

# The importance of dry woodlands and forests in rural livelihoods and poverty alleviation in South Africa

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## Abstract

Indigenous forests and savannas, along with plantation forests, offer numerous benefits to rural communities and society at large. Yet, the role of forests and forestry in contributing to sustainable livelihoods and poverty alleviation are widely debated. However, much of the debate pertains to lessons from the humid tropics, with little consideration of the widespread dry forests and savannas. This paper considers the role of dry forest types, including savannas, using South Africa as a case example. It concludes that a large proportion of the population makes use of forests and the resources from them. These are vital components of local livelihoods, which probably prevent people from slipping into deeper poverty. Moreover, for a measurable proportion, engagement in informal forest activities, as well as the formal forestry sector, has resulted in them being able to move out of poverty. Additionally, the generally dry nature of forests in South Africa, coupled with the high unemployment rate, limit the extent of alternative locally based livelihood options, thereby magnifying the contributions from forests and forest products. The depressing effects of widespread HIV/AIDS on labour availability, economic activities and livelihoods has exacerbated peoples' dependence on forest products.

**Keywords:** Ecotourism; Forestry; Non-timber forest products; Plantations; Poverty; Safety-net; Savannas; South Africa; Sustainable livelihoods

## 1. Introduction

It has been long appreciated, both internationally and within South Africa, that forests (in the broadest sense of the word) offer numerous benefits to adjacent communities and society at large (Wollenberg and Ingles, 1998, Oksanen et al., 2003 and Lawes et al., 2004a). Such benefits include consumptive resources, spiritual and aesthetic needs, employment, and ecological services such as carbon sequestration and water regulation. However, in many situations access to such benefits is neither uniform nor equitable between nor within communities.

The majority of forests, by their very nature, are located within rural and frequently remote areas. Typically this means that such areas are relatively underdeveloped in terms of infrastructure, government services, markets and jobs. It is not surprising, therefore, that communities living in and adjacent to savannas and forests are characterised by seemingly high levels of poverty and limited livelihood opportunities (Wunder,

2001 and Sunderlin et al., 2005). This is a developmental and environmental challenge for State agencies the world over. It is a developmental challenge because forest dependent peoples are frequently amongst the most marginalised and neglected communities. It is an environmental challenge because the spectre of resource depletion always looms as people continue to use forest resources and through land transformation to farming, mining and urban uses. Yet, use of forest resources potentially offers significant returns (whether in cash, direct-use or indirect use values) and hence, sustainable use poses an opportunity to meet both developmental and conservation goals (Crook and Clapp, 1998, Arnold and Ruiz-Pérez, 2001, Shackleton, 2001 and Sunderlin et al., 2005).

Attempts to combine both of these goals have been made through broad-based poverty alleviation initiatives, strategies and policies. Poverty alleviation is a binding policy goal internationally, as stipulated and agreed in the Millennium Development Goals (2002), and is the guiding principle of multinational agencies such as the World Bank. Within South Africa, poverty alleviation was elevated to a national policy goal following the democratic transition in 1994. Poverty is greatest in rural areas (Carter and May, 1999). Forestry is frequently an important economic activity in these rural areas, and is therefore posited as a potential key player in rural poverty alleviation, or at the very least, poverty mitigation.

Recently, the international reviews of Wunder (2001) and Angelsen and Wunder (2003) concluded that, whilst forests do have some role to play in poverty alleviation, it is relatively small, and that forest-dependent peoples will continue to be marginalised and have low standards of well-being as measured by conventional development indices. They concluded that forests seemingly offered little in terms of opportunities for expanding livelihood options and accumulation of wealth and assets required to reduce livelihood vulnerability; but rather that forest-dependent livelihoods offer limited options resulting in potentially persistent poverty (Byron and Arnold, 1999, Arnold and Ruiz-Pérez, 2001 and Angelsen and Wunder, 2003). Whilst a robust conclusion, it was founded largely on literature from the humid tropics. The question therefore needs to be asked whether or not the same applies to the drier regions of the globe, especially in countries where tropical forests are relatively rare, but where dry forests, savannas and thicket biomes may be extensive, such as in South Africa. Indeed, this is timeous, as the Department of Forestry in South Africa is currently in the process of developing policy on forest-poverty linkages. This paper, therefore, considers the importance of forestry, forests and forest products in rural poverty alleviation in South Africa as both a development and environmental challenge.

## **2. Terminology**

Within this paper we make repeated use of the terms forest, poverty and non-timber forest products (NTFPs). Each of these is widely used internationally, but often with certain regional nuances. Consequently, in this section we define our use of the terms. Firstly, our use of the word forest/s conforms to the international definition used by the FAO, to mean any land with greater than 10% cover by woody, perennial plants. It is thus an all-embracing term to include indigenous forests, savannas and plantations. It may also include agroforests and trees on farms or residential areas, but in this paper we exclude urban forests.

With respect to the term poverty we follow the working definition of May (1999), as the “inability of individuals, households or entire communities to command sufficient resources to satisfy a socially acceptable minimum standard of living”. This one is robust enough to embrace most dimensions of poverty, as well as accommodate the fact that it is socially defined, and hence includes the spatial variation in conceptualisation and indices, which is useful in a country as big as South Africa with significant regional variation in resources

and socio-economic conditions. For those readers requiring such benchmarks against which to interpret the incomes and values presented in this paper, the current nationally stipulated minimum wage in rural areas of South Africa is R713 per month (R8556 per year), and the minimum living requirement, or poverty line, is approximately R1290 per month per family of four (R15 480 per year). (The current exchange rate is US\$1 = R6.15, but has fluctuated widely in the last few years between R6.00 and R10.00.) Following on from this, we follow the FAO (2003) in taking poverty alleviation to mean a lasting improvement in the livelihood asset base, and thus households are better off than they were, even though they may still be below the local poverty line, whilst poverty mitigation relates to a prevention of deepening or worsening of poverty.

Whilst acknowledging that there are numerous definitions of NTFPs internationally (see summary by Belcher, 2003), within this report we have adopted a generally inclusive term, and taken it to mean any wild biological resource (animal or plant) harvested from forested lands (as per the definition above) by rural households for domestic consumption or small-scale trade, with no, or limited capital investment. For example, it would include a small, rural enterprise of two people cutting and selling firewood or carving timber from a woodland, but would exclude timber felling and extraction by a large, commercial forestry company. We exclude free-range grazing.

### **3. The contribution of forests to rural livelihoods: an overview of international perspectives**

Examination of the nature of the links between forests and rural livelihoods and poverty is not unique to South Africa. There have been a number of seminal works within the last five years posing variations of the same question, albeit mostly based on work in tropical forests of Southeast Asia and South America. Contributions from Africa and savanna regions are limited, with some notable exceptions (e.g. Cavendish, 2000 and Oksanen et al., 2003). This section provides a brief overview of the international literature, in particular those aspects that provided direction on how best to pursue the analysis of the South African situation.

It is now well appreciated in a number of disciplines, including the environmental, conservation, economics and development fields, that forests and forest products add to the well-being and, at times, the very survival of millions of rural poor throughout the world (Byron and Arnold, 1999, World Bank, 2002, Kaimowitz, 2003 and Sunderlin et al., 2005). Moreover, such benefits are not restricted to rural people since many forest products are used and marketed within urban communities (e.g. Mander, 1998 and Shackleton, 2005). However, attempts to delve deeper and to develop models and predictive capacity of the prevalence, magnitude and nature of the 'dependence' on forests and forest products have been persistently thwarted by problems relating to definitions, and the variable spatial and temporal dynamics of such use and dependence. Nonetheless, there is probably broad agreement across several key aspects as outlined below.

In developing countries forest products are an integral component of the livelihoods of the majority of rural households, and a lower, although not insignificant, proportion of urban households (Byron and Arnold, 1999). Despite being integral, in many households the use of forest products is not a primary source of livelihood, but is complementary to others (Sunderlin et al., 2005).

The timing of availability and use of forest products can be critical, even for those households that do not use forest resources frequently or in large amounts (Shackleton, 2005). This represents the safety-net function of forest resources, or an economic buffer in adverse times (Arnold and Ruiz-Pérez, 2001).

Households using forest resources on a regular basis and in meaningful quantities for direct household consumption usually enjoy a significant saving of scarce cash resources, as does the State (Shackleton and Shackleton, 2004a and Shackleton and Shackleton, 2004b).

Wealthier households and communities may well use greater amounts of forest products than poorer households, but this represents a smaller proportion of their total income streams than that of poorer households (Byron and Arnold, 1999 and Cavendish, 2000). Additionally, wealthier households frequently capture the higher incomes from trade in forest products since poorer ones lack the skills, technology and capital that may be required to start up and capture markets (Arnold and Ruiz-Pérez, 2001). Nonetheless, barriers to entry are relatively low compared to other livelihood options, and hence use of and trade in forests resources is a viable strategy for the poorest of the poor (Dubois, 2003).

Generally, returns to labour from the use of forest resources are low for most participants, but for a small few, specialising in niche markets and products, incomes from forest resources can be significant (Wunder, 2001, Belcher et al., 2005 and Shackleton, 2005), as well as for those employed in the formal sector for commercial plantations and tourism.

Not only are the tangible benefits to rural communities important, but so too are the indirect benefits to rural communities (such as cultural sites and species, aesthetic benefits) and the significant benefits to society at large, encapsulated in the value of ecosystem services such as water regulation, pollination services, option values, and carbon sequestration (Scherr et al., 2003).

The consequences of these characteristics and dynamics are that informal sector use of forest resources by rural communities, especially poorer households, rarely leads to poverty alleviation, but it may prevent intensification of poverty (Neumann and Hirsch, 2000, Wunder, 2001 and Sunderlin et al., 2005). Only with sustained capital intensification and perhaps cultivation can high benefits be sustained (Belcher et al., 2005).

## **4. A profile of rural poverty in South Africa**

Within the ambit of this paper, it is useful to provide a brief profile of poverty, especially rural poverty, within South Africa. For detailed statistics readers are referred to Statistics SA (2000) and Hirschowitz et al. (2001); whereas recent reviews and commentary have been provided by May (1999), Carter and May (1999), Ngwane et al. (2001), Zegeye and Maxted (2002) and Aliber (2003), as well as the Government "Poverty and Inequality Report" (2000) with contributions from a range of authors.

Despite South Africa being a large country with a wealth of natural assets (renewable and non-renewable), a large proportion of the South African population lives in poverty. The precise numbers differ in time and space, and according to what definition and measures are used. Yet, there is little doubt that there is widespread poverty, and that it is concentrated, although not exclusive to, the rural areas, especially amongst the black population, as a direct result of the apartheid policies of the previous, non-democratic, government (Government of South Africa, 2000 and Aliber, 2003). Overall, 70% of South Africa's poor live in rural areas, and that 70% of rural dwellers are poor (Government of South Africa, 2000). Some 5% of rural households report no cash incomes whatsoever, for 12% State pensions are their only source of cash income, and 26% rely on remittances from urban centres. Despite being rural dwellers, almost one million African households have no access to demarcated arable lands. These statistics are likely to have worsened in the last decade as a result of the large job losses during the late 1990s. Superimposed on this is the spectre of the growing impacts

of HIV/AIDS on rural livelihoods and development. Recent statistics intimate that over 18% of the rural population is HIV positive.

## **5. A profile of the forest resource in South Africa**

As with the subject of poverty, there are many comprehensive reports and summaries of the forestry resource in South Africa (e.g. Midgley et al., 1997, NFAP, 1997, Scholes, 1997, Owen, 2000, Mayers et al., 2001 and Lawes et al., 2004a). Key components are the (i) savannas, (ii) plantations, (iii) indigenous forests, and (iv) woodlots. It has been estimated that approximately 2–3 million households gain some “significant benefit” from these forests (NFAP, 1997).

Savannas are the largest biome in South Africa, and are characterised by a co-dominance of trees and grasses. The potential area is about 42 million ha (33% of South Africa), of which 11% are partially transformed and 10% totally transformed (Thompson et al., 2001). Savannas thus contribute the bulk (96.0%) of the wooded land area of South Africa. Approximately 8% of the savanna biome is conserved, but in recent years many agricultural enterprises (especially livestock-based ones) have converted to game-based operations, thereby restoring to a greater or lesser extent, large areas of savanna. Approximately one-quarter of the savanna biome is zoned as communal land, but over 70% of the former apartheid homelands are in the savanna biome. About 9.2 million rural people live in South Africa's savanna biome, and depend upon the goods and services that it provides for some component of their livelihood (Shackleton et al., 2001a).

Indigenous forests constitute the smallest biome in South Africa, covering approximately 350 000 ha, which constitutes 0.1% of the land area and 0.8% of the wooded biomes. Almost 75% of them are conserved either as declared State forests, or within formal protected areas. Access and harvesting of products was typically restricted for decades, until significant policy shifts in the mid-1990s, when more participatory policies and programmes came into being (NFAP, 1997 and Mayers et al., 2001). The majority of forest patches are less than 10 ha, which poses certain management and conservation challenges (Geldenhuys, 2000). There are relatively few people that reside within the indigenous forests, but many communities living adjacent to indigenous forests extract multiple resources for subsistence and income generation (von Maltitz and Grundy, 2000 and Lawes et al., 2004b).

Plantations cover approximately 1.35 million ha of South Africa (0.5%) (FSA, 2003), mainly in the moister areas (> 800 mm p.a.). Slightly over 76% are in private hands, the rest being State owned. There are approximately 66 000 direct employees, with over 300 000 dependents. These forests produced approximately 17 million m<sup>3</sup> of commercial roundwood in 2002, with a forestry worth of R3.3 billion. Through primary processing the forest products industry has a value of approximately R13.8 billion (in 2002), of which 81% is from exports. This represents 7.3% of national GDP in 2002. Many forest plantations also allow controlled use of forest products such as firewood, mushrooms, honey and grazing (Evans et al., 1998). The values of plantation forests and the forest products industries come with some environmental costs, especially in terms of water abstraction and biodiversity impacts (e.g. Armstrong et al., 1998 and Tewari, 2001), many of which have not been adequately costed, and deducted from forestry GDP statements (Hassan, 2002). However, there has been a steady commitment to improvement of environmental performance by the forestry industry, with over 80% of the plantation area now boasting some international certification standard. Plantation forestry has seen a recent growth as a livelihood option for small-growers, with most of the large commercial companies having schemes to promote small-growers. There are over 10 000 small-growers utilising an average of 1–3 ha each, providing a total area of approximately 18 000 ha (Cellier, 1999 and Cairns, 2000). Additionally,

there are approximately 51 000 ha of institutional woodlots (Gandar, 1994), which range from 1 ha to several hundred hectares in size. Most are seemingly in a poor condition and produce far less timber (construction poles and fuelwood) than their potential (Gandar, 1994 and Ham and Theorn, 2001).

Of particular relevance is the rapidly changing nature of forestry governance in South Africa since the democratic transition in the early 1990s (Willis, 2004). This applies to both the formal and informal sectors. Before the early 1990s, there was limited or no recognition of the role of forests and forestry in rural livelihoods and hence poverty. People were excluded from forests by State agencies on the grounds of conservation and economic priorities. Such centralised State control also undermined traditional knowledge, authorities and practices relating to forests and forest products. This began in the 1990s, especially after the release of a new National Forestry Action Programme in 1997, which laid the foundations for more participation in use of and policies relating to forests (NFAP, 1997). Coupled with the current Government's commitment to poverty alleviation, then the role of the forest sector came under debate.

## **6. The contribution of forests to rural livelihoods in South Africa**

It is now possible to illustrate the role of forests, forestry and forest products in rural livelihoods in South Africa. For some of these benefits there is an abundance of information from numerous case studies, whilst in other instances information is scarce. In instances of the former, we have not, in the interests of brevity, attempted to summarise all the information, but have used selected works and information to illustrate the point of links between the forest sector and poverty reduction or alleviation in rural livelihoods. In cases of the latter, these have been highlighted as areas requiring further investigation. Although the focus is on rural communities and households living next to, or using forests, it must be remembered that urban populations also make extensive use of forests and forest products; for example for ecotourism, as markets for natural resources, as well as maintaining spiritual and cultural beliefs (e.g. Mander, 1998 and Cocks and Wiersum, 2003).

### **6.1. Benefits streams within total livelihoods**

There are relatively few studies that have examined the use of forest resources from a livelihoods perspective, and even fewer that have estimated or measured the proportion of total income streams of households that can be ascribed to forest goods and services. Furthermore, differences in approach make direct comparisons complicated or inappropriate. For example, should browse and fodder be included as a forest/woodland product, or be assigned to the livestock income stream; should own labour be costed and deducted when calculating net incomes? Acknowledging such differences, this section summarises the few South African studies to date, with comparative data from elsewhere on the continent (Table 1).

Table 1.

Contribution of direct forestry goods to household income streams

% contribution to total hh income	Gross/net incomes	Country/province	Site	Vegetation	Reference
22.0%	Net	Limpopo	Manganeng	Savanna (arid, degraded)	Crookes (2003)
28.2%	Net	Limpopo	Makua	Savanna (arid, degraded)	Crookes (2003)
19.3%	Net	Limpopo	Thorndale	Savanna (arid)	Dovie (2001)
15.2%	Net	Zimbabwe	Romwe and Mutangi	Savanna (miombo)	Campbell et al. (2002)
17.2%	Net	Zimbabwe		Savanna	Cavendish (2002) in Campbell et al. (2002)
22% (1993/94) <sup>a</sup> 23% (1996/97)	Gross	Zimbabwe	Shindi	Savanna (miombo and mopane)	Cavendish (2000)
4.0–20.0%	Net	Cameroon	Mount Cameroon	Lowland forest	Ambrose-Oji (2003)

<sup>a</sup> The original values were 35% and 37%, but we have deducted the contribution of livestock fodder and gold panning.

The data in Table 1 indicate that use of forest resources generally contributes between one-sixth and one-quarter of total livelihood income streams, either for direct-use or for income generation. Frequently it may not be the primary livelihood activity. Yet it is often greater than one or both of the other land-based activities of livestock husbandry and arable production (Shackleton et al., 2001b). At approximately 20% of total livelihood, the contribution of forest resources is keenly appreciated by rural communities, and the loss of these resources requires significant changes to livelihoods to cope and adapt.

## 6.2. Subsistence goods

In terms of direct household provisioning, the use of forest goods provides three benefits, namely (i) the supply of basic needs, (ii) a saving of cash resources, and (iii) a buffer or safety-net during times of misfortune.

### 6.2.1. Supply of basic needs

There is considerable information reporting the widespread use of forest resources. Most reports focus on one or two specific products in a project area, for example use of firewood (e.g. Liengme, 1983, Banks et al., 1996

and Ham and Theorn, 2001), edible fruits (e.g. van Eck et al., 1997, Shackleton et al., 2000 and Cunningham and Shackleton, 2004), medicinal plants (Mander, 1998, Williams et al., 2000 and Botha, 2001), or weaving fibres (Cunningham, 1987, Cawe and Ntloko, 1997 and Gyan and Shackleton, 2005), to name a few. Fewer studies deal with use of all resources at a project site (e.g. Dovie et al., 2002, Shackleton et al., 2002a, Shackleton et al., 2002b and Cocks and Wiersum, 2003). Irrespective of area, approach, methods or focus, it is consistent across these studies that rural, and to a lesser extent urban, households make extensive use of a wide range of resources and species to meet their daily livelihood needs.

A significant illustration of the subsistence contribution of forests, woodlands and plantations to rural livelihoods is encapsulated in three stark statistics. The first is that over 80% of rural households still use fuelwood as their primary source of energy (Williams and Shackleton, 2002). Nearly all of this, some 13 million m<sup>3</sup> annually, is supplied from indigenous forests, savannas and plantation offcuts. Rural communities divorced from accessible wood supplies, either use woodlots, buy fuelwood from further afield, or use alternative energy sources, usually at a higher cost. This fuelwood use has a gross national value of approximately R3 billion annually (Williams and Shackleton, 2002), or just under R2000 per using household per year, which represents 23% of the minimum wage. Fuelwood is also the energy source for a range of small-scale, home-based industries in rural areas, such as beer brewing, brick firing, cooking meals for sale, baking, etc. Unsustainable use of fuelwood resources is a threat to not just the resource base and ecology, but also to rural livelihoods. A shortage of fuelwood has been implicated in changed cooking patterns with potentially ill effects to household nutrition (Brouwer et al., 1997). Madubansi and Shackleton (in press) documented an 11% increase between 1992 and 2002 in the proportion of households having to purchase fuelwood to meet their needs, presumably due to increasing local scarcity.

The second is that there are 27 million consumers of traditional plant medicine in South Africa, driving a multi-million rand industry (Mander, 1998). Forests are the primary sources of these medicines for self-medication, collection by herbalists, and small-scale traders (Mander, 1998 and Dold and Cocks, 2002). For example, over 65% of material in the Durban markets is of forest or savanna species. This proportion is similar in the Eastern Cape province (Cocks et al., 2004), and slightly higher (closer to 70%) in the Faraday market in Johannesburg (Williams, 2004). Approximately one-third of medicinal plant material is bark (Grace et al., 2002).

The third is that 94% of canopy tree species and 77% of sub-canopy tree species encountered in South African indigenous forests have some recorded use, either traditional or commercial (Geldenhuys, 1999).

Other widely used resources include wild spinach and fruits. Shackleton and Shackleton (2004a) reported that across quantitative surveys of 14 villages in the savanna biome, the most widely used resources were wild spinach, fuelwood, wooden utensils, grass hand-brushes, edible fruits and twig hand-brushes, all used by 85% or more of households. More than half the households surveyed also made use of edible insects, wood for construction, bushmeat, wild honey and reeds for weaving. It is probable that the proportion admitting to the use of bushmeat and medicinal plants are underestimates due to fear of religious or legal sanction in some areas. The annual, gross, direct-use value of these resources from the savanna biome alone has been conservatively estimated to be over R8 billion, most of which is unaccounted in the formal national and provincial economic statistics (Shackleton et al., 2001a). Adding in indigenous forests and plantation subsistence resources would suggest a gross value of over R10 billion annually. This equates to approximately R250 per hectare per year throughout the entire savanna and forest biomes and land under plantations. Given that the vast bulk of this land is not used for harvesting of subsistence resources, the gross annual value



extracted per hectare from accessible lands will be markedly higher, closer to R750–R1000 per hectare, annually. This compares favourably with cattle ranching and plantation forestry in many parts of the country (Shackleton, 1996 and Pollard et al., 1998). Nationally, R10 billion represents over 2.2% of the annual government budget.

Just as communities and households are socially and economically differentiated, so too is their access to and use of forest resources (Kepe, 2002). Although relatively little work in South Africa has specifically disaggregated resource use and income data based on socio-economic characteristics, there are clear indicators that poorer and more isolated communities, as well as households that are less well off or headed by women, are often more dependent on the natural resource base (Shackleton et al., 2002a and Shackleton and Shackleton, 2006). This finding is not unusual and a significant number of studies across the tropics have demonstrated that it is generally the poorest households who are most directly reliant on non-timber forest products (NTFPs) for both subsistence and cash income (Clarke et al., 1996, Campbell et al., 1997, Qureshi and Kumar, 1998, Cavendish, 2000, Neumann and Hirsch, 2000 and Cavendish, 2002). Similarly, a number of studies have indicated that among households headed by women forest resources often contribute significantly more to total household income than is the case for households headed by men (Clarke et al., 1996 and Cavendish, 2000). Thus, women with few other sources of income on which to rely and no means to leave their family to seek employment, have transformed previously subsistence activities into a means of income generation on either an ad hoc or full-time basis (Shackleton and Shackleton, 1997 and Shackleton and Shackleton, 2004b).

### **6.2.2. Cash saving**

Recently, Shackleton and Shackleton (2004b) suggested that a distinction should be made between the daily and emergency dimensions of forest-product use. The first encompasses the benefits accruing from forest resources that are accessed on a frequent and regular basis, especially the saving of scarce cash resources, which may then be deployed towards other household needs. In contrast, the emergency use refers to the standard safety-net function previously described (McSweeney, 2004). Being able to collect and use NTFPs to meet daily needs for energy, shelter, food and medicine, allows the scarce cash resources to be used to secure other household needs and the accumulation of the necessary assets for a more secure livelihood. This includes education of children, investment in agricultural tools, capital for income generation activities, and the like. For example, the direct-use value of fuelwood is R2000 per household per year. Such a cost saving would best be reflected by replacement values of the goods that the NTFPs substitute, rather than direct-use value based on farm-gate prices. This needs to then be summed across the wide number of resources used. Thus, it is several thousands of rands per household per year (Shackleton and Shackleton, 2004a). The magnitude of the cost saving is greater to poorer households than for wealthier households simply by virtue of the reduced total income sources and sizes for poor households (Cavendish, 2000 and Shackleton and Shackleton, 2006). Moreover, the cost saving has benefits not only at the household level, but also the national level (Shackleton, 2001). The role of daily use of NTFPs in the provision of energy, food, medicine and shelter to the rural poor alleviates some of the costs that the government would incur had it to provide these services in rural areas (although at a higher social cost). Thus, the government has a vested interest in ensuring the sustainable supply and use of these resources until it is capable of providing such services.

### **6.2.3. Safety-net functions of forest goods**

This refers to the role of forest goods in assisting households to cope in times of adversity (McSweeney, 2004, Shackleton and Shackleton, 2004b and Paumgarten, in press). Such times occur with a shock or sudden changes in the economic, social or climatic environments in which households exist and function. This includes events such as a death or retrenchment of the head of the household or breadwinner, droughts, floods, frosts or disease leading to crop failure or death of livestock, major economic structural adjustment, unanticipated and large increases in costs of staple foods and goods, and the like. Of particular significance in South and southern Africa is the high prevalence of HIV/AIDS, resulting in death of breadwinners, and diversion of labour and cash resources away from productive activities in order to care for relatives who are afflicted (Barany et al., 2001 and Kaschula, in press). During such times it is common for rural households to turn to forest resources to tide them over what they perceive as a temporary setback, but whether or not they do so, or rather turn to some other safety net depends upon what other assets and linkages are available to them (McSweeney, 2005). This may take three forms (Barany et al., 2001 and Shackleton and Shackleton, 2004b). The first is use of forest goods not usually used by that household, either species or types; e.g. use of wood poles collected from the environment for building purposes rather than the purchase of commercial poles or cement blocks; use of emergency grazing in plantations. Kaschula (in press) has found that bushmeat from small mammals and birds are particularly important for children having lost one or both parents through HIV/AIDS. The second is increased consumption (either on a relative or absolute basis) of forest goods already a component of their livelihood. Typically this involves substitution of purchased commodities with harvested ones; e.g. increased use of wild spinach, or a decline in use of paraffin in favour of fuelwood. Lastly, it may be the temporary sale of forest resources on local and regional markets; e.g. roadside wood-carvers, fuelwood vendors. Such trade often develops into a full-time activity in the absence of alternatives.

In these situations the changed or increased use of forest resources is typically a coping strategy. Simple calculation of the direct-use value of the forest resources used during such times of adversity does not adequately reflect their true value, because it does not account for the emergency insurance component of use during these times of hardship. An additional measure of value is required, equivalent to the option value assigned to natural habitats and resources. Frequently, this emergency coping strategy evolves into a more permanent livelihood activity.

Because the safety-net function of forest resources is temporally variable, no information exists regarding the prevalence of this activity throughout rural communities (Paumgarten, in press). But there is little doubt it is widespread. Many small-scale vendors of forest resources recount that the initial impetus for them taking to vending was some household hardship, especially for those with limited or no education (Ndabeni, 2001, Rogerson and Sithole, 2001, Shackleton and Shackleton, 2004b and Shackleton, 2005). Nearly all detailed case studies of specific forest product industries or descriptions of rural household dynamics reveal the use of a coping strategy based on one or more of the three safety-net forms mentioned above, at some time or other. It is a ubiquitous phenomenon.

## **6.3. Small-scale trade in forest goods and forest product enterprises**

### **6.3.1. Income from trade in forest goods**

There is widespread trade in forest products within rural communities and through external markets. There are no national or regional estimates of the numbers of people or households involved, on either an ad hoc or

semi-permanent basis. But, by all accounts, across the numerous types of forest products it is probably millions. For example: (i) there are over 10 000 timber small-growers, earning a net income of between R1000 and R5000 per year, who, in turn, support a small, but growing, number of small-scale contractors involved in land preparation, harvesting and transport (Cairns, 2000); (ii) at least 4% of rural households engage in selling one or more forest products and it is higher for poorer households, than more wealthy ones (Shackleton and Shackleton, 2004a); (iii) there are 300 000 traditional healers in South Africa, serving 27 million customers, with two-thirds of their plant medicines coming from forests (Mander, 1998), and (iv) there are at least 800 000 people involved in the craft industry (although not all producing natural resources craft) (DACST, 1998), over 70% of households in some areas (Marcus, 2000).

The high participation in small-scale trading in forest products belies the frequently poor returns to labour. Many commentators have noted that participation in such industries does not lift most participants out of poverty, but that it does play a significant role in poverty mitigation, i.e. preventing the worsening of poverty (Shackleton, 2005). Yet, in making such a conclusion, many commentators fail to consider the alternatives available to the rural poor, locally or further afield, as they are already marginalised by poor skills, education, infrastructure, remoteness and limited access to real employment opportunities. So, whilst returns to labour are low in absolute monetary terms for some products, they frequently compare favourably to immediate alternatives of local wage labour, *assuming that it is available*, as well as providing social benefits not captured in direct economic analyses. For example, Shackleton and Shackleton (1997) compared the net returns to labour per hour worked across a number of locally marketed forest products within rural communities. It varied from R2.50 per hour (for reed mats) to approximately R7.50 per hour for thatch grass (in 1997 monetary values). In comparison, daily wage labourers were paid R5–10 per day ( $\pm$  R1.00 per hour) by local community farmers, or R20 a day (R2.50 per hour) on regional commercial farms. This assumes that opportunities for wage labour were available, which frequently was not the case. In another study Mander et al. (2002), in analysing the returns and benefits of the marula fruit (*Sclerocarya birrea* subsp. *caffra*) industry in the Limpopo lowveld, found that “even if the time costs were taken into consideration, it is more profitable to sell marula beer than to earn a labour wage of R12.50 per day for full time employment”. Whilst selling of marula beer was only a short, seasonal activity, it competed well for that period against short, temporary wage labour opportunities.

Another option is arable agriculture. But in the more arid areas of the country, as is much of the savanna biome, this is an equally risky venture in the absence of irrigation infrastructure. Thus, engagement in small-scale trading within rural communities, or in local regional markets, may frequently represent a better return. Especially since it is usually only one livelihood strategy within the household portfolio. Overall, the factors that make forest resources attractive to poorer sectors of society as a means of earning a living (such as low barriers to entry; low or zero capital requirement; high labour intensity) are the same factors that cause them to have a relatively low market value.

Although generally the cash returns to small-scale trading in forest products are low, it is true to say that they are also highly variable, being influenced by a host of local and external factors. A key one, not much discussed within the literature, is simply the actual amount of time the entrepreneurs devote to trading in forest resources (Gyan and Shackleton, 2005 and Shackleton, 2005). The range in weekly or monthly incomes across any trading sector shows a high degree of variation, typically 3–5 times the mean (Krüger and Verster, 2001) (Table 2). For example, according to Marcus (2000) 63% of crafters in KwaZulu-Natal earned less than R250 per month (gross) from craft, yet almost 10% earned over R1000 per month. That is because many producers or vendors engage in forest product trade as a part-time activity, either a few hours a week, or at a

particular time of the year. Consequently, it is not surprising that their absolute incomes are low. However, despite the low returns to labour for many forest resources, for those individuals or households, capable and willing to devote the energy and time to cash-generating activities, many can make a livelihood more secure than other land-based livelihood options, or the demoralising false security of insecure casual wage labour. For example, (i) Cairns (2000) reports plantation forestry small-growers earning annual profits of over R30 000, which they subsequently invest in physical assets and family education; (ii) Botha (2001) reported some medicinal plant vendors with net incomes of over R40 000 per year, and (iii) Shackleton (2005) mentions the case of a single mother who “had paid all her son's personal expenses at medical school on the income she made from selling her trademark colourful and beautiful decorated reed mats”.

Table 2.

Some illustrative values of incomes to small-scale traders in forest resources

Activity	Province	Mean annual income (rand)	Gross/net	Range (rand)	Notes (incl. year data collected)	Reference
Palm brush vendors	EC	4272	Net	0–12 000	2002	Gyan and Shackleton (2005)
Marula beer traders	LP	500	Net	89–2299	2001—income for 2 month season only	Shackleton (2004)
Small timber growers	KZN	± 3000	Net	1100–4000	1999	Cairns (2000)
Roadside fuel-wood vendors to tourists	KZN	338	Gross	120–1400	1999	Lewis and Mander (2000)
Small-scale sawmillers	EC	11 250	Net		1999—income from only 5 months of the year	Horn (2000)
Medicinal plant vendors	MP	16 740	Gross	360-> 40000	1999	Botha (2001)
Woodrose sellers	LP	2895	Gross	635–6002	1997	Dzerefos et al. (1999)
Medicinal plant traders in Durban market	KZN	39 480	Gross		1996	Mander (1998)
Woodcarvers						Shackleton and Shackleton (2004b)
Hardwoods	LP	3603	Net	2584–16 928	1994	
Softwoods	MP	9838	Net		1997	
Mopane worm collectors	LP	2500	Gross		1992—income for 1 month season only	Styles (1994)
Aloe gel tappers	EC	± 12 000	Net		1994	Newton and Vaughan (1996)
Wild fruit sellers	LP	1044	Gross	240-> 20000	1993	Shackleton et al. (2000)

EC = Eastern Cape; KZN = KwaZulu-Natal; LP = Limpopo Province; MP = Mpumalanga Province.

Thus, for any single forest product enterprise, be it marula beer sellers, woodcarvers, timber small-growers, medicinal plant collectors, fuelwood vendors, and the like, there are a large number that earn relatively small amounts, but there are also those that earn several or tens of thousands of rands per year (Shackleton, 2005). Consequently, a key question becomes: if there are local examples of successful entrepreneurs, why do those earning so little not scale up their operations and consequent income, especially as the barriers to entry are so low? This has not been answered within South Africa, but any project attempting to do so will have to include examination of very micro-level household circumstances and personal motivations, as well as issues relating to access and proximity to markets, local abundance of the resource in question, etc. Of further importance is that the sectoral studies of specific resource enterprises only capture the incomes from the specific resource

under examination. But many traders in forest resources may trade in more than one resource, which is not captured by these sectoral studies.

It is also evident from Table 2 that some resources are only available on a seasonal basis, for example, mopane worms, marula beer, mushrooms, and wild fruits. Nonetheless, the income earned is still considered important, even if for only a few months of the year. Typically it is used to help pay off debts or payments that also occur more on an annual basis rather than a monthly one, such as school fees, agricultural implements, window and door frames for a new room. Some vendors adapt readily to the seasonality, and utilise different resources as the seasons change. Traders using non-seasonal resources (such as saw-millers, wood carvers, fuelwood and medicinal plant vendors), obviously have greater security.

### 6.3.2. Other benefits from trade in forest goods

Key indices of the importance and role of forest product enterprises in rural livelihoods are invariably the cash returns and net profit. Yet there are a number of other benefits associated with forest product enterprises that are also appreciated by participants, which currently have not been valued in monetary terms. These have been summarised in Table 3, drawn from Marcus (2000), Rogerson (2000), Krüger and Verster (2001), Rogerson and Sithole (2001) and Shackleton and Shackleton (2004b).

Table 3.

Non-monetary benefits from trade in NTFPs

• Low barriers to entry
• The ability to work at home (frequently mentioned by mothers and households impacted by HIV/AIDS)
• Being one's own boss and not at the beck and call of an exploitative employer
• Opportunity to involve and work with all family members
• The income earned is proportional to the effort expended, and so the harder one works the more income one can potentially make
• The ability to earn and control cash independent of the household head (frequently mentioned by women)
• To be able to make a contribution to the household, however small (mentioned by pensioners)
• Keeping alive traditional products, processing techniques and knowledge
• Passing on such traditions and knowledge to the younger generations in the household context
• Pride in having a skill and a means to support one's family when so many around are unemployed and demoralised
• The satisfaction of simply being occupied, irrespective of the returns
• Development of social networks and social capital (via joint collection trips; working together; sharing knowledge with other producers and traders)
• Business skills that can be applied to other livelihood strategies
• Recognition by community leaders and members for running a successful project that helps people in the community

## 6.4. Formal sector forest activities

### 6.4.1. Tourism enterprises

Tourism is the fastest growing economic sector in South Africa. There were approximately 6.5 million foreign tourists in 2002 (StatsSA, 2003), spending, on average, R6000–R8000 per head within South Africa in 2000 (Saayman and Saayman, 2003). Harvey (2003) reports that approximately R48.8 billion was spent by foreign tourists in South Africa in 2002. Tourism now contributes over 7% of national GDP. The majority of international tourists include a trip to see indigenous game in State or private conservation areas, most of which are situated in the savanna areas of the country (69% of land in protected areas is within the wooded biomes (Low and Rebelo, 1996). In terms of bed nights, domestic tourism accounts for approximately 55–60% of the national market (Rule et al., 2003), but spending is less per capita per night. However, the full amount accrues within South Africa. Thus, the domestic market is equivalent to a conservative estimate of a further R30 billion annually. Therefore, taking the area under savannas and forests as 35% of South Africa, a rough estimate of the tourism value is at least R25 billion annually. Using the figure of 69% of protected areas in the wooded biomes, the tourism value accruing could be as much as R62 billion annually.

Most of this value is captured by large commercial operations, and not poor rural communities directly, with a few exceptions. However, the commercial tourism enterprises are a valuable source of employment and infrastructural investment such as roads, communications, clinics and schools, since many of the ecotourism enterprises are in remote areas. The number of people employed varies in accordance with the size of the enterprise, and the nature of the clientele visiting. For example, large savanna parks average approximately one employee per 400–500 ha; whilst in smaller-scale parks the figure is closer to one employee per 250 ha; and luxury lodges closer to one per 50 ha (Richard Davies, personal communication 2003). South Africa's premier reserve, the Kruger National Park, (KNP) attracted over 1 million visitors in 2002. With at least 8 million ha in State protected areas, and a further 10 million under private ecotourism ventures, this represents a probable pool of *at least* 60 000 employees supporting between 300 000 and 500 000 dependents, of which between one- and two-thirds are in savanna or forested areas. There is also a growing commitment to sourcing support industries (such as laundries, vegetables) to protected areas within neighbouring communities, rather than distant urban areas, as well as linking with aspects of cultural tourism (Kibirige, 2003). At least 60% of the total orders for KNP supplies are placed within the local towns and villages (Engelbrecht and van der Walt, 1993). Thirty percent of the visitors to KNP are day visitors, who are accommodated in hundreds of accommodation enterprises within 10–40 km from the park (Engelbrecht and van der Walt, 1993). Figures for Hluhluwe-Umfolozi park in KwaZulu-Natal are similar, in that 50% of the services required by this area are sourced in the immediate local economy (Foggin and Mûster, 2003).

An appreciation of the potential for ecotourism to contribute to poverty alleviation directly (rather than just trickle down effects) is growing, with emerging enterprises explicitly stating local job creation as one of the core objectives, or criteria for success, now encapsulated in the phrase “pro-poor tourism” (Mahony and van Zyl, 2002 and Ashley and Roe, 2002). The number of wage earners in these enterprises may still be a small proportion of rural households, but the wages earned are typically twice or greater than that of homesteads without employment in such ventures (Ashley and Roe, 2002). The tourism enterprises also then create opportunities and downstream effects for four to ten times more people besides the wage earners, such as casual labourers, crafters and small businesses (Ashley and Roe, 2002). Indeed, tourists are the primary buyers of crafts produced by rural enterprises. There is also a growing number of community led and managed tourism initiatives in which rural communities capture the bulk of the benefits (Ashley and Roe,

2002 and Mahony and van Zyl, 2002). There are a number of models from small-scale camps, to more up-market ventures. Examples include (i) the community tourism venture at Mntentu River mouth on the Wild Coast, (ii) Sagoli hot springs in the arid woodlands of northern Venda, and (iii) contractual parks.

Game parks are not the only type of tourism experience offered by forests and woodlands. Ecotourism is a significant factor in the planning and management of indigenous forests and plantations, which is now mandated within the National Forest Act (Department of Water Affairs & Forestry, 1998). Tourism to forested areas is associated with walks, bird watching, waterfalls and streams offering a variety of experiences to ecotourists. For example, the Knysna State forest attracts at least 200 000 visitors a year (a conservative estimate) using over a dozen day walks, two hiking trails, scenic routes for driving, picnic sites, a camping site, four mountain bike trails, a horse trail, and a youth hostel (Vermeulen, 2004). Over 75 000 people a year visit the 'Big Tree' (a particularly large *Podocarpus falcatus* tree for that forest) in the Knysna forest. Approximately 30% of income from the state-owned forests in the Knysna/Tsitsikamma forests comes from ecotourism, which is also worth millions to the regional economy of Knysna (Vermeulen, 2004).

### **6.4.2. Forest products industries**

South Africa boasts a vibrant formal forest products sector with a value of approximately R13.8 billion (in 2002), employing approximately 66 000 direct employees (with over 300 000 dependents) and providing some livelihood for over 10 000 small-growers providing the industry with timber. This represented 7.3% of national GDP in 2002. Many forest plantations also allow controlled use of forest products such as thatch grass, firewood, mushrooms and grazing (Evans et al., 1998). Over the last decade or so there has been considerable out-sourcing of forest sector requirements so that opportunities for small-scale, independent entrepreneurs offering services such as weeding, thinning, and felling, have burgeoned.

### **6.4.3. Benefits from employment**

The benefits from employment in the formal forest and tourism sectors are greater than simply a regular and secure salary, although that is undoubtedly core. Salary levels are variable, depending upon the nature and profitability of the enterprise. Within the formal sector, the bulk of the large plantation-forestry companies, and their subcontractors, complies with minimum wage levels set by the central government, as well as other employee benefits advocated in the labour law, such as pension schemes, vacation leave, sick leave, compensation for work related accidents, unemployment fund contributions and further training opportunities. At the opposite end of the scale, small household or micro-enterprises are rarely able to comply with minimum wage regulations (Horn, 2000), with many based on family units, rather than formal employment. But given the acute unemployment within the rural areas, there is rarely any difficulty in finding assistants, apprentices or employees.

The development of commercial enterprises, especially large-scale, or if small-scale, highly profitable ones, such as plantation or ecotourism ventures creates more than primary level employment in the rural areas. For example, FOA (1996) reports that 63% of plantation forestry workers are housed in company housing, most of which are serviced with water, sanitation and electricity (Table 4). The capital investment of this housing is in the region of R320 million in current terms. The maintenance and servicing of these houses and services generates downstream jobs and benefits not linked directly to the forestry sector. The majority of employees on tourist game ranches and lodges are also housed on the company property. Where housing is unavailable, larger companies offer financial assistance to employees to purchase housing in the region where they work.

Table 4.

Annual cost to company of non-salary contribution of formal forestry sector (FOA, 1996)

Sector	Annual cost (R millions)
Pensions and unemployment fund	35.6
Housing	25.5
Education and training (employees)	20.9
Schooling (employees' children)	5.2
Health services	4.3

The provision of housing in rural areas for employees of formal forestry companies is inextricably linked with the provision of other services and amenities required by any community, be it urban or rural. Thus, the six largest forestry companies (representing over 70% of the planted area under plantation forestry; and two-thirds of the annual turnover) each provide pre- and primary-schools and clinics in areas where they have a concentration of employees (FOA, 1996). These are usually also open to neighbouring communities. Over 14 000 children are schooled in these forestry-sponsored schools. Where the worker housing density does not merit the construction of a school, transport is provided to the nearest state school. There are over 60 medical clinics under the auspices of formal plantation companies providing preventative and basic health care to employees and neighbouring communities.

A key benefit of formal employment is access to vocational, technical or academic training. Forestry South Africa (FSA) reported that approximately 65% of employees receive some formal training in any given year. Of particular importance is access to adult literacy classes, which plainly have broader livelihood benefits well beyond the ability of the employee to perform his or her job. Many forestry subcontractors provide food rations to employees, which reduces food insecurity within the rural household, but with a trade-off of lower cash wages.

The downstream benefits of both the salary and the non-salary component of employee remuneration have not been quantified, but must be substantial, especially given that they are paid in rural areas where unemployment is acute. These salaries contribute to the turnover of the small, commercial sector in these areas, such as food, drink and clothing stores, garages and repair shops. Factor in employees of wood-processing industries in rural areas dependent upon raw timber from plantations, such as sawmills, and the buying power and contribution of the formal sector salaries to the rural economy is significant. There were overall 180 processing plants associated with plantation forestry in 2002 (FSA, 2003). The analysis of Hassan (2002) indicates a downstream employment multiplier effect of between two and three times resulting from processing and value addition of plantation timber.

## 6.5. Cultural and spiritual benefits

The cultural and spiritual benefits afforded by forests to rural communities are clear, but little studied. This is partly because the notion of culture has different meanings and interpretations, and is frequently difficult to define or describe in tangible or monetary terms. Even if monetary values could be assigned to the cultural



and spiritual dimensions of forests and forestry it would appear, on the surface, that these have no role to play in poverty alleviation or reduction. However, embracing the definition of poverty that we use, it is clear that satisfaction of social and spiritual dimensions to livelihoods is vital in reducing vulnerability and maintenance of an acceptable standard of living.

In terms of specific resources, many are used for cultural and traditional reasons rather than utilitarian. The most striking one in terms of demand and influence on species populations is the demand for medicinal plants that are used for cultural rather than conventional medicinal purposes. Cocks and Møller (2002) found that approximately 30% of the total value of medicinal plants could be ascribed to cultural uses. Other resources also have explicit cultural significance as recently argued by Cocks and Wiersum (2003), including woodpiles, and use of certain fuelwood species only for specific rituals and ceremonies. In their study over half the annual direct-use value harvested by rural households was attributable to cultural purposes as opposed to utilitarian ones. In attempting to place a value on cultural aspects of the environment, Campbell et al. (1997) reported that cultural use of the environment and goods accounted for 29% and 16% of total environmental goods value appropriated by residents at Jinga and Matendeudze villages, respectively, in Zimbabwe.

## **7. Peculiarities of the South African situation**

The bulk of current understanding on the role of forests in rural livelihoods comes from studies in the humid tropics. From the information and analyses presented here, there is much commonality between the knowledge from tropical forests, and those of the drier forests and savannas of South Africa. However, there are also some noticeable differences and nuances that have a strong bearing on the contribution of forest and forest products to local livelihoods and poverty, and hence the policy interventions required.

The southern African savannas and forests are characterised by a markedly drier and variable climate. This undermines the viability of agriculture as an alternative land use and livelihood option. Consequently, the potential relative contribution of forest products to livelihoods is greater. Even more so when many rural households lack sufficient land for arable agriculture resulting from the considerably higher human population densities (than many other developing nations) as an artefact of the apartheid era land policies that concentrated indigenous populations into small parcels of demarcated land. Thus, land use pressures are high, and in most areas, there is no such thing as “pristine forest”—all are modified by human activity and settlement.

There is very limited, large-scale commercial logging in indigenous forest and woodlands in South Africa, and hence it is not a primary threat to forest biodiversity, structure and function, nor a significant opportunity for employment. The only exception is the State controlled logging in the Knysna forest based on a pre-emptive death system. Logging does occur for valuable species (with detrimental impacts on the species in several instances) in the savannas, but by small-scale wood-carvers and furniture-makers, as well as small stems of less valuable species for building poles from both savannas and forests. Thus, nationally, the key threats to forest conservation are land conversion to human settlement or agriculture, and over-harvesting of selected species, or axiomatically, conversion to plantation forests. There are specific localities where the cumulative effects of small-scale timber extraction are considered excessive and the forest system has been jeopardised (e.g. Boudreau et al., 2005). But at a national level, the plantation sector provides the bulk of domestic timber supply. This large and well-regulated plantation forest sector provides relatively secure jobs and other benefits to tens of thousands of employees and their dependents, as well as being the basis for

multiple downstream, value-added industries and enterprises, and infrastructural investment. The benefits from employment are usually sufficient to lift workers out of poverty, falling within the specialised-cultivated group described by Belcher et al. (2005).

As in tropical areas, the returns to labour from forest products are low. However, in the drier forests and woodlands of South Africa it is viewed as a viable and vital livelihood contribution since (i) alternative options for labour are scarce, or even absent in the remote rural areas, (ii) land for agriculture is in short supply, and (iii) the returns to agriculture can be low and equally risky due to climatic uncertainty. Moreover, previous literature recognises horizontal redistribution of wealth within rural communities but downplays it in favour of external markets for improved livelihoods and a pathway out of poverty. This holds true in South Africa as well, but the prevalence and value of local markets within communities is significant. These local markets transfer cash resources from wealthier households to poorer ones (Shackleton and Shackleton, 2006).

Urban demand for forest products remains high. It is argued by Wunder (2001) that urban populations in tropical countries are generally wealthy relative to their rural counterparts, which leads to greater purchasing power, resulting in reduced use and consumption of forest products. This is not necessarily the situation in South Africa, because of strong cultural ties to the use of forest products (Mander, 1998 and Cocks and Wiersum, 2003), and the strong rural–urban links facilitated through migrant labour systems. Urban demand remains high and there is less substitution. We hypothesise that substitution is more a function of time since urbanisation than increasing wealth status per se.

International commentators stress the safety-net value of forest products. As such they are available at crucial times of the year or during times of household misfortune, thereby preventing intensification of poverty. The same applies in South Africa. But little is made of the direct cash saving this daily-net use represents. Access to effectively “free” goods from the forest (where opportunity costs are extremely low) means that scarce cash resources can be saved or invested in other forms of capital and livelihood strategies. This is significant in areas or to households where there are very few cash income streams, and of low magnitude. This is also a saving to the State. If these forest resources were not available, the welfare burden to the State in terms of medical services, energy supply, nutrition aid and so on would be considerably higher than it is.

The macro- and micro-economic analysis from tropical areas conclude that use of forests and forest products is usually an option of last resort (Sunderlin et al., 2005). Whilst a valid conclusion, it is based on reports of central tendency such as means or modes. Yet, the dispersion and variability in the data also need to be considered. Certainly, use of forests and forest products is not a viable strategy for poverty alleviation on a wide scale. But it is possible for some households. Case studies of returns to households need to differentiate between those households that engage in forestry and forest product enterprises as a primary and perhaps more or less full time activity, and those that do so for only a few hours a week, or in times of need. These households in turn have ripple effects within their local community, as they provide employment and skills training for others, they buy goods locally, and they contribute to the development of local infrastructure (roads, schools, bridges, sports fields).

The widespread prevalence of HIV/AIDS in South Africa is being felt. Urban dwellers too sick to work are returning to their rural kin. This is one contributor to the increased commercialisation of forest and woodland resources and the inability of many households to escape poverty (Shackleton, 2005). Preliminary indications suggest that households afflicted by HIV/AIDS may also have higher per capita needs for resources such as water, medicinal plants, and fuelwood.

## 8. Conclusions

From the illustrative figures that we have provided a number of key conclusions regarding the links between forestry, forest products and poverty reduction or alleviation can be made for the South African situation. Firstly, there is no doubt that the presence of forests confers both opportunities and constraints on rural livelihoods in South Africa. The relative balance between the opportunities and constraints afforded to communities living close to forests is spatially and temporally variable. In most instances, the constraints are more of a function of forests being in rural, and therefore usually remote, areas with limited infrastructure, access to markets, employment and government services (including educational facilities), rather than forests themselves being directly limiting on livelihood opportunities, other than competition for land. Indeed, *millions* of South Africans do derive direct benefits from forests, forestry and forest products. The cultural, spiritual and ecosystem services values of forests require further definition and measurement.

Secondly, rural livelihoods are diverse, and therefore most households do not rely solely on one or two livelihood options. There are relatively few that depend solely on forest resources as the major component of their livelihood, typically restricted to employees in the formal sector for plantation forestry companies, sub-contractors and tourism enterprises. There are equally few that depend solely on wage labour or solely on agriculture. At approximately 20% contribution to livelihood, forest resources represent a large and vital component.

Thirdly, forest resources are not a means of alleviating poverty for millions of rural people, but nor are most of the other activities in which the rural poor engage. Access to and use of forest resources can however, undoubtedly prevent intensification of poverty. Degradation of the forest resource is invariably associated with deepening poverty and increased livelihood vulnerability. For others the frequency or permanency of the benefits offered by forests is not important, but they do value and require access to those benefits on a seasonal basis for financial, spiritual or direct use purposes, or on an ad hoc basis in times of hardship or adversity, as a safety-net until conditions improve again. This is particularly relevant within the context of the high HIV/AIDS rates.

Fourthly, for some rural households forestry and forest products do offer a pathway out of poverty. This is most noteworthy for the formal forest products and tourism sectors, which also invest in infrastructure and skills development in rural areas. However, even the informal sector trade in NTFPs does offer a pathway out of poverty for a minority of participants. The number might fall far short of the promise of large-scale poverty alleviation once promised, but it should not be overlooked nor neglected, especially as most of those being lifted out of poverty often do so by their own initiative and with no or limited government support. The returns to labour from engagement in forestry related enterprises are frequently greater than daily wage labour rates to casual or full-time workers in the agricultural sector, if such casual labour opportunities were available in such remote and underdeveloped areas, which is often not the case. The downstream or multiplier effects of formal commercial forestry and tourism enterprises are significant. The downstream effects of small-scale enterprises based on forest products have not been enumerated, but are also important although probably smaller in magnitude than commercial forestry enterprises.

Thus, overall, whilst there are certain parallels and similarities between South Africa and the situation in more tropical, developing countries, there are also some important differences that generally serve to increase the importance of forests, forestry and forest products in rural livelihoods. The challenge is how to capitalise on these differences and the opportunities they present. The national policy context sets an enabling environment

to allow forests and forestry to benefit local users and contribute to poverty alleviation. At a national level South Africa has several policies in place that are germane to the issues discussed here and broadly in agreement with the international level 'Agenda for Action' as a guideline for strengthening the role of forestry in poverty alleviation (Dubois, 2003). Since the 1994 democratic transition, the core of many sectoral policies in South Africa has been poverty reduction, redress and equitable sharing of resources, including forestry resources. These principles are contained in the National Forests Act (Department of Water Affairs & Forestry, 1998), and accompanying National Forestry Action Plan (1997), as well as policies relating to the Reconstruction and Development Programme, Integrated Rural Development Strategy, National Environmental Management Act, Small-business and Enterprise Development Plan, and the like. These have been carried through as requirements within the current process of compiling local Integrated Development Plans that are mandatory for each municipality. Thus, the policy environment within South Africa seems to be well founded and places poverty alleviation and equitable sharing of resources (including forestry resources) high on the agenda, although there are some tensions with those policies aimed at conservation and protection of forests and forest resources, placing the State in a dilemma of criminalising use of resources on the one hand, but wishing to support livelihoods by promoting access on the other (Lawes et al., 2004a). There is also tension in many rural areas between traditional authorities and the new democratic structures established after the national political transition in 1994. In many areas this has resulted in an institutional vacuum and communities have little control over their own resources, resulting in overuse by both locals and outsiders (Twine et al., 2003 and von Maltitz and Shackleton, 2004). The challenge now comes with implementation, especially at the local level to make real differences on the ground.

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