

The effects of communal land resource management on forest conservation in northern and north-eastern Namibia

Scotney Watts¹

The area under natural forests has diminished steadily while deforestation has escalated progressively in the past 10 years. Strategic constraints leading to this ever-increasing rate of forest depletion are examined, and relevant policy interventions for overturning them are suggested. Communal ownership and management of natural resources in the northern and north-eastern Namibia are identified as a major underlying constraint on natural resource conservation because the communal system lacks mechanisms for regulating access. Nonetheless, the study acknowledges the optimistic views on communal use and management in other parts of the world. The assumptions about community, the willingness of its members to realise joint environmental or social goals, and their motivation and skills for natural resource management have been challenged. The perception that communities are custodial and non-materialistic in their attitudes to natural resources is rejected. It is concluded that common resources should be brought under more formal management. There should be a state-community/private partnership, with the state performing an advisory function, and implementation at the highest level through the use of state institutions for law enforcement, while the community or the private interest undertakes day-to-day management and law enforcement activities. Maintaining state ownership of natural resources in communal areas and inviting local people to manage them on their own, or mainly on government terms, is not a solution to natural resource degradation.

1. INTRODUCTION

All evidence indicates that forest loss in Namibia has increased from 43 000 ha/annum to 73 000 ha/annum, causing a reduction in the area under natural forest cover from 15 per cent of the overall land area to about 9,8 per cent in the past 10 years (FAO, 1995, 2001). The theme of this article is to assess the strategic constraints leading to this ever-increasing deforestation and to recommend policy-related opportunities for upsetting them. This broad objective is accomplished through critical literature survey: assessment of the conservation attributes of public policies for land resources, official documents and published materials. This is used to explain what is happening to land resources in northern and north-eastern Namibia in 11 sections. In this context, the term 'land resources' in Section 2 of the article refers to terrestrial biological resources that utilise land for establishment, growth and survival, while the concepts of 'forest' and 'forest resource' are based on the definition of the Food and Agriculture Organisation (FAO), mainly because the forest resource data used in this study are derived from the organisation's global forest resource assessment surveys.

Sections 3 and 4 deal with the constraints on forest conservation and the categories of

¹Lecturer, Conservation Ecology Department, Faculty of Agricultural and Forestry Sciences, University of Stellenbosch, Stellenbosch, South Africa.

land resource ownership. Section 5 examines the characteristics of communal land ownership. 'Communal land' refers to Namibia's land and intrinsic natural resources that fall within the areas legally recognised as 'communal land'. Thus, communal resources denote natural resources whose production and/or consumption benefits and costs are borne by a group of individuals (or a community) that lives within designated communal land. Nevertheless, the distribution of benefits and costs that accrue from the management of these resources may be unequal at a personal level due to the lack of appropriate institutions. Cost sharing (and exclusive access to benefits by local elites) has been noted to be a characteristic feature of communal property in Namibia. This does not, however, imply that there are no optimistic concepts of rational use and management of communal resources elsewhere (e.g. Bromley, 1992; Matose & Wily, 1996; Ostrom, 1999; Sjaastad & Bromley, 2000), although Campbell et al. (2001) regard this as false optimism. This is premised on the realisation that the international debate on communal ownership and management has few contributors from Africa, when the issue is largely an African one.

Section 6 evaluates the implications of communally owned land for natural resource conservation, Section 7 specifically examines the impacts of communal land on tree planting and rangeland conservation, while Section 8 focuses on the effectiveness of traditional institutions in the management of communal resources. Section 9 questions the existing assumptions about sustainable management of communal resources, while Section 10 deals with the implications of ecologically insensitive agricultural interventions for rangeland conservation. It is important to note that all the above limitations to forest conservation are exogenous to the forestry sector, which explicitly highlights the need for intersectoral policy coordination that Namibia currently lacks. Section 11 examines the implications of the national forestry policy and legislation for forest conservation, and Section 12 concludes the article with a brief look at the salient features of the study and offers some strategic recommendations.

2. CONSERVATION STATUS OF FOREST RESOURCES

The term 'forest' includes both closed and open canopy forests and wooded landscapes such as mopane woodlands and *Acacia* savannah, while 'forest resource' refers to anything that appears or grows in a forest and is capable of satisfying economic want. This definition accords with the one advanced by the FAO (1995), which portrays forests as terrestrial ecosystems with at least 10 per cent tree-crown coverage and are generally associated with wild fauna, flora and natural soil conditions. This concept is maintained here, because the forest resource data for this study are drawn from the FAO estimates. According to this definition, Namibia had a total natural forest area of about 12 569 000 ha in 1990, which constituted approximately 15 per cent of the overall land area. It was estimated that these forests disappeared at an annual rate of 43 000 ha. The area planted out to plantations was considered insignificant (FAO, 1995). Ten years later, the same organisation put the area of natural forest cover at 8 040 000 ha, amounting to 9,8 per cent of the country's total land area. Deforestation occurs at an annual rate of 73 000 ha, while the area under plantations remains insignificant (FAO, 2001).

These forests occur mainly in the northern regions of Oshana, Omusati and western Ohangwena and the north-eastern part of the country in the Okavango and Caprivi (see Figure 1) where rainfall ranges from 400–700 mm/annum. *Omusati* in Oshiwambo (a



Figure 1: Regional map of Namibia

Namibian language) actually refers to the *Colophospermum mopane* (Kojwang & Erkkilä, 1996). This description of the occurrence of forests in Namibia agrees with an earlier economic report which stated that 'Namibia's only indigenous forests are the savannah woodlands of the moister regions in Okavango, Ovambo and Caprivi' (Government of the Republic of Namibia, 1987: 34). It is natural that these regions are the most populated parts of Namibia where the demand for agricultural land, fuelwood and construction material has resulted in cutting down extensive stands of trees such as mopane. Mopane wood is highly valued as construction material in traditional homesteads, where it is used mainly in the construction of palisade walls because it is very resistant to termites (and probably to woodborers in general). The use of long, thick poles demonstrates wealth and prosperity. This threatens the conservation of the mopane tree, although cutting does not kill the tree, as it coppices readily. Nevertheless, repeated cuttings reduce the tree to a bushy form. This has transformed extensive tracts of mopane into, at most, two-metre shrubland in the former Ovamboland – the northern regions of Omusati, Oshana, Ohangwena and Oshikoto (Kojwang & Erkkilä, 1996).

3. CONSTRAINTS ON FOREST CONSERVATION

With an estimated population of about 1,6 million people on a land area of about

82 300 000 ha, one would expect little or no pressure on forest resources. This translates conservatively into 1,7 inhabitants/km² (Barnard, 1998). However, there are sharp internal contrasts in population distribution due to variations in climatic conditions that define the distribution of natural resources essential for human welfare. As a result, more than 60 per cent of Namibia's population is found in the northern and north-eastern parts of the country where rainfall is comparatively higher than elsewhere (Jochbeth et al., 1994). While this would imply that land resources in northern and north-eastern Namibia suffer overexploitation (the neo-Malthusian perspective), Westoby (1989: 137) notes that 'there is no simple relationship between the extent of forests and the size and distribution of the human population. Instances can be found in which large numbers of people live in harmony with their forests and others where forests are devastated, although few people are present'. It is therefore not so much the number of people that has the crucial impact, but the way in which they are organised. To attribute forest loss to population pressure is to argue that 'spots cause measles' (Westoby, 1989: 137).

It is indisputable that rural communities play a significant role in forest degradation, but as agents of forest loss rather than as the cause of it. Westoby (1987) considers the rural disinherited (peasant farmers, woodcarvers, rural landless, etc.) as the main instruments of forest destruction, and emphasised that their pressure on forests would increase steadily as a consequence of institutions bent on maintaining inequitable allocation of natural resources. The World Resources Institute (WRI, 1992) notes inequitable distribution of agricultural land as a main factor in forest destruction, and asserts that land reform policies aiming to redress this imbalance are one of the potent tools governments possess for conservation of land resources, including forests and rangelands. Thus, the depletion of Namibia's forest resources has its roots in the institutions that determine who owns, has access to and controls the use of the forest resources and the underlying land.

It is worth noting that degradation of natural resources in Namibia occurs because existing institutions reward those who degrade them, with scant consideration for the social costs of their production or consumption. In forestry, such material rewards include free fuelwood and construction material, land area that becomes available for agriculture, tree crop cultivation or for livestock ranching and revenues generated by forest commodities. These economic incentives discourage the conservation of land resources; they are obstacles to forest conservation. The most important disincentive that militates against forest conservation in Namibia's communal areas relates to land resource ownership. 'Land ownership implies a bundle of institutional rights and obligations which regulate relationships among individuals, families, ethnic groups, tribes or communities and the state in their access to land and its resources' (Barraclough & Ghimire, 1995: 193-4). However, the prevailing land resource tenure in Namibia divests the responsibility (rights and obligations) for sustainable management from the communal resource users. This is exacerbated further by the country's forestry policy, which Dewdney (1996) notes to have sidelined the role of communities in forest management with its emphasis on state-controlled forests.

Therefore, the sustainability of forest resources in Namibia depends on reversing forest degradation and loss by improving the ill-defined relations between people and land to make communal dwellers responsive to the degradation of land and forest resources. A socio-economic and ecologically sensitive intervention should aim at internalising most, if not all, the private costs associated with the overexploitation of land resources,

including tree cutting. The procedures for accomplishing this are outlined in the relevant sections of this article.

4. CATEGORIES OF LAND RESOURCE OWNERSHIP

Namibia has three basic categories of land ownership. Privately owned or commercial land makes up about 44 per cent of the country and is found mainly in the southern and central parts. State-owned communal land constitutes about 41 per cent of the total land area (Ashley, 1994, 1996; Bester, 1995). This categorisation stems from the massive social-engineering practices of the colonial past: German administrative classification of 'Native Reserves' and 'Crown Land', and the South African apartheid 'homeland' policies which were implemented in 1971 and onwards (Harring, 1998; Barnard, 1998). There is a general consensus that communal land accommodates at least 60 per cent of the population (Bester, 1995; Byers, 1997), over 85 per cent of which are located in the north in the former Ovamboland and Okavango, and in the northeast Caprivi region. This is where land degradation and natural resource use conflicts occur. The remaining 15 per cent is proclaimed state land designated for environmental conservation, i.e. national parks, nature reserves and other forms of protected areas, and mining (Byers, 1997).

5. COMMUNAL LAND RESOURCES

Communal lands are the media of economic activities in rural areas, ensuring livelihoods for the majority of Namibia's population. Jochbeth et al. (1994) indicate that Namibia experiences urban-rural migration and that 75 per cent of its population live in rural areas. Naturally, the existing government (after having been in power for more than a decade) should recognise the significance of communal resources and create institutions to safeguard them against depletion or degradation. It is thus ironic that natural resources in these areas that shift the burden of the country's majority population from the state to communal inhabitants themselves undergo degradation with scant consideration for rehabilitation. The lack of regulation of access and control over the use of natural resources in southern Africa's communal areas qualifies them to be categorised as open-access resources. Moreover, Ashton & Panayotou (1992) and Watts (2002) have stated that any natural resource that is not totally owned by the state, community or an individual that cannot effectively enforce its ownership to the exclusion of others will suffer 'the tragedy of the commons'.

The proponents of communal ownership of natural resources for rural Africa might have a more optimistic view of sustainable management of communal resources. For example, Matose & Wily (1996) conceive communal resources as those resources held by an identifiable community of interdependent users, in which outsiders to that community are excluded and in which use by members is regulated by cultural norms. Kissling-Näf et al. (2002) emphasise that the right of title is in the hands of a group that has formulated regulations controlling use and excludes non-group members from using the natural resources. Bromley (1992) notes that the property-owning groups demonstrate variable size and anatomical structure. Nevertheless, they are social units with definite membership and boundaries. Community members share interests, interact among themselves and have common cultural norms, as well as having their own endogenous authority systems. Bromley (1992) emphasises that common property represents private property for the group concerned, because all persons other than

community members are excluded from use and decision making. Furthermore, Sjaastad & Bromley (2000) denote communal tenures as a regime of rights where a specific group of natural resource users interact with the environment in a mutually accepted mode of behaviour.

In fact, there are many optimistic views of communal property, with others equating communal tenure to private tenure in that both property regimes possess the capacity to exclude outsiders, and individuals have rights and duties in common property. However, this differs drastically from the current natural resource management initiatives in the northern and north-eastern parts of Namibia, which are legally communally owned.

6. IMPLICATIONS OF COMMUNALLY OWNED LAND FOR NATURAL RESOURCE CONSERVATION

The current land-use practices in communal areas encourage deforestation. For example, a person aiming to gain lifetime ownership of a piece of land that has been cultivated previously in the former Ovamboland is required to pay a land fee that ranges from one to two oxen. However, a household that wants to establish a new farm on pristine arable land needs only the permission of a village headman, without paying a fee (Kreike, 1995). Such ecologically insensitive resource use practices vest no responsibility for sustainable utilisation of common resources in natural resource users. This implies that the functional land-use policy in Namibia's communal areas promotes land resource degradation. For example, Dewdney (1996) notes that local people bear the costs of deforestation in communal areas, but without tenure over forest resources there is little incentive to limit use or plant new trees. Individuals and communities cannot be certain to reap the benefits of their wise management because it is unfeasible to exclude others from both within and outside the community. Conroy et al. (2002) recognise greater natural resource security against outside communities as a key factor in successful joint forest management. Moreover, Adams et al. (2000) indicate that Namibia's communal tenure, like that in South Africa and Zimbabwe, did not evolve naturally with the support of communal inhabitants. Communal areas in the country were established to further colonial policies.

State-imposed communal tenure lacks inclusive broad-based rules, regulations or laws for the use of natural resources, and this description fits Namibia's communal areas in the northern and north-eastern parts of the country well. Ironically, many people equate such tenure to customary tenure in which traditional institutions lay down conditions for the equitable and sustainable allocation of natural resources in remote parts of certain countries (Sudan, the Democratic Republic of the Congo and other central African nations) where economic infrastructures had not weighed down these institutions. However, today's customary system has been bogged down in many African countries by the great deal of social engineering that removed communities forcibly from their ancestral agriculturally productive land to reserves, and more recently by the inability of traditional institutions to sustain themselves in the face of mounting socio-economic pressures owing to population and consumption pressures.

Therefore, the appropriate tenorial regime for conserving land resources is one that bestows the responsibility and duty for production and consumption of natural resources on individual producers and consumers (Bac, 1998). The high tendency for

free riding of communal resources without commensurate community-level deterrence measures now requires the adoption of more formal state–community/private measures to control the overexploitation of natural resources. The state lacks the logistical resources to effectively protect all forests. Thus, Conroy et al. (2002) emphasise that only an effective partnership between state agencies with responsibilities for forest resources and forest-dependent communities is pertinent to forest conservation. In the case of Namibia this implies that, instead of being an absentee landlord, the state should assist communities that are willing to participate in the management of communal resources to organise themselves to develop and enforce laws for regulating access and use. The ultimate goal should be the strengthening of natural resource management capacities of local people to enhance the building of social and human capital necessary for effective decentralisation of authority for sustainable management of natural resources. Conroy et al. (2002) state that there should be graduated devolution of legal stewardship, management and utilisation rights to communities according to their ability to implement forest conservation. Communities that demonstrate a lead role in sustainable management of particular patches and have strong responsibilities for equitable allocation of forest resources should have pronounced devolution for managing conflicts affecting sustainable forest management.

With full management and utilisation rights devolved or decentralised to communities in exchange for protection and rehabilitation of communal land resources, the task for existing ‘community committees’ in Namibia is to enforce the law and monitor resources. Defiant community members (or free-riders) who disregard such newly created institutions for the sustainability of natural resources should become liable for prosecution, either by the community or by the state, depending on the magnitude of negative externalities involved and the level of sophistication of offenders. A substantial part of the fines imposed on violators could be ploughed back into the community to rehabilitate the environment. Offenders sentenced to perform community service should actually remedy the social cost that they have imposed.

It is this state–community partnership that would enhance the sustainability of natural resources in Namibia’s communal areas rather than the existing one, which is characterised by open-access (Ministry of Environment and Tourism, 1996). Quan et al. (1994) also note the open-access nature of Namibia’s communal resources. Indeed, there is ample evidence from other southern African countries that the management of communal land resources is characterised by free-riding, even in thinly populated (relative to arable land) countries. For example, Akapelwa (1996) reports that the communal system is considered to be a structural feature of environmental degradation on the vast majority of Zambia’s landscape. Generally, communal areas in the country are characterised by insecurity of tenure for communal dwellers and the state. Consequently, people are reluctant to participate in long-term natural resource conservation projects, such as tree planting on agricultural holdings, because there is no guarantee that they can farm the same parcel of land indefinitely. The Zambian government further echoes that tenurial arrangements under the communal system have been an obstacle to investment in land resource conservation (Ministry of Environment and Natural Resources, 1994). The problems of communal management of land resources in Zambia are reflected in the depletion of about 850 000 ha of forest per year (FAO, 2001). This is certainly the highest rate of deforestation on the African continent.

7. IMPACTS OF COMMUNAL LAND ON TREE PLANTING AND RANGELAND CONSERVATION

The negative consequences of insecurely held land under the communal system for on-farm forest conservation is summarised by the old English saying that 'oaks scorn to grow except on free land' (Bruce & Fortmann, 1992: 472). Forest conservation through tree planting is a long-term investment, as trees are slow to mature. Seedling production may represent a large part of the investment. When trees take up land that would otherwise have been used for other crops there are considerable opportunity costs involved, although this can be recouped in the long term. Tree planting resembles a permanent improvement and as a result requires clear and secure land rights, assuring the farmer that the trees planted on the holding will always belong to him or her.

The relationship between forest conservation on non-industrial private land and land tenure security has been examined for many countries. For example, a study was conducted in Costa Rica to determine the impact of tenure on tree planting by farmers who had access to a number of parcels of land under different tenure arrangements. The study revealed that farmers were growing trees on land held in more secure tenure and annual crops on less secure holdings. In Saint Lucia, 'farmers utilise individually titled valley land for trees and hillside land, under the somewhat ambiguous family land tenure regime, for food crops' (Bruce & Fortmann, 1992: 474). Tenurial considerations explain why trees were planted on soils or ecological niches best suited for agronomic crops. Ideally, trees would have been planted on hillside to prevent soil erosion.

The degradation of natural resources in Namibia's communal areas is attributed to the apparent lack of legislation for controlling access and use (Quan et al., 1994; Dewdney, 1996; Byers, 1997). The absence of the much-awaited Communal Land Act threatens the sustainability of all terrestrial systems in the northern and north-eastern parts of the country. For example, lack of the law has sparked unsustainable management of rangeland resources, escalating resource use conflicts among livestock owners. Quan et al. (1994) and Blackie & Tarr (1999) report that the wealthier have taken to illegal operations such as enclosing productive parts of communal areas. Quan et al. (1994) indicate further that large herders and businessmen enclose grazing land in the belief that an eventual land reform will legalise this de facto private ownership. As a result, small herders face diminishing access to traditional seasonal watering points and grazing land, which is now degraded severely by large herds. Without the Communal Land Act, there is no real legal basis for the development of collective land ownership or effective mechanisms for common property resource management by local communities.

Furthermore, it is important to note that the communal system works better where there is adequate land for agriculture and a firm adherence to nomadism in the case of livestock production. When a sedentary lifestyle is followed, there must be strict management to sustain the productive capacity of the environment, which is virtually impossible in Namibia. For example, Byers (1997) reveals that when a herder moves his livestock away to allow his traditional pasture to recuperate, another stockowner simply moves in and destroys the recovering vegetation, thereby promoting land resource degradation.

8. WANING CAPACITY OF TRADITIONAL INSTITUTIONS

The capacity of traditional chiefs, widely recognised as the custodians of customary

land resources, to mobilise effectively traditional institutions to promote the conservation of natural resources in communal areas has waned throughout rural Africa. In adapting to changing economic realities, such as a liberalised rural economy that exerts pressure on environmental resources, many traditional chiefs have taken to illicit practices, casting doubt on their effectiveness to manage Namibia's common resources sustainably. They have been implicated in illegal activities, such as fencing, which heighten pressure on natural resources by the poor. A legal opinion to the Ministry of Lands, Resettlement and Rehabilitation noted both the allocation of land by traditional authorities and payment for it to be extrastatutory (Dewdney, 1996). It has been observed that chiefs or their headmen allocate land to certain individuals and permit fencing of productive rangelands, occasionally in return for payment (Quan et al., 1994; Dewdney, 1996). It is evident that chiefs tend to maximise their utility out of the present legal vacuum that prevails in communal areas. They are aware that their de facto right to allocate land may be curtailed in the near future with the advent of the Communal Land Act. This law may restrict their ability to allocate land to individuals for profit. As a result, there is a 'rush-to-allocate' attitude among traditional leaders, causing the overexploitation of natural resources and impoverishment among the poor in rural communities. According to Blackie & Tarr (1999), recent estimates for the densely populated Oshikoto region of northern Namibia indicate that approximately 25–50 per cent of the communal land has been fenced off into private ranches.

In fact, Prud'homme (1995) warns that the high degree of discretion placed in the hands of local administrators, which in this instance refers to traditional chiefs and their headmen, breeds corruption. For example, Braga (2001) notes for Mozambique that community land in Issa Malanga, in the Niassa province, was reduced significantly in establishing a commercial farm that resulted in the loss of access to the Luambala River and the adjacent forests considered important for people's livelihoods. There were outcries of bribery, with local people questioning the capacity of traditional authorities to represent their interests. Rihoy et al. (1999) also report relentless speculation in land and other natural resources by local elites and foreign investors in communal areas where tenure security remains weak. Mandondo (2000) notes that chiefs and headmen have allocated land clandestinely on the basis of customary, territorial and other claims, although the Communal Lands Act of 1982 in post-colonial Zimbabwe divested them of this responsibility. Mukamari (cited in Campbell et al., 2001) notes how territorial power elites in south-central Zimbabwe have monopolised access to sacred forests by adapting institutions in a manner that permits them to harness benefits while externalising costs. Rihoy et al. (1999) note that the administration of communal land resources by some chiefs has resulted in the allocation or selling of large tracts of land to outsiders.

Similarly, traditional chiefs in the neighbouring Zambia are more concerned about their own utility than the welfare of their subjects and the natural resources on which they depend. Secure individual ownership of land for subsistence is disallowed by traditional leaders due to the reversion of customary land (which constitutes about 94 per cent of the overall land) to state (or private) land on acquisition of title deeds. Chiefs fear losing land and the accompanying prestige and power in this manner (Moyo et al., 1993). Thus, the customary tenure system in Zambia does not ensure exclusive rights to land owners, as the land reverts between individual and communal management. The Ministry of Environment and Natural Resources (1994) concedes that when an individual has been parcelled a piece of land, the security of ownership is perpetuated only through cultivation because resources in cultivated areas can temporarily revert to

communal management between periods of cultivation. Thus, fallow periods during which soil nutrients are recharged are discouraged under this tenorial arrangement while land, forest and wildlife resources in uncultivated areas are utilised communally with little consideration for their sustainability. It is the same weak and environmentally insensitive traditional chiefs, as noted by Roe et al. (1997), who permit illegal operations that result in environmental devastation in Mfuwe in the Lupande Game Management Area.

It would suffice, therefore, to state that traditional institutions are incapable of ensuring equitable and sustainable utilisation of natural resources in the face of mounting socio-economic pressures and ecological change. For example, Bac (1998) notes that rapid population increases diminish individual incentives to comply with local institutions that govern common pool resources. Okoth-Ogendo (2000) posits the juridical content of customary institutions for common resources as cryptic, with ineffective control mechanisms and inconclusive transactional procedures. He notes further that customary land laws are basically social practices concerning land resources, which may be inappropriate to address the current land resource development needs of different interest groups. Campbell et al. (2001: 592) note for Zimbabwe that 'local traditional institutions have generally been unable to cope with the rapid pace of change'. Rapid increases in marketing or commercialisation of commonly managed natural resources have caused a breakdown of all types of institutional arrangement for these resources (Sithole, 1999). Sithole also attributes the rapid reduction in sacred patches in rural landscapes to declining capacity of traditional institutions. Furthermore, Jones & Mosimane (2000) amplify the collapse of Namibia's traditional institutions.

Thus, communal resources – both under the state and customary systems – are inappropriate for profit-based conservation of land resources in Namibia. Rihoy et al. (1999) indicate that communal land resources in the country are theoretically under a common property regime. However, in practice this has degenerated into an open-access regime due to the breakdown of institutions governing common property resources. This view is supported by the Namibian government (Ministry of Environment and Tourism, 1992), which concedes in its existing forestry policy that the current communal resource management practices do not guarantee sustainable forest management. As a result, the Directorate of Forestry emphasises that forest management practices in communal areas will be updated to reflect forest resource scarcity (Ministry of Environment and Tourism, 1992). Unfortunately, this remains rhetorical.

9. INAPPROPRIATE ASSUMPTIONS ABOUT COMMUNAL MANAGEMENT OF NATURAL RESOURCES

The advocates of a communal system for rural Africa often fail to conceive that individualism is setting in at a faster pace in war-free African countries, particularly among sedentary cultivators. When rural Africans such as herders coexist, it is not that they have a common interest in the resources of an area; rather, it is a matter of the perceived risks of individualism outweighing commonage. As individuals, the nomadic tribes of the Sudan, the Maasai, the Karamajong and the Turkanas and other cattle-owning groups of East Africa face increasing risks of rustling. Commonage is therefore not by choice as a result of ecological constraints but by necessity. The uncertainties caused by war in certain African countries force large rural families to pursue communal management. However, when there is peace and an enhanced sense of security the same large families that farmed together or utilised common pastures

disperse over a large area with minimal contact among themselves. Instead of producing enough for their own consumption, as during wartime, new economic opportunities opened up by political stability increase the need for cash crop production. Households begin tampering with each other's boundary lines, causing conflicts and hence necessitating dispersal. Endemic pests also encourage interdependence and communal management in highly forested areas, but this diminishes as newly settled areas mature.

Evidently, the prescription of communal ownership of natural resources to rural communities is based on the assumption that if African customary usage of resources had been allowed to mature it would have evolved into communal management. However, there is sufficient evidence that customary management of resources would have been replaced with individual tenure. Adeyoju (1991) maintains that land tenure prior to the arrival of colonial powers to Africa was essentially ethnocentric. The laws and rights were peculiar to communities or ethnic groups, and changed as the communities enlarged and expanded or as they contracted and diminished. Communal management was obligatory because there was general insecurity during those troubled times. Consequently, the male members of the various ethnic groups worked their fields together, often under a leader. This promoted the group solidarity that was needed in battle. However, Adeyoju (1991) notes further that on arrival of the colonisers, there was considerable improvement in security. Populations began to disperse and farming hamlets that had been settled only during the farming season grew into permanent villages and towns. Cohesiveness that was needed for self-defence collapsed and individualism began to set in as land scarcity developed. Moreover, Feder & Feeny (1993: 242) maintain that 'changes in economic relations and in power structures that characterise the development process generate changing needs for property rights and the institutions to regulate or enforce them'.

This argument has been supported by the 'property rights school of economics', which shows how private property rights evolve from a primitive regime in which no property exists. The school advocates that, as demands on resources grow, users begin to interfere with each other's production unless they develop ways of allocating the scarce resources among themselves more efficiently or equitably. As time progresses, the potential gains from eliminating the interference and inefficiency make it worthy of the cost of organising ways of allocating rights which lead to private property (Pearse, 1993). This means that, when a resource is abundant relative to the demands for it, the users' rights will remain rudimentary (Tisdell, 1991). Nevertheless, as values rise reflecting demand pressure, more sophisticated tenurial arrangements develop. Therefore, the presence of communal lands now in many African countries is somewhat artificial and does not reflect the true choice of the local people who live in these areas.

The myth of a simple unified community whose members share resources and livelihoods wisely without overtaxing their reproductive ability appears comforting to outsiders who prescribe communal management to rural Africans. They are assumed to be custodial and non-materialistic in their attitudes to land resources. On the contrary, extended families are heterogeneous, let alone whole village communities that are highly heterogeneous, factional and stratified. For example, Songorwa et al. (2000) assert that younger people who are alienated from traditional cultures and past natural resource management practices have different views on the use of natural resources, among others. They are impatient for development, which may militate against land resource conservation. Enters & Anderson (1999) point out the misconception that

communal inhabitants have the necessary skills, similar discount rates and cultural views on natural resource management. They note further that communal dwellers are poorly organised – their ability to take collective responsibility for sustainable management of land resources, and in regulating access and use, is limited. Market expansion for communal products through attractive prices has led to vigorous competition among local people in communal areas, leading to natural resource degradation. Moreover, Brown & Shrestha (2000) note that market-oriented production is a key factor driving land degradation. Implicitly, traditional institutions cannot manage cash-oriented production in areas where they had exuded authority when production was predominantly subsistence-based. For example, Bac (1998) observes that an increase in the price of commodities extracted from common pool resources leads to the collapse of common property regimes where the main preoccupation is short-term economic survival. Accordingly, the argument that local people produce enough food for own consumption does not hold any longer, as there is no clear distinction between subsistence and commercial uses of communal resources.

Namibia's communal management of resources, as in other African countries, is modelled on utility interdependence (altruism), or what Ruitenbeek & Cartier (2001) term the 'invisible wand'. Altruism assumes economic agents as selfless individuals who are more concerned about social welfare than their individual private gains (Schneider & Volkert, 1999). However, if communal inhabitants were truly altruistic, there would not be destruction of biodiversity in Namibia and other sub-Saharan countries where communal systems operate. On the contrary, economic agents in Namibia's communal areas are more interested in private gains than social benefits. For example, Convery (1995) maintains that all evidence indicates that farmers in Africa, as elsewhere, behave rationally, i.e. they use land resources to maximise their utility. When opportunities that are perceived to improve their situation appear they are quick to grasp them, how destructive that may be on social utility. Implicitly, the assumption that rural communities may self-organise if there is a common good at stake (Ruitenbeek & Cartier, 2001) does not apply to Namibia's communally owned and managed land resources. This is because communal dwellers have high discount rates in relation to future benefits, and users with higher economic and political assets are disproportionately affected by the current pattern of natural resource use. In summary, natural resource-dependent communities lack the attributes which Ostrom (1999) considers pertinent for self-organisation.

10. IMPLICATIONS OF ECOLOGICALLY INSENSITIVE PUBLIC INTERVENTIONS

Provision of government services, such as boreholes, veterinary research, extension services, soft loans, drought relief subsidies paid per head of livestock, price support and guarantee of access to livestock markets by private producers on communal lands has contributed to a vicious cycle of environmental degradation (Ashley, 1994, 1996). High animal concentrations around water points cause land resource degradation, subsidised veterinary research and extension services increase cattle population and prevent seasonal migration as these services are geographically specific, and soft loans and drought relief subsidies discourage culling because the costs of cattle production are not borne fully by communal herders. Unhindered access to the livestock market encourages new entrants, with a concomitant rise in animal populations and hence increased pressure on land resources. Ashley (1996) asserts rightly that livestock

production in communal areas has low costs and high benefits to local residents. Implicitly, 'investment in livestock and use of rangeland is high because both the net benefits and relative returns are high' (Ashley, 1996: 8).

The negative environmental effects of these ecologically insensitive public interventions are exacerbated by the lack of intersectoral policy coordination. Byers (1997) notes the general lack of cross-sectoral planning as the most critical weakness of the Namibian government. Policies are set in one ministry such as the Ministry of Lands, Resettlement and Rehabilitation or the Ministry of Agriculture without considering their effects on the country's biodiversity. Intersectoral policy coordination requires communication and cooperation. However, in Namibia, communication is poor between ministries and also between departments, directorates and divisions within a given ministry. This, according to Byers (1997), has frustrated officials who see their efforts overlapping and duplicated. Furthermore, there is inadequate communication between government departments and the private sector whose attitude of profit maximisation conflicts with biodiversity conservation, which is a public goal. Blackie & Tarr (1999) also reiterate that issues relating to land and local governance of natural resources require cooperation. Nevertheless, interministerial cooperation has been lacking and inconsistent to date.

11. FORESTRY POLICY

Namibia's existing forestry policy was formulated in 1992, and one of the main drawbacks of the policy relates to its mainly bureaucratic mode of formulation (Siyambango, 1996). For example, Westergren (1996) notes that policy formulation consultations were carried out on the government's terms. The process was narrow based, dominated largely by forestry bureaucrats because it was assumed incorrectly that traditional leaders who were invited to policy meetings represented community views when, to the contrary, they sought their own self-interests. This is evident in the land sector where they have proved to be fraudulent, as outlined above. The conservative approach to policy formulation would certainly spill over into policy implementation.

Furthermore, Namibia's forestry policy objectives, strategies and laws might be inappropriate, as they were not founded upon up-to-date forest resource data during that time. Detailed understanding of any major component of the environment, such as forestry, requires contemporary data to generate policy options, which are socio-economically and ecologically pertinent. Lack of information on the economic status of forest resources during the policy formulation process should mean that the lofty policy objectives lacked any political support. Implicitly, these objectives would remain much general statements of intent. The policy might also not be issue-centred, because the duration allocated for consultations, drafting and discussions was too short to permit thorough issue searching. For example, Siyambango (1996) reveals that there was considerable political pressure on the Ministry of Environment and Tourism to produce forestry policy irrespective of its foundation. It is thus less surprising that the new policy lacks popularity among policy-affected and policy-connected people, which is likely to dampen its full implementation.

11.1 Forest resource ownership

The existing forestry policy considers forest resources, including individual trees, as

state property, as is the underlying land. Vesting the ownership of trees in the governing authority or institution is the continuation of traditional, pre-colonial forestry policy that operated in north-central Namibia. Before the colonial occupation in 1917, kings or chiefs controlled certain fruit and other trees (Erkkilä & Siiskonen, 1992; Kreike, 1995). Therefore, the existing forestry policy and legislation underpinned the customary forest resource law, which withdrew the responsibility of managing certain trees on individual farms and communal lands from farmers who should normally bear the responsibilities and duties of conserving them. The transfer of formal control and management of trees to the state, which cannot supervise and enforce its legal status over forest resources in remote areas of the country, has sparked poaching of forest and woodland products (Kreike, 1995). This has exacerbated the degree of deforestation on communal lands more than elsewhere in Namibia. A study conducted by Quan et al. (1994) in a communal area in the former Ovamboland notes common resources as open-access properties under which vulnerable and scarce resources, including forests and woodlands, have no effective protection. This confirms Vogelgesang's (1999) view that there is practically no clear demarcation between communal property and open-access regimes because the incentive structure in a communal property may cause the economic behaviour of individuals to resemble that under open-access regimes. Ashley (1996) also confirms the inappropriate forest resource tenure as a main factor contributing to deforestation in Namibia.

The above scenario threatens the economic efficiency with which forest resources are used. When a forest is a common property, a resource to which communal interests and the state have free access and is valuable for direct use, such as for timber, fuelwood and food, its existence can be threatened. Ironically, the more valuable it becomes the more likely it is to be brought to the brink of extinction by excessive use. In reality, 'the property of all is frequently the concern of none and usually such a property is not adequately protected and husbanded' (Tisdell, 1991: 107). Exclusion of others from both within and outside the community, while it may be possible, is costly for the majority of communal inhabitants and the state. As Tewari & Isemonger (1998: 32) observe: 'The management of common property resources is inherently difficult as the costs of exclusion are often infinite.' This implies that when the use of a resource is competitive but access is non-exclusive inefficient use of the resource occurs, resulting in its overexploitation even though this is against social utility. Parcels of land in communal areas are common property *de facto* because they are fugitive resources, where the holdings and inherent biological resources move from one person to another and can be appropriated by any lessee, especially the wealthy and powerful. Forests that occur in such a sociopolitical climate are unlikely to be optimally conserved, because an individual who undertakes resource conservation now cannot guarantee appropriating the benefits or substantial part of the investment (Tisdell, 1991).

11.2 Community forestry

The emphasis on community forestry or community-based natural forest management in the Namibian forestry policy (Ministry of Environment and Tourism, 1992) would be expected to rectify the ensuing market failure in the forestry sector. However, the underlying assumption about forest-dependent communities that their members (smallholders) are willing to work towards a common environmental goal, such as sustainable forest management, works against the use of community forestry as a strategy for profit-based forest conservation. This is illustrated at the household level by the diverse

demands for forest resources. For example, one group within an extended African family would value the forest for its underlying fertile land; another group would be interested in fodder, natural remedy, fuel or timber, or all of these. Yet, another would value the forest for both material and intrinsic services. For others, forest resources are more valuable today than tomorrow (time preference). The latter group's demand is more likely to conflict with those advocating intergenerational equity (environmental justice).

The efficacy of community forestry or community-based natural forest management as the sole means of livelihood for communal inhabitants is questionable. For example, Kumar & Bakshi (2002) note the lack of new opportunities for alternative sources of income as a key factor that led to the collapse of 'joint forest management' in India. Furthermore, Wily & Mbaya (2000) doubt the extent and role of community participation in community forestry in Namibia's communal areas. This is because the authority to manage community forests is not vested in the relevant community committee responsible for organising environmental action support, including on-farm tree planting. This is expressed in Sections 13(4) and 14(3) of the proposed forest law, which aims 'to give persons affected an opportunity to express their views on the matter' (Government of Namibia, 2000), but without power to reject government proposals concerning forest management in communal areas. This is also evident in the conservancy sector, where Jones & Mosimane (2000) report that communities lack strong rights to hunting concessions because the conservancy legislation vests only non-consumptive use of wildlife resources in them.

It would suffice to state that the forestry policy appears to be at loggerheads with its proposed legal instrument. The strategy in the policy, for instance, recognises that the 'maintenance of biological diversity requires economic incentives to increase the net local benefits from conservation and sustainable forest resource use' (Ministry of Environment and Tourism, 1992). Section 33(1) of the proposed law notes that a communal inhabitant may cut, take and remove forest produce for household fuel, for shelter construction for self and for protection of livestock and agricultural crops on communal land that is not legally occupied by another person and is not classified as a forest (Government of the Republic of Namibia, 2000). This is certainly a *carte blanche* for overexploitation of forest resources in the vast majority of communal areas, which are not categorised as state forests and/or are not legally owned by individuals. There is also no clear distinction between own use and commercial use.

Encouraging farmers to establish conservancies (which is a forest- and woodland-enhancing activity) as an ultimate means for their economic survival can be counterproductive if their expectations are not met. In Zimbabwe, the Communal Area Management Programme for Indigenous Resources (CAMPFIRE), on which Namibia's conservancy initiative is founded, had been misconceived as a principal source of livelihood for the rural landless (Songorwa et al., 2000). Today, the future of CAMPFIRE is doubtful, as it has become increasingly clear that wildlife conservation alone cannot be the sole means of livelihood for the poor (Watts, 2002). Consequently the issue of land reform, which had been put on ice, has been reactivated vigorously (Shepherd et al., 1991). Granting security of a parcel of land to a farming household for self-provisioning should actually preclude designation of community forests or conservancies, otherwise these resources will be overwhelmed by high incidences of poverty that Khan (2000) attributes to land hunger.

Participation in community forestry or conservancy should thus be voluntary to

supplement farm income, particularly as the conservancy initiative may die out completely when the external resources supporting it cease. Donor-funded conservation programmes raise expectations and draw support easily from local communities. However, they fail to meet expectations for sustainability with the termination of externally sourced resources. Ostrom (1998) cautions that these external funds might undercut the capabilities of local institutions to sustain themselves, and encourage corruption and other forms of opportunistic behaviour. The World Bank (2002: 40) reiterates further that 'the ownership and ultimate sustainability of works that have been carried out with the incentive of an external supply source of income are usually questionable'. It is thus natural to consider that although biodiversity conservation is a viable source of livelihood for many rural Namibians, alternative modes of subsistence for the rural poor should be developed and strengthened to lessen dependence on biological resources.

Stressing the need for establishment of community forests and/or conservancies on 'untitled land' is unrealistic, because both the forest or woodland resources and the underlying land lack any legal protection (Blackie & Tarr, 1999). Furthermore, it appears that the creation of conservancies in communal areas is modelled on the success of wildlife ranching in commercial areas. However, market saturation due to oversupply of wildlife resources is likely to emerge. Excessive dependence on one product (or lack of diversification in economic production) has rendered many African economies vulnerable to global changes in consumption. For example, Watts (2002) maintains that the Zambian economy has not fully recovered from the collapse of copper prices. This is attributable to the heavy reliance on copper production, although the country has had a great potential to diversify into agriculture and nature-based tourism, as it has unique natural areas of tourist attraction. Wildlife-based tourism is also enhanced by Zambia's tranquil political history.

11.3 Lack of institutional capacity

The formulation and administration of forest conservation policy require competent professional and technical staff. However, Namibia lacked well-qualified personnel to position the sector well in the political and economic philosophy of the country, and also in the global context. Siyambango (1996) indicates that the policy was formulated at a time when the Directorate of Forestry had just been formed with only a limited and inexperienced staff. Shortage of qualified personnel weakens the administration of the policy, although Namibia has institutionalised biodiversity conservation in its constitution (Obbes, 1999). For example, of 120 positions established in the Directorate of Forestry, 61 positions were filled while 59 were vacant (Ministry of Environment and Tourism, 1996).

These vacant positions might have been filled by now, because six years have elapsed. However, it is important to note that Namibia has had no institutional capacity or policy for forest conservation other than some medieval, fragmentary rules, regulations or laws. This means that street-level bureaucrats (technical forestry personnel) lack the skills or discretion needed to implement forestry policy effectively at the grass roots. It is noteworthy that the forestry sector is not static; new issues and problems arise demanding new interventions, which in turn require paradigm shifts in forestry education and training, making the development of competent professional and technical staff a lengthy process. It takes considerable time to train a desired number of personnel, let alone the acquisition of mature experience to manage the sector.

Moreover, the ability of decision makers to sensitise the forestry sector to changing socio-economic and ecological conditions depends on their experience, an asset that Namibia lacks. As a result, the instrument for implementing Namibia's 1992 forestry policy is still lacking.

One important concern for the forestry sector is the lack of skills for integrating socio-economic development into the conservation of natural resources. Writing on South Africa, Els & Bothma (2000) lament that wildlife managers who have been trained within the Western cultural value systems of conservation fail frequently to anchor the development of rural communities in the goals of natural resource conservation. Namibia is not immune to this institutional deficiency; it is for this reason that decision makers and day-to-day policy administrators are unaware of what constitutes sustainable management of natural resources, although this has become an official policy goal. For example, Jones & Mosimane (2000) recognise lack of government resources (including human capital) as a key factor militating against enforcement of state regulation for wildlife and forestry products. This, combined with unwavering belief in the capacity of traditional institutions to control access and use, results in overexploitation of natural resources.

In summary, institutional capacity is a precondition for the conception, planning and management of sound policy options, policy analysis and for the formulation of strategic policy decisions. Similarly, the need to assess and articulate needs, establish networks and create partnerships for policy making, and to develop optimal technical and socio-economic solutions for the forestry sector, which is exposed to a host of demands, requires a great deal of expertise. Forest conservation requires the capacity to analyse data and information to generate best policy options with corresponding innovative tools and/or strategies for securing the implementation of desired policy objectives. Particular attention should also be paid to the establishment and strengthening of institutions responsible for monitoring and evaluating forestry policy and the resources that it is designed to conserve to cover information gaps. For example, there is no explicit link between forest degradation, missed economic opportunities and deterioration of human health, amongst others. Consequently, forest loss is not considered an important ecological degradation, with pervasive socio-economic consequences for the country.

12. CONCLUSIONS

This article categorises explicitly Namibia's communal property system as inappropriate for profit-based conservation because it does not confer responsibility for sustainable management of natural resources upon users, both individually and collectively. The system encourages maximisation of individual gains at the expense of social utility, as traditional institutions that sanctioned equitable and sustainable allocation of natural resources among users have collapsed in many places. Where they operate, their authority for ensuring sustainable management of natural resources has been eroded in the face of mounting population and consumption pressures. It is noteworthy that the juridical content of customary law that controls common resources is cryptic, with ineffective access control mechanisms and inadequate procedures for equitable distribution of transactional costs. Accordingly, communal ownership of land resources in Namibia discourages on-farm tree planting because there is no guarantee that the trees planted on the holding will always belong to the farmer. This state of lawlessness that characterises communal areas in northern and north-eastern Namibia also militates

against sustainable management of rangelands. There are conflicts among the users of natural resources, with the wealthier in communal areas enclosing productive pastures as private property. As a result, small herders face diminishing access to traditional seasonal watering points and grazing land, which are severely degraded. It is, however, important to note that there are optimistic views on communal property management and ownership elsewhere.

The ongoing depletion of forest resources is blamed on Namibia's past (colonialism), which was assumed to have undermined people's authority over the resources with which they had lived in harmony without being able to alter it significantly. However, if alienation of local people from forest resources was indeed the root cause of degradation, the surest intervention for resource conservation would be to re-delegate the responsibility for managing forests in most of the communal areas to local people immediately after independence, after having secured them the primary means of production (land). Such delegation of responsibility should take cognisance of the institutional vacuum created by the collapse or diminishing role of traditional institutions. This means that natural resources in the communal areas should be brought under more formal management, such as state–community (or state–private) partnership, with a clear set of locally developed regulations to ensure sustainability. Local communities that would like to participate in this institutional arrangement should demonstrate structural organisation, motivation, willingness and capacity to effectively pursue sustainable forest management prior to the devolution of any management and utilisation authority. In essence, there should be graduated devolution of responsibilities and duties.

In considering equitable and sustainable management of land resources (including forests) in partnership with primary stakeholders the state should classify these resources into three categories, depending on the extent of externalities, both in terms of intensity and spatial distribution: land resources disposable to individuals; land resources disposable to groups of individuals/communities; and non-disposable land resources over which the state maintains absolute authority, with minimal or without community/private involvement. These categories refer to land resources with little, substantial but localised, and widespread externalities, respectively. As there is great potential for the utilisation of forests to generate externalities, the concerned stakeholders should demonstrate the necessary skills and resources to meet the required criteria for sustainability, with little state assistance and supervision. Forests in any of these groupings should be inventoried and clearly demarcated with well-specified beneficiaries (individuals and/or communities) to avoid conflicts over natural resource use and to enhance accountability. Rules specifying resources and their respective units to be harvested, the time and place for harvesting and the technologies to be used should be explicit. There ought to be a legal contractual undertaking between individuals and communities and the state, outlining the responsibilities and duties of the vested interests. In practice, the state should facilitate sustainable forest management and community development, while the community undertakes day-to-day law enforcement and management activities. Community enforcement should be backed by the state through the use of its organs and institutions, such as police and courts in case of sophisticated offences.

Finally, the above initiatives for forest conservation should be coupled with wider socio-economic concerns for rural development, particularly as the factors leading to forest degradation are largely external to the sector. The government should, for

instance, encourage intensive but sustainable agriculture in rural areas. This should give rise to small and medium agricultural produce-processing industries capable of alleviating rural unemployment and excessive dependence on the consumption of natural resources. Ensuring access to markets for sustainable forestry and agricultural produce would enhance economic activity in rural areas, thereby encouraging both public and private investment in transportation, education, health, communications and other facilities which are likely to diversify rural economy through specialisation among producers. For example, communal dwellers may diversify away from livestock and agricultural crop production to tourism and wildlife ranching; others may seek formal employment in the service sector in rural areas. The cumulative result is a reduction in the direct consumption of natural resources and an improved rural economy.

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