The contribution of wild plant resources to rural livelihoods and to poverty alleviation is receiving increased attention. Village studies in southern Africa indicate that the harvesting of wild plant products may in some communities amount to as much as 50 per cent of the total net income (Shackleton et al., 2001). Traditionally, most of these products were used for subsistence. Increasingly, however, rural households are incorporated into urban networks and rural livelihood strategies emerge that include the commercial sale of hitherto subsistence products and off-farm employment. As a result of such livelihood diversification, wild plants increasingly acquire a commercial value, not in the least because many urban people maintain their original cultural practices, including the use of wild plants. Thus, the role of wild plant resources in maintaining and enhancing rural livelihoods is diverse. The purpose of this chapter is to review the role of plant biodiversity in rural livelihoods in southern Africa with a particular focus on Zimbabwe and South Africa. The recognition of

1 Forest and Nature Conservation Policy Group, Department of Environmental Sciences, Wageningen University, P.O. Box 342, 6700 AH Wageningen, the Netherlands.

2 Department of Environmental Science, Rhodes University, Grahamstown 6140, South Africa.
the roles that natural resources play in rural livelihoods has resulted in the
stimulation of community-based conservation. These programmes are often
focused on protected areas that are perceived as being more or less in a wilderness
state (Fabricius et al., 2004). However, the frequently assumed dichotomy
between cultivated fields and wilderness areas does not reflect rural reality. With
regard to stimulating community-based biodiversity conservation, it is important
that biodiversity conservation is not only based on an ecologically oriented
species perspective, but also on a livelihood-oriented perspective of resource
diversity. As elsewhere in Africa, in southern Africa livelihoods are undergoing
major transformation (Ellis, 1998) and the links between natural resources and
rural livelihoods are ‘in transition’ (Campbell, 1996; Campbell et al., 1998).
Therefore, this chapter focuses specifically on the role of plants in the livelihood
diversification strategies of small-scale farmers. After a brief review of the role of
natural resources in poverty alleviation the following questions are addressed:
- What is the role of wild plant resources in small-scale farmers’ livelihoods?
- Which processes of rural livelihood diversification are taking place and what
  impact do they have on wild plant use?
- How do local livelihood strategies relate to biodiversity conservation?

3.1 The role of natural resources in poverty alleviation
The role of natural resources in poverty alleviation became a topical issue
particularly since the 2002 Johannesburg Conference on Sustainable Development
and the revision of the World Bank’s Strategy on Forestry. A major unifying
concept is the notion of rural livelihoods. Rural livelihoods are the outcome of the
combined employment of natural, physical, financial, human and social capital
(Carney, 1988). The rural livelihoods approach specifically focuses on options for
sustainable livelihoods of disadvantaged groups in society such as small farmers
and landless rural people and on the alleviation of their vulnerability.
Consequently, the livelihood approach complements the discourse and emphasis
on the need to increase small farm efficiency that has dominated rural
development thinking throughout the last half century (Ellis and Biggs, 2001).

The livelihoods approach considers poverty to be multi-dimensional: it
involves not simply a lack of food or cash, but includes deprivations such as
physical hardships, social subordination and vulnerability to adversity. Several
recent studies in tropical rain forest areas have explored the links between forest
resource use and poverty alleviation (e.g. Byron and Arnold, 1999; Salafsky and
Wollenberg, 2000; Wunder, 2001; Angelsen and Wunder, 2003). These studies
have indicated that global concerns for biodiversity conservation can be combined
with concerns about poverty alleviation. Natural resources may contribute to
poverty alleviation by serving either as a productive asset or as a safety net in
times of hardship, as well as contribute to overcoming social subordination.

Relatively less attention has been paid to the role of natural resources in
poverty alleviation in the drier woodlands and savannahs, which cover most of
southern and eastern Africa. However, several studies indicate that the
contribution to livelihoods of such drier vegetation types is as important as in
humid forest biomes, if not more so (e.g. Campbell, 1996; Cavendish, 2000;
Shackleton et al., 2001; Campbell et al., 2002).

Because of the history of land use in southern Africa, the concerns related to
sustainable livelihoods of small-scale farmers and other disadvantaged rural
groups are of special significance. Historically, a dual rural economy developed
comprising a modern farming sector of commercially-oriented, large, mono-
culture farms alongside a traditional farming sector dominated by predominantly
subsistence-based, small-scale farming practices (Bernstein, 1996). In most
countries, the modern farming sector has always been considered technically and
economically progressive, while the traditional farming practice was seen as
technically backward and consequently inefficient and unproductive.
Considerable financial, physical and human resources have been allocated to the
large-scale commercial sector with relatively little or none being allocated to the
small-scale sector (Duggan, 1986; Bernstein, 1996). However, due to major political changes in the region, as well as the international concerns about stimulating rural livelihoods for small farmers, this historic approach to agricultural modernisation is now changing with increased attention being given to specific development trajectories for small-scale farmers.

The increased attention for small farmer-driven rural development has led to a reconsideration of how small farmer activities are embedded in rural areas. The traditional conception of rural areas as being primarily characterised by a set of primary production activities in the form of crop growing and animal husbandry does not fit in with the facts. According to this traditional view, the primary production processes are based on the constant use, reproduction and gradual domestication of selected biological resources and on cultural practices that support these activities. Rural areas were considered as being bounded by urban areas typified by a lack of human-induced reproduction of natural resources and by wilderness areas typified by a lack of human impact (van der Ploeg, 1997).

This characterisation of rural areas as being dominated by farming practices in the form of crop production and animal husbandry still prevails in many rural studies. Consequently, studies of poverty alleviation focused primarily on the nature and status of such farming practices. During the last decade it has become clear, however, that the livelihoods of many small farmers not only include agricultural activities, but also the use and management of natural resource (Shackleton et al., 2001). In southern Africa a lot of attention has been focused on faunal resources that have a high commercial value (Logan and Moseley, 2002), but much less attention has been given to the role of wild plant resources.

3.2 Wild plant resources and rural livelihoods

3.2.1 The importance of wild plant resources in rural livelihoods

The important role that plant resources play in small-scale farmers’ livelihood
systems is demonstrated by the multiple activities farmers are engaged in. Typical examples of multiple farm activities are the cultivation of a vegetable garden at the homestead to supply produce for home consumption, the maintenance of different types of livestock (a mix of poultry, small stock and cattle), the cultivation of arable fields for the production of staple cereals, intercropped with cash crops, vegetables and wild edible plants that may be eaten or sold. The collection of plants and plant parts from the wild also plays an important role in the rural livelihood strategies (Scoones et al., 1992). Nearly all rural households collect wild plant material for a variety of household uses such as vegetables, fruits, medicines, fuelwood, wooden utensils, and grass and twig hand-brushes. A large proportion also makes use of wood for fences or kraals and reeds for weaving (Shackleton et al., 2002; Cocks and Wiersum, 2003). Wild plants are also used for agricultural production, such as wood for fences and ploughs, herbal medicines for livestock or leaf mulch for fertiliser. Several species may be used for fuel wood or weaving fibres, but most plant use is species specific. Species are traditionally not directly substitutable and resource users know the subtle differences in characteristics and properties of each. However, increasing scarcity of preferred species may cause their substitution for a less preferred species, as can been seen in the woodcraft industry (Shackleton and Shackleton, 2004a) and in the case of certain medicinal plant species (Botha, 2001).

The importance of wild plant resources to local communities is illustrated by the finding that communities in the rangelands of northern South Africa frequently use more than 200-300 plant species. The number of species used by individual households in the Bushbuckridge lowveld in the northern part of South Africa may be as many as 20 edible fruit species, 21 edible herb species and the same number of species for fuelwood (Shackleton et al., 2002). More to the south, fewer species appear to be used by households, perhaps paralleling changes in relative biodiversity in the landscape. For instance, in the former Ciskei homeland in the Eastern Cape province of South Africa a total of 103 wild plant species
were found to be used by rural households, among which are 18 fruit species and 12 wild vegetables. The number of species used by individual households ranged here between 2 and 21 with a mean of seven species (Cocks and Wiersum, 2003). Many wild plant species are also used as traditional medicines (Lawes et al., 2004). Individual traditional healers work with hundreds of different plant species. Most rural households are aware of many of these and may use between 20-50 species for self-medication for a range of minor ailments or charms. Some products are used on a regular basis, while others are only be used in emergencies. The wild plants are not only extracted from the native vegetation for subsistence use or as emergency resource, but may also be used as a base for domestication.

The plants are not used only for direct consumption, but also for cultural purposes such as in rituals and construction of cultural artefacts. A recent study in the former South African homeland of Ciskei indicated that the value of wild plant products used for cultural purposes was higher than the value of wild plant products used for direct consumption (Cocks and Wiersum, 2003). The cultural role of natural plant resources is also demonstrated by the presence of sacred forests and groves (Campbell, 1996). Thus, the value of wild plants for rural households may range from being a natural or financial asset, to a socio-cultural asset used by people to express their identity. Moreover, the native vegetation also contributes towards the identity of the landscape and gives a sense of place.

The use of wild plants contributes significantly to household incomes (Cavendish, 2000; Campbell et al., 2002; Lawes et al., 2004), which in rural livelihood assessments is often totally ignored. A study in Zimbabwe revealed that woodlands contributed 15 per cent, on average, to the net household income, as opposed to 22 per cent from dryland crops, 8 per cent from gardens and 21 per cent from livestock (Campbell et al., 2002). In some communal areas in Southeast Africa 50 per cent of the household income from land-based activities appeared to be derived from harvesting natural products, compared to 28 per cent for cropping and 22 per cent for livestock production (Shackleton et al., 2001).
3.2.2 Impacts of wild plant use on rural landscapes

The wild plants that are used in rural livelihoods are collected from different landscapes. Some wild edible plants may be extensively inter-cropped in the crop fields or maintained within the home space, such as the most favoured edible fruit and spinach species (High and Shackleton, 2000). Others are collected from non-cultivated environments such as communal lands in the immediate vicinity. Yet specialised resources, such as certain medicinal plants, weaving fibres, durable housing poles and the like, will only be found in certain parts of the broader landscape around the village or further afield.

In the various landscape niches from which wild plants are extracted, different regulations regarding access and different intensities of management exist (Fortman and Nihra, 1992; Clarke, 1994; Wiersum, 2003). For instance, fruits may be extracted from wild vegetation, from wild trees that were protected when opening up agricultural fields or from planted trees in homesteads. The species in homesteads are often maintained by a variety of management practices such as planting, protection or pruning, whereas species growing on agricultural fields are often less intensively managed by protection and controlled harvesting practices. In the native woodlands, wild plant products are often collected under open-access regimes. Fodder production may also involve a variety of landscape niches subject to different management intensities. It includes a home component where animals are kept in stables and fed with fodder collected from cultivated fields or wild vegetation, free range use of the communal lands covered by native vegetation, as well as targeted use of particularly resource-rich areas in time of shortage such as winter or droughts (Scoones, 1993). Such emergency grazing areas may be riparian strips, wetlands, grazing reserves some distance from the village and crop residues in fields.

Thus, different landscape niches provide many different resources and species to fulfil everyday needs, and livelihood diversification involves the use of various niches in a diverse landscape. The combined utilisation of these spatially diverse
resource areas – ranging from natural to modified and transformed vegetation and including both cultivated fields, grazing areas and extraction areas – allows a household to react flexibly to different production conditions and to obtain optimal benefits from the surrounding environments. In the event that the extraction of highly valued species results in local scarcity, farmers may react by actively protecting or propagating plants in home gardens or crop lands, by species substitution or by falling back on alternative harvesting areas (High and Shackleton, 2000; Wiersum, 2003).

To conclude, the traditional characterisation of rural areas as being dominated by crop and animal production processes ignores the important role of the extraction of wild products from the natural environment. The common characterisation of agriculture as a human process that takes place in areas which are distinct from wilderness areas undisturbed by human activity ignores the fact that most agricultural areas consist of a landscape mosaic in which farmlands and more or less natural areas co-exist.

### 3.3 Diversification of rural livelihoods

#### 3.3.1 Diversification trends

During recent years not only has the notion that rural households in southern Africa are primarily farmers of crops or livestock been challenged, but also the notion that they are predominantly engaged in primary production processes has been questioned (Ellis, 1998; Ashley and Maxwell, 2001; Shackleton et al., 2001). Several recent studies revealed that, at present, rural households are not only engaged in a number of on-farm activities, but also in off-farm activities. Such multi-enterprise practices are often essential to the livelihoods strategies and help reduce vulnerability and risk (Shackleton et al., 2001; Campbell et al., 2002). In addition to multiple farm activities, members of many rural households are also involved in off-farm activities such as informal trading or labouring in more
urban-based jobs. Consequently, contributions to rural livelihoods include cash and remittances from urban-based family members with part-time or full-time employment, state grants such as old-age or disability pensions and/or \textit{ad hoc} trade in farm produce or natural resources. It is now recognised that in much of southern Africa the cash and remittances from urban centres contribute significantly to rural livelihoods (May, 1996). For instance, a village study in Zimbabwe showed that wages and home industries contributed 12 per cent and remittances and gifts 21 per cent to net household income (Campbell \textit{et al.}, 2002).

Several recent studies suggest that rural livelihood diversification will be of increasing importance for small farmers (Ashley and Maxwell, 2001). As a result of increasing links to the national and global economies, modern farming increasingly requires capital-based new technology as well as technical skills to meet the quality and timeliness requirements of commodity chains. For many small farmers, it is often difficult to meet these requirements. In addition, to maintain self-sufficiency based on part-time farming, some of these farmers are increasingly becoming engaged in relatively high-return activities in the rural non-farm economy such as trading, manufacturing or migrant employment in more urbanised areas. Others may only be able to cope with the changing rural conditions by focusing on low-return activities that do not require capital or specific skills such as the gathering of products from the wild or petty trading. In many southern African countries there is evidence of poor people becoming poorer. For instance, in a case study in Malawi it was found that 25 per cent of the rural households in Blantyre Shire Highlands recently experienced downward economic mobility (Orr and Mwale, 2001). Moreover, Aliber (2003) shows that for many households poverty is highly variable in time, with households moving in and out of poverty in relation to changes in local and national conditions.

Thus, regarding the livelihood diversification of small farmers, a bifurcation is becoming apparent with part-time farming being combined with more lucrative off-farm activities, on the one hand, and poor people competing for any type of
informal work, on the other. Although these contrasting trends and options have been analytically acknowledged, little empirical data is available on the relative importance of both trends and the rural conditions under which they are most likely to emerge. The dichotomy that has been outlined is only an initial approximation and a more diversified process of change is likely to occur. In a study in Zimbabwe, Campbell et al. (2002) identified ten livelihood strategies with households depending in varying degrees on agricultural production (either gardening, dryland cropping or cattle raising), non-farm activities (either trade, local employment or off-site employment) and woodland activities.

3.3.2 Increased incorporation of rural areas in rural-urban networks
A major driving force behind the diversification in rural livelihoods is the increased incorporation of rural areas into external commercial networks. As a result of an extension of infrastructure and growing markets, rural production systems are increasingly becoming commercialised. Moreover, as noted before, a significant proportion of the rural population migrates to urban areas in search of temporary or permanent employment in the urban economic sector. Many of these migrants send some of their income to family members who have stayed behind in the rural areas.

Commercialisation
At present, the livelihoods of rural African communities should not be regarded as being predominantly subsistence-based since they are increasingly becoming incorporated in commercial networks (Ellis, 1998). This includes not only agricultural crops, but also wild plant products. The commercialisation of these products is a growing phenomenon throughout the region over the past decade or so (Braedt and Standa-Gunda, 2000; Campbell et al., 2001; Shackleton, 2002; Sunderland and Ndoye, 2004). In many places it used to be absent or extremely limited. This was due to a combination of factors that differed from place to place,
including cultural taboos against the monetisation of products from resources with cultural significance, such as *marula* beer (Shackleton, 2002), absent or distant markets, limited consumer demand and sufficient cash income from other sources.

The trend in commercialisation is increasing, both in terms of the range of products involved, the number of participants and the value traded. Commercialisation occurs both between households within the same community, as well as between households and external markets/consumers. The drivers of commercialisation at household and community level are not yet well understood. Neither is the potential intra-household competition between subsistence demand and commercial demand for products from the commons. Arnold and Townson (1998) argue that when examining social differentiation and resource use it is important to distinguish between households engaged in the trade of natural plant products because they lack alternative means of livelihood, and those that are responding to market opportunities. Both instances represent a diversification in livelihood and resource use, but the first concerns a coping strategy involving less advantageous markets (Ellis, 1999), whereas the second concerns an adaptive strategy involving more advantageous markets. These contrasting trends in commercialisation are analogous to the aforementioned bifurcation trends in livelihood diversification.

*Rural-urban links*

The growing importance of commercialisation in rural livelihoods is also related to the increasing linkages between rural and urban areas. Although some rural communities may be geographically isolated, they are not necessarily isolated in economic and social terms. The influx of cash and remittances from urban areas are proof that rural villages cannot be viewed as closed systems. In several rural areas in southeastern Africa cash from urban and state sources may make up the bulk of cash income streams (May, 1996). Moreover, due to commercialisation there is a growing flow of rural goods and culture to urban areas. Thus, rural
villages are often intimately linked to local urban centres, which affects the economic climate in the rural areas. The rural-urban interactions come to the fore particularly when there is an economic downturn in national or local economies, which results in urban-based family members returning to the rural homestead.

Between various rural areas there is a differentiation in the degree of linkages with urban areas. In some areas improved communication and infrastructure facilitate a rapid increase in new urban-based opportunities for rural services and labour. However, in more remote areas the linkages with urban centres may be weaker. Consequently, there is a gradual differentiation between ‘remote’, ‘middle countryside’ and ‘peri-urban’ rural conditions (Wiggins and Proctor, 2001). Thus, rural diversification not only includes a differentiation of livelihoods, but also a regional differentiation.

3.3.3 Impacts of incorporation in external networks

There is increasing evidence that the incorporation of rural areas in external networks has several repercussions for the use of wild plant products. It is often assumed that the use of wild plant products is mostly limited to subsistence use in relatively underdeveloped rural areas and that with improved economic conditions the use of these products will be substituted for manufactured products. Recent studies have indicated, however, that this is not necessarily the case (Sunderland and Ndoye, 2004). For instance, the commercialisation of indigenous medicines for use in urban areas has been well documented (e.g. Williams et al., 2000; Lawes et al., 2004). Moreover, significant quantities of firewood and charcoal are supplied to urban and peri-urban areas (Brigham et al., 1996; Luoga et al., 2000).

The commercialisation of wild plant products takes place both within rural communities and between rural and urban areas. Within communities there is evidence of increasing commercialisation of everyday resources such as fuelwood, medicinal plants, reed sleeping mats and household utensils from wood or fibre, such as spoons or brooms. Typically it is the lower income and more
marginalised households that sell products within communities to their more affluent neighbours (Shackleton et al., 2002). This frequently occurs on an ad hoc basis and generates supplementary cash income. Similar products are also supplied to external markets (pension markets and regional centres) as well as manufactured goods for urban centres and the tourism markets. These include household utensils and decorations such as woodcarvings and alcoholic beverages (Shackleton et al., 2002; Cocks and Dold, 2004). Participation in external markets is varied, spanning both wealthy and poor households. Households with sufficient labour and the means to address entry barriers tend to serve the urban-based external markets which provides them a relatively more steady and reliable income.

The urban and peri-urban sites represent relatively lucrative markets for wild plant products. Much of this trade may take the form of informal flows of a few items or a few bags of produce brought by a relative or friend returning to his or her job after a visit to the village at the end of a month or a holiday period. This supply of goods also has an important cultural dimension, for example when urban-based friends and relatives return home during specific times of the year to honour or participate in important cultural events, such as the drinking of traditional beer, initiation rites or communication/worship of ancestral spirits (Goebel et al., 2000). Cocks and Wiersum (2003) found that young people expected that the domestic or fuelwood use of natural resources products would decrease due to them being substituted for industrial products, but that the use of wild plant products for cultural purposes would maintain its importance.

3.3.4 Contrasting pathways in the diversification of wild plant use
As discussed above, the path to livelihood diversification of small-scale farmers can be likened to a bifurcated road. On the one hand there is the growing importance of commercial production and non-farm activities while, on the other hand, there is increased dependence on low-return activities open to poor people
Wild plants can play a role in both trends (Ross-Tonen and Wiersum, 2005).

The extraction of wild plants may result from a lack of access to other resources and of increasing poverty. It represents a low-return coping strategy. Such strategies often concern the extraction of wild plants from common property or public lands. Many poor rural households depend on natural resources in the sense of being unable to do without them. For instance, Cavendish (2000) found in a study carried out in Zimbabwe that 40 per cent of the poorer households depend heavily on these resources. In another study, woodland species accounted for nearly 30 per cent of the income of the lowest income farmers versus less than 10 per cent for the highest income farmers (Campbell et al., 2002). Such dependency involves a reliance on subsistence supplies from forests or other natural environments, a lack of alternatives to the income generated from selling natural resource products or the use of forests as a safety net in hard times (Angelsen and Wunder, 2003).

Thus, wild plants can offer a source of subsistence and a safety net to what Byron and Arnold (1999) characterised as ‘forest-dependent’ people. The extractive activities are often characterised by low productivity and generate low returns for most people involved, although a few can, and do, make significant returns. Nonetheless, direct use values attached to home consumption can be high, thereby representing an opportunity cost to alternative uses of the same resource (Cavendish, 2000; Shackleton et al., 2001). However, many commercialisation initiatives of this type have to be abandoned as labour costs rise. Others may lose market share as they involve ‘inferior goods’ that cease to be used as incomes rise or are displaced by factory-made alternatives, imports or substitutes. Thus, although natural resource activities for poor people are extremely important in helping them to survive, this form of diversification often has only limited prospects and potential to contribute to meaningful livelihood improvement. These activities are likely to decline, or may even be abandoned, once better
opportunities become available. Nonetheless, although the absolute dependence of poor households on natural plant resources may decline as other livelihood opportunities arise, their relative importance can still be significant. As a result of increasing poverty in southeastern Africa, the number of households that rely on natural plant resources may well be increasing.

Conversely, the purposeful production of certain financially lucrative wild plants can also involve a strategy to gain access to new financially rewarding economic activities. The potential of wild plants to generate more income is mostly linked to products which are subject to growing market demand. In such cases, the traditional low productivity extraction activities may be intensified through improved management and (semi-)domestication, increased manufacturing or more effective marketing. Several examples in southeastern Africa bear witness to the potential for such a specialisation strategy by what Byron and Arnold (1999) characterise as ‘forest-related’ people. These include the domestication of wild plants in home gardens (High and Shackleton, 2000; Shackleton et al., 2003), the growth of tourism-orientated craft markets (e.g. Dzerefos et al., 1999; Rogerson and Sithole, 2001) or the development of localised markets for wild plant products such as marula beer (Shackleton, 2002).

Following Geertz’ (1963) classic treatise on the processes of ecological change in Indonesia, these contrasting trends in diversification of natural resource use could be characterised as involving either an involution due to having become internally more refined and complicated or a gradual evolution in productive strategies and patterns. The first trend involves shared poverty and social stagnation, whereas the second trend involves an evolutionary stage in rural development.

3.4 Local livelihoods and community-based biodiversity conservation

Rural areas are not only increasingly being incorporated in external commercial networks, but also in national policy and administration networks (see Ole Siloma
and Zaal, this volume). During the second half of the 20th century, the conservation of ‘wilderness’ with relatively intact biodiversity was considered a state responsibility. This resulted in a management approach in which special forest and nature reserves were put under the control of professional management organisations, with access by local people being restricted. At present it is acknowledged that such an approach often restricts the traditional livelihood practices of rural dwellers and limits the potential to use natural resources as a means for poverty alleviation (e.g. Fabricius et al., 2004). Consequently, in many southern African countries a lot of attention is now given to the stimulation of community-based natural resource management (Wily, 2000; Benjaminsen et al., 2002). This approach is not only considered a good strategy for the development of multi-resource livelihood activities, but also a strategy to stimulate local self-reliance and overcome social subordination, and hence poverty alleviation.

In community-based resource management strategies attention is mainly focused on restructuring the rights of access to and use of communal and/or state lands. Such lands are not primarily meant for agricultural production, but for extractive activities. As Ole Siloma and Zaal illustrate in Chapter 10, this approach pays a lot of attention to the strengthening of traditional community institutions or the creation of new local institutions for the management of natural resources, which in the past often had a ‘de-facto’ open-access nature. The efforts aimed at the development of appropriate community-based natural resource management systems offer, in principle, an excellent opportunity to adjust the traditional natural resource management systems of small farmers to the diversification in livelihood strategies. However, in many cases weaknesses in the set-up of new institutions for community-based conservation have been noted in southern Africa (Campbell et al., 2001; Fabricius et al., 2004).

One reason for these pitfalls is the fact that in many such programmes insufficient attention has been given to the local values regarding natural resources (Goebel et al., 2000; Shackleton and Shackleton, 2004b) and the
impacts of local livelihood strategies on local landscapes. Most programmes are still based on a presumed dichotomy between cultivated lands and wilderness areas. Although the role of farmers in conserving biodiversity on their farmlands is scientifically recognised (Swaminathan, 2002), many official conservation programmes still assume that biodiversity conservation should primarily focus on ‘in situ’ conservation of biodiversity in reserved conservation areas, with the only alternative being ‘ex situ’ conservation in botanical gardens or gene banks. This approach ignores the fact that rural communities have created a diversified landscape in which local people are using various areas under different intensities of use and management. Chase (1989) termed this process of creating a combination of land-use zones in a continuum from wilderness areas to cultivated fields ‘domiculture’. Accordingly, the creation of different landscape elements under different degrees of intensity of use and management offers scope for what may be called ‘in domo’ conservation of biodiversity (Wiersum, 2003).

In sum, alleviating rural poverty by giving local communities autonomy over resource management cannot be effectively achieved without acknowledging the complex nature of local livelihood systems and their impacts on the local landscapes. This includes the notion of local communities creating different landscape niches which are used for various purposes. The local landscapes, consisting of various land-use types along the nature-culture axis, offer a more varied scope for biodiversity conservation through both in-situ and in-domo conservation than a dichotomised landscape consisting of cultivated fields and reserved conservation areas destined for in-situ conservation. Thus, stimulating the involvement of rural communities in safeguarding biodiversity should be based on a good understanding of the nested nature of rural land-use systems.

3.5 Conclusions
Due to the historic developments in land-use policies, small farm development in southern Africa has for a long-time been given little attention and small farmers
were in the first place considered as a labour pool for large estates or urban-based industries. Using a similar logic, it was also assumed that nature and biodiversity conservation were best assured by establishing official conservation reserves. This conservation approach ignored the fact that natural resources such as wild animals and plants are of great importance for rural livelihood strategies of rural communities as both a natural, financial and socio-cultural asset. Based on increasing recognition of this importance, the present focus is on how to develop strategies to maintain or even increase the role of natural resources in rural livelihoods. Consequently, a lot of attention is being given to involving rural communities in the conservation of biodiversity.

In stimulating such community involvement in biodiversity conservation, two main issues require attention. Firstly, it should be recognised that the collection of natural resource products by rural communities takes place in different parts of the rural landscape. Several of the useful wild plants are collected within and between privately used cultivated fields and surrounds, while others are collected from communal or public forest lands, grazing areas or nature reserves. Consequently, the commonly assumed dichotomy between farmlands and nature areas does not reflect reality. Instead, a diversified landscape exists which has various land-use types in different stages along the nature-culture continuum (Wiersum, 1997). The recognition of the multiple scales of integration of cultivated plants, semi-domesticated plants and wild plants in different landscape niches has important repercussions for the development of new approaches towards combining poverty alleviation and biodiversity conservation.

Secondly, it should be recognised that the livelihoods of rural households in southern Africa are incredibly diverse and are becoming even more so (Ellis, 1998; Shackleton et al., 2001). This diversification not only involves an increased importance of off-farm activities, but also a more important role for the use of on-farm and off-farm natural resources such as wild plants. The diversification of natural resource use involves two contrasting trajectories. On the one hand, these
activities may function as a safety net for the poor. On the other hand, they may offer scope for the development of what are frequently low productivity activities into financially more attractive ones. Each of these trends deserves specific responses in conservation and development strategies. In the first case, encouraging an expansion or extension of low value natural resource-based activities focused on predominantly limited or subsistence demands may only result in further redistribution of natural resources among the poor. In such cases it could be preferable to assist people to move into more economically promising activities (Byron and Arnold, 1999; Arnold, 2002). In the second case, encouraging an expansion or intensification of the more promising natural resource use activities is certainly an option as regards improving rural livelihoods. Thus, stimulating community involvement in biodiversity conservation should not only be based on ideas about traditional rural livelihoods, but should also recognise the dynamics of rural livelihoods.

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