



CONFLICTS AND THEIR MANAGEMENT IN THE USE OF MIOMBO WOODLANDS IN SELECTED AREAS OF TANZANIA

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ABSTRACT

Miombo woodlands are increasingly becoming major centres of conflicts due to a variety of causes such as growing populations of both humans and livestock. Research in the area of conflicts in the use of miombo woodlands is more of a recent phenomenon in the wake of these new challenges on natural resource use. This paper is based on research findings from three sites in Tanzania aimed at exploring the nature of conflicts related to the use of miombo woodlands and how these conflicts are managed or resolved. The findings show that the key players in these conflicts are at three levels involving the regulators, the commercial sector, and the local communities. Conflicts involving these parties are complex within and between these parties. Also these conflicts generally differ from site to site due to differences in the factors that generate these conflicts. Factors such as population pressure, economic activities, institutional arrangements, a changing value system and policies, poverty and general awareness on the part of both the local communities and outsiders greatly influence their nature and intensity. Although there are several avenues existing towards conflict management, our experiences from the three sites reveal that only two mechanisms are used across sites. The paper concludes by suggesting areas for further research and the need to have more dynamic policies that accommodate changing situations.

Key words: Conflicts management - local communities - Miombo woodlands

INTRODUCTION

Miombo woodlands constitute the largest single vegetation type of southern Africa (Morgan, 1972). These types of woodlands constitute the dominant forest type in countries South of the Equator mainly in Tanzania, Malawi, Mozambique, Zambia, Zimbabwe, Angola, and the southern part of the Democratic Republic of Congo. Together, miombo woodlands are estimated to cover about 2.7 million square kilometers (Millington *et al* 1986). In Tanzania, miombo woodlands cover more than 50% of the total land area (Malimbwi *et al.*, 1998). The dominating genera are *Brachystegia*, *Julbernadia*, and *Isoberlinia*. Other tree species that characterize miombo woodlands include *Parinari spp.*, *Combretum spp.*, *Azanza garckeana*, *Vangueria infausta*, *Uapaca kirkiana*, *Faurea saligna*, among others.

The ecological and human uses of miombo woodlands are vast. These woodlands protect watersheds and hence sources of many rivers, they maintain soil fertility in shifting and semi-permanent cultivation systems (Stromgaard, 1984; Swift *et al.*, 1989), provide grazing and browsing resources for livestock (Hood, 1972; Swift *et al.*, 1989; Campbell *et al.*, 1991); provide edible products such as honey, mushrooms, caterpillars and fruits (Campbell, 1987; Campbell *et al.*, 1991; Malaisse, 1978). The woodlands also provide fuel wood and other wood products such as construction poles, medicine, and other related products. The woodlands also provide critical habitats for a variety of animals and other living



organisms. The diverse resources found in miombo woodlands make them important tourist destinations.

The high utility of miombo woodlands has also attracted human settlements in the miombo rich areas and increased exploitation of its resources (Stromgaard, 1984). The result of the population increase has been a rise in the demand for natural resources, beyond what “Mother Nature” can supply. When valuable resources get scarce, conflicts become inevitable. The more unequal the distribution of scarce resources in a system, the greater will be the conflict of interest between dominant and subordinate segments in a system (Turner, 1978). Disagreements also arise when these interests and needs are incompatible or when the priorities of some user groups are not considered in policies, programs and projects (Hart and Castro, 2000). The most vulnerable in these conflicts are the disadvantaged and marginalized groups, including the poor, women and indigenous peoples, who are the most dependent on forest and tree resources (Mwangi, 1997). Often long-standing conflicts exist between and within the regulators, commercial and household sectors over resource use and control. Conflicts over the appropriation, management, and use of forest resources can pose significant constraints to sustainable forest management (Kaboggoza, 2000).

In Tanzania, a number of conflicts related to natural resources have dictated not only the speed at which projects are being implemented but also discontinuation due to court injunctions, popular protests, and negative publicity by the mass media, *inter alia*. A case in point was the prawns project in the Rufiji delta where the much valued mangrove forests survived the adverse effects of the project, due to popular resistance by local residents. For this reason, it is important to appreciate and understand conflicts in relation to natural resource use. Understanding natural resource use conflicts within typical rural

contexts will increase the sociological body of knowledge on how these conflicts are generated and managed by the parties with a stake in miombo woodlands. To understand conflicts from a sociological viewpoint it is necessary to revisit conflict theory, albeit briefly.

Conflict theorists assume that societies are in a constant state of change, in which conflict is a permanent feature (Robertson, 1977). Conflict in this sense does not necessarily imply outright violence; it includes tension, hostility, competition, and disagreement over goals and values. Both Karl Marx and Georg Simmel viewed conflict as a pervasive and inevitable feature of social systems. Their respective intellectual purposes as well as their assumptions about the nature of society were vastly different. Marx emphasized the divisiveness of conflict while Simmel, the integrative (Turner, 1978). Warner and Jones (1998) contend that the word conflict carries a negative connotation. It is often thought of as the opposite of cooperation and peace, and is most commonly associated with violence or a threat of violence. In many settings, the same authors point out; it should be seen as a potential force for positive social change; its presence being a visible demonstration of society adapting to a new political, economic or physical environment.

In this paper, we consider conflicts as a challenge to natural resource managers who have to constantly manage these conflicts often resulting in more sustainable and egalitarian strategies. Detailed review of conflict theories and the neo-classical social theories related to natural resource management is beyond the scope of this paper. This paper looks at the nature of conflicts and how these conflicts are managed using experiences from three sites in Tanzania, namely, Sadani (Iringa), Handeni (Tanga), and Babati (Arusha) that together constitute typical miombo sites with considerable human influence.



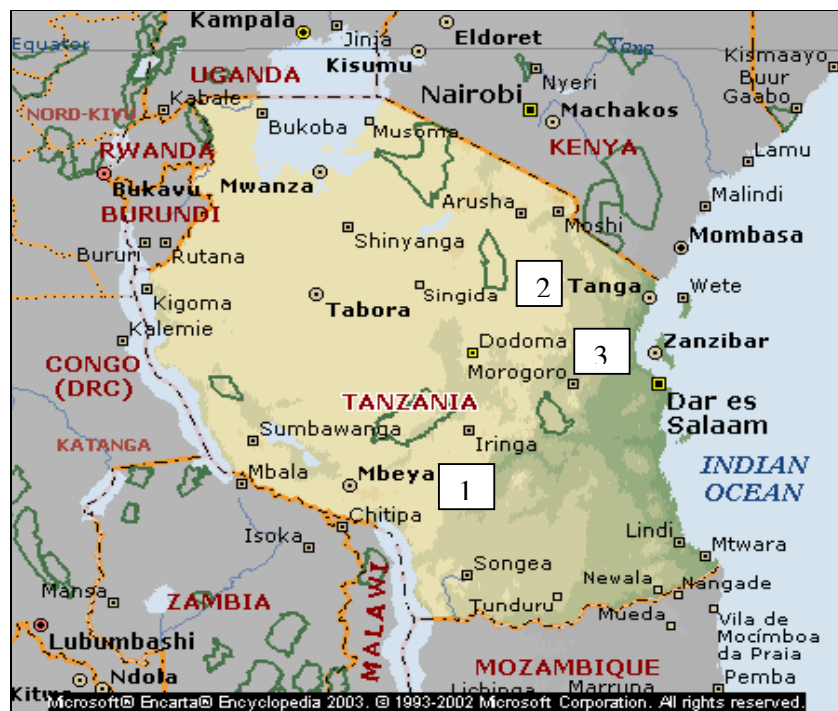
Materials and Methods

Study Area

Three sites were selected for this study, namely, Kwabaya in Handeni district (Tanga Region), Sadani in Mufindi district (Iringa Region), and Buay in Babati district (Arusha Region). The three study sites were selected on the basis of being peri-urban, intermediate, and remote relative to markets for the forest products. Together, these three sites were considered to be typical or representative of miombo areas and their human interaction in Tanzania. Handeni district has an estimated 91,000 ha of forested land. About 50% of this is miombo woodland. Mufindi district, on the other hand, has miombo woodlands constituting 44.9 %, which are 80,000 ha. Miombo woodlands particularly towards the South wholly occupy Babati district. Duru-Haitemba, which is the area of interest in the Babati site, has forests that are typical dry miombo woodlands located within the Rift

Valley about 20km south of Babati township (Kajembe *et al* 2003). The woodlands cover an area of 9,000 ha; and consist of a series of small woodland patches named after adjacent villages. One of these adjacent villages is Buay. Due to the location in relation to markets, these study sites (Figure 1) provide different potentials for exploitation of miombo woodland resources.

Kwabaya village in Handeni district is characterized as peri-urban as it lies within the fringes of Handeni town, in Tanga region. Forest products, particularly charcoal, are regularly ferried to town using bicycles due to being hardly 5 km from Handeni town. The Mufindi site on the other hand is considered to be intermediate compared to the other two sites while Babati is seen as being rather remote in relation to markets. These sites represent the different intensities of use of the miombo woodland resources and, therefore, reflect typical situations under which conflicts ensue.



KEY: 1 = Mufindi site; 2 = Babati site; 3 = Handeni site

Figure 1 Map showing the study sites



Data Collection

The methodology for this study employed multiple methods of data collection. The study first used Participatory Rural Appraisal (PRA) in which the following

exercises were undertaken: resource mapping, wealth-ranking the results of which are shown in Table 1 below, and institution mapping whose results are as shown in Figure 2 on page 13 below.

Table 1 Criteria for wealth ranking from the three study sites among Miombo Woodland Users Tanzania

Site	Rich	Intermediate/ medium	Poor
Mufindi site	<ul style="list-style-type: none"> - Have over 100 cattle - Have small shops - Have big farms of about 100ha - Have milling machine 	<ul style="list-style-type: none"> - Have few goats - Able to sustain their family with food - Have medium farm - Able to educate his family 	<ul style="list-style-type: none"> - Doing casual labour - Cannot sustain themselves - Has poorly built house - Life is a daily struggle
Handeni site	<ul style="list-style-type: none"> - Many children - Have cows, goats - Ability to send children to school - Big farms with permanent crops - Have radio, bicycle, and corrugated iron roofs of their houses - Have milling machine 	<ul style="list-style-type: none"> - Have medium farm - Few goats - Medium house with corrugated iron roofed house - Ordinary farmer who can feed himself yearly 	<ul style="list-style-type: none"> - Doing low paying casual labour - Not able to feed themselves yearly - Have no or little money - Has grass thatched house - Thieves
Babati site	<ul style="list-style-type: none"> - Many head of cattle of above 60 - Have farms of 3 acres or more and use modern farming 	<ul style="list-style-type: none"> - Medium farmland - Able to educate his/her family - Few livestock (1-10 head of cattle) 	<ul style="list-style-type: none"> - Lazy - Thieves

The PRA exercise was later followed by the use of different research methods such as participant observation, stakeholder analysis, focus group discussions, key informant interviews-cum-investigative interviews, and the use of secondary data sources from village and district offices.

RESULTS AND DISCUSSION

Levels of conflict

Conflicts occur between varieties of actors. There are conflicts within and between communities between communities and state or private entities, as well as between the state and private entities. The three main actors can be categorized as the regulators, the commercial and the household sectors. Conflicts are within each actor and between the three actors as shown in Figure 2.

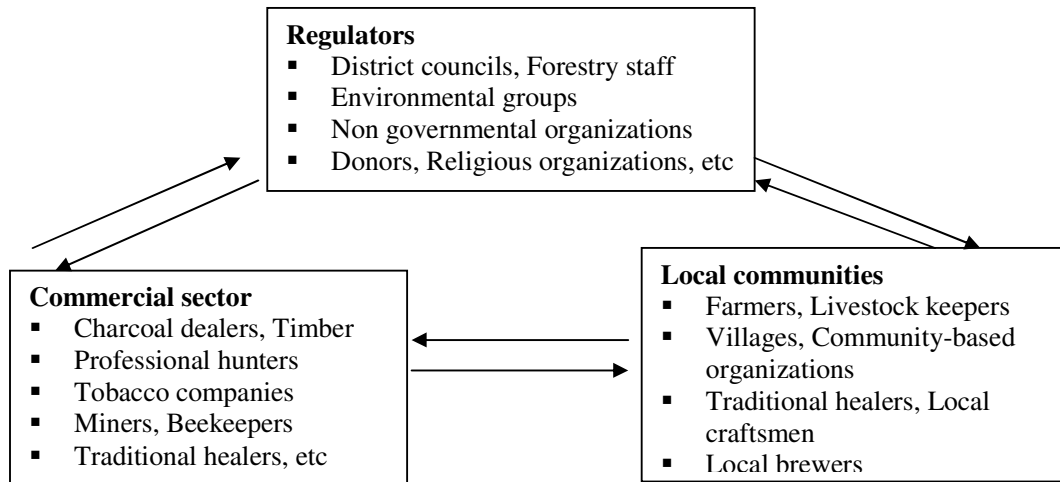


Figure 2 Conflict interactions amongst the stakeholders in miombo woodlands

The regulators here include the Government, that is, the Ministry of Natural Resources and Tourism as the key player, but there are other non-governmental organizations such as the DANIDA-funded Environmental Management Programme in Iringa (HIMA), the SIDA-funded Land Management Programme (LAMP) in Babati, the GTZ-funded Natural Resources and Buffer zone Management Programme (NRBZ) in Handeni and environmental committees at village level. Although GTZ, DANIDA, and SIDA are primarily facilitators, they are in practice also regulators because they function through the government machinery, namely, district councils.

On the Government side, it includes all officials at all levels such as the Regional and District Forest or Natural Resources Officers. District Councils play an

instrumental role in this regulatory function. In the case of the Mufindi site, the District Council is working hand in hand with DANIDA/HIMA in protecting forest and

other natural resources while in Babati, the District Council is working closely with LAMP in regulating forest resources together with the village governments. These institutions are primarily responsible for regulating the use and management of natural resources, in this case, miombo woodlands. The regulator's interest is in the overall benefit to society covering household interests, commercial, and environmental interests. Forestry staff at all levels have the mandate to regulate the use of miombo resources by issuing permits for harvesting as well as managing woodlands through e.g. the control of wildfires so as to sustain these multiple interests. PRA data from the Mufindi site revealed that HIMA is the most significant regulator at that site (Figure 3). A similar pattern of results was also observed in the remaining two sites where environmental committees, village governments, government departments, and development partners were present while institutions financing the programs, namely GTZ and LAMP, being mentioned as having the most influence.

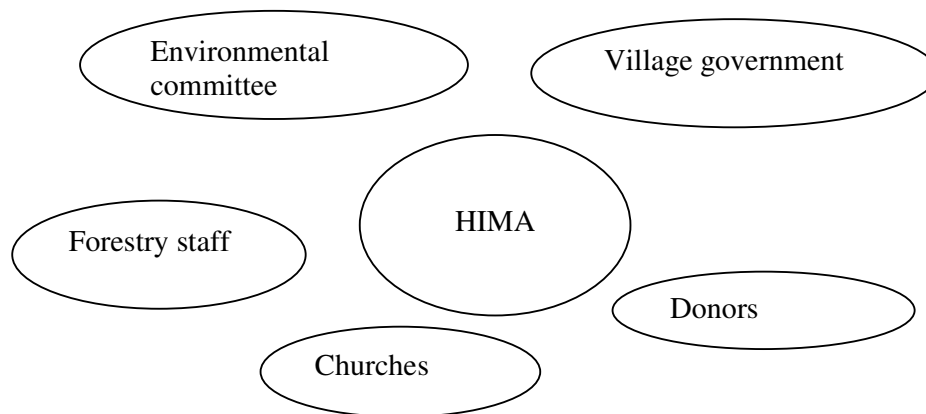


Figure 3 relative influences of regulators and/or facilitators in Sadani, Mufindi District (where the size of circle indicates level of influence)

Figure 3 above shows that HIMA has the most influence on the regulation of the use of natural resources even surpassing that of the district councils or forestry staff. The reason is that local communities are used to seeing HIMA staff, their motor vehicles and cycles, the staff housing in the villages, and the various assistance programs and educational campaigns which are not readily offered by cash constrained government or forestry staff.

The commercial sector includes all individuals and groups exploiting natural resources for business purposes. Products extracted from the miombo woodlands for commercial purposes are mainly timber and charcoal. Finally, the household level encompasses members of local communities, who in one way or another benefit directly from the miombo woodlands. This category enjoys a more diverse variety of products harvested from these woodlands such as charcoal, timber, firewood, construction poles, medicinal plants, mushrooms, and game meat. On the other hand, there are also costs associated with woodland management which is often restrictive in the use of resources. These include, for example, opportunity costs of resources, wild animals foraging on crops as well as preying on livestock.

(a) Conflicts within the regulators

Although conflicts within the regulators are not as common as within the other two categories of stakeholders, observations from the three sites show that there have been some misunderstandings even within the foresters, the non-governmental organizations, and councilors. In the case of Sadani, for example, it was reported that there have been incidences where junior forestry staff have arrested influential commercial operators, handed them over to their bosses, only to find that the offenders have been cleared and have then become arrogant to the junior forestry staff. Such situations often demoralize junior staff and in some cases have engendered some corrupt practices. In Handeni, it was reported that in some cases, there have been misunderstandings between the Ministry of Natural Resources staff and the district councillors over tax revenues accruing from forest products.

(b) Conflicts between regulators and commercial operators

Noticeable conflicts exist between the regulators and the commercial operators in the study sites. At the heart of these conflicts are the sentiments raised by the business community that forestry staff “squeeze” them too much with regulations and taxes.



To the complainants this is not an enabling environment to do business, compelling some to resort to illegal practices, e.g. harvesting more forest products than allowed by permit, transporting products at night, using illegal routes, and bribing some corrupt staff.

(c) Conflicts between regulators and households

There are also long standing conflicts between the regulators and local communities. Conflicts have often arisen between forestry staff and local communities to what is seen by the latter as undue protectionism of the resources they consider to have inherited from their ancestors. In the Mufindi study site for example, residents were bitter about the presence of a forestry control gate and about the revenue being surrendered to the government, leaving them with nothing. This “powerlessness” is not well received by the residents living in the villages

surrounding miombo forest reserves. It was also observed in Mufindi that farmers clear the designated catchment areas (which are sources of water) for off-season cultivation that offers plenty of dividends due to better prices, particularly of vegetables. Such a move contravenes the laid down by-laws that prohibit any form of human activity in water catchment areas.

The Babati case presents a rather unique case. Ideally, the respective villages manage the forests within the Duru-Haitemba complex, that is, it is community-based forest management. However, communities are guided by the forestry staff, some of whom may even be living within these villages, and by the by-laws, which have been approved, by the District Council and which are recognized in the court of law. By-laws used to manage forest resources in Babati fall under three categories as shown in Table 2.

Table 2 By-laws used for managing village forests in Babati

Activities allowed to be carried by villagers freely	Activities that have to be licensed if a villager are in need of them	Activities that are completely prohibited
<ul style="list-style-type: none"> ▪ Collect dried fuel wood ▪ Collect fruits and vegetables ▪ Collect grinding stones ▪ Collect pasture and thatch grass ▪ Worship and practice traditional rituals ▪ Collect medicine for non-commercial use 	<ul style="list-style-type: none"> ▪ To cut building poles ▪ To harvest timber ▪ To collect traditional medicine for commercial use ▪ To collect stones for building 	<ul style="list-style-type: none"> ▪ To cut a living tree ▪ To cut any traditionally or nationally reserved tree ▪ To burn charcoal ▪ To clear forest for settlement ▪ To undertake cultivation in the reserved forest ▪ To graze in the reserved forest ▪ To destroy catchment areas ▪ To start fires ▪ To cut a tree for the purpose of collecting honey

It is on the grounds of the conspicuous role of the district council through its technical staff, particularly foresters, that, residents of

Buay village in Babati resent the fact that the forestry staff are too strict and have not permitted the residents to expand



agricultural land, which currently stands at only 980 acres supporting a total population of over 2,028 with 732 head of cattle and 464 goats and sheep. The forestry staff (through the use of the same by-laws) also prohibit village residents from collecting dead wood. It should be understood that in all community endeavours, there are always dissenters. When individuals realize that they cannot exercise their freedom to exploit resources, those entrusted to enforce the jointly formulated by-laws are seen as being overly restrictive. It is for this reason that foresters may appear to conflict with some individual interests, when in fact they are simply implementing what has been agreed upon by the full village councils.

Another source of conflict between foresters and local communities is related to the management of wild fires. During the dry season, wild fires are very common in many parts of Tanzania. When these occur, it is expected that the local communities should automatically respond; they are required to do so by law. Residents of Mufindi complained bitterly against this compulsion claiming that they have no stake in the forests that are harvested by outsiders. Against this background, forestry staff find themselves with more enemies than friends in many rural communities. The official title of forest agent confirms to the villagers that forestry staff are mere agents of the government.

(d) Conflict within the commercial sector

Conflicts between businessmen are rare even though there is competition. In conflict, opponents are primarily oriented toward each other; while in competition the opponents are primarily oriented toward the object they seek (Theodorson and Theodorson, 1969). Businessmen often come as individuals and may not even know their competitors personally.

(e) Conflict between the commercial sector and households

Unlike business in agricultural products, buyers of forest products rarely become friends of local communities because the latter always feel that their forest products are looted by the businessmen and facilitated by the forestry staff through corrupt practices. As observed in all three sites, due to the influence by virtual of the economic power they command businessmen are often arrogant to villagers thus driving a wedge deeper between themselves and communities.

(f) Conflicts within local communities

Conflicts at a community level are numerous and more complex. Within communities, there are conflicts between individuals or groups but also between villages, mainly over boundaries. One of the areas where conflicts are rife is in areas designated as catchment areas. A conflict arising from this often draws the regulators such as water catchment officers, district councils, environmental committees, farmers, and other stakeholders into conflict over use of such resources.

Water catchment areas are key resources to both farmers and livestock keepers. During the dry season when pastures become scarce, livestock keepers drive their herds to these areas for greener pastures and drinking water. The situation is often complicated by the fact that, within the communities, livestock keepers are perceived as the wealthier compared to farmers and hence this is sometimes perceived as a class conflict.

Another source of conflicts within the local communities is the loss of clan land used for production and spiritual purposes. At the Mufindi site, the concept of clan land or “*lilungulu*”, as it is locally known is deeply rooted among the local residents. Such clan land was “nationalised” by the government during the era of *Ujamaa* (Tanzanian socialism) in the early seventies and given to



other members of the village including immigrants. These immigrants did not only take up much of the clan land, but also had a dismal recognition of areas designated as ritual areas by the indigenous population.

There have been conflicts in relation to sacred forests as well. This is particularly noticeable in Handeni where some people may come from as far as Lushoto, more than 100km away, to worship in what they consider to be their ancestral forests. This is also noticeable in Babati where ritual forests *Ghaymanda*, *Ghayberise*, and *Ghaydesu* have a special social significance as discussed later. Conflicts related to these ritual areas are mainly due to trespassing of individuals who are not entitled to enter being ridiculed by those who belong to modern religions or the lack of respect for these ritual areas by those who are alien to the local culture (such as recent immigrants).

Drivers of conflicts

It is not easy to document all types of conflicts at all levels. What is becoming clear is the fact that many of these conflicts are due to unclear policies, lack of transparency on the part of the regulators and other beneficiaries of forest resources and the lack of what Ostrom (1997) calls design principles, defined as an element or condition that helps to account for the success of institutions in sustaining common-pool resources and gaining the compliance of generation after generation of appropriators to the rules in use. Some of the design principles include; clearly defined boundaries, congruence between the rules that assign benefits and those that assign costs, collective-choice arrangements used to modify the operational rules of regular operation of the resource, and others. Duru-Haitemba residents in Babati have come close to meeting these requirements as shown in Table 1.

With respect to natural resource use, there are several major interrelated drivers of

conflicts, namely, population growth, economic activities, legal provisions, shift in the value system, changes in government policy, poverty, and ignorance.

(a) Population pressure and diversity

Population changes in the study villages appear to have similar historical patterns. Discussions with village members during the PRA exercises revealed similar timelines. Villagers identified three major milestones. These included migration (for Mufindi and Babati but not Handeni). This occurred during the colonial era aimed at looking for employment that could generate money for paying poll or hut tax. The villagization programme under “*Ujamaa*” and the post-*ujamaa* era had an influence on population growth. Of the three milestones, the “*Ujamaa*” era was reported to have had major population changes in all villages. The villagization programme is reported to have concentrated people into limited geographical areas and thus putting more pressure on natural resources. By using the Handeni site as an illustration, the availability of all resources has been declining over the years

In areas such as Mufindi district, the migration process had even more adverse impact on natural resources. Population data gathered from all three-research sites underscore the impact of population growth on natural resources. In the case of Mufindi district, the total population from the 2002 Census data stood at 283,032 people with average land ownership of 1.924 ha/household. Sixty percent of the population is located in the eastern part of the district where much of the vegetation is either planted trees or natural non-miombo forests. The use of either of these two types of resources is severely restrictive. Thus the majority of the population must derive the natural resource related needs such as fuelwood and timber from the miombo woodlands located in the western part of the district, which accommodates twenty-four percent of the population in the district. In



fact, the miombo woodlands in the western part of the district carry a bigger burden including consumers from the district headquarters (Mafinga) and outside the district.

The same situation also exists in Handeni with respect to the impact of the population on natural resources, in this case, miombo woodlands. While the study village, Kwabaya, has an estimated population of only 1,300 registered people, with approximately 2.01 ha/household, the demand for forest products from the surrounding miombo woodland resources far exceeds the registered population. Due to its proximity to Handeni town, hardly four kilometers away, many town residents depend on the Kwabaya miombo resources for their fuelwood and timber needs, amongst other resources. Some Kwabaya residents sell these resources to town residents and beyond or some town residents use various types of transport to exploit the resources directly. Bicycles are the commonest means of transport in the process of exploiting these resources.

In comparison with the other two research sites, pressure on resources due to population is relatively less in Buay village in Babati district. Because of remoteness of the village and the influence of the conservation drive by the Duru-Haitemba communities the status of the miombo woodlands in Buay is relatively better. In fact, the name Buay means darkness, referring to the dense forests that existed then and now. This does not imply in any way the absence of conflicts. As it will be pointed out later, the conflicts here are rather of a different kind.

It is not just the size of the population that influences conflicts but also the composition of the population in question. The Mufindi site has a much more diverse population than the other two sites. This diversity produces different types of conflicts. In Mufindi, and to a lesser extent, Handeni

there are many immigrants to the point where they dominate the indigenous population. Wabena and Wakinga ethnic groups originating from the neighboring districts, namely, Njombe and Makete respectively dominate Mufindi. The former are mainly cultivators while the latter combine crop cultivation, business, and charcoal making and trading. Charcoal making is what drives Wakinga into conflicts with their fellow immigrants (Wabena) and the indigenous Wahehe. Together with the differences in economic activities, the immigrants are also accused of disregarding the areas with ritualistic value to indigenous Wahehe. Cultural conflicts were minimal in Handeni and were virtually absent in Babati where residents have no significant cultural differences. Local residents of Buay, reported that all immigrants have been absorbed by the dominant Wagorowa culture.

(b) Economic activities

Economic activities constitute the second major type of drivers of conflicts in relation to the use of miombo woodlands. In all three-research sites there are significant economic activities that have a bearing on conflicts. The only difference is the level and intensity of conflicts within these research sites that are directly related to the nature of economic activities undertaken by the residents and those from outside.

In all three-research sites, farming and livestock production are the key economic activities for the majority of the residents. For instance, all three sites ranked agricultural crops as the number one source of livelihood while Babati ranked livestock as number two. In relation to the impact of economic activities on miombo resources, Babati respondents report that they do not consider forest products as a source of income. However, this does not mean they do not earn a living out of the sale of these products. There were reports that residents do illegally sell forest products due to the stringent by-laws. One resident reported that



some individuals sell furniture rather than raw timber for fear of being arrested while transporting the timber.

Residents of Mufindi are mostly smallholder farmers cultivating an area of approximately 1.0-2.5 ha each household and raising livestock. The main crops grown in the area are maize, beans, cow-peas, groundnuts, millets, sunflower, tomatoes, cabbages, and a variety of fruits such as citrus, peaches, guava, mangoes, and paw paws. Tobacco is the main cash crop grown by a few farmers in the area. Acreage under tobacco has continued to fall due to increased input prices, which lower the profit margins. There are a variety of other socio-economic activities that have a bearing on miombo resources, including commercial charcoal making, timber extraction, collection of fuel wood, construction poles collection of medicinal plants and mushrooms, hunting wild animals and grazing livestock, etc.

In Handeni, residents of Kwabaya village are mostly farmers with insignificant livestock populations. The villagers depend on crop cultivation for their economic wellbeing. Crops cultivated in the area include maize, sorghum, beans, and pigeon peas. Compared to the residents of the Mufindi site, the Kwabaya residents are less well off. Conflicts among people at the Handeni site were of a different kind, with the dominant form being intergenerational conflicts.

In Babati, the residents of Buay consist of both farmers and livestock keepers. Crops cultivated in Buay are mainly, maize, beans, and pigeon peas, which also serve as cash crops. The three equally dominant ethnic groups, namely, Warangi, Wairaqw, and Wagorowa, are all livestock keepers. Due to the prominence of the livestock economy in the area, conflicts at this site relate to grazing.

(c) Legal provisions

Legal provisions within a particular resource base define the rights, responsibilities, and limits to a certain resource. The legal provisions also include a definition of boundaries, which may fall into three types, namely, geographical, socio-cultural, and biological. Geographical boundaries here include village boundaries, which define the sovereignty of each village, or boundaries of a particular resource within a village such as farms, woodlots, etc. For instance, since many farmers consider miombo woodlands as open access, chances of conflicts are likely to abound.

Socio-cultural boundaries here define social groupings without reference to geographical location. This may include clan-based resources that may even transcend village boundaries due to intermarriages. Socio-cultural boundaries may also define who can access a certain resource, for instance, access to ritual areas may be off limit to male members of the community or only to elders with specific qualifications. Social boundaries of this nature were particularly noticeable in Babati where respondents report three types of ritual forests with distinct boundaries by age and sex. There are forests for the elders that are for traditional rituals *Ghaymanda*. Then there are specific areas for the old men *Ghaybarise*. Men use these areas for the initiation rituals for boys as well as “matambiko” or traditional worship. Finally, there is the *Ghaydesu*, which is for women and it is used for initiation rites for girls. Only members of these categories of forest users can freely enter these forests; trespassers are punished by culturally defined sanctions.

Biological boundaries, on the other hand, define what biological resources can be exploited and what cannot. Certain tree species such as *Ficus* spp. are designated for certain ritual purposes whereas others may be designated for other uses. These three types of boundaries are often well defined,



though not necessarily in writing. Fluid boundaries are potentially a source of conflict.

Legal provisions also spell out the rights of different members of the society to different kinds of resources as well as the responsibilities to such resources within the stipulated boundaries. The latter includes management issues as for example in the case of fire. To enable communities to address these management issues, it is necessary to develop by-laws and have appropriate institutions to manage these resources. Such legal provisions must be well understood by all members of the community if conflicts are to be avoided. Based on the legal provisions, the three research sites differ significantly in terms of how conflicts are addressed by the presence or absence of legal provisions. Buay village in Babati has much fewer conflicts than the other two sites, primarily due to more advanced institutional arrangements, such as leadership structures with a well defined mission and by-laws up to the sub-village level as shown in Table 1. Since this quality is missing in the other two sites, conflicts are more prevalent.

(d) Shift in the value system

Conflicts in natural resource use management depict, *inter alia*, an intergenerational dimension. There has been a shift in the value system based on age difference. The young generation view natural resources differently from the older generation. Many members of the younger generation do not respect the ritual forests for a number of reasons. First, youths have simply lost their roots together with the traditions. Rituals done in the forests are seen by some as a thing of the past or simply “*mila zilizopitwa na wakati*” meaning, outdated traditions. Second, the youth may just cut trees from sacred forests as an act of open rebellion to the elders who are seen as unjustifiably controlling resources, which the younger members of the society may not have. Third, the younger generations are

likely to be more influenced by Christianity or Islam and, therefore, to them, sacred forests and associated rituals are seen as devilish. Finally, the temptation to make cash income drives many youths to areas that may be traditionally out of bounds. This temptation is often the result of the scarcity of tree products. In Handeni and Babati where traditional worship is still an integral part of life, the youth were reported to be widely engaged in cutting construction poles from forests, which are considered sacred. Not much of this was noticed in Mufindi, probably due to the influence of immigrants. These trends are bringing tension to the community; the youths are seen as disrespectful of cherished traditions.

(e) Changes in government policy

Policy changes that are pronounced and implemented without the consultation and due regard to the key stakeholders such as local communities can easily foment conflicts. A common-pool forest can be changed into a National Park to preserve certain rare plants or animals or village land can be alienated for national interests without comprehensive consultations with the local users of the resource. In Handeni, for instance, there have been efforts by the government and conservation projects to alienate key resources from use by the local people or demarcate forests of ritualistic value to the local people. There have also been cases where alienation is accompanied by evictions and without compensation. Sometimes, this move may even be externally driven, for instance by environmental activists. Such moves lead to severe conflicts, including deliberate setting of fire to these resources or refusing to control wild fires when they occur.

(f) Poverty

Poverty is one of the most important drivers of conflict in the natural resource sector. This is particularly the case where local communities have no reliable sources of income. Agricultural crops ranked as the



number one income source in all sites. Due to low and unstable prices of agricultural products, farmers must rely on other sources of income. Communities living in proximity to natural resources will continue to rely on them (legally or illegally) for their livelihood and for economic survival (Kaboggoza, 2000). Efforts by the forestry staff to prevent local residents from charcoal making or harvesting other forest products is seen as a threat to their well-being. In Handeni, close to the town many people exploit forest products and sell them to town dwellers.

(g) Ignorance

Ignorance applies to both local people and government officials. Local communities may not understand the need to restrict the use of natural resource within the context of national or public interest. Many farmers may consider all forests near them as open access. Government officials on the other hand may be ignorant of local realities. Officials need to understand community perspectives if they are to work together with communities.

Conflict Management Mechanisms

Not many conflicts can be easily resolved. It is for this reason that we would rather discuss conflict management than conflict resolution. Conflicts are always part of any management regime and will always influence the management process. Hart and Castro (2000) identify six different conflict management strategies (Figure 4).

Of the six mechanisms, our experience in the three sites appears to suggest that local communities predominantly use negotiation. In some cases adjudication is used that is, relying on the courts, government leaders or the police, to make a binding decision. The use of the court system is constrained by the poor staffing of the courts at a village level. Villagers often find it difficult to lodge cases in courts, which are located in towns or major settlements due to the cost involved. A case in point is the Mufindi district court, which has a building but for a long time has been without the necessary staff. Instead villagers have relied on village governments to handle all conflicts.

One of the widely used conflict management mechanisms is the use of “reconciliation committees” at village and ward level. Formal law recognizes these institutions, and they are constituted of the traditionally well-respected members of the respective village (Kihyo and Kajembe, 2000). The institution of by-laws and enforced by the village “environmental committees” is another mechanism of conflict management. As a general rule, knowing the problem is the first significant step towards finding a solution. Hence, knowing what drives conflict as described earlier in this paper helps us conceive innovative ways of managing or resolving these conflicts.



Avoidance	
Acting in ways to keep a conflict from becoming publicly acknowledged	
Mediation	Adjudication
Using a third party to facilitate the negotiation process (a mediator lacks authority to impose a solution)	Relying on a judge or administrator to make a binding decision
Negotiation	
Following a voluntary process in which parties reach agreement through consensus	
Arbitration	Coercion
Submitting a conflict to a mutually agreeable third party who renders a decision	Threatening or using force to impose one's will

Figure 4 Key conflict management strategies (after Hart and Castro, 2000)

Conclusions and Recommendations

The findings from the three study sites, namely, Sadani in Mufindi, Kwabaya in Handeni, and Buay in Babati reveal some similarities and differences. In general conflicts are common to all sites although they differ in terms of intensities and the manner in which they are managed or resolved. Mufindi and Handeni are engrained in more conflicts than Babati. Community empowerment in the case of the latter may have contributed to reduced conflicts through the building of effective institutions and participatory approaches. Though the Babati case may appeal to advocates of devolution of policies, there still remain some outstanding questions requiring answers. How can we effectively prevent the tragedy of the commons? Who is going to meet the very high transaction costs necessary for this transition, including costs of inventories of resources? What will be the role of government after complete devolution? Who will take care of the very sensitive water catchment forests and how will they be managed without endangering national interests? Is there an alternative to devolution? Forest policy will need to be fairly dynamic in order to accommodate changing situations and ideas, while minimizing the conflicts.

There are several mechanisms we can use in order to achieve this goal. First, negotiation seems to be the cardinal tool of conflict prevention and/or resolution. Each party in

the conflict should be prepared to give and take in order to reach an amicable solution (Kaboggoza, 2000). All options in the conflict management/ resolution process such as accommodation, avoidance, compromise, and cooperation need to be explored.

Second, there is need to develop effective communication channels between and within stakeholders. The communication between stakeholders needs to be transparent, leaving no room for misinterpretation of messages by all parties involved. This also involves having appropriate institutional mechanisms in place to guide the use and management of the particular resource. Such mechanisms include jointly formulated rules or by-laws that will guide the use and management of the resource and clearly defined boundaries, which are understood by all. These boundaries can be geographical such as village boundaries, social such as the *Ghayberise* and *Ghaydesu* or biological such as the traditionally recognized tree species used for rituals.

Third, societies are increasingly becoming complex with diverse interests in relation to the use and management of natural resources. As regulators or users of such resources such realities need to be taken aboard in decision-making involving natural resources. There is need to take inventory of the diverse interests and find mutually agreed ways to harmonize and accommodate



them. This can be done by negotiation. One possible outcome of this can be collaborative resource management and use involving all stakeholders.

Fourth as pointed out earlier in this paper, some conflicts are caused by poverty. Community members must make their living by exploiting resources from the forest. Use of the forest is often driven by desperation; given a viable alternative, many would not use the forest. People living next to these forests must be given an alternative means of earning a living. Increasing agricultural productivity and other income generating activities will deter individuals from expanding their land into forest or wildlife lands.

Finally, appropriate educational approaches and programs which will enhance mutual comprehension of all parties involved in natural resource management and use have need to be instituted. The regulators must understand local communities and their environment, while at the same time, local communities and businessmen must also understand national interests including environmental concerns. All these issues call for more interaction between stakeholders, which can greatly be enhanced by educational programs and various forms of participatory action, and development.

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