from the road itself.

Additionally, agriculture extension officers participated in the training workshop, but soil erosion activities have not been taken up as part of their extension service. This situation may alter when the Land Care programme takes off.

Tenure issues present a challenge. People are only likely to rehabilitate land that they have permission to occupy and not the common access areas/woodlands. Linked to this is a governance problem where capacity is weak, roles of different institutions have not yet been resolved, and institutional arrangements (formal and informal practices) are, to a large degree, disregarded. A broader community-based approach to natural resource management – involving negotiated agreements between institutions, between institutions and resource users, and between different and perhaps competing resource user groups - is required for this to occur.

Conclusions

The soil erosion control initiatives the CFPB has been involved in have demonstrated how this problem can be dealt with through the use of low cost appropriate technology.

Soil erosion prevention and control will be greatly enhanced through improved co-operation between the various government departments working with the people using the land.

2.2 Community Forestry and User Groups

The CFPB began working with users of natural resources for specific purposes after it reassessed its broad community-based approach (see Section 1.4). The understanding of community forestry by both communities and the project itself had increased by this stage. A number of groups had approached the CFPB for assistance with regard to resource depletion as this impacted on their livelihoods.

This section describes and assesses each of the community forestry projects with the following resource user groups –

beekeeping, medicinal plants, and wood carving. While not a user of natural resources in the same way as the above groups, a project with a woodlot at a homestead, rather than a community woodlot, is also discussed.

2.2.1. Beekeeping

Target Group
Women and men in rural areas.

Objectives and Justification
ž Honey production as an alternative income generating activity and to encourage a mixed farming system.
ž Raising awareness of the value of indigenous species through contributing to food security and household income.
ž Promote the practice of retaining indigenous tree species in the farming system
ž Increase orchard and agricultural production through increased pollination

The Bushbuckridge area is suitable for small-scale beekeeping. The south-western section of the CFPB area is flanked by extensive eucalyptus plantations which provide an excellent source of nectar and pollen, especially in the low flow periods. In the

southern and eastern parts of the CFPB area, the natural woodlands contain a variety of indigenous plants - and the area borders on private game parks and national parks. Beekeeping is ideal for resource-poor farmers as it requires low cost appropriate technology inputs, a minimum of infrastructure, does not require land ownership, and provides a cash income and food for poor households. The role of honeybees as the primary pollinators of many plants is crucial not only for agricultural production, but also in sustaining much of the natural flora.

Description of the Activity

Individuals who expressed an interest in beekeeping were targeted for training. Both forestry extension officers and community members received training from the Agricultural Research Council (ARC). Following the initial training, beekeepers were provided with a basic starter kit, such as a beehive and protective clothing. Training is ongoing and linked to field implementation. Areas rich in nectar sources are selected by the beekeepers together with the CFPB and ARC for establishing beehives. A survey of the Bushbuckridge area was carried out to identify areas with species rich in nectar and pollen (*Potenial for Beekeeping and Honey Production in the Bushbuckridge Area,* 1998).

History of the Activity

A study of the potential for beekeeping and honey production included PRAs with different roleplayers and resource users in the Bushbuckride area. Through this process people interested in beekeeping were identified.

After this, 15 people, plus the forestry extension officers, attended a training workshop in beekeeping run by ARC during August 1998. Training covered the maintenance of beehives, harvesting honey and other bee products, developing a range of bee products such as honey, candles, alcohol, and polish, business and management skills, and building beehives. Training is ongoing and includes follow-up infield training (practice rather than demonstrations or lectures), is flexible to accommodate illiterate farmers, and is responsive to needs as they arise. Low cost, low technology beekeeping methodology and equipment has been introduced. The first batch of honey was harvested in March 1999.

Agriculture extension officers were invited to participate in the training and the beekeepers project, as beekeeping straddles both agriculture and forestry, but this offer was not taken up by the NPDA.

The CFPB and ARC proposed that the beekeepers form an association. A workshop was held to discuss this proposal and the beekeepers decided to establish the Bushbuckridge Beekeepers Association in order to reduce costs by sharing equipment, such as the centrifugal drum used to separate the honey and protective clothing; enable more effective distribution of their products; share the work load (beekeeping is labour intensive); and provide a support base for the beekeepers.

However, while the association is a co-operative system, the beekeepers are also able to function as individuals. Most beekeepers have beehives at their homes, and harvest and sell these bee products without going through the association. This two-pronged approach is a strategy that delivers benefits and support to the beekeepers through the association but also allows the more enthusiastic beekeepers to work without waiting for the group, and, should the association collapse, the individual beekeepers will be able to continue bee farming on their own.

Beehives, both those of the association and those belonging to individuals, are kept at a “bee garden” near Thulamahashe and in the eucalyptus plantations bordering the Bushbuckridge communal savannas. Many of the beehives were moved to the eucalyptus plantations because of shortages of food for the bees during the winter months. The beekeepers proposed to the CFPB that a bee garden be established. In this garden species rich in nectar and pollen would be planted as a longterm solution to the problems caused by species depletion in the area. To establish the garden the beekeepers put in a proposal to the local municipality and were given approval to use 1,1ha of land.

The CFPB assisted in identifying species rich in bee food, and among the species planted were aloes, *Ziziphus mucronata* and *Portulacaria afra*. A portion of the fence and some of the bee plants were stolen and the beekeepers sought permission from the Commercial Forestry Directorate of DWAF to move their beehives to the plantation. They also put hives in the neighbouring Vukuzenzele medicinal plant garden and nursery. The association also negotiated with DWAF’s Indigenous Forest Management Directorate (D:IFM) to keep hives in the State-owned indigenous forests near Bushbuckridge.

The beekeepers have built up their bee colonies where, as an association, they have seven hives (seven Langstroth hives with 20 super structures). Individually, the beekeepers have an additional 23 hives (11 Langstroth hives with five super structures and 12 top-bar hives). Products include bottled honey, candles, mead (honey wine) and honey beer. Besides the cash value, the bee products also have nutritional and medicinal value and uses. About 400kg of honey has been harvested, and a 350l bottle is sold for

about R15.00 within the Bushbuckridge area where demand is high. The CFPB assisted in sourcing bottles and in creating a label with a logo for the products. There is potentially a large market for honey and other bee products in the neighbouring conservation areas and in towns near Bushbuckridge.

However, the amount of honey harvested through the association was limited by internal tensions and group dynamics.

The CFPB facilitated a workshop to identify and deal with problems experienced by the beekeepers. Areas that needed attention were: internal conflict, planning, commitment, and applying skills gained through the training programme. A constitution was drawn up, membership clarified, and commitment sought. It was agreed that if the response was positive other needs could be tackled with support from the CFPB. These included further training and implementation around product development, marketing, environmental issues and eco-tourism. In addition, selection of beekeepers for further support from ARC, which has recently received funds to make beekeeping commercially viable for resource-poor households in rural areas in all nine provinces, would be based on commitment and active participation. These discussions resulted in improved co-operation and commitment. Subsequently the ARC provided 150 beehives and superstructures that are being released in batches based on the hives becoming productive. The ARC will continue with infield training while the CFPB will continue to facilitate organisational development. A workshop, through the Commercial Products from the Wild Project (CPWP), will be held focusing on organisational issues and to establish the beekeepers' association as a legal entity.

The number of beekeepers has fluctuated, and currently there are about nine active participants, five of whom are from the original group of 15 people. Employment opportunities in Bushbuckridge are limited and two beekeepers left because they got jobs in the city, but the major reason for slowed production of bee products is the association's organisational difficulties.

Support from the CFPB is ongoing and includes facilitating organisational development; helping establish links and co-operation with other organisations and initiatives (such as ARC, the CPWP, and D: IFM) to ensure sustainability and work towards replicating the initiative; identifying areas suitable for locating bee hives; planting indigenous species rich in bee food; identifying and helping to meet training needs; discussions with other roleplayers (such as the Working for Water Programme and the departments of Agriculture and Environment) around sustainable use and management of natural resources.

Main Lessons Learnt

Some areas have a paucity of beeplants (those with high nectar/pollen counts) and this restricts honey production. Seasonal changes also affect honey production, particularly during the winter months. The beekeeping project has helped raise people's awareness and concern about the status of the woodlands, as well as the causes of the deterioration in the natural resource base. An important reason for them having to develop the bee garden and to move their hives to the plantations is the lack of adequate food. The beekeepers now see that natural resources sustain bee colonies and are indispensable for the pollination of indigenous plants.

The beekeepers identified poor natural resource management systems - a result of a breakdown in local institutional arrangements and no co-operation between competing resource users - as contributing to the problem of resource depletion. Minimal co-operation between government departments also contributes to the problem. Resource depletion is largely caused by land clearing, in particular for agricultural activities, and cutting trees for other uses. The beekeepers project approached the agricultural extension services in the NPDA for support and to ensure their activities take into account the interdependent relationship between bees and plants. NPDA could encourage the retention of indigenous species within the farming system, while the bees would play an important role in pollinating agricultural crops. Co-operation between different departments and divisions within departments would also help ensure a better supply of pollen and nectar. One example of this is the beekeepers' experience with the DWAF Working for Water Programme that is removing exotic plants. These exotics are important for the beekeepers as they provide pollen and nectar during periods of scarcity, assist in building up swarms for major flows, and enable swarms to recover when there is a pollen deficiency.

While a more intensive planting programme of appropriate species to ensure year round flowering at the bee garden and at homesteads will help reduce this problem, longer term solutions are required. These include:

- An integrated approach by the various government departments so that issues around sustainable use can be addressed.
- The Tribal Authorities (TA) and other institutions responsible for land and resource use need to be drawn into natural resource use and management discussions so that they understand and develop appropriate systems.
- Improved communication and co-operation between projects so that their activities do not clash or contradict each other.
- Other resource users, including people involved in crop and fruit tree production, need to be made aware of the mutually beneficial relationship between bees and plants. This would improve the sustainable use and management of natural resources in common access areas as well as encourage diversity in the farming system through introducing beekeeping,

not clearing the land of indigenous plants, and planting trees to improve production.

While the association has a structure and regulations and has agreed on monthly meetings, these were often not adhered to and attendance was irregular. Communication with members and problems with transport to the hives in the plantations and to meetings were cited as reasons. However, some members were highly active and committed while others were only present when honey was being harvested. This lack of commitment or co-operation - and the hope for quick cash without effort - meant there was limited maintenance of the communally owned hives, leading to problems such as invasions by ants and moths, while honey was not harvested regularly. Thus the motivated beekeepers were held back by less committed members.

If forming co-operatives or organisations is the route to be followed, focusing on organisational development with members at an earlier stage is essential. Included in this is the need to develop planning and management skills as well as finding mechanisms to deal with group dynamics and tensions.

A flexible approach allows people to act as individuals and derive benefits from belonging to a co-operative. This dual approach allows beekeepers to derive benefits from the association but not be held back by internal difficulties or limited to only working with the association.

Some of the organisational problems appear to be gender linked. The chairperson of the association is a woman. In a male dominated society women have little status despite their capabilities and find it difficult to take up leadership roles. She is one of the enthusiastic beekeepers, but said she could not harvest the honey without the other members. Gender issues have a direct impact on community forestry activities, particularly in relation to ensuring true participation by women. Gender roles are culturally defined and therefore difficult to deal with. The example of the beekeepers was beneficial in one way: the extension officers have, through this experience, gained greater insight into issues of development and gender. Their awareness will make it easier to explore ways to counter problems with a gender dimension.

The beekeepers also experience difficulties when people stone the hives – both those who are afraid of bees and children playing. This is exacerbated by the theft of honey, hives, fencing and plants at the various sites.

Ways of preventing raising unrealistic expectations need to be found when a project is proposed and initiated. It should, at the start of the initiative, be emphasised that it takes time and effort to establish an enterprise and for participants to start earning an adequate income that justifies their hard work. Only five of the original 15 beekeepers are active. While there are numerous reasons for this drop-out rate, one factor was that people saw the beekeeping project as an income earning opportunity with high returns and only little effort from their side.

Active involvement by members should be closely monitored and attention focused only on those who show commitment. This would also allow beekeeping to be extended to other community members who express interest in participating in this activity.

Conclusions

Community forestry activities that include tangible benefits and income generation require support in terms of product development. Reliable supply and quality of products, marketing and outlets are also critical components of a project of this nature. The D: CF needs to find ways to ensure these aspects are built into its activities.

Given the range of issues that emerge when working with a community group, community forestry extension officers require not only technical skills but also social interactive skills, such as organisational development, facilitation, planning and conflict management.

Increased co-operation from other service providers (for example, government departments) and governance structures (such as tribal authorities and local government) would not only enhance community members' income earning opportunities from beekeeping but would contribute to improved resource management. Capacity within departments, for example, Agriculture, could be increased through engaging with different sectors, and thus contribute to development in rural areas.

A flexible approach (individual and group) to accommodate participants' needs is advisable.

2.2.2. Medicinal Plants

Target Group
Medicinal plant trade practitioners (traditional healers, traders and gatherers)

Objectives and Justification
ž The maintenance of existing stocks of wild plants ensured through sustainable utilisation and harvesting techniques by traditional medicinal practitioners in the medicinal plant trade.
ž Continued supply of medicinal plants ensured through various propagation strategies.

Traditional medicine plays a vital role in both the material and social well-being of most South Africans in urban and rural areas. About 70 to 75 percent of the population depends on the traditional health care system while many people generate an income from trading and healing. Demand in urban areas is high and gatherers and traders harvest plants in rural areas and transport these to the cities to sell in the markets. Value is added to the raw material when healers diagnose, prescribe and prepare mixtures for clients. The trade in medicinal plants in the Bushbuckridge area alone amounts to some 500 tons a year, creates about 2000 to 3000 income earning opportunities, and is worth about R170-R260 million annually. Plant species are protected by various laws, but

the trees, bulbs and shrubs in the increasingly fragmented woodland ecosystem are threatened by unsustainable exploitation and competing land and resource use. It is important that steps are taken to maintain existing wild populations and to ensure a renewed supply of medicinal plants because of our reliance on this natural resource from both a health and economic point of view.

Description of the Activities

Interested individuals and groups involved in the medicinal plant trade are assisted in establishing medicinal plant gardens at their homes and in setting up nurseries. Plants in high demand – those which are usually those most threatened - are identified by the traditional healers for propagation and cultivation. The participants are initially trained in medicinal plant propagation, cultivation and conservation. Further training - for example, business and management skills and organisational development skills - is incorporated as the project develops. Discussions around sustainable natural resource use and management are incorporated into all activities.

History of the Activity

A group of about 16 traditional healers, most of whom were women, approached the CFPB and expressed interest in working with it. A series of workshops were held with the group to start identifying their interests and needs.

Eight of the healers participated in a study tour organised by CFPB to KwaZulu-Natal where they met other traditional healers involved in various projects and were trained in the propagation, cultivation and conservation of medicinal plants at Silverglen Nursery, Durban. On their return they trained the rest of the group and all 16 healers, who live in different areas around Bushbuckridge, then established medicinal plant gardens at their homes.

The CFPB works with a range of other organisations involved in the medicinal plant trade. The healers are linked into this wider network where the following activities were undertaken:

- The Project assisted in the process of formulating the Mpumalanga Medicinal Plant Programme (MMPP).
- Healers are involved in activities arranged by organisations involved in the MMPP, such as establishing a medicinal plant section at the Lowveld Botanical Garden, workshops and conferences. For example, the healers took part in medicinal plant salvaging operations from various sites where the plants would be destroyed by development activities (road and dam construction.)
- The need for a more accessible training centre for the propagation, cultivation and conservation of plants was identified through the MMPP. The CFPB helped establish the Phindulwandle training centre at a traditional healers nursery near Driekoppies, Malelane. The facility serves the broader region and is used by traditional healers, other resource user groups, and agricultural and forestry extension officers. The eight healers who had not travelled to KwaZulu-Natal attended a training course at Phindulwandle training centre.
- The CFPB provides support to local and international researchers around medicinal plant trade, and ensures the healers benefit from this work.
- Following work by two of the researchers, the CFPB organised and facilitated a Medicinal Plant Trade symposium attended by government departments, traditional healers, researchers, and those people who had participated in the research process.
- A working relationship has been established between the traditional healers and the CPWP, a project under the auspices of the national Department of Arts, Culture, Science and Technology (DACST).

Six of the 16 healers live in close proximity to each other and have decided to establish a medicinal plant nursery and garden because their medicinal home gardens are too small for their requirements. This group consists of five women and one man. Starting the Vukuzenzele (which means 'stand up and help ourselves') nursery and garden involved getting approval from the local council to use the 1,5ha. This was granted but later disputed by the local Civic because they said they had not been consulted and because one of their members wanted to start a nursery across the road from the Vukuzenzele site. The matter was eventually settled when the healers took the matter back to the council and threatened to take legal action.

No trees were removed from the Vukuzenzele site during the process of establishing the Vukuzenzele project. In one portion of the garden the healers have planted about 300 trees, as well as a range of bulbs and shrubs, all with medicinal value (a list of species is contained in the technical report, *Medicinal Plant Marketing and Strategies for Sustaining the Plant Supply in the Bushbuckridge Area*, 1997.) In addition, live fencing was planted around the project site (see the live fencing and parklands ' models').

A nursery of shadecloth and poles was constructed and the healers then built propagation beds. Theft in the area is high so the healers hired a guard. However, the guard was shot at and the shadecloth and some plants were stolen. The healers then constructed a larger nursery from thin eucalyptus poles and reeds to reduce the risk of theft and because the existing nursery was

too small for their needs. The shadecloth nursery is used to propagate medicinal plants while the second structure houses seedlings for sale to the public (exotic fruit trees, ornamental plants, medicinal plants, and other indigenous trees for various purposes). The nursery was able to supply trees for Arbor Week activities in Bushbuckridge this year (2001).

Tree seedling sales drop in the dry winter months. The nursery is located near a busy road but difficulties in transporting seedlings hamper sales, as does poverty (trees are low on people's list of spending priorities). The healers realised they could not rely on the nursery alone and started a vegetable garden to sell seedlings and vegetables. They also cultivate crops such as cassava, groundnuts and maize for sale and to provide food for the healers' families. For these activities the healers would benefit from the involvement of the Department of Agriculture.

Water is an issue. Rainfall in the past three seasons has been good but the area is prone to cyclical droughts. The medicinal plant nursery is on a slope next to a river. Carrying water is time and labour intensive and this affects seedling survival rates. A small pump was procured from the Working for Water Programme and a simple gravity fed system was established to water nursery plants and vegetables. Crops are not watered at all.

Members were trained on site in soil erosion prevention and control using low cost, appropriate technology. A large donga was rehabilitated within the garden and a footpath for other residents in the area and for cattle was constructed below the garden. However, erosion, exacerbated by flooding in February 2000, outside the site has not yet been repaired despite requesting help from the Department of Public Works and the Department of Agriculture.

The CFPB has facilitated workshops with the healers around markets for their medicinal plants and products. Potential outlets were identified but this is an ongoing process as plants take time to grow and products have not yet been developed. The healers have recently purchased medicinal plant products manufactured elsewhere and are selling these. This activity is assisting them to identify and explore potential markets and develop business skills. The healers also participated in a business management training course.

Through the CPWP the healers participated in medicinal plant trials of about 10 species, the results of which are positive. These trials were the only ones carried out in a community setting. The healers are now taking part in trials to test and develop medicinal plant products. The aim of the CPWP is to add value to a range of natural resource products that are already being traded informally and thus improve the sustainable use and management of these resources. The healers hope to produce traditional medicines, packaged and labelled by them, using the plants they cultivate in the garden. Sustainable harvesting techniques will be used to ensure a continuous supply of the raw material. Processing the raw material will involve the use of low cost, low technology equipment to ensure the enterprise is sustainable.

Vukuzenzele members act as community-based trainers in community forestry activities. Given the variety of community forestry models that have been implemented there, it serves as a demonstration site for local residents, NGOs and government departments. Field days with other community forestry projects are held to facilitate discussion and exchange of ideas.

The medicinal plant project began in mid-1997 with a series of meetings; the home gardens were established in February 1998; the Vukuzenzele nursery and garden was started in February 1999; and it is only in 2001 that the prospect of the healers processing and packaging traditional medicine is starting to become a reality.

The CFPB continues to assist the healers with regard to alternative planting and harvesting strategies to support processing; organisational development around forming a legal entity, ownership, sharing of potential profits and responsibilities; procurement of equipment for processing together with the CPWP; and training linked to processing. Discussions with the healers are also underway on how to improve natural resource use in the broader area. For example, they have identified the problem as being one of governance and want to initiate discussions with local government, tribal authorities and government departments.

Main Lessons Learnt

The healers' project, like any other community forestry initiative, involves hard work for slow returns. The fruit of their labour is only beginning to be reaped now, about three to four years after the project was started.

A reliable water source is crucial. The less time consuming and labour intensive the watering of plants is, the more successful the nursery in terms of tree survival rates and number of plants cultivated. This also frees up people to carry on with other activities in the community forestry initiative. Rainfall over the past few seasons has been good. However, the river barely flows in the winter months and there is the continuous threat of a drought, the effects of which on the Vukuzenzele project are yet to be seen.

Theft and vandalism are common occurrences in the Bushbuckridge area. This risk needs to be weighed up and planned for when implementing community forestry activities.

Group dynamics and organisational issues have arisen in the healers' project, but have not been insuperable. Workshops with the healers have, and continue to, focus on dealing with organisational issues – planning, ownership and taking responsibility. The group will establish a legal entity and draw up a constitution to ensure benefits and work are shared, while the planning and management discussions will be ongoing.

The CFPB facilitated planning workshops with the healers to identify problems, aims, activities and responsibilities. The main problem identified was some members were seen to work harder than others. The reason for this is that members of the group have other commitments that compete for their time (they have their own healing practices, two members belong to other community projects, the women have additional family responsibilities, one healer is not physically able). This problem was resolved when the healers agreed to send a substitute (usually a family member) when he or she was not able to work.

Another contributing factor to problems is linked to gender. The leader of the group is a man. The women have to "show respect"; he takes charge and they follow. Because he is a perfectionist, works hard and is committed to making a success of the medicinal plant nursery and garden, the project moves forward. The healers are in the process of drawing up a constitution and establishing a legal entity to ensure equity.

The CFPB had to gain the trust of the healers. This was crucial because the healers' investment in the project is based on hope and trust and it is they who are taking all the risks. The healers invest their time and labour in the hope of worthwhile benefits. The mere involvement of an external agent raises expectations even if it makes no promises and takes care not to create unrealistic expectations. This trust and the extent of their risk must be respected by the external agency and promises must be kept.

Market outlets, product development and access to finance require special emphasis if D: CF is to promote sustainable livelihoods, greening and natural resource management. The CFPB has, to the extent possible, assisted in these areas by, for example, giving interest free loans, linking healers into a wider network, and collaborating with other initiatives like the CPWP.

The issue of access to land and security of tenure is difficult but needs to be negotiated. This includes dealing with local institutions around the new laws that protect people's rights. However, local politics, no clarity on tenure in former homelands, and land scarcity complicate the process. The healers worked through local government to access land because their site fell within the municipal boundary of a town (Thulamahashe), but were challenged by a Civic. The matter was resolved, but the healers still feel insecure about their tenure rights because of the lack of clarity around tenure in communal areas.

A related matter to be considered with regard to natural resource use is competition between different resource user groups. While there was no conflict in this instance and no resource users objected to the healers occupation of the site, fencing off the land effectively meant other people no longer had access to grazing and fuelwood.

The success of community forestry initiatives requires that people derive tangible benefits from these activities. The healers see deriving tangible benefits - or in their words, "business opportunities" - as key to achieving improved natural resource use.

Introducing a diversity of activities at Vukuzenzele is critical to the survival of the healers' project as these activities (growing vegetables to sell, produce agricultural crops, sell trees and plants for a variety of uses like beautification and focus on producing medicinal plants)help to ensure adequate tangible benefits are derived throughout the year.

As with community gardens, the healers also require the assistance of agricultural extension officers for advice on growing crops and vegetables. In turn, the officers would broaden their knowledge beyond conventional agricultural approaches to agriculture through working with the CFPB and the healers. The healers, with the assistance of the CFPB, have sought to encourage this mutually beneficial co-operation but without much success.

The healers have, over a period of time, developed capacity and skills through formal training, workshops, discussions, conferences, and interaction with a broad range of people and projects. This is resulting in a broadening of their understanding of environment beyond their own immediate concerns. For example, initially the healers wanted to grow medicinal plants for their own consumption, whereas now they are starting to add value to the medicinal plants and have identified the need for a meeting with the Tribal Authorities and local government, to discuss the unsustainable use of natural resources in the area and land use

practices as these are resulting in the depletion of medicinal plants. Developing this level of capacity has occurred through the incremental implementation of activities, so that one builds on another, thus broadening skills as well as cognitive and conceptual understanding. Together with this increased capacity, their fundamental human needs are met – confidence, self-worth, motivation and identity – and help ensure the progress of their project.

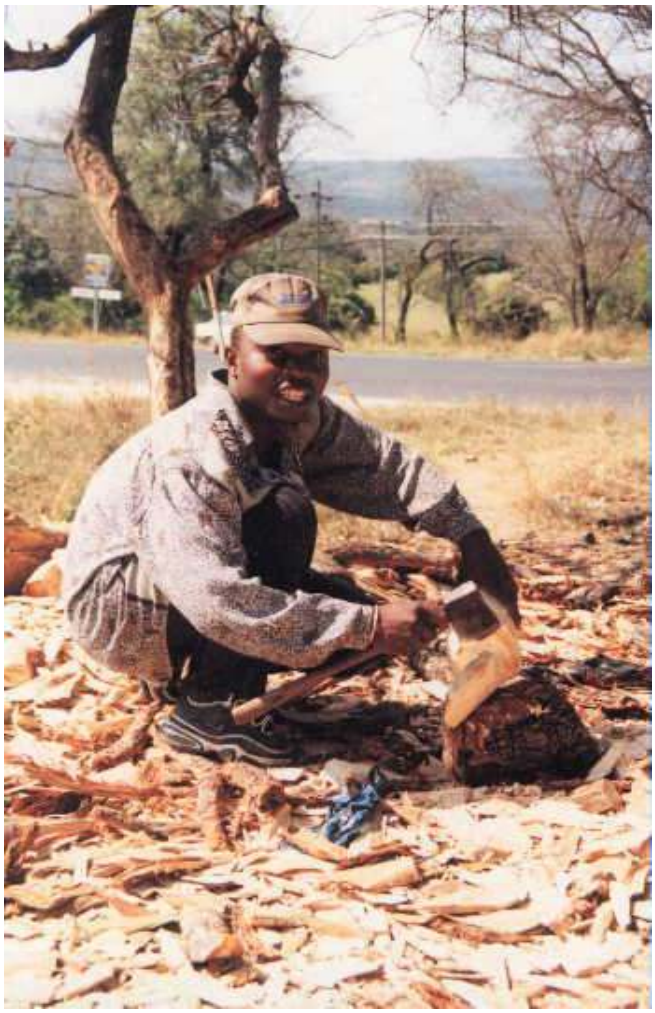
Conclusions

Success of the project has required continuous, consistent input, effort and hands-on involvement by the CFPB. Sporadic contact would not have resulted in the achievements to date. An incremental approach results in both developing capacity and skills and ensuring that the healers are not overburdened and are thus able to continue with their other daily activities. Developing capacity takes time and the healers set the pace.

Part of the reason for achievements in the healers' project is the group's leader is a committed individual who accepts challenges, gets excited by new ideas, is able to motivate other participants, and is prepared - and able - to wait for the returns. Linked to this is the critical issue of building trust between the healers and the CFPB, where the healers assume/trust the CFPB is acting in their best interests and that the outcomes of the activities will be beneficial.

Diversifying activities and a reliable water source are critical to the success of the project.

2.2.3. Woodcarving



Target Group

Wood carvers and furniture makers along the main roads to the Kruger National Park (KNP).

Objectives and Justification

ž Improved craft skills and products to supplement household incomes.
ž Improved business and marketing skills.
ž Reduced depletion of threatened species through raising environ-mental awareness, and finding alternative wood sources.

Among the many veld products collected in the wild and used by communities are food, medicine, fuelwood, construction wood and carving wood. One result of this is that populations of tree species, such as *Pterocarpus angolensis*, are being depleted in the savanna woodlands because of their high value for the wood carving and furniture making industry. Wood carving provides a livelihood for many families in the Bushbuckridge area. However, their income earning opportunities are low because of a poor skills base, little product diversity and transportation problems - thus their market is limited to the main routes to tourist attractions, such as the KNP. Improving the products, and thus sales, includes dealing with problems of woodborer infestation, mould and cracks in the carvings.

Most carvers use crude tools and have no formal training, but learn their skills from elders and peers. They enter the trade to escape unemployment and many would leave if they could find formal employment elsewhere. Carvers can earn on average between R300 and R800 a month, but also go for long periods with no income. Prices of carvings are standardised and are based on size and not quality (of the carving and the wood used).

Description of the Activity

The CFPB's approach to the wood carving trade in and near the Bushbuckridge area is to forge links with other organisations and departments working in this field. The CFPB has provided support in the form of training courses, workshops and field implementation aimed at enhancing the skills of craftspeople; and has worked towards product improvement through exposure to new ideas and techniques. It has also provided input aimed at improving business and marketing skills, and raising environmental awareness with regard to the sustainable utilisation of natural resources. Strategies include species substitution (using exotic wood), salvaging wood from development sites, planting seedlings, training in propagation, cultivation and conservation of indigenous species, and promoting the marketing of carvings. Strategies for improved resource use and management of woodland resources were informed by discussions and a study by the CFPB (an *Analysis of the Woodcarving Industry in the Bushbuckridge Area)* that incorporated the views, needs and perceptions various roleplayers and stakeholders, including the wood carvers.

History of the Activity

Most of the carvers are men and work in loosely collaborative clusters along the roadside or at outlets located at the entrances to the KNP. Before the CFPB started, an alliance of woodcarvers and other craftsmakers in the Kruger/Numbi area had already been established, at the behest of external agencies aiming to deliver development to a large number of people. However, not all woodcarvers belong to the alliance out of preference. Conflict within the alliance has finally resulted in the chairperson being expelled from the area and the dispersal of members of the core group at Numbi Gate, KNP.

The CFPB began working with groups (including the alliance) and individuals along the Kruger/Numbi roads in the vicinity of Hazyview to discuss the challenges facing them. Selection was based on interest shown by carvers. Meetings with external agencies and organisations, such as the Working for Water Programme, DEAT, Mpumalanga, the Social Ecology unit in KNP, and the Hazyview/Kiepersol Conservancy of private landowners, were also held to collaborate on initiatives linked to the woodcarving trade.

A week-long training workshop was attended by 19 woodcarvers from various groups. It focused on business skills, improving the diversity of products, and sustainable utilisation and supply of raw material. The proceedings were documented in a report (*Proceedings of the People and Plants Workshop for Woodcarvers*). The carvers also took part in an Arbor Week event when they displayed their products at an exhibition in Nelspruit. The workshop and exhibition were a joint initiative with DEAT. The co-operation between DEAT and the Project ended when the DEAT officials relocated to DACST, Mpumalanga. This department has decided to shift its focus to other initiatives.

In an effort to expose the woodcarvers to opportunities and requirements for marketing their products, they were taken to commercial tourist outlets. The CFPB facilitated meetings by establishing contacts and setting up meetings between buyers and various woodcarving groups and individuals (and, in two instances, transporting the carvings to a buyer) in an effort to improve diversity and quality of products and the sale of carvings.

Regarding quality issues linked to woodborer, fungus and products cracking, the Project established a relationship between carvers at the Numbi Gate outlet and the Plant Protection Research Institute (PPRI). Trials were underway to deal with these problems when the unit was closed and relocated to Pretoria. As a result the work was never finalised.

Since many desirable woodcarving species are becoming increasingly scarce in the woodlands, according to the wood carvers and studies that have been carried out, a planting strategy was attempted. The carvers identified high demand, low availability trees for

carving. It was decided, in co-operation with a group of woodcarvers, that planting should take place around 'privatised' land – homesteads and fields in the communal areas. Woodcarvers then attended a training workshop in propagation, cultivation and conservation/sustainable use at the traditional healers' Phindulwandle Training Centre, near Malelane. The woodcarving group based at Numbi Gate selected the following species to plant in a 'carving woodlot' next to a community garden: *Berchemia zeyheri, Afzelia quanzensis, Albizia versicolour, Olea europaea, Khaya nyasica, Ficus ingens, Combretum imberbe, Annona senegalensis, Spirostachys africana,* and *Androstachys johnsonii*. The training and the planting strategy helps to raise awareness around sustainable utilisation issues, but it is a longterm strategy in terms of wood supply.

A short-term solution was then discussed: a species substitution strategy was undertaken aimed at relieving pressure on the woodlands by meeting the need for wood. Various carver groups were involved in discussions on whether and why such an initiative was desirable. Meetings were then arranged with the Working for Water Programme, which is removing exotics, such as *Jacaranda mimosifolia*, from riparian zones and wetlands, to arrange the supply of these exotic species. Similar discussions were held with the Hazyview/Kiepersol Conservancy, comprising private landowners in the area concerned about wood and other resources being harvesting on their land. A large quantity of exotic wood - species regarded as invasive - was then supplied to the different carving groups along the two roads.

Sourcing alternative supplies of wood also included salvaging indigenous trees from land being cleared for development, such as dams, mines and roads. To promote this concept the Project assisted woodcarvers in harvesting wood from areas that will be flooded by the Injaka dam under construction in Bushbuckridge.

In another instance the redistribution of natural resources was a collaborative effort between the private sector, government, a donor agency and the resource users. The De Beers diamond mining company approached the Project to assist it in distributing 26 tons of marula (*Sclerocarya birrea*) and knob thorn (*Acacia nigrescens*) it had felled to establish a new mine in the Limpopo River area. Mondi forestry company transported the wood 450km from the new mine to Hazyview station. From here the wood was distributed to the carvers with the assistance of the Working for Water Programme.

The woodcarvers said they appreciated the marula from De Beers because it helped their business but "we would prefer a job on the mine". This anecdote illustrates one of the many issues to be considered in the multifaceted and complex matter of natural resource management.

The CFPB is currently not working closely with the woodcarvers.

Main Lessons Learnt

A number of related factors present a challenge when working with the woodcarvers around woodland resource use and management:

- The wood carvers work in many loosely collaborative groups and, while the individuals do, to some degree, work with each other, the groups themselves do not necessarily collaborate with each other.
- The woodcarvers are mobile, moving when an employment opportunity arises but returning when the job ends.
- Conflicts arise within a group and between groups over access to and control over resources and power.

The struggle for power and control resulted in all the members of the original core group leaving. This effectively halted the work being carried out by the CFPB with this group of carvers and would have required the Project starting afresh with the new group and its new leader. Even though the alliance was established before the CFPB became involved, it does raise questions around associations established by external agencies. These bodies do not necessarily serve the interests of the intended beneficiaries.

An organisation can, however, be useful, for both the members and the external agencies, but the way in which it is established requires greater understanding and a careful process. It may also require that no single organsiation for the woodcarvers is established, but that each group is worked with separately. In addition, a single organisation established and targeted by external agencies sets the leader up as a powerful person because he controls benefits and resources. This leads to jealousy and attempts to topple the leader are made, leading to divisions and conflict. Further, the loosely collaborative arrangement in a group appears to suit the woodcarvers' needs. It also appears to reduce conflict and allow for fluid membership. These factors should be taken into account if attempts are made to strengthen organisational capacity. Any activity undertaken with the carvers should be based on interest expressed by the group.

The woodcarvers participated in the propagation, cultivation and conservation training workshop and in tree planting but were not

enthusiastic. While they recognise that planting is a useful strategy and that resource depletion is a problem, they are more concerned with satisfying their immediate needs – selling carvings to feed their families. This emphasises the importance of a multi-pronged strategy so that woodcarvers derive immediate tangible benefits so that other, less enticing but important, activities can be successfully implemented.

The Working for Water Programme, De Beers and Conservancy initiatives are examples of the improved use, supply and distribution of natural resources to people in need while reducing the demand on the natural woodlands. The substitution strategy proved to be successful: the woodcarvers welcome the supply of wood and are willing to substitute exotic wood for indigenous species. Jacaranda is easy to work with, but not all exotic species are suitable for carving.

However, logistically the substitution and salvaging strategies are difficult to implement because the transportation of wood is expensive. The Working for Water Programme initially delivered large quantities of exotic wood to the carvers, but this has now eased off because the activity is time consuming and costly to the Programme. The carvers expect external agencies to assist with transporting the wood, but external agencies would like the carvers to make some contribution and not rely on handouts. Their expectation for an external agency to pay for costs is normal – anyone would take this opportunity but more so in the case of people who are poor. The CFPB facilitated attempts to locate drop-off sites from which the carvers could collect wood to reduce transport costs, but the woodcarvers did not take up this proposal. One reason for this is that the woodlands are not completely depleted and carvers can still source free wood, while using exotics would incur them transportation costs. However, woodcarvers do pay for wood (like *Pterocarpus angolensis*) and for transporting wood and their carvings when an external agency is not involved.

The discussions with the private landowners in the Hazyview/Kiepersol Conservancy helped dispel negative attitudes towards carvers and misunderstandings about the woodcarving trade. For example, some private landowners in the area are now delivering wood to nearby carving groups. In a few cases, landowners inform the carvers that a tree has been felled on their property and the group does their carving on site.

The carvers are craftsmen, not artists. They tend to specialise in producing a small range of specific objects and are reluctant to diversify their range. Once-off attempts at rectifying this have limited effect. A solution could be to have a buyer assessing the market and working with the carvers to produce craft that meets the changing demands and taste of the consumer. This would also solve the problem of market outlets. Selling along the rural roadside or at outlets in conservation areas is limited, whereas supplying larger markets on an order basis would secure the carvers a more regular income. The CFPB did try to link buyers with the woodcarvers but these individuals were businessmen and not interested in development issues in the woodcarving trade. Selecting the right buyer, who collaborates with an institution involved in product development and natural resources, would be an advantage as it would ensure a longterm commitment to the process.

Conclusions

Proper planning and a co-ordinated approach from external agencies (such as DWAF, the Working for Water Programme, private organisations, the Department of Trade and Economic Affairs and DACST) are required to deal with all aspects of the woodcarving trade. This involvement cannot be sporadic; it should be continuous and consistent. For this approach to be successful one person/external agency to co-ordinate and drive the process is necessary. The CFPB tried to work with other government departments and programmes but was not able to ensure their commitment or their consistent involvement.

Since the wood carving trade will continue as part of household survival strategies, and as DWAF promotes enterprise development, the broader but crucial components of product development and ensuring access to markets need to be built into the D: CF's initiatives.

The one strategy not yet attempted would be a broader, more integrated approach to natural resource management involving discussions with various local institutions - such as Traditional Authorities, local government, government departments and local structures - and different natural woodland resource user groups in order to reach agreements on improved natural resource management (the difficulties with this approach include capacity problems in local government and the unresolved role of traditional authorities).

2.2.4. Sericulture

Target Group
Women living in the area of New Forest and Orinoco

Objectives and Justification
ž Income generation and small-scale business development through mulberry cultivation and sericulture
ž Empowerment of women through entrepreneurial skills development

Unemployment is high and household incomes are low in the Bushbuckridge area. Sericulture is a labour intensive activity and, given the right circumstances, could be developed as a cottage industry. Women are doubly disadvantaged - socially and economically. They are, in many cases, also the head of the household and the sole provider. Mulberry trees have a number of uses, besides growing silkworms for harvesting silk. The trees can be a source of firewood; the surplus leaves and silkworm droppings can be used as green fertiliser; the leaves left over after feeding the silkworms can act as a fodder bank for livestock; the reeled-out pupae are an important protein source for livestock and people; baskets, mats and other items can be crafted from the twigs; paper can be made from the bark; and the fruit can be eaten fresh or made into jam, juice or an alcoholic beverage.

Description of the Activities
The implementation of the sericulture project is restricted to communities around the silk farm in the New Forest/Orinoco area. An already established, but neglected, 5ha mulberry plot is the starting point for more intensive management. Initial support has been provided for shed construction to maintain adequate environmental conditions for quality cocoons and silk production. Activities around the other uses of mulberry trees are also encouraged. Women are trained in propagating and managing trees, rearing silkworms, and business management.

History of the Activities
The presence of a silk farm in Bushbuckridge created the opportunity for an unusual community forestry project, but one that directly benefitted women, and indirectly other community members. South Africa's only commercial silk farm, Tsinini, was started in the 1980s by the Department of Agriculture in the former Gazankulu homeland. In 1994 it was privatised and run by two women in agreement with the AmaShangana Traditional Authority.

Prior to the start of the CFPB, the Forestry Department had been conducting mulberry tree trials at the silk farm and had raised the idea of silk farming at homestead level. When the CFPB started this idea was discussed with Tsinini in more detail. It was decided that technical issues would first be explored to see if it was possible to raise silkworms at homesteads in uncontrolled environment. The CFPB's support for this activity was discussed with DWAF. The conclusion was that support for this activity was appropriate because it promoted enterprise development and formed part of the greening core function of the department.

An outgrower scheme was discussed with the silk farm managers and women from the New Forest/Orinoco community who work at the silk farm. The proposed scheme involved Tsinini importing the eggs and the women buying boxes of these from Tsinini and rearing the silkworms in a low technology shed until they spin cocoons. They then would sell the cocoons back to the silk farm. Each woman would have three 0,4ha blocks of mulberry plants that she would manage and harvest leaves from to feed the silkworms. It is estimated that once costs have been included the women could earn about R800 a month. The women would also

supplement their incomes by using the mulberry trees to make other products (jams, baskets, fodder, green manure, etc.), some of which would be sold to tourists visiting the silk farm. It was decided that the number of women would be limited to three and then expanded at a later stage should the venture prove successful.

The CFPB provided financial and technical support for the construction of a low cost, low technology rearing shed and silkworms were reared in it to test its efficacy. The results from rearing silkworms in an uncontrolled environment were positive for a specific type of silkworm, with higher survival rates and yields than silkworms grown in sheds where the humidity and temperature are controlled.

Now that it was established that it was technically possible to rear silkworms without expensive infrastructure, three women were selected by Tsinini and the community for training. The women had previously worked for the silk farm and thus had some experience. The training programme, funded by the CFPB and focusing on the propagation, cultivation and management of mulberry trees; silkworm egg incubation; rearing silkworms; and business management skills, took place at Tsinini.

The implementation of the sericulture project was halted because of conflict between the two managers. They later sold the silk farm. The CFPB held discussions with the new manager who expressed interest in implementing the outgrower scheme. However, financial constraints, caused by a decline in the tourism trade (Bushbuckridge is seen as a dangerous place) and competition from a new silk farm started near Bushbuckridge by one of the former managers, resulted in the scaling down of activities and staff at Tsinini. Problems at the silk farm were further exacerbated by land claims and conflict over ownership of the land. Equipment was stolen and the manager was threatened. He decided to close the silk farm.

Main Lessons Learnt

It was successfully demonstrated that a low cost, low technology shed can be used to raise certain silkworm species.
Women can supplement their incomes by utilising the whole mulberry tree and making various artefacts, such as mats, baskets and curios, to sell to the tourist trade.

Training is beneficial even though the outgrower scheme was not implemented, as the women can use the propagation, cultivation and tree management skills they acquired at their homesteads and in their fields.

During the selection of the initial group of three participants, many women expressed interest in the outgrower scheme. However, most were reluctant to take the risk of being self-employed, preferring instead formal waged labour even if this meant they would earn less than they would through the outgrower scheme.

The outgrower scheme would have been mutually beneficial for Tsinini (saving on labour costs) and for the women (an opportunity to earn an income greater than waged labour).

Transparency is essential if the trust of community members is to be maintained, particularly if an initiative is unable to proceed. Discussions with the women were at all times open and honest – for example, during the conflict between the managers and about its impact on the implementation of the outgrower scheme.

When the CFPB started working with Tsinini it could not have anticipated the kinds of problems that were experienced as the silk farm had been a successful enterprise for 20 years. The problems were caused by conflict at different levels and around different issues – between the managers over finances and resources, political affiliations within the community expressed through claims over land, and the provincial border conflict in Bushbuckridge area.

Conclusions

The outgrower scheme was technically possible and the participants were enthusiastic, but matters beyond the control of the CFPB and the women – a decline in the tourism trade, land claims, conflict within Tsinini between the managers – resulted in it not being implemented.

It is important to plan for change. Implementing projects during periods of transition and conflict requires that small incremental steps are taken to prevent the participants from experiencing any negative consequences should the initiative not be able to proceed.

2.2.5. Homestead Woodlots

Target Group
Households

Objectives and Justification
ž Reduce household expenditure with the household using its woodlot to replace construct-ion material
ž Supplement household income through selling poles for construction and fencing to the local market
ž Initiate other income generating activities linked to the woodlot, such as beekeeping and furniture making
ž Reduce pressure on the natural woodlands through the supply of an alternative source of wood for construction, fencing, furniture and fuelwood

Households in the Bushbuckridge area use poles for a variety of purposes. Because of the pressure on the natural woodlands, many community members have to travel further to harvest indigenous fuelwood and poles in the common access woodlands. In some instances entrepreneurs with transport earn an income by cutting indigenous trees in neighbouring communities to meet local demand. The homestead woodlot or boundary also assists in relieving the pressure on the natural woodlands. Poles and other construction wood grown around homesteads offer a saving on the household budget when structures need replacement. In addition, the off-cuts provide a supplementary fuelwood supply and reduce the considerable time women normally have to spend collecting wood in degraded areas.

There is clearly a demand for poles in Bushbuckridge as an increasing number of poleyards are being established in the area (there are currently at least 10 private poleyards, three of which are treating the wood). Trade in indigenous poles also occurs around the whole area.

Description of the activity
Tree seedlings are planted at homesteads where the residents have water licences from Water Affairs (DWAF). Seedlings are not planted near areas where vegetables, crops and fruit trees are being cultivated to prevent the trees competing with the household's food supply. The species selected is *Eucalyptus grandis var. camaldulensis* – a non-invasive, drought resistant, fast growing clone that has the potential to be harvested for up to five rotations. The seedlings are planted at a distance of 2,5m x 2,5m.

The model proposes planting around the homestead, rather than a community woodlot, because the former offers tenure security and ownership of the trees. In the past, the forestry department's attempts to establish community woodlots were not successful for a number of reasons, including the lack of participation in the process, giving rise to a perception that the woodlots were State property and that land had been taken away from people. This lack of ownership resulted in the poor management or destruction of the woodlots.

The CFPB is cautious in implementing this activity: it takes into account that the Bushbuckridge borders a conservation area, that planting woodlots must comply with water regulations, and that the Working for Water Programme is clearing exotics as part of the Save the Sand Project that aims to improve water flow in the Sand River catchment.

History of the activity

Only one woodlot has been established through the CFPB. During the process of identifying six areas for conducting PRAs, the owner of a poleyard at his homestead in Clare, located in the northern part of Bushbuckridge, requested support from the CFPB. Discussions were later held with the family on what kind of support the Project could provide.

The family purchased eucalyptus poles in Graskop or further afield (a round trip of 290km to 350km), transported them back to the poleyard once or twice a week, and then sold the poles to local consumers. Transporting poles over long distances increases the price of the poles. If the poles were harvested from the homestead woodlot, it would reduce the selling price of the poles because transport costs would be cut. It was thus decided that the CFPB could support the establishment of a homestead woodlot and a treatment plant to add value to the poles by increasing their resistance to termites.

The woodlands around Clare are degraded because of a high demand for wood from a large population, including recent Mozambican immigrants who are highly dependent on natural resources. Thus there is a local demand for poles. The poleyard could also reduce the pressure on woodlands in nearby communities since Clare residents would not have to harvest from these areas as they would now have the opportunity to purchase the locally produced poles at a potentially reduced price.

The household and other residents in the Clare area - 11 people including three Mozambican immigrants - were already earning an income from the poleyard, and a woodlot would help increase the amount earned. The family and workers have a good understanding of what is required for the woodlot. The CFPB made recommendations regarding planting and the maintenance of the trees.

The woodlot was established in an area that has been deforested as a result of a high local demand for wood and clearing land for agricultural purposes. Planting the woodlot took place in 1998 and in 1999. A total of 6000 seedlings were planted over about 4,5ha. A further 5ha is available for planting. The growth and survival rates of the trees are high, except in one area where the soil is eroded. The first harvesting rotation can probably take place in 2005/6.

During an evaluation of the CFPB's activities, members of the poleyard expressed concern over the Working for Water Programme that is removing exotic species from the water catchment. "They say anything to do with exotics must be destroyed but no survey was done to establish how communities benefit from these exotics." The members also said they felt "discriminated against" because "(the) Agriculture (department) have a free pass to convert woodlands into agricultural lands while we need permits from Forestry and Water Affairs".

Main Lessons Learnt

With regard to a homestead woodlot, issues around responsibilities, such as managing the woodlot and ownership of the woodlot are unambiguous. In contrast, community woodlots in the Bushbuckridge area were troubled by a lack of clarity over maintenance/management responsibilities, ownership of the resource, and who would derive benefits from the woodlot.

An integrated approach to rural development is required, incorporating various departments, projects and programmes (such as Working for Water Programme, the Save the Sand Project, DWAF, and the departments of Agriculture and Environment), to ensure strategies are not conflicting and to take into account the views and needs of community members.

An improved system of land and resource use and management is needed in the long-term to ensure sustainablility. Policies aimed at integrated development are in place, but because capacity in local government is lacking, co-operation between different departments is not yet developed, and the status of traditional authorities is unclear, this has not yet occurred.

The homestead woodlot is a short to medium term strategy for assisting in addressing different wood resource needs, such as demands for fencing and construction material.

Other activities, such as beekeeping and furniture making, could provide additional incomes. Eucalyptus is not a desirable species in terms of fuelwood, with indigenous species being preferred. However, where indigenous species are scarce, eucalyptus could be substituted.

Eucalyptus grandis var. camaldulensis grows well. However, rains in the past three seasons have been unusually good and success rates will only be truly tested in dry years.

It is yet to be shown whether the local production of poles has reduced the harvesting of indigenous trees in the woodlands.

Conclusions
Establishment of the homestead woodlot has been successful. However, the implementation of this model should be done selectively taking the following into account:

- Eucalyptus is a water hungry tree and is not desirable in a semi-arid environment where the annual rainfall is low.
- Where the homestead woodlot is planted is critical as the trees may compete with a household's crops, vegetable garden and fruit trees for water.
- While a woodlot can reduce the demand for indigenous poles from the woodlands, this has to be weighed up against the loss of species diversity through afforestation depending on the size of the area planted and the use made of it before. A reduction in biodiversity has a negative impact on households who harvest a variety of natural resources from the grasslands and woodlands for immediate consumption and to sell to supplement the household income.
- Planting homestead woodlots should not contradict or compromise the activities of other projects and programmes.

Support for establishing woodlots has, for the above reasons, not been a priority of the CFPB.

2.3 Other Community Forestry Activities

The tree planting activities described in this section aim to involve a range of community groups and institutions in community forestry activities that contribute to raising awareness of the importance of trees to quality of life and the contribution they make to livelihoods.

2.3.1 Rural/Urban Greening - Arbor Week

Target Group
Local government councilors, Tribal Authorities, departments of Health and Welfare, Agriculture, Environ-ment, Forestry and Education officials, members of local institutions like Civics (local branch of the South African National Civic Organisation, Sanco) and Reconstruction and Development Committees (RDC), local NGOs and businessmen, community forestry project members, residents, teachers and pupils.

Objectives and Justification
ž Improve the living environment by providing shelter from sun, rain and wind, soil erosion control, food and medicine

ž Improve the psychological health and general well-being of people
ž Raise awareness of the importance of tree planting to ensure a natural resource for future generations
ž Reintroduce trees into the landscape, particularly those that are now scarce

Urban greening is an integrated approach to the planting, care and management of all vegetation in an urban, semi- or peri-urban area to secure multiple environmental, social and economic benefits for residents who should also participate in the greening process. While the community forestry activities described in this document could all be classified as urban/rural greening initiatives, the greening activity discussed in this section is undertaken in connection with Arbor Week, the first week in September, but activities are not restricted to this time period.

Description of Activities

Preparations involved discussions with participants on the purpose of urban/rural greening and Arbor Week and the criteria for site selection, such as the availability of water, protection for the seedlings, which species should be selected, who would be responsible for planting and after-care of the seedlings. Based on the criteria a list of potential sites and responsible people was compiled. The communities then prepared the planting sites. A site visit was carried out and trees delivered based on the number of holes that were dug. Planting then took place.

Where possible, Arbor Week activities are implemented in conjunction with existing activities in order to supplement these initiatives. This approach is an attempt to ensure Arbor Week is not seen as a once-off annual event that occurs in isolation from ongoing initiatives being implemented in communities and schools.

After planting the sites are monitored and recommendations made to counter any problems. The site visits, undertaken by forestry extension officers, a BNCP representative and people who planted the trees, occur a week after planting and then a month later. The sites are visited again about six months later. The forestry extension officers keep records of the number of trees that have survived, along with the reasons for low or high survival rates.

History of the Activities

Over the past four years the CFPB, together with BNCP, has supported Arbor Week activities at schools. Preference is given to schools with existing environmental projects, such as those implemented by their eco-clubs, and where indigenous fruit tree orchards have been planted through the CFPB. Other schools that meet the criteria are also selected for Arbor Week. Teachers and eco-club members organise the Arbor Week activities. All pupils at each school take part in the event that includes speakers discussing environmental issues, pupils performing dance and drama with an environmental theme, and planting the seedlings. About 830 seedlings (20 species) at a total of 61 schools were planted in this period. Survival rates average about 41%.

The urban settlements of Hluvukani (Bushbuckridge north), Dwarsloop (Bushbuckridge centre) and Mkhuhlu (Bushbuckridge south) were selected for Arbor Week where the CFPB's procedures were introduced for the first time (see Description above). Prior to this, Arbor Week activities were restricted to tree planting events, for example at schools in the area.

The total number of seedlings planted at the three urban centres was 402 (38 species). The species selected include: *Acacia xanthophloea*, *Acacia abyssinica*, *Acacia robusta*, *Afzelia quanzensis*, *Antidesma venosum*, *Berchemia zeyheri*, *Bolusanthus speciosus*, *Brachylaena transvaalensis*, *Bridelia micrantha*, *Celtis africana*, *Ekebergia capensis*, *Erythrina lysistemon*, *Faidherbia albida*, *Ficus abutifolia*, *Ficus thonningii*, *Ficus sycomorus*, *Kirkia acuminata*, *Kirkia wilmsii*, *Olea europaea*, *Peltophorum africanum*, *Schotia brachypetala*, *Securinega virosa, Terminalia sericea, Trichilia emetica,* and *Ziziphus mucronata*.

Hluvukani

Members of the community-based nursery and garden helped organise Arbor Week activities. Representatives from the Department of Health and Welfare, the local council, the Tribal Authority, Mvula water project, BNCP, and a range of community organisations were involved in the planning process. A total of 140 seedlings were planted at churches, day care centres, the clinic, schools, a hotel, a trading store, a shopping centre, a food outlet, and centres for women's groups. Local business people paid for half of the cost of the trees planted on their sites. Preparations began some months before planting, which took place in September. The trees planted were 1,5m in size.

The induna planted the first tree which was also named after him. It was a day of celebration, with church leaders blessing the event, choirs singing, drum majorettes parading and local leaders making speeches.

Survival rates are high (90-100%) at all but three sites. About 50% of the trees died at two primary schools and none of the

seedlings planted at the Zionist Christian Church site survived, because goats ate the trees (the church members worship in the open and do not have a building).

Mkhuhlu

A total of 90 trees were planted at two schools, the Department of Education centre, the hospital, the clinic, the Department of Agriculture centre, the town council, the sports and recreation centre, the police station, and a church. A representative from each of the following structures planted a tree to launch the urban greening event: local government, the Tribal Authority, the departments of Education and Health and Welfare, eco-clubs, women's groups, day care groups, churches and the local tourism group. Planting of 1,5m trees took place in October and November. There is to date a 100% survival rate. Community involvement was limited when compared to Hluvukani.

Dwarsloop

At Dwarsloop the following were involved in organising the urban greening initiative: local government, the departments of Agriculture and Housing, church leaders, the local Civic, and street residents. Site selection at Dwarsloop was different to both Hluvukani and Mkhuhlu. In Dwarsloop trees were planted on 'private' property (for example, at the churches) as well as along the main road through the town and along secondary roads in the residential area, whereas in the other two settlements planting took place on property used by various organisations. The trees planted were 0,5m - smaller than those in Hluvukani and Mkhuhlu. None of the trees planted along the main road through the town survived. This area carries a high volume of pedestrian traffic and is also used for pension day markets. In contrast, the survival rate of trees planted in residential areas is 100%, while that on ' private' property is about 74%.

Other Urban Greening Initiatives

In some instances, specific resource user groups are also targeted for Arbor Week. A variety of species with a high medicinal value were planted in medicinal gardens at the homes of 16 traditional healers.

The woodcarvers took part in an exhibition in Nelspruit to emphasise that Arbor Week is not simply a once-off tree planting ceremony but that it is intimately linked to resource use and livelihoods, particularly in poor rural areas where people are dependent on the resource base for their survival.

Support, in the form of supplying seedlings, is also given by the CFPB to the departments of Agriculture and Education for their Arbor Week activities.

In 2001, other government departments, local NGOs and projects approached the CFPB for seedlings for Arbor Week. This time the seedlings were purchased by the CFPB from the Vukuzenzele traditional healers' nursery instead of from commercial nurseries in urban areas or from Kruger National Park. In return the departments provided transport for the seedlings.

Main Lessons Learnt

Involving government departments, local government, Tribal Authorities and local institutions in planning Arbor Week activities is a slow but necessary process to ensure support, ownership and responsibility. It also encourages integrated service delivery/co-operative governance.

However, participation needs to be wider than this. In areas where community-based organisations were involved, the trees stood a greater chance of survival – Hluvukani being one example. Emphasis should be placed on drawing residents and local associations into Arbor Week activities.

The criteria used for site selection are critical - water, protecting the seedling with some kind of barrier and, in particular, having someone taking responsibility for the maintenance and care of the seedlings.

Seedlings planted on the property of government departments and institutions also survive well, probably because they employ gardeners and the areas are fenced off.

Despite the fact that measures were taken to protect the seedlings, survival rates are low when the trees are planted in public spaces, for example along the main road through Dwarsloop. Seedlings should either not be planted on busy public thoroughfares or be given greater protection.

Trees planted on pavements outside people's houses, on the other hand, had a higher survival rate because the homeowners saw

the trees as theirs, took responsibility for caring for them, and participated in the planning process.

Seedlings planted along the roads in front of businesses have a good survival rate because they are also on 'private' territory. Ownership was further emphasised because the business people paid half or all of the cost of the seedlings.

The involvement of specific resource user groups (for example, traditional healers) is also a successful approach as it underlines the importance of meeting people's needs. People benefit from the resource and thus take ownership of and responsibility for the plants. The activity raises awareness of the need to both plant and manage existing natural resources in terms of their livelihoods.

At the schools where the teachers and principals are enthusiastic and support the pupils, the seedling survival rate is higher - even if the schools do not have fencing and water.

In most instances, preference for evergreen trees to provide shade was expressed. This is probably a result of the institutions targeted and the sites selected for planting – along streets, outside food outlets and other local businesses, at churches, and at government buildings. In one case (Dwarsloop) the species selected included exotics (such as cedars, cypress, juniper, palms and oaks) based on the participants' perceptions of trees required for beautification purposes along streets. In other instances, trees for purposes other than shade or beautification were requested depending on the activities being undertaken, for example, community gardens require trees to improve soil fertility while healers want medicinal plants.

It is better to plant fewer, but bigger, seedlings (1,5m) rather than many smaller trees (0,5m). Survival rates are higher because caring for many trees is a burden in terms of watering, weeding and protecting the seedlings from grazing animals and people trampling them.
September is not always the ideal month in which to plant trees because the summer rains have generally not begun. Survival rates are increased if the trees are planted after the first rains (November/December) and by mid-February (before the end of the rainy season) in order to give the trees time to establish themselves.

The CFPB found that transporting seedlings is a time-consuming activity. However, it is too costly for community members to provide transport. Involving other government departments in transporting the trees ensures their commitment to and involvement in Arbor Week activities, enables tree planting in communities, and reduces the burden on DWAF.

Conclusions
From the above it appears that responsibility and ownership, not only of the process but also of property, is a determining factor in ensuring the trees planted do survive and that tree planting is successful.

Linking Arbor Week with ongoing initiatives and projects in an area is a successful approach because people are generally already motivated, and see the trees as an extension of their activities, and of benefit to them.

Tree planting during Arbor Week raises people's awareness of the importance of trees, but raising awareness does not necessarily translate into action or behaviour changes. Tree planting requires more than a ceremony once a year. Developing long-term activities in conjunction with tree planting has a greater impact with regard to improved natural resource use and management.

2.3.2 Indigenous Fruit Tree Orchards

Target Group
Primarily school children and teachers at primary and secondary schools. Members of community-based gardens and nurseries can also be targeted.

Objectives and Justification
- To raise awareness of the contribution indigenous fruit trees make to the nutrition of household members, children in particular.
- To raise awareness of the other roles trees play in people's lives, for example, combating soil erosion.
- To raise awareness of the importance of tree planting to ensure a natural resource for future generations.
- To serve as an educational tool.
- To provide food, shade and shelter, as well as beautification of the school yard which improves the general well-being of people.
- To reintroduce species that are now scarce in the Bushbuckridge area.

Often learning resources, such as text books, are inadequate at schools and the presence of a variety of trees and other plants in the school environment would be a welcome addition of educational material, particularly given the new outcomes based system of education. Many schoolyards consist of bare patches of ground and planting trees would improve the physical surroundings - and thus have a positive psychological impact on children and teachers. In addition, many rural schools do not have enough classrooms and lessons are held under trees. The trees would also serve to reduce erosion caused by rainwater run-off. Some schools also have vegetable gardens and the tree component could be incorporated into the system to not only provide nutrition but also shade, a windbreak and to improve soil fertility,

Description of the Activities
The schools targeted are those who express interest in this activity. Many of the schools have eco-clubs, consisting of pupils interested in environmental issues, a chairperson, and a teacher. The CFPB works with BNCP, as it already has strong links with schools in the area. This partnership is mutually beneficial: it facilitates the CFPB's access to, and work with, the schools and the CFPB supports the NGO by providing seedlings, transport and other resources.

The CFPB provides the following support: assistance with species identification and selection; technical assistance regarding planting and maintenance of the seedlings; educational field trips to nurseries, botanical gardens, and the Social Ecology department in Kruger National Park; and transport of the seedlings.

Before the trees are delivered, discussions are held with pupils, a responsible teacher and the school principal. The topics discussed include: the role of trees, the availability of water, who is responsible for caring for the trees – watering, weeding, mulching - and how trees will be protected to prevent damage by children and livestock. The planting of indigenous fruit tree orchards is also incorporated into Arbor Week activities.

The tree orchards are monitored and evaluated at yearly intervals by the forestry extension officers, teachers and eco-club members. The CFPB discusses problems with participants and recommendations are made to deal with issues that might have arisen.

History of the Activities
Work on establishing the indigenous fruit tree orchards began in the 1997 and 1998 planting seasons.

Indigenous fruit tree orchards have been planted at 29 schools. The number of tree seedlings planted at each school ranges between 10 and 40. The survival rates fluctuate from school to school. At one school, about 99% of the trees are growing, but at another school all the trees have died. On average, survival rates at the majority of schools range between 20% and 60%.

The Green Valley community garden and nursery also planted an indigenous fruit tree orchard. About 20% of the trees in the orchard at the Green Valley community garden and nursery have survived. The main cause of the high mortality rate was a fire that swept through the area in August 2000, destroying many of the plants. In addition, the soil was water-logged during the rainy season (the February 2000 floods) and most of the species that survived were those trees suited to heavy/clayey soils, such as the Ficus species.

The fruit tree species selected for planting include: *Antidesma venosum, Berchemia discolor, Carissa bispinosa, Carissa edulis, Cordia ovalis, Cordyla africana, Dovyalis caffra, Diospyros mespiliformis, Diospyros lycioides, Ehretia amoena, Ficus glumosa, Ficus sycomorus, Flueggea virosa, Garcinia livingstonei, Lannea stuhlmannii, Mimusops zeyheri, Pappea capensis, Rhus gueinzii, Sclerocarya birrea, Senna petersiana, Strychnos spinosa, Syzygium cordatum, Syzygium guineense, Trichilia emetica, Vangueria infausta,* and *Ziziphus mucronata*.

Main Lessons Learnt

The main cause of the low survival rates is poor after-care of tree seedlings - no weeding, no watering in the first crucial phase, and destruction by livestock, fire and children playing.

While some schools do have a water supply and a fence around the yard, which should help to ensure the survival of trees, this is no guarantee that the seedlings will live. All schools face similar problems, yet certain schools with no amenities have a high tree survival rate. At Islington school, for example, there is no fence or water, but their trees grow because pupils bring water from home in winter and they use branches to protect the trees.

In addition, trees at schools tend not to be cared for during the holiday periods.

Interest in environmental issues and a commitment to working on environmentally related initiatives contributes to success. However, as with the Arbor Week activities, the support and involvement of teachers is an essential factor, not only to generate an interest in and awareness of natural resources, but also for the personal development of the youth. As one schoolchild said: “The principal is supportive and makes us feel responsible and proud of what we are doing for the school.”

Ensuring responsibility is also a necessary condition for tree survival. The pupils and teacher responsible should be encouraged to draw up a list of who is responsible for caring for the plants (for example, watering, mulching to reduce water loss and discourage weeds, pruning, supports for the seedlings) and how problems, such as a lack of water and the need to protect the seedlings from livestock and fire, are going to be dealt with.

Given that many schools do not have a reliable water supply, planting should only take place during the rainy season.

Site/species matching is critical. Factors such as rainfall and soil types should first be assessed to determine which are the appropriate species to plant. The Green Valley community garden’s indigenous fruit tree orchard is an example where site species matching would have resulted in a higher survival rate.

Conclusions

This community forestry activity raises awareness around the importance of natural resources and the contribution they make to people’s livelihoods, the causes of environmental degradation, and the need for tree planting and other resource management strategies. This is best summed up in the words of Phillipos Monareng, a pupil at Maakere school in Dingleydale: “I was ignorant … I thought environment was only found in game reserves. By planting and looking after these trees I now know it is in my place. Trees are life itself and without nature there is nothing.”

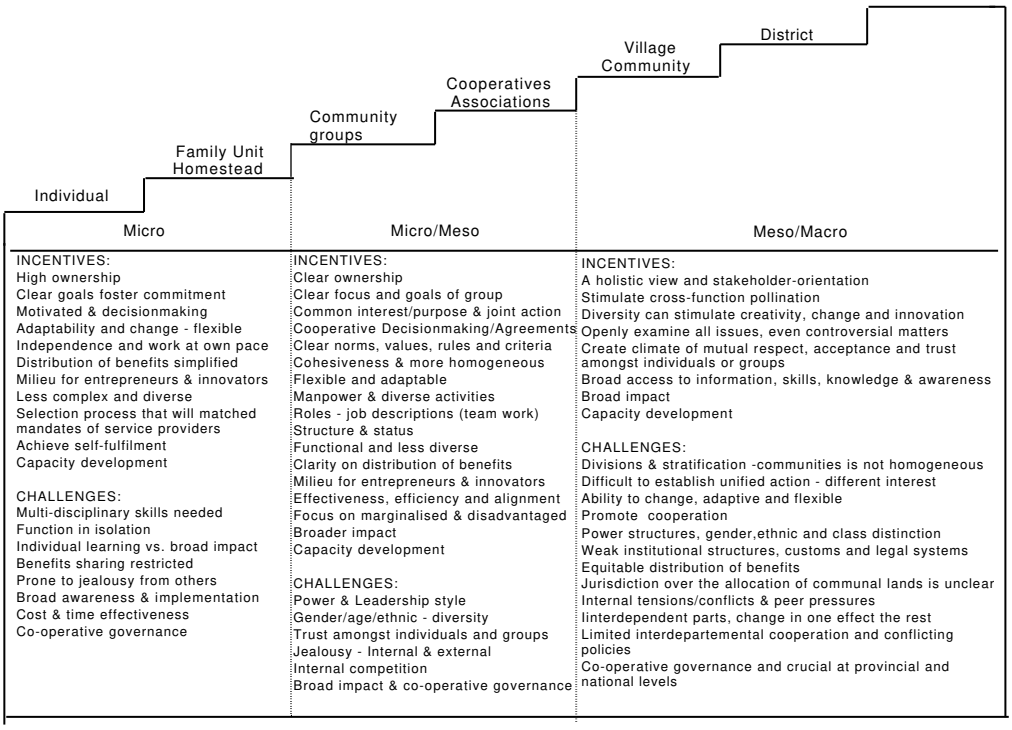
3. LESSONS LEARNT

According to the CFPB’s experience, there are a range of incentives and challenges - ownership, goals, decision-making, flexibility, benefits, opportunities, co-operation, capacity development, level of impact in relation to mandates and resources - related to the different ways of approach community forestry activities. These are summarised in the diagram below that

compares these incentives and challenges between the different levels of implementation.

Figure 3.

Experience at Diffrent Levels and Participation in Community Forestry Activities



3.1 Developing Crosscutting Themes and Conclusions

Section 2's description and analysis of the various community forestry activities, based also on participatory monitoring and evaluation during implementation, reveal various themes common to the community forestry projects and activities/models. Section 3 discusses these recurrent themes derived from the previous section in terms of the lessons learnt - what works and what does not, and what is required to help ensure successful outcomes from community forestry initiatives. Thus, this section aims to explore the cross-cutting themes and work towards developing conclusions.

Four main crosscutting themes emerged from the community forestry activities aimed at greening and socio-economic development described in Section 2. These can be grouped as follows: benefits, capacity development, participation and co-operation. A few technical issues were also revealed. Within these broad categories are a number of sub-themes or issues. Both the broad categories and the sub-themes are not discrete but are interlinked and mutually dependent.

3.2 Benefits

The CFPB builds on the recognition that for environmental restoration to be relevant for people, they need to derive tangible benefits from community forestry activities, since raising environmental awareness is insufficient to ensure sustainable development. Thus the CFPB's approach has been to link natural resource use and products to ways to strengthen the sustainable utilisation of these woodland products. For this reason the various community forestry 'models' were developed.

> When the CFPB was being formulated, and when it started five years ago, DWAF policy was still being developed and the forestry staff had little experience and a narrow framework regarding community forestry. One of the benefits of the CFPB is that it has broadened the understanding of community forestry activities – these are more than simply woodlots for fuelwood and some agro-forestry technologies, and rather encompass a variety of other activities linked to natural woodland use, such as medicinal plants, woodcarving, construction material, household items, food, fodder and so forth. New ideas were piloted and tested, such as low technology approaches (to soil erosion, nursery construction and the silkworm rearing shed), as was the resource user group approach. The CFPB looked for new opportunities for community

forestry initiatives (the silkfarm initiative, woodcarving, beekeeping, indigenous fruit tree orchards and agro-forestry technologies). This broadening of the understanding of what community forestry is has resulted in blurring barriers – for example, it works against the compartmentalisation of strategies within a directorate, between the directorates within DWAF, and between government departments – stressing the need for greater co-operation and collaboration.

In addition, through the implementation of the CFPB capacity among forestry staff has been built. When the CFPB started five years ago there was little understanding of what was meant by participation and development. Through the CFPB, new concepts and alternative approaches have been explored, resulting in a shift from a 'service delivery' mentality, where ownership of initiatives resided with the department, to one where DWAF staff work together with citizens to achieve desired goals, with ownership resting with community members. The new learning includes greater understanding of 'community' as stratified and complex; the residents' needs, values and priorities; institutional issues; and social, political, cultural, economic and historical factors linked to natural resource utilisation.

The resource user-group approach focuses on the group's specific interests and needs to provide direct benefits to participants. Other community forestry activities or models, such as agro-forestry technologies and soil erosion control, provide indirect benefits to the participants.

Through the implementation of community forestry activities, benefits related to natural resources are made obvious to the members of the various projects, such as the beekeepers who recognise the intimate link between bees and trees and honey production; traditional healers who need natural resources in order to heal people; and community gardens where agro-forestry technologies improve crop and vegetable production. This results in changed perceptions around resource use and benefits from natural woodland resources.

The importance of this focus on tangible benefits was again confirmed during a recent participatory evaluation of the CFPB where participants in community forestry projects identified generating an income, employment and rural development as their major concerns: "What we dream of is to have facilities where we can make the products ourselves and in this way create jobs and fight poverty" (Project Evaluation, 2001).

Participants in all of the community forestry projects described in Section 2 initially saw satisfying needs in terms of direct (usually income generation and natural resource use linked) benefits. However, the benefits gained through the implementation process are not only tangible and quantitative, but also intangible and qualitative. They include the following:

a) The user groups' specific plant resource needs are, to a greater or lesser degree, met. For example, the carvers accessed jacaranda wood through the substitution strategy while the planting strategy was less successful and only a long-term solution. The traditional healers are meeting some of their resource needs through propagating and cultivating medicinal plants. Beekeepers are accessing sources of plants high in nectar so that their beehives become productive.
b) Interest in participating in activities aimed at improved natural resource use is greater – people can identify with these activities whereas the broader concept of environmental rehabilitation is initially too nebulous.
c) Resource linked activities supplement household incomes - for example, beekeepers sell honey and other bee products, while community garden members sell surplus vegetables because the soil fertility has improved and runoff has been reduced.
d) Household income is further increased when community forestry initiatives introduce a range of activities. The Hluvukani community garden is one example of diversification (introducing, for example, a fence-making business, poultry for egg production, a sewing business, a food garden and a nursery) that has resulted in a large number of households receiving additional income.
e) Community forestry activities can also provide products that reduce household expenditure, such as food from the community gardens or medicine from the healers' nursery and garden. The indigenous fruit tree orchards and live fencing with multi-purpose plants will provide goods, such as fruit, medicine and fodder.
f) Over time participants developed a more complex understanding of the role of natural resources in their lives, competing resource use, ecology, the impact of people's activities on the resource base, and of other broader issues linked to natural resource use, such as institutional arrangements, and policies and legislation around land and resource use. The resource user groups (beekeepers, healers, homestead woodlot and woodcarvers), as well as members of some of the community gardens and nurseries, have all identified a need to hold discussions with local institutions, government departments and local government regarding decision-making processes around land and resource use.
g) Community members also develop a range of skills through participation and experience gained in implementing the

community forestry activities. For example, they may learn and practice how to rehabilitate a donga, plant propagation and cultivation, management skills, business skills and beekeeping, to name a few.

h) Through participation people derive the intangible but important benefits of hope, self-worth, confidence, pride, dignity, recognition, responsibility, motivation, and the like - in other words, fundamental human needs. This benefit is linked to the benefit of participation (see 3.4 below).

i) Increased capacity (understanding and skills) and success in their activities is a secondary factor that contributes to attaining these human needs. Without satisfying these fundamental needs, a community forestry initiative is unlikely to succeed.

The material and intangible benefits derived from most community forestry activities take a long time to be realised and require hard work for slow returns. This is illustrated by a number of initiatives, including the community-based nurseries, medicinal plant project and beekeeping. For example, discussions with the traditional healers began in 1998 and the nursery was established a year later. Plants are being propagated and sold but the six healers have had to introduce other activities, such as vegetable growing, to tide them over the lean months. Through implementation and formal training capacity in a number of areas is being developed. However, it has taken almost four years for the group to start resolving organisational issues, explore ways to address broader issues linked to resource depletion, and work towards processing and packaging medicinal plants in order to add value to the product. The latter step will not be achieved in the shortterm as the healers still face many challenges, such as developing a reliable source of the raw materials, exploring packaging options, establishing a 'production line', and identifying markets for products while ensuring a constant supply of goods. The original group size was 20 but has dropped to six, largely because returns were not immediate and time and labour demands were high.

The participants in the projects introduce other activities that are not necessarily linked to community forestry (in other words, community forestry activities act as a catalyst). For example, the traditional healers introduced vegetables and food crops, while plants for sale in the nursery are not only medicinal plants but also fruit trees and plants for gardens and homes. Another example is the Hluvukani community garden where sewing, chickens and fence-making were introduced.

Diversifying activities spreads risk and generates additional material benefits for participants. Should one activity fail there are others to fall back on; the returns from one initiative are generally to small for the number of participants and the labour and time invested; and returns from community forestry activities are slow because plants take time to grow. This approach underpins rural household survival strategies and replicating it in community forestry initiatives works well.

Implementing community forestry (and other) initiatives, coupled with an increased understanding of dependency levels on natural resources and the effects of unsustainable resource utilisation practices, results in people shifting from a day-to-day survival strategy to a long-term view which brings a need for planning for the future and for success in their initiatives.

Product development has emerged as an important factor in community forestry initiatives with regard to tangible benefits, capacity building and natural resource use and management. By adding value to products derived through community forestry activities (for example, wood carvings, bee products, and medicinal plants), income generation is enhanced. This raises the value of the natural resource itself and increases the opportunity for improved natural resource use and management. This is best illustrated by a quote by a traditional healer: "It is only through business opportunities that we will succeed in addressing the slaughter of our environment" (Project Evaluation, 2001).

However, the reliable supply of natural resource products to the outlets/buyers and quality standards need to be improved. This requires a focus on organisational development and technical training with the community groups. The woodcarvers serve as a good example (as do the traditional healers, the nurseries and the beekeepers). Buyers placed orders with the woodcarvers but the production of the carvings was slow, resulting in the buyers having to wait for the orders. In one instance the order was to be exported and the delays resulted in the buyer not placing further orders. In another instance the batch was rejected because the quality of the carvings was not good (some carvings were not according to the order placed, while others were cracking and were covered in mould).

3.2.1 … and Costs

Along with the benefits of community forestry, there are costs. These should be assessed during discussions with the various stakeholders, including community members.

Costs can take the form of people's labour and time - meetings, workshops, training, implementation, discussions with people from departments, universities and other projects visiting community forestry initiatives on study tours or undertaking research. If these costs outweigh the benefits then either participation in these initiatives is adversely affected or participants are put under undue pressure. Additionally, time spent on their other activities is reduced, increasing the household's vulnerability. There are numerous examples of this but the following illustrates the point: training was arranged for 10 woodcarvers but only three attended the course. The remaining seven did not attend because they would not have been able to sell their carvings from outlets along the roads to Kruger National Park and they could not afford this loss of income.

Community forestry activities themselves may carry more costs than benefits for the community members. For example, planting trees when deadwood is available could be a financial cost not only for community groups but also for the department. Another example is the woodcarvers substituting jacaranda for indigenous wood and facing the potential of incurring the cost of transporting the jacaranda.

Costs incurred by community forestry and other activities in terms of reducing bio-diversity need also to be considered, as this has an impact on livelihoods through reducing the 'free' products harvested from the woodlands. This reduction is caused by clearing land for agriculture, clearing land to establish a woodlot of only one species (particularly if it is an exotic that demands water or spreads), and unsustainable harvesting of indigenous species for, say, medicinal or woodcarving purposes.

Costs to the broader community may also occur through, for example, fencing off the commons and thus effectively denying other users access to woodland resources, such as grazing, fuelwood, medicinal plants etc (see below for further discussion).

Transport – access and cost - is a factor that inhibits the effectiveness of community forestry initiatives. If members of a group do not live in the same area, it affects communication and organisation (as seen in the example of the Dwarsloop nursery where the participants lived in three different areas near the town. Communication and organisation among the beekeepers is also difficult because the members of the association live in different community areas around Bushbuckridge). It affects initiatives such as salvaging species and species substitution (as the woodcarvers example shows). It also affects access to outlets for their products - local markets do exist but access to a market outside the Bushbuckridge area would potentially increase income generation from community forestry activities. Goods that might be needed for the projects may not be available in Bushbuckridge shops, or the prices may be much higher than in the larger urban settlements outside the area.

3.3 Inputs

Access to finance for poor people is limited and costly, and this restricts their ability to start or continue enterprises based on woodland products. It is for this reason the CFPB has a Tree Fund in the Project's budget. The initial intention was to disperse loans to groups involved in community forestry initiatives. However, it was soon realised that there were problems regarding financial management, including the following: at the start of a community forestry initiative the groups are loose affiliations and membership fluctuates; accountability and capacity may be limited; the groups may not be legal entities and thus cannot open bank accounts; and there may be no systems in place to prevent the mismanagement of funds (for example, some PSC members were more interested in getting access to the money than they were in ensuring community benefits and there was no system in place to prevent potential misuse of funds).

It was therefore decided that the Tree Fund would be used to purchase equipment for the various community forestry projects and that the members would pay for this at a later stage. Examples include tree seedling starter stocks that were provided based on an interest free loan. The fencing machines were bought and community groups repaid the CFPB over a period of time after they had received enough orders for fencing. The same applied to the beekeepers and the traditional healers. Repayment is considered important so that there is a sense of ownership and so that the community forestry initiatives are not based on handouts that would result in dependency and not engender a sense of responsibility and accountability. A rigid repayment system is inappropriate and would place a burden on groups and may result in them becoming poorer. Thus the time over which the loan is repaid has to be flexible because most community forestry initiatives are not quick income generating activities and the groups are starting from scratch with no capital and infrastructure and with limited capacity. The community group members did not have to pay cash for

all the physical inputs provided through the Tree Funds. In some instances their labour was regarded as a form of payment – for example, work towards the erection of nurseries and fences, and planting live fencing.

To assist in overcoming some of the initial problems the CFPB has focused on developing organisational capacity and arranged that group members received business and management training. The CFPB has also had to wait while group members decided whether they were committed to continuing with the community forestry initiative. Once this was determined the CFPB has assisted in forming legal entities, generally in the form of associations, with some of the groups (those where membership is fairly constant, and where members are committed and able to take processes further). There are no easy solutions to the management of the Tree Fund. Ideally, the funds should be released directly to the groups and the loans repaid, but the risks associated with community forestry activities are high (seasonal fluctuations, the time it takes to develop capacity, grow plants, establish markets and products, etc.) and these initiatives should not impoverish an already impoverished group of people.

It is unrealistic to expect that the burden of environmental rehabilitation and natural resource management be borne solely by poor rural communities.

Community forestry initiatives that involve material/physical inputs need to ensure that the technology is appropriate. Cost, availability and maintenance issues are considered so that the group's vulnerability is not increased (examples include building nurseries and erosion control using resources available; using a hand operated centrifugal drum to extract honey; and hives that the beekeepers construct themselves). This approach helps to ensure that the activity can easily be replicated and implemented by community residents without outside assistance.

This low cost, appropriate technology approach also reduces the risk of theft and vandalism (the latter is usually linked ' jealousy'). Fencing and shadecloth was stolen on about six occasions, and in one instance a security guard hired by the group was shot at. The building of nurseries from natural resources available (*latte* and reeds) has so far eliminated the problem of theft of nursery construction materials. Fencing remains a problem, as discussed below. Crimes are reported but in some instances the officials do nothing either because they are inefficient or they are corrupt. Crime and jealousy, caused in part by poverty, is common and it is not just development initiatives involving government departments and other institutions that are affected. The issue of 'jealousy' is difficult to resolve. It is assumed it occurs out of envy because some people are being assisted by the CFPB and are becoming successful. However, it is unrealistic for the CFPB to work with and assist the entire population of Bushbuckridge. In addition, the CFPB bases its selection and support on a variety of criteria including demand and commitment. The Project has the support of local institutions, but perhaps wider communication of the CFPB's objectives and establishing broad agreements around land and resource use would reduce vandalism and theft.

Fencing is one material input that needs careful consideration as it is linked to a number of issues, including tenure and cost. Fencing is desired, but it is expensive and, because of this, it is often stolen. Many community forestry initiatives involve groups accessing land and fencing it to protect the plants from animals and to define their land. Acquiring land and ensuring tenure security is problematic in the former homelands. Fencing off land meets the needs of the smaller group but denies other resource users, such as wood collectors and livestock owners, access to natural resources. Effectively the commons are 'privatised' even when procedures, themselves unclear and insecure, have been followed. This has to be weighed up against the benefits gained where people gain access to land and a level of tenure security and household income and savings are enhanced through a community forestry initiative. (As an example, when the fencing around the bee garden was stolen other local residents resumed using the natural resources in the area, reducing the bee plants and forcing the beekeepers to relocate their hives because bee food was reduced and they feared the hives would be stolen or robbed.) Physical fences may keep animals out but they are currently not solutions for people – either the community forestry group or other resource users. In addition, clear legislation around tenure, and social agreements reached through participative processes are required – i.e. co-operation between different resource users.

3.4 Participation

The CFPB's approach to planning, decision-making and implementation of community forestry activities depends on ensuring the full participation of local communities that rely on natural resources for their daily livelihoods. The users of natural resources must be involved in identifying opportunities, problems and solutions. (The benefits of participation are well known, as summarised in Section 1).

The CFPB experience is that through participation people develop a sense of ownership, pride, self-esteem, self-worth, recognition, belonging, motivation and. Quotes from participants in community forestry projects illustrate this: "We can now make a difference"; "I was like a beggar waiting at home but now I can do something, even if it is only a small thing" and "You must bring people here to see what we can do here in our place in Bushbuckridge" (Project Evaluation, 2001).

Participation enhances the likelihood of community forestry initiatives succeeding. For example, the survival rates of seedlings planted at schools (through Arbor Week and the indigenous fruit tree orchards) are determined by the level of interest, enthusiasm and commitment shown by the principal and teachers in environmental issues, in the pupils and in the eco-clubs. When this support occurs the school children are motivated, feel a sense of belonging and of pride, and develop a greater understanding of the importance of natural resources. Tree seedlings often do not survive because of poor care after planting. Although this appears to be a technical issue, it is linked to the importance of participation to engender a sense of ownership and responsibility.

In a sense, participation in community forestry activities can be seen to have two dimensions - decision-making in the planning and implementation stages, and active and continuous involvement in implementation - and both dimensions are equally important. The constraints and lessons learnt, described in Section 2, reveal that participation is affected by a number of factors, including people's available time; their priorities, values, interest, and needs; and gender and power (including that of external agents).

a) The community forestry projects, in many instances, introduce additional work for people. For example, traditional healers have patients to treat and introducing a medicinal plant nursery and garden means they now have to divide their time between healing people and propagating and cultivating medicinal plants. Even though these initiatives complement their other activities, participation is affected because the various activities compete for people's time.
b) A specific aspect of this is gender. Certain jobs are regarded as women's work – such as caring for children, feeding the family, harvesting natural resources (fuelwood, for example), and cultivating crops – and this places an additional burden on women involved in community forestry activities. This applies to most community forestry activities but, to continue with the traditional healers example, the women not only heal people and grow medicinal plants, but also do 'women's work'. Furthermore, certain jobs in the community forestry initiatives are also seen as women's work, such as weeding, hoeing and watering.
c) Power relations in a group determine the members' level of participation in decision-making. This is illustrated by the CFPB's experience with the woodcarvers.
d) Power also has a gender dimension. Women's status in society can negatively affect their full participation in the decision-making process. (Gender issues are elaborated on in Section 3.5 below).
e) People will only participate fully if their interests and needs are met.
f) The corollary of this is that people should not be forced to participate - community forestry initiatives are more successful if people are committed and willing. While the CFPB encourages interactive participation leading to self-mobilisation, it is easy for an external agency to slip into a mode of functional participation because of the pressure on it to achieve the objectives of the external institution rather than those of the community (see Annex 2). This has a power dimension that works against participation as the external agents may influence, shape and determine people's needs and wants.

Trust plays a crucial role in ensuring participation and thus the success of implementing a project. The Forestry Department has had to overcome mistrust created during the apartheid era. It is only after the CFPB had proved itself to community groups that they were willing to participate fully in community forestry initiatives aimed at improved natural resource use and management. A quote from one participant illustrates this point: "We thought the woodlands belong to the government; now we know that they are ours" (Project Evaluation, 2000). The CFPB's experience in one community in the southern portion of Bushbuckridge, Justicia, shows this mistrust. The CFPB took part in community meetings to discuss community forestry and was asked to leave the area because, according to a group within the community, the Project "wants to steal our land". (The CFPB was later invited back after further discussions). Trust is, however, only gained over time and requires that the external agency:

a) Recognise that it is the members who take the risks and invest their time and effort for the promise of benefits from community forestry activities aimed at improved resource use and management.
b) Show respect for community members.
c) Be open and transparent in all discussions and processes, in particular about its motives and objectives.

d) Show consistency in behaviour and ensure there is clarity at all times.
e) Ensure continuous, co-ordinated collaboration, rather than sporadic interventions.
f) Deliver on any promises made.

The forestry staff now has greater awareness and understanding of the need to ensure participation when implementing community forestry activities. Through the implementation of a participative approach, the community forestry extension officers gained both skills and understanding of development. One aspect of this capacity development singled out by the community foresters was that they finally understood what was meant by marginalised groups – the very poor, women, Mozambican immigrants - and the need to ensure these groups took part in the planning and decision-making processes for initiatives around development and natural resource utilisation.

3.5 Group Dynamics

As discussed in Section 1, the CFPB has developed the user-group approach where group composition is determined by the resources used and with 'community' groups where membership is determined by their interest in an activity (such as community-based nurseries and gardens incorporating community forestry models).

> Newly formed groups face difficulties around planning, managing their activities and deciding on responsibilities. For example, in the beekeepers' group, hives need to be maintained, honey needs to be harvested, and once the honey is harvested it needs to be separated from the comb and bottled. All of this requires planning – when these activities will occur, arranging transport to the sites, who will extract the honey, purchasing bottles for the honey, ensuring there are labels, and so forth. In the initial stages the group found it difficult to establish a routine for maintenance and harvesting and, once harvesting had occurred, no-one had remembered to buy bottles. The group was also dependent on the CFPB for transport, whereas they could have made alternative arrangements. These problems were linked to poor planning and not allocating responsibilities clearly. In addition, there was a danger of their becoming too dependent on the CFPB, which would ultimately mean that the project was unsustainable.

Planning and management skills may be weak but power and gender dynamics, tensions/conflicts within the group, and time constraints also contribute to the difficulties. Group dynamics and organisational issues always exist and require attention. In some groups this is more problematic than in others, as is the case with the traditional healers. Tensions, which can lead to conflict, emerge around issues linked to responsibility, commitment, ownership, communication, gender, and leadership style. Reaching agreements on the sharing of benefits and the workload, determining responsibilities, and developing people's ability to plan are some of the ways to reduce tensions and improve the effectiveness of the community forestry initiative. The process requires discussions and workshops to clarify roles and responsibilities, membership, aims and objectives. In some instances (the beekeepers and the traditional healers) this has resulted in the formation of an association, a legal entity with a constitution which brings with it benefits, such as enabling the group to open a bank account and motivate for funding.

Equity in groups refers not only to the sharing of the workload and responsibilities but also to benefits. Benefits from community forestry initiatives have to be shared with a number of people – and the greater the number the further the benefits have to spread. This is illustrated by the CFPB's experience with community-based nurseries. Using the Green Valley garden and nursery as an example, initially up to 30 people participated but the numbers soon dropped off as people realised the returns for their labour and time would be minimal. If the nursery has a good market for their seedlings, the maximum number of people who can derive adequate cash benefits from a community-based nursery is probably about three to four people. To deal with the problem of too many people for too few returns, the Hluvukani group of 60 people started a range of activities and divided their members between the various initiatives. Group size with regard to benefits needs to be taken into consideration in establishing a community forestry initiative.

Development initiatives, particularly for the poor, are often based on a 'community' or group approach. The reasons for organising people into groups are logical and practical. An external agency promotes the concept because, organisationally, it is easier to work with a group, or a few representatives, than it is to work with many individuals. The external agency also wants to spread benefits to as many people as possible rather than to a few people. But this group approach is also problematic. It ignores the individualistic nature of people. It assumes people co-operate for the good of 'the community', and it further assumes that the benefits of development will be equitably distributed. People agree to form a group because they realise this is what the external agency wants and thus go along with the proposal in order to get the benefits. In this

sense, the group is an artificial construct.

In addition, group membership may fluctuate – the members leave, but may also return. For example, some of the beekeepers and woodcarvers left the Bushbuckridge area because they found waged labour in the urban areas. However, when these jobs ended they returned to the rural areas and resumed their former income generating activities with the group.

In some instances, establishing an organisation may result in the creation of a platform and powerbase for a person, usually a man, who emerges as the leader. Strong tactics are required to remain in power. However, these leaders are easily toppled – through rumour, innuendo, and public humiliation – as others seek the status and other rewards of the position.

A good example of the above points is the woodcarvers group where an alliance had been established some time before the CFPB was initiated. The alliance was formed to ensure as many people as possible benefited from inputs from private companies and the Kruger National Park – for example, having an outlet to sell their craft and where they could receive training. The leader of the alliance to some degree acted as a gatekeeper, deciding who would participate in initiatives through the CFPB. Rumours about his alleged misdemeanours abounded (but were not proved) because he was seen to have status and power and because benefits were not thought to be equally distributed. (The issue of jealousy is also highlighted by the above example). He was finally driven out of the area. The CFPB worked with the alliance but also found it necessary to work with other groups of carvers who did not want to be part of the alliance. Membership of these groups is loose, with members working in co-operation to some degree, leaving when they find formal employment, and then returning. The CFPB had to take these factors into consideration when working with the carvers, and put in place flexible arrangements and took small incremental steps.

Another example is that of the beekeepers where the CFPB strategy was to follow a flexible approach involving both the formation of an association, so that all members share costs and benefits, and enabling beekeepers to also operate as individuals outside of the association. This strategy is, so far, working well.

While the difficult aspects of organisations exist and are not always acknowledged, groups do function to a degree and people do derive some benefits – a legal entity with a constitution, such as an association, can share skills, resources and costs, has greater opportunity to access funding and loans, and the members as a group gain power and leverage. (An example of the latter occurred when the police initially ignored a beekeeper when he laid a complaint of theft, but on presentation of his association card, the matter was pursued.) This suggests that organisations can be useful but the way in which these are established requires greater understanding and a careful process. Organisational development thus emerges as a critical factor for the success of a community forestry initiative involving a group. A flexible approach is also required to cater for individuals, loose groups and structured organisations.

Gender related issues in relation to group dynamics are evident in the community forestry initiatives – as discussed in Section 2 with regard to the community gardens and nurseries (such as Green Valley and Hluvukani), the beekeepers and the traditional healers. It is also a cross-cutting theme that emerges in the discussions around participation and is a factor that should be considered in relation to capacity development. Because women are limited by cultural and social patriarchal domination, their full participation in the decision-making process is limited. Yet many households are female headed; women are often responsible for the harvesting of natural resources for consumption by the household or for selling and for cultivating crops; and in most community forestry initiatives women predominate in number. However, in most instances, the 'leaders' of the community forestry groups are men (the exceptions being the beekeepers and the Hluvukani group). Given that women play a large role in natural resource use it is essential that they participate in the process of deciding how land and natural resources should be managed. Finding ways to accommodate cultural factors and also enable women to be part of the decision-making process without causing conflict between members in a group is important in community forestry initiatives. Clarifying responsibilities within the group, discussions around the roles women and men play with regard to resource use, and discussions around democratic processes helps to ensure greater equity without being confrontational.

3.6 Capacity Development

Capacity development is not only a process of acquiring a range of technical and organisational development skills, but also of conceptual and cognitive learning, such as developing an understanding of the interrelatedness of environmental issues - practices that have an impact on natural resources, the social, material and environmental value of these resources, and the need for a holistic approach to achieve sustainable utilisation and management.

The CFPB's user-group approach involves a process of planning and decision-making where incremental steps are taken to reach the objectives, and developing capacity is built into this process. Capacity development is thus a process of learning over time; it cannot, and should not, be rushed by the external agency as it is the participants who determine the pace.

Capacity development is entwined with participation – the extent to which people participate determines the level of capacity that is built. Capacity development is also linked to benefits. For example, the success of the healers' project is also in part based on the members deriving the invisible benefits of improved capacity (skills, knowledge and understanding) gained through the implementation process and formal training and this contributes to meeting the fundamental human needs of confidence, recognition, identity, pride, hope, self-worth, motivation and purpose. This capacity is reflected in the progress made at Vukuzenzele, their understanding of natural resource issues, and their desire to develop their activities even further.

Capacity is built in different ways - through formal training workshops, where the participants decide what training they require, exchange visits and study tours, and through informal experiential learning. (Capacity building through exchange visits between community forestry and other projects resulted in changed perceptions and the understanding of sustainable natural resource use and benefits from resources. The members - and not the external agent - exchanged views on problems and solutions. Technical problems and solutions, around erosion for example, were also explored. Experiential learning takes place through the implementation of the community forestry activities.) Both cognitive and technical skills are developed through informal and formal learning. Discussions before and after (action reflection) form part of the learning process. In the learning process mistakes - or rather participants' decisions and actions they later see as inappropriate - are as valuable as their successes.

The healers' experience illustrates the incremental approach to capacity building, the various ways in which capacity is built, and the point that participants determine the pace of learning. The healers first identified their own immediate needs and then took part in a range of activities to meet these needs - internal workshops, exchange visits and planning meetings, formal training, informal and "on-the-job" training through implementing a variety of community forestry activities (such as nursery construction, propagating plants, rehabilitating dongas, identifying and planting trees for live fencing, medicinal plant trials), and informal and formal interaction with a wide range of people in similar and different contexts. Only now are the healers identifying broader issues related to natural resource use that have a direct impact on them (such as a lack of clarity on resource and land tenure, competing and unclear roles and mandates of Tribal Authorities, local government and other local institutions and the accompanying breakdown of institutional arrangements, and competing uses for land and natural resources), and they are now involved in workshops, discussions, training and planning processes to add value to medicinal plants.

Attendance and the level of participation indicate whether the training is desired and whether presentation is appropriate. One of the reasons many of the woodcarvers failed to attend the training workshop in plant propagation and cultivation is that it took them away from their sales outlets and earning an income was valued over deriving the future benefits of training . Another example is that business skills and management training was welcomed by the participants not only because they learnt something new that they found useful, but because presentation was appropriate – it was conducted in local languages, it focused on participation and not traditional teaching methods, and it took into consideration the fact that most participants are semi-literate.

The CFPB's experience indicates that follow-up training is beneficial. This allows participants to implement the training and review this experience. The follow-up training enables them to refresh their memories, ask questions they may not have initially thought of, and discuss ways to improve their activities and build on their experience. Follow-up training is also an opportunity to expand their skills and understanding.

For example, the beekeepers underwent initial training and follow-up training in the field then took place every three to four months. They first established beehives and the follow-up training enabled them to discuss any problems they encountered regarding the maintenance of beehives. Harvesting honey was then incorporated into the training. Problems with this were then discussed. Training then included making various products in addition to bottled honey, such as candles, mead, and polish (production of these still needs to be developed). Capacity development around organisational issues has been difficult to deal with, but this aspect is crucial as this community forestry activity depends on the beekeepers developing routines around maintenance, harvesting and production of bee products. Follow-up workshops and discussions in this regard have taken place on a regular basis. The beekeepers have now formed a legal entity and training will accompany this process.

The experience with the beekeepers and other community forestry initiatives underlines the importance of regular inputs from the CFPB and working at field level. Establishing community forestry initiatives requires more than once-off interventions and a formal training course. Learning is most beneficial when it is based on practical application. And regular contact with the groups is critical so that problems can be dealt with and so that successes can be built on and taken to new levels. The example of erosion control illustrates the need for constant input from extension staff working at field level and follow-up training. The formal training section of the training course took place when the participants rehabilitated a donga. They not only learnt techniques to control the donga but also gained an understanding of the flow of water at the site of the donga. When the rains fell, follow-up maintenance of the donga was required and the community group soon identified the causes of the donga that were not at the site of the donga itself (runoff from the tar road, paths made by cattle and inadequate ground cover) and ways of preventing them.

3.7 Co-operation

Co-operation refers to collaboration between different roleplayers and stakeholders at various levels to achieve desired outcomes. Efficiency and effectiveness, as well as sustainability, would be enhanced through this collaboration. Given the scarcity of a range of resources (such as financial and human), an integrated and collaborative approach is sensible. Duplication of activities would also be minimised. Co-operation between resource users and institutions (government departments, projects, local government, traditional authorities and local institutions) is required to ensure that the needs of the resource users are taken into account.

Participants in community forestry activities expressed a need for greater co-operation between relevant government departments. It is time consuming having to meet separately with each line department. Confusion among community members – created by each department having different, and sometimes conflicting, objectives, methods and approaches to land and resource use - would be reduced through a "team" approach and departments would be more accountable and responsive with regard to their mandates. Co-ordinating the activities of government departments with NGOs and projects (whether government-linked or not) would also reduce confusion and improve the use of communities' time.

An integrated approach to service delivery by government departments would be of benefit to both the members of the community forestry projects and the other government departments with regard to capacity development. For example, the agriculture extension officers could assist the traditional healers in growing vegetable and agricultural crops, while these extensionists could benefit from participating in the healers' project in that they would learn alternative agro-forestry approaches from the CFPB and from the healers. Despite numerous attempts made by both the members of the various community forestry initiatives, and the CFPB it has been difficult to get the co-operation of the agricultural sector.

Co-operative governance is desirable but is unlikely to occur to the extent expressed in forestry policy documents. The CFPB and the members of the community gardens, nurseries, beekeepers, and traditional healers projects make every attempt to get this co-operation but, so far, have been unsuccessful. While efforts to gain this co-operation from other government departments and local government should be continuous, the planning and implementation of community forestry activities should not rely on this support.

The agricultural extension service appears not to regard trees as important in the farming system – yet trees, among other things, hold the soil, improve soil fertility, reduce evaporation and increase water infiltration. One reason may be that agro-forestry did not form part of the agricultural extension officers' original training. A second may be reluctance from higher levels to expand their activities to something they may regard as beyond their mandate. Extension officers may also regard this as additional work. Thirdly, it is difficult to get people to change and try something they are not familiar with. Finally, the difficulty in establishing an integrated approach among government departments contributes to this situation.

The CFPB has, through different ways, tried to build in co-operation between the various interested and affected parties, with varying levels of success. When this co-operative approach has worked it, unfortunately in many instances, is based only on the interest and will of individuals within other projects, organisations, departments and institutions. This is illustrated by the CFPB's experience with the woodcarvers where co-operation with various institutions was good, but inadequately co-ordinated. The DACST co-operation depended on the interest of two individuals in that department but fell away when this department decided to focus on other initiatives. This situation does not contribute to the sustainability of the community forestry initiatives or to institutional sustainability.

The CFPB has, in many instances - with beekeeping, medicinal plants, the woodlot, sericulture, woodcarving, nurseries and gardens – tried to build linkages with other projects or departments to help ensure requirements for enterprise

development, such as product development, training and market outlets, are in place. For example, the CFPB is working with the Commercial Products from the Wild Project to ensure capacity is built with regard to developing a range of medicinal plant products, including the testing, processing, packaging and labeling of this range, establishing networks and linkages with other groups involved in the medicinal plant trade, and exploring outlets for the products. This co-operation is mutually beneficial as resources are shared and the objectives of the CFPB, the CPWP and the traditional healers are met with regard to improved use and management of natural resources and improved livelihoods through enterprise development. However, the timeframes of projects such as the CFPB and CPWP are unrealistic, given the time it takes to develop capacity, deal with natural resource issues linked to the raw material, such as sustainable harvesting and growing plants, and establish businesses. Since enterprise development is one of the objectives of DWAF, the department needs to consider how this will be done or supported when it is working with communities around community forestry activities.

3.8 Technical Issues

Only a few technical matters around greening and tree survival emerged from the analysis of the community forestry activities:

The survival rates of trees will be improved if site species matching is done when the participants are identifying what trees they would like to grow. This emerged during the monitoring and evaluation of the live fencing and indigenous fruit tree orchards that were planted.

The Bushbuckridge area is semi-arid with a summer rainfall. Trees have a better chance of survival when planted after the first good rains. The planting season is thus generally a narrow period from about November to mid-February – although rains may occur before and after these months.

The availability of water is critical for the success of community forestry initiatives, such as nurseries.

Creating fire belts to prevent damage by wild fires is required but should not involve clearing strips of vegetation (as this increases the potential for erosion).

The use of low technology and low cost inputs, such as natural resources for construction of nurseries and the silkworm rearing shed, and for erosion control, fulfil the shade, temperature and other technical requirements for these activities.

Planning and design of the technical aspects of community forestry initiatives is necessary. For example, for contouring to prevent soil erosion and improve water harvesting and establish an agro-forestry system in the garden, as occurred at the Green Valley community garden.

Technical skills are required – how to rehabilitate a donga; how to propagate and cultivate plants; how to harvest sustainably; to name a few – but are inadequate without relevant socio-economic factors and issues of co-operation, participation, group dynamics, benefits and costs being taken into account, as illustrated in examples under the broad themes discussed earlier in this section.

4. CONCLUSION

A great deal of interest was expressed in this report on the lessons learnt by the CFPB. There were requests for a manual on "how to do community forestry" with step-by-step guidelines and diagrams. However, based on the CFPB's experience it is evident that there is no formula for the successful implementation of community forestry initiatives. Rather the CFPB is able to propose an approach to community forestry initiatives that aim to achieve socio-economic development in relation to the sustainable use of natural woodland products (see Figure 1 in Section 1). It is also able to highlight issues and factors that need to be taken into consideration when initiating and implementing community forestry activities.

Very few technical issues emerged from the analysis of the CFPB's community forestry activities and, where they did, these were discussed in the context of the broad themes of participation, capacity development, benefits and costs, and group dynamics. This indicates that community forestry is first and foremost concerned with social context. The success of community forestry initiatives requires an understanding that socio-economic, political and cultural issues are as important as technical ones. As each context is unique, attention to local needs and circumstances is critical in planning and implementing processes based on interactive

participation if community forestry is to achieve sustainable socio-economic development through capacity development and improved natural resource use/management.

> Process vs product: Perhaps the most important lesson learnt through the CFPB's experience is that implementing community forestry activities to achieve the aims of development and improved natural resource use should be process oriented and not product oriented or based on preconceived solutions. It is the context in which the initiatives occur and the participants in these activities that will determine the end result. And it is the process of implementation based on interactive participation that leads to capacity development and ensures sustainability because ownership of the initiatives lies with the users of the natural resources.

Among the factors that need to taken into consideration to ensure full participation during the planning and implementation of community forestry initiatives are the way groups are established, the creation of a powerbase and emergence of leaders who act as gatekeepers, and gender issues where women are culturally disadvantaged within a patriarchal system. Another critical factor is the issue of power with regard to the external agent. During the recent participative evaluation of the CFPB it emerged that departmental processes unintentionally limit the achievement of interactive participation and results instead in functional participation where groups are presented with objectives and involve the promotion of externally initiated social organisation. "The way the department operates influences what kind (level) of participation takes place because the desired results are predetermined by the department and the staff's performance is measured against these objectives set by DWAF." This suggests that there tends to be a top-down approach. The experience and understanding of the lower levels of the department need to be taken into consideration as they are more aware of people's needs, the context in which community forestry initiatives take place, and the processes required to ensure sustainable development through capacity building.

> Building capacity refers not only to acquiring skills but also to developing broader understanding and knowledge, and the ability to understand linkages. The CFPB's approach has the user-group's immediate needs as a focus point but at the same time is able to deliver indirect benefits. Benefits from community forestry activities are intimately linked with capacity building based on people participating in their own development. Thus sustainable development is concerned not only with basic needs or economic benefits but also with people's fundamental human needs that are critical to the success of the community forestry initiatives.

Community foresters, as well as community members, need multiple skills. The skills that are more technical in nature include agro-forestry, erosion prevention and control, beekeeping, propagation and cultivation of plants, and the like. There is limited capacity and experience within the D: CF to develop management techniques, systems and plans around sustainable natural resource use in communal woodlands. This requires knowledge of the bio-physical resources and ecology. However, given that people use and are dependent on natural resources, this scientific knowledge needs to be integrated with the socio-economic aspects of resource use.

It is the "social interactive skills" that are critical to accomplishing sustainable community forestry activities. These range from planning, management, organisational development, communication, conflict resolution, facilitation and participatory methodologies to knowledge and understanding of context and environment in its broad sense, including sustainable livelihoods.

The forestry directorates of Community Forestry and Indigenous Forest Management tend still to emphasise the importance of technical skills – for example, in employees' job descriptions. Given the importance of social, economic, political and cultural factors in community forestry initiatives, there is a need for people with social interactive skills in the department if Community Forestry is to succeed in achieving its goals and objectives.

Technical skills and implementation of technical jobs are easier to acquire, measure and see the results, whereas social processes and skills are not as tangible. Training courses on social interactive skills provide the tools, but it is only through practice that these skills are developed.

From the CFPB's experience, training for technical and social interactive skills that emphasises participation and practice, rather than simply giving a lecture, achieves the best results and is preferred by both community members and DWAF staff.

The impact of training of participants in community forestry activities and of extension officers is not instant but occurs over time and through implementation – in other words, experiential learning based on context. The type of training (whether formal or informal) is determined by the needs of the participants and the context in which it occurs. Contexts vary and change over time. Thus continuous involvement or follow-up training at field level is required. This is best summed up in the words of one field

worker: "Regular inputs and contact means that we must be there in the field with the people. Evaluation of training and implementation is seeing the gaps (in knowledge) and problems and successes and acting on these and planning the next step."

Regarding enterprise development linked to natural resources, improving the quality of products implies the need for research and development of appropriate technologies, and that community members are trained. Access to buyers and outlets also needs to be strengthened. This would not only form part of product development (and what the consumer wants) but reliable markets would improve sales, boost incomes for the community forestry groups, and the potential for developing natural resource management systems. Capacity within the department will have to be developed with regard to an understanding of requirements for enterprise development. Another route is improved co-operation (see below) between other government departments and projects - and possibly partnerships with the private sector -with safeguards built in so that community groups that derive adequate benefits - to ensure all facets of enterprise development around natural resources are taken into consideration.

People cannot be experts in all of the technical and social interactive skills, thus the ability to access information and people with these abilities is important – and is a skill in itself – emphasising the need for co-operation between different government departments and other institutions concerned with land use planning and improved natural resource utilisation.

> South Africa is undergoing social transformation processes that affect every sphere of life. While environment is never constant, the deliberate attempt to move away from the apartheid past brings with it even greater levels of change. It challenges power relations between individuals, groups and institutions and it aims to alter governance at all levels, the way work is done, development objectives, and access to resources. This change is a continuous process and it takes time for new legislation and policies, such as cross-sectoral co-operation, to be incorporated and adopted as common practice and for capacity to this end to be developed. While an integrated approach would contribute to achieving the improved management and sustainable use of natural resources, it is not working well. The reasons for poor cross-sectoral co-operation are unclear but may be as a result of: limited capacity and resources (skills, finances, etc); policies and legislation to this end is new and departments are still engaged in the process of restructuring; and mechanisms for ensuring co-operation are new or not yet in place. Furthermore, an integrated approach requires people to change the way they work, but change is difficult and thus resisted. Internal conflicts in the hierarchy of a line department may also contribute to this resistance to co-operation. In addition, the objectives of line departments are often conflicting and contradictory.

The compartmentalisation that occurs within a department and the limited communication between these directorates contributes to poor co-operative governance and service delivery.

The role of local government is to drive development and is based on integrated approach to development. Legislation and mechanisms to achieve this exist but capacity (skills and resources) at local government level is low (rural local government is new, contributing to this situation), reducing opportunities for co-operation. Linkages with and co-operation between government departments and local government need to be strengthened.

In terms of local governance and development, co-operation between democratic local government and traditional authorities is desirable, particularly with regard to tenure security and the way land and resources are used and managed. While the mandate of local government is clear, clarity on the role of traditional authorities is still not forthcoming.

Community forestry activities are being implemented during this state of flux and uncertainty, stressing the need for planning and implementation of these initiatives to be flexible to accommodate measures that are not yet in place.

Community forestry activities in Bushbuckridge have acted as a catalyst for other non-forestry activities and this forms part of households' and community groups' survival strategy. Since members of most community forestry projects have diversified their activities, co-operation between government departments would enhance the success of these different initiatives – for example, where agricultural activities have been introduced into community forestry projects. It would also lead to improved natural resource use and management.

Cross-sectoral co-operation needs to occur not only at sub-regional level but also at higher levels between government departments. Linkages and mechanisms are required at national level, middle management and lower levels of government to develop common goals and for the implementation of these agreements. For example, technical teams at middle management level could develop an integrated planning process to develop joint action plans that include measures to ensure responsibility and accountability during implementation.

Community members expressed the need for co-operation between different resource users competing for the same natural resource or acting in ways that impact negatively on a particular resource. Community forestry activities should also aim to achieve co-operation and establish agreements between these resource user groups.

> While a group approach may meet the needs of the D: CF (and other external agencies involved in development initiatives) because this is perceived as the best way to use its financial and human resources. However, the department needs to be flexible in its approach to accommodate individual needs.

When starting a community forestry initiative it is preferable to work with existing groups and strengthening systems and relationships that are already in place. This would help avoid some of the problems that arise when new groups are formed to meet the needs of the external agency. However, developing organisational capacity is a slow process and this time factor should be built into the planning process for community forestry activities. It is crucial to ensure that participants in community forestry projects do not have unrealistic expectations as it takes time and effort to develop capacity and reap the rewards.

Issues around group dynamics are closely linked to capacity development. Organisational development emerges as a critical factor to ensure roles and responsibilities with regard to the community forestry activities are clarified. This should also help ensure equity within the group around participation in the decision-making process and sharing both the benefits and the workload – in relation to, for example, gender imbalances or group leaders who act as gatekeepers. It also refers to building capacity and systems to ensure good planning and management takes place.

> Community forestry activities may bring benefits to people dependent on natural resources, but these can also brings additional costs to the rural poor. Costs may include reduced access to natural resources, bio-diversity depletion, people's time and labour invested in the activities that they would have invested elsewhere, and cash expenditure for goods and transport. Community members place their trust in the department that is promoting community forestry activities but it is they, and not the external agent, who take the risk with no guarantee of returns. Implementation of community forestry initiatives should ensure that people are not made poorer (in terms of both cash and natural resources) through these activities. Government cannot expect the poorest part of the population to accept higher costs in the name of sustainable environmental development and bear the burden of conservation alone.

In conclusion, community-based forestry activities in communal areas are dependent on: a common understanding and trust between DWAF and the community members; increased capacity of DWAF staff at all levels and community members to plan and implement such activities; co-operation and integrated approach from government departments and local government; an understanding of environment (the bio-physical, social, cultural, political and economic) in which the initiatives occur; equity; and an approach where community members participate in the analysis and decision-making process around needs, problems and solutions.

TYPES OR LEVELS OF PARTICIPATION ANNEX 2

Level/Type	Characteristics
Manipulative participation	Participation is only a pretense. For example, members of the ' community' are invited to sit on an official body by the external agency but they have no power, are not elected and may not represent the 'community'.
Passive participation	People participate by being told what is going to happen or has already happened. It is a unilateral announcement by an administration or project management without listening to people's responses. The information being shared belongs only to external professionals.
Participation in information giving	People participate by answering questions posed by extractive researchers using questionnaire surveys or similar approaches. People do not take part in the proceedings as the findings of the research are neither shared nor checked by them.

Participation by consultation	People participate by answering questions (consulted). External agents define the problems and solutions, and may modify these in the light of people's responses. This process does not allow people to take part in decision-making and professionals do not feel they have to take on board people's views
Participation for material incentives	People participate by providing resources in return for food, cash or other material incentives. For example, in farming research people provide labour and the fields but they are not involved in the experimentation or the process of learning during the research. When the material incentives end, people have no stake in prolonging activities or practices.
Functional participation	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organisation. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. People's involvement may include working with the external agency and sharing in decision-making. These groups (institutions) tend to be dependent on external initiators and facilitators, but may also become self-dependent.
Interactive participation	People participate in joint analysis, which leads to action plans and the formation or strengthening of local institutions. Participation is seen as a right, not just the means to achieve project goals. The process tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions and so people have a stake in maintaining structures or practices.
Self-mobilisation	People participate by taking initiatives independent of external agencies to change systems. They develop contacts with outside institutions for resources or technical advice that they need, but retain control over how resources are used. Self-initiated mobilisation can spread if external agencies, such as government departments, are willing to provide helpful support. Such self-mobilisation and collective action may or may not challenge existing inequitable distributions of wealth and power

Adapted from: A Trainer's Guide for Participatory Learning & Action, by Jules Pretty, Irene Guijt, Ian Scoones, John Thompson, IIED, 1995

PLANT SPECIES FOR VARIOUS USES ANNEX 3

Species marked with * identifies are among those planted in the Bushbuckridge area through the CFPB. Selection is based on climate, soils, rainfall, purpose, desirability, and availability of seedlings. Most species serve a number of purposes, for example, the *Carissa* spp. are not only used for live fencing but also produce fruit.

Live Fencing

Azima tetracantha	Needle bush
**Barleria rotundifolia*	Yellow barleria
**Canthium inerme*	Common turkey-berry
Capparis tomentosa	Woolly caper-bush
**Cardiogyne africana*	African sausage tree
**Carissa bispinosa*	Forest num-num
**Carissa edulis*	Simple spined num-num
**Carissa macrocarpa*	Large num-num
**Carissa tetramera*	Sand forest num-num

Catophractes alexandri	Trumpet-thorn
Cassinopsis ilicifolia	Spiny cassinopsis
**Catunaregam spinosa* (*Xeromphis obovata*)	Thorny bone-apple
**Chaetachme aristata*	Thorny elm
Commiphora africana	Hairy corkwood
Commiphora glandulosa	Tall common corkwood
Commiphora pyracanthoides	Common corkwood
Commiphora schimperi	Glossy-leaved corkwood
Dalbergia armata	Thorny rope
**Dalbergia melanoxylon*	Zebrawood
**Dovyalis caffra*	Kei-apple
Dovyalis longispina	Natal apricot
Dovyalis rhamnoides	Common sourberry
Dovyalis zeyheri	Wild apricot
Erythrina lysistemon	Choral tree
Flacourtia indica	Governor's plum
Gymnosporia buxifolia	Common spike-thorn
Gymnosporia mossambicensis	Black forest spike-thorn
Gymnosporia nemorosa	White forest spike-thorn
Gymnosporia polyacantha	Kraal spike-thorn
Gymnosporia senegalensis	Red spike-thorn
**Gardenia spatulifolia*	Transvaal gardenia
**Hyperacanthus amoenus*	Thorny/spiny gardenia
Obetia tenax	Mountain nettle
**Oncoba spinosa*	Snuffbox tree
Plectroniella	Bastard turkey berry
Plectroniella armata	False turkey berry
Putterlickia pyracantha	Bastard spike-thorn
Rhus gueinzii	Thorny karee
Rhus pyroides	Fire-thorn karee
Scolopia mundii	Red pear
Scolopia zeyheri	Thorn pear
Scutia myrtina	Cat-thorn
**Tecomaria capensis*	Cape honey-suckle
Terminalia prunioides	Lowveld cluster-leaf
Terminalia randii	Small-leafed terminalia
Ximenia Americana	Blue sourplum
Ximenia caffra	Large sourplum
Zanthoxylum capense	Small knobwood
**Ziziphus mucronata*	Buffalo thorn

Indigenous Fruit Trees

Annona senegalensis	Wild custard-apple
**Antidesma venosum*	Tassel berry
Azanza garckeana	Snot apple
**Bequaertiodendron magalismontanum*	Transvaal milkplum
**Berchemia discolor*	Brown ivory
**Berchemia zeyheri*	Red ivory
**Bridelia micrantha*	Mitzeeri
Bridelia mollis	Velvet sweetberry
**Cassine aethiopica*	Kooboo-berry
Cassine tetragona	Climbing saffron
Cassine transvaalensis	Transvaal saffron
**Carissa bispinosa*	Forest num-num
**Carissa edulis*	Simple spined num-num

Cephalanthus natalensis	Strawberry bush
Cleistochlamys kirkii	Purple cluster-pear
Commiphora edulis	Rough-leafed corkwood
Commiphora marlothii	Paperbark corkwood
**Cordyla africana*	Wild mango
**Cordia ovalis*	Snot berry
Cryptocarya wyliei	Red quince
Dialium schlechteri	Zulu podberry
**Dovyalis caffra*	Kei-apple
Dovyalis zeyheri	Wild apricot
**Diospyros mespiliformis*	Jackal-berry
**Diospyros lycioides*	Bluebush
Diospyros kirkii	Pink diospyros
Drypetes arguta	Water ironplum
Ehretia rigida	Puzzle bush
**Ehretia amoena*	Sandpaper bush
Ekebergia benguellensis	Woodland dogplum
**Englerophytum natalensis*	Natal milkplum
Erythroxylum delagoense	Small-leafed coca tree
Euclea crispa	Blue guarri
Euclea natalensis	Natal guarri
**Eugenia woodii*	Natal myrtle
**Ficus abutilifolia*	Large-leafed rock fig
**Ficus glumosa*	African rock fig
Ficus sansibarica	Zanzibar fig
**Ficus sur*	Broom cluster fig
**Ficus sycomorus*	Common cluster fig
**Ficus thonningii*	Common wild fig
**Flueggea virosa (Securinega virosa)*	White-berry bush
Garcinia buchananii	Granite garcinia
Garcinia gerrardii	Forest mangosteen
**Garcinia livingstonei*	African mangosteen
Haplocoelum gallense	Galla plum
**Harpephyllum caffrum*	Wild plum
Hexalobus monopetalus	Shakama-plum
**Kraussia floribunda*	Rhino-coffee
**Lannea discolor*	Live-long
**Lannea schweinfurthii var. stuhlmannii*	False marula
Manilkara concolor	Zulu milkberry
Manilkara discolor	Forest milkberry
**Manilkara mochisia*	Lowveld milkberry
Mimusops obovata	Red milkwood
**Mimusops zeyheri*	Transvaal red milkwood
Monodora junodii	Green-apple
Myrianthus holstii	Myrianthus
**Pappea capensis*	Jackel plum
Parinari curatellifolia	Mabola plum
**Phoenix reclinata*	Wild date palm
Rhamnus prinoides	Dogwood
Rhoicissus revoilii	Bitter forest grape
Rhoicissus tomentosa	Common forest grape
Rhus dentata	Nana-berry
**Rhus gueinzii*	Thorny karee
Schinziophyton rautanenii	Manketti tree
**Sclerocarya birrea*	Marula
Scolopia mundii	Red pear

**Senna petersiana*	Monkey pod
Strychnos cocculoides	Corky monkey orange
Strychnos gerrardii	False black monkey orange
Strychnos madagascariensis	Black monkey orange
**Strychnos spinosa*	Green monkey orange
**Syzygium cordatum*	Waterberry
Syzygium legatii	Mountain waterberry
**Syzygium guineense*	Woodland waterberry
Tabernaemontana elegans	Toad tree
**Tabernaemontana ventricosa*	Forest toad tree
Tapiphyllum parvifolium	Mountain medlar
**Trichilia emetica*	Natal mahogany
Uvaria caffra	Small cluster pear
Vangueria cyanescens	Bush medlar
**Vangueria infausta*	Wild medlar
Vangueriopsis lanciflora	False medlar
Vitellariopsis marginata	Natal bush milkwood
Xanthocercis zambesiaca	Nyala tree
**Ziziphus mucronata*.	Buffalo thorn

Arbor Week

Species	**Some of the Uses**
Acacia xanthophloea	Medicinal
Acacia abyssinica	Shade
Acacia robusta	Rope, implements, medicine, food, tanning leather
Afzelia quanzensis	Medicine, building material, fence poles
Antidesma venosum	Building material, fuelwood, medicine, fruit, shade
Berchemia zeyheri	Furniture, carving, fence poles, fruit, medicine, shade, dye
Bolusanthus speciosus	Furniture, fence poles, medicine
Brachylaena transvaalensis	Beekeeping, boats, building material, implements, medicine, shade
Bridelia micrantha	Building material, furniture, fence poles, shade, soil erosion control, fruit, medicine
Celtis africana	Timber, furniture, shade, implements, carving, fruit
Ekebergia capensis	Furniture, building material, shade, fodder, tanning leather, medicine
Erythrina lysistemon	Shade, medicine, fencing
Faidherbia albida	Fodder, food, soil erosion control, soil improvement nitrogen fixing), medicine
Ficus abutilifolia	Fruit
Ficus thonningii	Shade, fodder, frit, timber, medicine, mats, rope
Ficus sycomorus	Fodder, shade, fruit, rope, medicine
Kirkia acuminata	Shade, furniture, live fencing, household utensils, rope, medicine, water
Kirkia wilmsii	Fodder, shade, fence, houseold utensils, rope, medicine, water
Olea europaea	Shade, windbreak, fodder, fence posts, carving, furniture, fruit, medicine
Peltophorum africanum	Fodder, beekeeping, furniture, shade, medicine, fuelwood
Schotia brachypetala	Shade, beekeeping, tanning leather, food, medicine, furniture
Securinega virosa (Flueggea virosa)	Medicine, fruit
Terminalia sericea	Medicine, furniture, fence poles, building material
Trichilia emetica	Furniture, carvings, household articles, musical instruments, shade, food, medicine, soap, preservative
Ziziphus mucronata	Fodder, beekeeping, live fencing, fruit, food, coffee, medicine, fuelwood

While the CFPB promotes the planting of indigenous species, some exotic trees were also planted during Arbor Weeks –on request from the participants. The species are evergreen ornamental garden and park species for beautification and shade purposes, and are not invasive:

Cupressus macrocarpa
Cupressus sempervirens
Thuja orientalis
Jumiperus spp
Chamaecyparis spp

Erosion Control

Acacia tortilis	Umbrella thorn
Acacia karroo	Sweet thorn
**Acacia xanthophloea*	Fever tree
Bridelia micrantha	Mitzeerie
**Faidherbia albida*	Ana tree
**Ficus spp*	Fig species (truncheons in rainy season)
Olea europaea	Wild olive
Portulacaria afra	Pork bush
Salix mucronata	Safsaf willow (grows from truncheons)
Tarchonanthus camphoratus	Camphor bush
**Plumbago auriculata*	Plumbago

*Vetiver grass

A mix of grass seeds including species, such as
**Cenchrus spp., *Eragrostis, *Digitaria spp., *Panicum spp.* and *Seteria spp*.

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