

Institutions Surrounding the Use of Marketed Bark Products

**The Case of *Berchemia discolor*, *Warburgia salutaris*
and *Adansonia digitata***

B. MUKAMURI AND W. KOZANAYI

IES Working Paper No. 17



**INSTITUTIONS SURROUNDING THE USE OF MARKETED BARK
PRODUCTS: THE CASE OF *ADANSONIA DIGITATA*, *WARBURGIA
SALUTARIS* AND *BERCHEMIA DISCOLOR***

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Institute of Environmental Studies
University of Zimbabwe
P O Box MP167
Mount Pleasant
HARARE

Telephone 263-4-302603/332039 (direct) or 303211 ext. 1937
Fax 263-4-332853/333407
E-mail: Campbell@africaonline.co.zw

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Preface

The WWF People and Plants Programme has supported a number of bark-related research activities in Zimbabwe, one of which is the study of institutions surrounding the use of bark for various purposes (this publication). Other activities have included the development of participatory monitoring systems for palm basketry resources and a thesis on the ecological impacts of the use of baobab bark for craftwork. For further details on these activities contact IES or WWF (Campbell@africaonline.co.zw or peopleplants@bigpond.com)

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SOCIO-ECONOMIC ISSUES RELATED TO *WARBURGIA SALUTARIS*: A POWERFUL MEDICINAL PLANT IN ZIMBABWE

Abstract

There is a good potential to domesticate high value non-timber forest products. With the demise of *Warburgia salutaris* the opportunities for planting have arisen. However, medicinal plants are closely connected with the spiritual world and thus tree planting needs to be carefully implemented. African healers believe that *Warburgia salutaris* treats a plethora of ailments and the tree has a high commercial value on the informal herbal market. *Warburgia* is threatened with extinction in Zimbabwe. The collapse of traditional institutions during the last two decades, coupled by high demand for the bark on the informal herbal market, has contributed to the decline in the number of known *Warburgia* trees. Possibilities for increasing the tree's population include appropriate institutional arrangements and planting. However, a danger with the planting of such a highly valued plant may be that the elite get access to the planted trees, as the poor and non-herbalist's fail to get access to the seedlings

Keywords: *Warburgia salutaris*, healers and collectors, vendors, uses, availability and decline, market trends and strategies, economic value, institutional arrangements, traditional leaders, tree planting.

Introduction

Non-Timber Forest Products (NTFPs) are important in enhancing rural livelihoods. However, despite their relevance in enhancing incomes, there is little evidence of sustainable harvesting of the products (Godoy and Bawa, 1993; Boot and Gullison, 1995; FAO, 1996). Kaplan *et al.*, (1998) expressed the fear that future availability of tree species used as medicinals may be jeopardised by unsustainable harvesting practices. Mobilising smallholder farmers to grow more trees has been identified as a meaningful way to avert shortages of tree products (Eckholm, 1975, 1979; FAO, 1978).

The paper explores uses, marketing strategies, economic value, conservation status and institutional issues related to *Warburgia salutaris* in some two localities in eastern Zimbabwe. The study areas were selected on the basis of accounts by healers and taxonomic literature as to the places which were known to have had *Warburgia* trees (Mukamuri and Mavi, 1996; Palgrave *et al.*, 1984).

Warburgia salutaris and *Alepidia amatymbica* have been identified as two species that were threatened with extinction because of the high demand on the herbal market and limited populations in the wild (Mukamuri and Mavi, 1996; Marshall, 1998). *Warburgia salutaris* is harvested for its bark to treat a panacea of ailments. The tree has become increasingly scarce to the point where the remaining trees are being uprooted and carried away to be ground into powder. Though the degree of scarcity is contested by different healers, there is enough data to support the view that the tree species is nearing extinction or seriously endangered in Zimbabwe (Mukamuri and Mavi, 1996).

A decrease in the availability of a valued plant species is not only a problem for conservationists. It also implies increases for rare species (Daselegn *et al.*, 1996). Mukamuri and Mavi, (1996) found that traditional healers were buying the imported bark from as far as South Africa and Mozambique. Zimbabwe was ruled out by many herbalists covered in the survey as a local source of the plant. Some herbalists did not think that a single *Warburgia salutaris* tree existed naturally within Zimbabwe. Other informants claimed that a few trees still existed in eastern Zimbabwe. Such trees were said to be expensive to harvest, in terms of the huge bribes which have to be paid to the local leaders to access the trees. The trees were also said to be guarded through strict institutional arrangements comprising numerous taboos, sacredness and sanctions by local leaders. Given the high value of the tree and its limited local availability, this species is an ideal candidate for a tree planting programme. The current work formed some of the institutional basis for a tree planting programme that was implemented.

Study area

The first of the two study areas is Tanganda which lies in the agro-ecological Region IV and is in the rain shadow of the mountains which form the Eastern Highlands. The area receives very little rainfall, 400-600 mm per annum, and is not suitable for crop production, unless irrigated. People largely rely on livestock production as a livelihood strategy. The second study site was Chief Mapungwana's area which is in the higher areas of the Eastern Highlands. The area falls in agro-ecological Region I and has an annual rainfall of about 800-1000 mm.

Methods

Most of the data presented was generated through key informant and open-ended interviews in 1997. A total of 75 informants were interviewed, including herbalists, old and young people, patients of traditional healers, civil servants, traditional leaders and local agricultural and forestry staff. In addition, two group discussions were conducted with local people. The group meetings focused on group perceptions of the tree, conservation issues, availability of the tree and future planting plans. Three months after the initial surveys and group meetings, *W. salutaris* seedlings were distributed by SAFIRE (Southern Alliance For Indigenous Resources) in the two study areas. One batch of seedlings were left at Chief Mapungwana's homestead and the other was left with the local Chairman, Mr Dhliwayo, of ZINATHA (Zimbabwe Traditional Healers Association). Interested individuals were invited to collect and plant seedlings. A follow up visit to the study area was conducted three months after the trees had been distributed.

Both study sites have large numbers of immigrants, mostly from Mozambique. The immigrants lack historical information of the area and do not have much concern about the state of the environment. Another problem was that some of the healers who collected the plants use either pseudo-names or are not registered with ZINATHA. The unregistered healers are reluctant to admit their activities because of fear of being arrested or forced to pay ZINATHA membership fees. We suspect that some of the people who harvest the trees are not from the area but stay with relatives. Some of the trees could be harvested by people living in Mozambique, but connected to the Mapungwana lineage through socio-cultural relations.

Traditional healers

Traditional healing is an important livelihood strategy for many smallholder farmers living in the study area. For example, in Tanganda, the local branch of the Zimbabwe National Traditional Healers Association (ZINATHA) has a membership of 26, in a single village with about 100 households. Most of the healers are believed to be Mozambicans. Mozambicans enjoy a large clientele who consider that the Mozambicans possess powerful medicines. Herbalists around Tanganda also enjoy large numbers of clients because of the good road network that links Tanganda with other parts of the country. Clients come to Tanganda from as far as Bulawayo, Plumtree, Lower Gweru, Harare and even South Africa.

In Chief Mapungwana's area, there are 119 healers and herbalists registered under ZINATHA. During the Mozambican civil war up to the early 1990s, the number

of herbalists and traditional healers numbered 280 (Mr Madhabuya, *pers. comm.*). Some of the healers were believed to be "good" while others were labeled as "fake". Many immigrants claimed to be traditional healers and herbalists, but some of them were merely pretending in order to raise cash. Formal health institutions in areas bordering Mozambique had been derailed by the devastating civil war and thus the time was ripe for the practice of traditional medicine. The area borders Mozambique and there is relatively free movement of people and goods. Most of Chief Mapungwana's area is remote and almost inaccessible by road. The terrain makes it difficult for local people to visit clinics. Therefore, many people rely on traditional healers for most of their primary health care. Access to the formal health care system is also limited by high fees.

What is *Warburgia salutaris*?

Local people mentioned that they know two types of *Warburgia salutaris*. They mentioned a red one (*mutsvuku*), as well as a white one (*muchena*). According to the local people's taxonomy, the red one is the male one and is believed to be medically more potent than the female, white one. In terms of availability, the red one was reported to be very difficult or impossible to get. The commercial value of the tree species was highlighted by the informants.

The local name of the tree is "*MuRanga-zvose*" (discipline-everything). *MuRanga* is derived from the verb root *Ranga* (to instill discipline). The local belief is that medicine derived from *Warburgia salutaris* can "treat all human ailments." Other informants described *Warburgia* as "*murapa kamwe*" (a direct translation indicates that the patient has to take only one dosage in order to be healed of any ailment). Local beliefs about its medical potency has led to *Warburgia salutaris* being mixed with many medicines (Mukamuri and Mavi, 1996).

Local uses of *Warburgia salutaris*

Warburgia salutaris is believed by herbalists and traditional healers to be capable of treating a panacea of diseases and ailments. Informants mentioned that without *Warburgia salutaris* their profession is meaningless. The plant is used to treat malaria and many fever-related diseases. Some herbalists also use it to treat stomach problems, including diarrhoea. Other herbalists mentioned that they use the bark and roots to treat pneumonia. A famous traditional healer at Tanganda, Mr. Dhliwayo, claimed that he includes *Warburgia salutaris* bark in almost all the concoctions of herbs he prescribes to his patients regardless of the illness. Headaches, backaches, and snake bites were

mentioned as some of the problems that can be cured using *Warburgia salutaris*. The tree is also believed to be capable of terminating pregnancies during the early stages. The bark is also ground and mixed with porridge which is fed to babies. The common belief is that the bark improves the babies' immune system hence making them grow fit and strong. The bark is also used to treat an ailment locally known as "magagade" (possibly, indigestion). In this case, the bark is ground into powder and loaded into a hollow reed. The powder is then blown into the patient's anus to treat the ailment.

Informants mentioned that the bark was traditionally used in the study areas to treat chickens. Such practices have been stopped because local people can no longer get enough bark to treat both themselves and their chickens. When treating chickens (for a broad spectrum of diseases), the bark is put in the water which is given to the chickens.

Some local uses of *Warburgia salutaris* cannot be understood from a natural science perspective (Maclean, 1985). Ulin (1974) recorded that 50% of the cases treated in Botswana with traditional medicines were complaints not normally regarded as illnesses. For example, people used herbs to solve problems such as crop failure, strained social relationships or even unemployment.

Warburgia salutaris bark was also said to be used during the ritual strengthening of men whose wives had been accused of infidelity. This is done before the man has sexual intercourse with such a wife in order to prevent any illness befalling the husband. The terminology used to describe this cleansing was that it is done in order to prevent the husband from coughing. This use of *Warburgia* is more for a psychological reason than a medical condition, in the Western sense.

Warburgia salutaris is associated with many death rituals. One is called "kuruma mutombo" (biting the herb). This is a practice whereby one piece of the bark is put in a clay pot with water and the pot is placed by the door. A second piece is placed on the ground close to the pot, while a third piece is placed on the roof of the hut. As the procession of relatives of a deceased come from the grave site, they have to perform the following sequence of activities:

- Wash their hands in the pot with *Warburgia salutaris* bark
- Take off their shoes and cleanse their feet with the water
- Step on the bark which is laid on the floor besides the pot
- Bite the third piece of bark.

This set-up of pots and bark is left in the same place for a couple of days until almost all immediate relatives of the deceased have arrived and participated in the ritual. Leaves of the tree are also used. For example, they are

pounded into powder. The powder is then mixed with water and sprinkled on the deceased's clothes so that no harm comes to the people who inherit the clothes. The ceremony is considered very important in the study areas and, one wonders, what would happen in the absence of *Warburgia salutaris* bark.

Another interesting use of *Warburgia salutaris* bark is for sexual purification following death. If a person shared a woman or prostitute with the deceased, then the person must eat the bark before attending the funeral. The practice is believed to prevent death of that person.

Warburgia salutaris bark is also used as an aphrodisiac. For such purposes, the bark is mixed with a well-known soft drink. The mixture is shaken until a froth forms and is then drunk. In some cases the powder is mixed with warm water and drunk. The bark has been described as capable of bringing happiness into the home because of its aphrodisiac values. Women who are undergoing menstruation are often regarded as ritually impure. Therefore, local informants mentioned that they take *Warburgia salutaris* bark as a way of cleaning themselves if they happen to have sexual contact with such women. Some young people are also known to keep pieces of the bark in their pockets when going out to look for employment. The bark is believed to be a charm which brings good luck to the bearer.

The bark is also used to treat some ailments associated with AIDS, such as diarrhea and loss of appetite. It is still not clear what the healers tell the AIDS patients. However, in another study conducted by one of the authors, some urban healers mentioned that *Warburgia salutaris* can treat AIDS (Mukamuri and Mavi, 1996). *Warburgia salutaris* bark is definitely a major component of traditional medicines being used in the area and thus it is likely to be used for AIDS. Any medicine which does not contain *Warburgia salutaris* bark is not highly regarded by healers or their patients.

In terms of the medical use of *Warburgia salutaris*, there are divergent views among Christians. Some Christians interviewed mentioned that they are not allowed to use any traditional herbs. However, some members of the independent churches mentioned that they use the bark to drive away evil spirits. If the bark is burnt just outside the yard, it is believed to chase away evil spirits.

The distribution and availability of *Warburgia salutaris*

Scientists and traditional medical practitioners differ about the availability and distribution of *Warburgia salutaris* in Zimbabwe, the reason being the many myths surrounding the tree. According to Palgrave *et al.*, (1984), the tree was limited to a single small locality in Zimbabwe, near Chipinge. Scientists believe that the

bark in their possession. However, it became apparent that fining transgressors and confiscating the bark had never occurred yet. Some kraalheads in Tanganda mentioned that they always accompany people who go into their forests to harvest the bark. They claimed that they do this in order to ensure that no trees are uprooted.

Some informants mentioned that there were no obligations to tell the kraalhead when harvesting the bark. According to them, *Warburgia* bark is like any other medicinal plant which anybody can harvest. The kraalheads were said to have no right to control harvesting, as healing involved secrets which were held by healers. Most of the informants mentioned that the traditional leaders had lost control of what was happening to the trees. The only binding rule appeared to be those relating to various harvesting taboos, such as using mentally handicapped persons, leaving some coins under the trees, clapping hands before and after harvesting, and taking off clothes (if one is not mentally handicapped).

Traditional institutions controlling the collection of *Warburgia* bark are not the only ones suffering from legitimacy problems. State organisations are also unpopular with local people. For example, most respondents are not happy working with organisations like Agritex (the national extension service), Forestry Commission, the Natural Resources Board (NRB) and the Rural District Councils, at least, as far as *Warburgia* is concerned. They alleged that these organisations are agents of the government who want to completely ban the use of *Warburgia*. Some of the people who planted the seedlings cautioned the research team not to tell either Agritex or Forestry Commission field officers where they planted their seedlings.

Ironically, the institutions that are entrusted by the state as the guardians of the forests are not very knowledgeable about *Warburgia*. In a meeting held with the District Administrator (DA) and officers from Agritex, Forestry Commission (FC), Natural Resources Board, and CAMPFIRE only the DA knew about the tree and its existence in Chipinge. The DA said that the local traditional leaders always raise the question of the fast depletion of *Warburgia* in their respective areas. As far as *Warburgia* is concerned, the link between the DA and the traditional leaders is the only one which involves traditional and modern structures. A closely knit relationship between the traditional leaders and the field officers of state organisations is largely missing.

Instead of following both traditional and state-based rules, informants suggested some new and pragmatic rules to be followed, e.g. avoiding pruning of the whole bark from a tree, harvesting of bark from the branches and, managing of roots to ensure that more plants can sprout. Some suggested that only big trees with a diameter of more than 30 cm should be harvested.

Local views on *warburgia* planting

In meetings to introduce the concept of planting *Warburgia*, views were varied, particularly over who should plant the trees. For example, most traditional leaders and healers mentioned that they were the ones most suitable to be involved in the planting project that involved *Warburgia*. According to these informants, only those people who were medically and spiritually connected to the tree should be given the right to plant the tree. They also mentioned that bringing people with different interests into the project would kill the project as "there is no way that a driver, a nurse, a teacher and an agricultural extension worker can work in a single project." (Mr Dhliwayo, *pers. comm.*). Some of the informants were against communal planting.

Other people were of the opinion that everyone should have access to the seedlings. Focusing the tree planting project only on traditional leaders and healers was viewed as some form of nepotism.

A small section of the community objected to the planting of these trees. Those who objected claimed that such practices would weaken the medicinal value of the tree. According to these informants, only naturally growing trees should be used as medicine. Others, however, claimed that if the trees were planted without artificial fertilisers they would still yield strong medicines.

Most informants showed an interest in planting the trees. They included health workers and nurses, who claimed that they wanted to plant the trees in their rural homes. Asked whether they would plant some of the trees at the local clinic, they cited security as a major hinderance to do so. Teachers at the local school expressed similar sentiments about planting the trees at the school. Almost all informants noted that the trees should be planted close to the homesteads in order to minimise the risk of the trees being stolen. Examples were given where trees such as *Cassia abbreviata* and *Kirkia acuminata* were planted in communal grazing areas and ended up being used by carpenters. In a minority of cases, informants stated that they would like to plant their trees away from their homes because of the belief that planted trees lure snakes to the homesteads. Traditional beliefs about the sacredness of the *Warburgia* did not seem to be a major concern to most informants with respect to planting the trees at their homes, because many people normally keep bark and other parts of the tree in their homes.

Interviews revealed that local people have been planting medicinal trees. In addition, some such planting was done away from homes. For example, *Zingiber officinale* (ginger) was planted far from homes. Taboos were used to stop other people from harvesting someone else's plants.

Review of the *Warburgia* planting initiative

The *Warburgia* seedlings that were given to potential partners, were not equally distributed. Economic status was a cause of the differentiation, as all people seemed to be able to afford the set price of the seedlings (\$5). Healers were the major recipients of the seedlings because of their effective networking. In Chief Mapungwana's area the few non-healers who managed to get the seedlings were close relatives of the chief. For example, his wife planted five seedlings. Her daughter-in-law planted all her three seedlings in her mother-in-law's field indicating that the mother-in-law will eventually own all these plants. Those outside the influential circles did not get the message about the arrival of the seedlings. No seedlings were reserved for them, despite the fact that they had expressed an interest in the planting of the seedlings at earlier meetings. The authorities put the blame on the rugged terrain, resulting in poor communication and hence some people not being able to come and collect their seedlings.

Out of the 61 seedlings that were planted in Chief Mapungwana's area, 45 were still surviving and well managed three months after the planting, a 71% survival rate. Termites were responsible for most of the deaths. Some of the farmers mentioned that the seedlings which died were very weak when they were planted. The research team noted that many deaths could have occurred because they were not planted properly. Most of the dead seedlings were found to have been planted with the budding node well under the ground.

21 out of 30 tree seedlings which were distributed to Tanganda Halt had not been planted by the time of the survey because of disagreements among locals over whether the seedlings were to be planted as a community or by individuals. The community was not happy with the immigrant healer to whom the trees had been handed out for distribution. The argument was that an immigrant had no right to be in charge of planting of *Warburgia salutaris*. Locals largely believe the trees to be sacred and therefore closely associated with their ancestral spirits. The locals prefer a member of the ruling lineage to be in charge of the distribution of seedlings.

Conclusions and recommendations

Warburgia salutaris bark is one of the most preferred plant species for medicinal purposes. There are cases of urban-based collectors entering communal areas and "stealing" the bark. It appears the tree has become extinct in Zimbabwe. The tree has both medicinal and ritual functions in African society. Despite the importance of NTFPs in improving rural incomes and the conservation of biodiversity, there are few examples

of their sustainable harvesting (Boot and Gullison, 1995; Godoy and Bawa, 1993).

The high economic values ascribed to the plant have led to the desire by many people to plant the trees. All informants agreed that the tree species will remain under pressure from collectors, as long as the high market demand for the bark persists. Substitutes for *Warburgia* are not many.

The market and marketing strategies are complex and difficult to monitor and control. Though state organisations have the legal backing to control the harvesting of *Warburgia* bark, they suffer from serious legitimacy problems. For example, smallholders view them as aiming to ban the use of the bark altogether. State agencies do not have the necessary financial backing to curb increased harvesting of the bark. On the other hand, traditional institutions have been weakened by several factors, including conflicts with local-level state institutions such as Village Development Committees (VIDCOs) large immigrant populations which do not support traditional institutions, and socio-economic differentiation at the local level.

There are controversies at the local level on whether the planted trees should be "private property" or "common property resources." We still have to learn more about trees planted in communally owned land units, such as grazing areas. Our preliminary work indicates that a tree planting programme based on the *Warburgia* is likely to be successful but elites may take control of the newly planted resource.

Warburgia salutaris will remain a heavily contested, and highly demanded tree resource. It will also remain a threatened tree species unless appropriate institutional arrangements, educational campaigns and planting interventions are effected. The cultural practices mentioned by Cunningham (1993) to control resource use, for example, restricting harvesting of medicinals to healers, controlling the harvesting implements and avoiding ring barking, were mentioned by Zimbabwean informants as being applied to *Warburgia* (Mukamuri and Mavi, 1996). However, the rules do not have a significant impact on minimising harvesting of *Warburgia salutaris* in Zimbabwe.

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CRAFT PRODUCTION AND MANAGEMENT OF *BERCHEMIA DISCOLOR*: A CASE STUDY OF KARIANGWE WARD, BINGA DISTRICT

Abstract

Berchemia discolor, locally known as Mwii (Tonga) and Nyii (Shona), is a high value non-timber forest product. Bark from *Berchemia discolor* is processed into a dye used to decorate crafts such as baskets, mats and hats. In the past the crafts were used as traditional household goods and sometimes were used during cultural events such as marriages and traditional ceremonies. Recently, the crafts have been heavily commercialised and are sold to tourists. Though substitutes exist, craft producers continue to prefer dye made from *Berchemia discolor* bark. The case study was conducted in Binga District which supplies baskets to a well organised international market. In Binga there are clubs, co-operatives and individuals who make and sell crafts in large quantities. The issue being addressed in this paper is whether bark harvesting is sustainable in respect of management and institutional arrangements. Our hypothesis is that commercialisation of bark products leads to the depletion of *Berchemia discolor*. Recent studies indicate that most of the rural institutions in Zimbabwe are weak due to a number of social and economic forces. Local traditional leadership has been weakened and this could have severe repercussions for resource management. The various arms of the state play almost no role in the use and management of *Berchemia*. Though there is a CAMPFIRE programme in the area its focus is largely on large game species. A key institution working with craft producers, the Binga Craft Centre, has not had much impact on ensuring resource sustainability.

Key Words: *Berchemia discolor*, non-timber forest products (NTFPs), institutions, management practices, local perceptions, sustainability.

Introduction

The paper presents uses and institutional arrangements pertaining to *Berchemia discolor* in Zimbabwe. The bark is harvested and processed into a dye which is used by small-holder farmers to colour commercially produced crafts (baskets, mats and basins) made from *Hyphene petersiana* and reeds. The study was conducted in Kariangwe Ward, Binga District. More than 3000 women are registered as craft producers and they operate in clubs and cooperatives. The crafts are sold locally to neighbouring communities, as well as internationally, particularly in Denmark and South Africa. There is also a thriving craft market in Zimbabwe's large cities such as Harare and Bulawayo, and at leading tourist locations, notably Victoria Falls. Tourists also buy large quantities of crafts, especially along highways leading to popular tourist destinations (Victoria Falls, Hwange National Park, Eastern Highlands and Great Zimbabwe). Commercialisation of crafts has increased over the last decade because of droughts and hard economic conditions prevailing in Zimbabwe (Braedt and Standa-Gunda, in press; Matose *et al.*, 1997). Craft production is therefore a major livelihood strategy for most poor rural households. Dye obtained from bark is a non-timber forest product (NTFP) (FAO 1995; Arnold 1995; CIFOR 1996; Arnold and Perez 1996). Internationally and locally, non-timber forest products have become heavily commercialised (Matose *et al.*, 1998; Arnold, 1996;

Braedt and Standa-Gunda, 1997; Mukamuri *et al.*, 1998; Campbell *et al.*, 1997).

The question is whether production of dye from the stems and roots of *Berchemia discolor* is sustainable. There is a large number of people involved in craft production. The study focused on the management practices and the institutional arrangements related to *Berchemia discolor* bark stripping.

Many authors are concerned about the limited examples of sustainable harvesting of NTFPs (Boot and Gullison, 1995; Godoy and Bawa, 1993). Several arguments for the failure of sustainable harvesting focus on institutional and tenurial arrangements. For example, Campbell, Frost and Byron (1996), maintain that the failure of local level institutions is linked to legal constraints such as lack of clear tenure. Mukamuri (1995) highlights the problems of legitimacy and ghettoisation of natural resources as major factors militating against sustainable harvesting. He primarily focuses on the existing conflicts between traditional leaders and the newly-instituted state-sponsored Village Development Committees (VIDCOs) and Ward Development Committees (WADCOs). VIDCOs and WADCOs were introduced by the government in 1982, following the Prime Minister's decree. Their mandate was to distribute land and manage locally available resources. Their officially sanctioned roles have been challenged by traditional leadership (kraalheads, headmen and chiefs). The traditional leaders feel that they have the mandate from ancestral spirits to act as

guardians over natural resources and their allocation. In areas where VIDCOs and WADCOs are operational, they largely comprise immigrants (Mukamuri 1995). Immigrants are people who were moved by the colonial governments in order to make way for white-owned farms. Braedt and Standa-Gunda (1998) maintain that current management practices are limited by a framework characterised by inappropriate rules and regulations. In overall terms, current use of woodland resources is unregulated and has the characteristics of open access, hence, resulting in deforestation (Jodha, 1990; Arnold and Stewart, 1991; Shepherd, 1992; Messerschmidt, 1993).

Study area

Data for this paper were collected in Kariangwe Ward, Binga District. The district forms the north western border between Zimbabwe and Zambia. The study area was selected because it is one of the largest craft producing areas in Zimbabwe, with dye derived from *Berchemia discolor*, locally known as Mwii tree, being a key component of the crafts. Crafts have recently been sold in national and international markets. Commercial production of crafts has dramatically increased over the last decade because of droughts, poverty and market support offered by the Danish Volunteer Service, an international non-governmental organisation.

The study area lies in Natural Regions IV and V where mean annual rainfall ranges between 350-600 mm. The area is characterised by low agricultural potential. Crop production is largely only possible through irrigation.

According to AGRITEX records, Kariangwe Ward comprise 8 222 hectares and 4 900 people (874 households). Most of the inhabitants of Kariangwe are of the Tonga tribe. Kariangwe Ward is serviced by 18 boreholes. Marriage is largely polygamous, with most men having 2-7 wives.

People living in the study area are very poor and with low levels of literacy. Their poverty is exacerbated by wildlife which continuously destroy crops and livestock. Craft production is therefore a key livelihood strategy, particularly for poor households. Small amounts of grain are grown in Kariangwe Irrigation Scheme, but the ward relies heavily on food aid or food purchased through remittances, livestock sales, or selling of crafts.

Traditional institutions

Throughout Zimbabwe, ethnicity plays a central role in determining the effectiveness of local level institutions. It also forms the background of most people's world views. This is also the case in the Binga District where nearly 40% of the population are immigrants. Ndebele

and Shona ethnic groups comprise the majority of the immigrants. Recently there has been an influx of immigrants into Binga. Although most immigrants started moving into the district as early as 1982, the majority settled into the area between 1992 and 1994. Most are from the neighbouring communal lands of Lupane, Nkayi and Gokwe in search of land and pasture. Few immigrants settle among the Tonga people, the majority forming settlements or small "colonies" on their own, particularly in areas designated for wildlife. The Sikomena area is one such "colony" composed of mainly agriculturists. Immigrants have introduced new lifestyles, as well as new crops, such as cotton and maize.

Little social and economic interaction occurs between the Tonga and the immigrants. The former accuse the latter of being "greedy for land, and arrogant and denigrating Tonga language". On the other hand, the immigrants accuse the former of being lazy and poor because they spend their hard-earned cash on beer.

Traditional institutions comprise kraal-heads (sabhuku) and chiefs. The position of paramount chief is hardly mentioned by the locals. We suspect the position of paramount chief would be rather superficial because of the long distances that would be necessary to administer the territory. Another interpretation is that the Tonga do not want to be administered from afar. Their power is locally concentrated. Earlier studies have shown that this is the reason why they refused to be incorporated into the Matonjeni Cult which is based in the Matopo Hills, a distance of about 600 km from Binga. The refusal of the Tonga to join the religious cult was that they feared political and cultural integration with other tribes.

Tonga society has highly localised administrative units. This is also evidenced by the number of chiefs in Binga District. Binga District has well over 20 chiefs. The chiefs are assisted by a number of kraalheads. The authority of a chief may be confined within a state administrative Ward. However, in some cases, a chief's authority spills over more than two Wards. A Ward in Binga District is made up of five to six Village Development Committees (VIDCOs). There are often different ethnic groups in a single Ward. Going over ethnic lines has resulted in much animosity among people.

The functions of the kraalheads are continuously being challenged by the introduction of VIDCOs. Contestations between the VIDCO chairman and the kraalheads have developed. The two authorities accuse each other of having taken the other's responsibilities.

Before Independence the chief had much power and had respect from his subjects. The protocol for reporting infringement of rules was that the accused

person would be referred to the kraalhead first and then passed on to the chief. Elderly people were reported to have been central in settling disputes. The chief was also the head of cultural events, such as traditional ceremonies and funerals. Box 1 presents perspectives on local institutions from the Chairman of the local CAMPFIRE Committee. Despite the chairman's claims that offenders are punished, our research found no such cases. The box indicates some degree of collaboration amongst the various local institutions.

Present chiefs are said to be corrupt and insensitive to the interests of their subjects. Some informants think that the position of the chief is now meaningless and that some of the decisions they make are archaic. The commonly cited example of corruption is where the chief refused four local youths to go to the USA for further studies. American students studying in the area had asked the local chief to nominate four eligible

candidates who would be provided with scholarships to enable them to study in the USA. The idea was that the students would graduate and return home and assist the locals with development planning. The chief refused the offer by arguing that the students would eventually come back and assist their own families and not the community. Following pressure from the Ward Councilors, the chief demanded US\$500 in order to grant the permission. The local interpretation of the chief's refusal was that he did not have a relative who qualified for the scholarship.

Respect for the traditional leadership is gradually declining in this community. Some of the examples indicating decline in respect for the traditional leadership by locals include people being tried absconding from the courts during the trials. Domestic disputes which used to be settled by the chiefs and kraalheads are now commonly being referred to the

Box 1: Local institutions: a view from the Chairman of the local CAMPFIRE committee

I am the CAMPFIRE Chairman of the natural resources which comprises of a village ward, as well as the VIKO chairman of Ndzim village. As you know, every month in CAMPFIRE, about the timing of when for example, indicate through coming down of trees in some places. The committee assigns all people who indiscriminately cut down trees. The one found guilty are taken to the ward court and a fine is given. A member of the CAMPFIRE Committee is District head. This committee has the power to fine. He takes the subject to the chief for punishment just to make the subject aware the same crime is done and in such cases the fine will be increased. When convicted, these offenders are disciplined in CAMPFIRE courts.

It is also to see some holding of huge trees, particularly those with few dead branches, for firewood. This will represent a danger that at the end of the year, the trees will be cut down. In the past, when there were no laws, the trees were cut down.

I usually assign in the evening some of the trees, especially the ones which are very old, to be cut down. The trees are cut down through the 6 trees, as an example. One, in which that are cut down to be used for firewood. This is done through the traditional, the trees are cut down as a punishment. There are the trees in a field being used as other ways in the field. The the harvesting of the trees are done, but are very particular about the depth of the trees. If they are cut down, the trees will be up due to lack of maintenance and so on. The main committee member would check up if people are not cutting the trees. No offenders have been reported to us.

Only people that have been to court are allowed to get back from Kamungu. However, there is a problem of that I have reported a case where some other work. The big problem is that people do not know, and quite that they can harvest resources in all the ways which fall under the chief's area. Some people even think that as long as they have it on their own, they can harvest. The main committee member for Ndzim District, they are free to move and settle anywhere in Ndzim District. Recently, a group of people from Ndzim ward wants to build a house under Chief Ndzim's authority, and the committee of people in the area are divided in Chief Ndzim's area. Although in such cases 'agreements' have not reached anything and the Chief of Administration has been called in to arbitrate in the dispute.

Traditionally, the victims and their wives responsible for land allocation. They also are responsible for the traditional and their laws. If accepted by their laws, the harvest will be increased. The only reference made to the 'wonder letter' which should have the authority of the law. The traditional VIKO and CAMPFIRE chairman then indicate the importance of such a letter. The CAMPFIRE committee is concerned so that people are not misled in CAMPFIRE, among other.

Some victims of the law are of their property. For example, some of them do not know that they have power to take their own land. The victims of land boundaries should have the power to be referred to the chief for settlement. Sometimes, they cut up the land of their property, but they address the court through the court.

Mostly, the victims are very old people. They are not able to go to court to settle their disputes. In such cases, the victims, whose names are well known, and are in the court. The court will have stopped going to the court and people stop. Sometimes, they are not able to go to court.

Zimbabwe Republic Police. Youths are reported to be at the forefront of the continuing battle with the chiefs. Informants mentioned that the chiefs were not being impartial in their decisions.

Box 2, presents views of one kraalhead on the present decline in the traditional leadership. The presentation also shows that the chief is no longer viewed as a traditional leader but more as a state agent because of the monthly state salaries that chiefs receive. Local level management is difficult without the support of the traditional leadership. Resource management initiatives often succeed when traditional leadership is powerful and respected, as then the traditional leaders be able to enforce the rules at the local level. Thus the demise of the traditional leadership in Kariangwe can have severe negative impacts on resource management.

Berchemia trees are protected from cutting by traditional rules against cutting of fruit trees. However, bark stripping is permitted. Informants mentioned that trees in grazing areas, abandoned homesteads and fields are open access. Outsiders take advantage of the fact that no one closely monitors such trees. Accessibility of trees between homesteads is subject to discussion between the nearest homesteads and the bark collector.

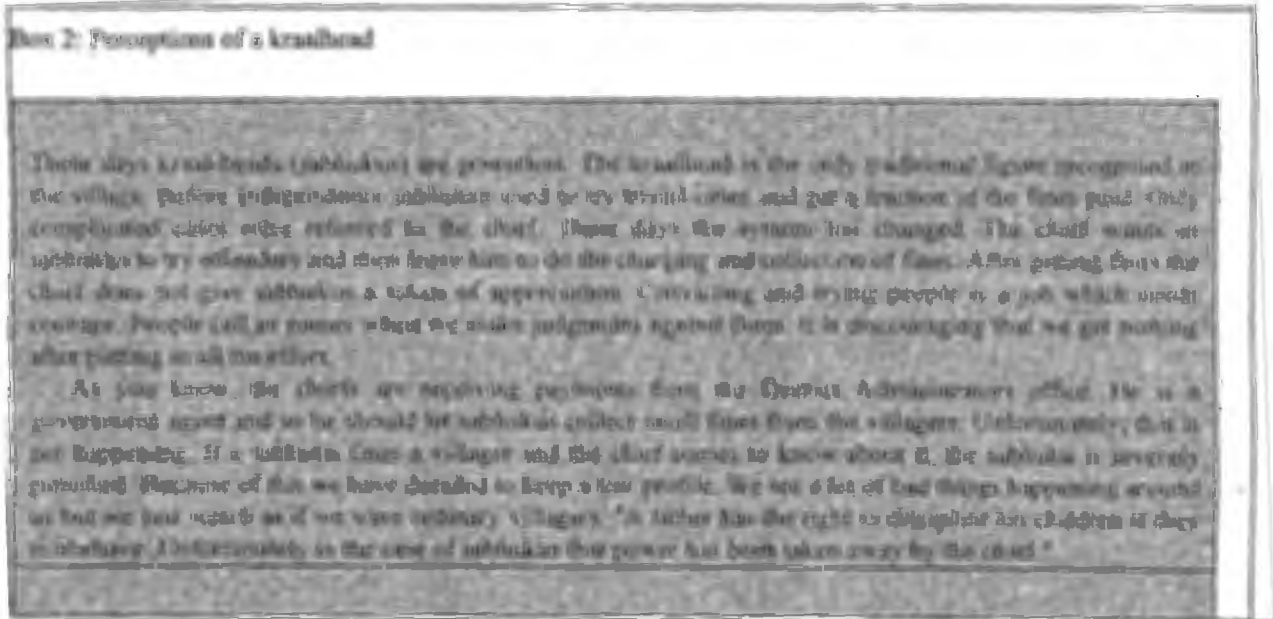
State institutions

Kariangwe Ward is administered through the District Administrator's office which is based at Binga District Office, a distance of 50 km. The head of the district is the District Administrator and he is the senior civil servant. His duties, among others, is to ensure that government policies are implemented. In our

interviews with the local communities, there was no indication that the D.A.s office was involved in controlling harvesting of *Berchemia discolor* bark.

The Rural District Council (RDC) is the responsible authority in the district. The RDC is composed of locally elected Councilors and executive staff. The Council meets regularly to discuss development issues. The RDC is chaired by the Council Chairman, Most of the RDC decisions are carried out by the Chief Executive Officer who holds a civil servant position. Both the RDC and the District Administrator's Office fall under the same ministry (Ministry of Local Government and National Housing) but conflicts have ensued between the two institutions over responsibilities for different activities.

At the local level, the Rural District Council is represented by Village Development Committees (VIDCOs) and Ward Development Committees (WADCOs), both of which are made up of locally elected members. These were enacted by the government following the Prime Minister's decree of 1982. In principle the role of WADCOs and VIDCOs is to channel development projects and problems from the local level to the district level. However, the institutions have been used by the ruling party to channel political messages to the people. Conflicts with traditional leaders and different ethnic groups have also militated against WADCOs and VIDCOs implementing some of their stated objectives. In terms of management of *Berchemia discolor* and other natural resources, the Councilor, who is the head of the WADCO, seemed to be more powerful than the VIDCO members or other WADCO members. There was no significant roles VIDCOs were playing in the



management of natural resources.

The mandate for RDCs, VIDCOs and WADCOs to allocate land to people has often been hampered by immigrants and challenged by traditional leaders. Immigrants seeking places to settle often by-pass the state institutions. Most immigrants prefer to be settled by the traditional leadership as a strategy to reduce bureaucracy and travel expenses involved in efforts to get permits to settle. More often-than-not, traditional leaders are bribed by settlers.

Though their efforts are compromised by a number of factors, several other state institutions are active in the ward. Active state institutions that have some relationship with management of natural resources in the ward include the following: Natural Resources Board (NRB), Department of Agriculture, Technical and Extension Services (Agritex), Ministry of National Affairs, Forestry Commission, Zimbabwe Farmers' Union (ZFU), and the local Member of Parliament (MP).

NRB is primarily concerned with encouraging farmers to make contour ridges. Contour ridges are believed by the department to reduce soil erosion. Locals view them as forced labour and actually causing soil erosion by concentrating running water in one place. The issue of contour ridges is politicised by the local MP who is reported to be going around campaigning against their construction with the hope of gaining popularity from the locals. Conservation officials argue that the MP is capitalising on "Tonga laziness." Opposition towards contour ridges has also been coming from the traditional leaders.

Agritex provides agricultural advice to local farmers. It is active in both dryland and irrigation cropping. In terms of natural resources management, Agritex claims that it is contributing by asking farmers not to cut trees to reduce deforestation.

The Ministry of National Affairs employs locally-based extension agents known as Village Community Development Workers (VCDWs). These have a mandate to encourage community projects at the village level. In the study area, the workers are working closely with non-governmental and state institutions, particularly in community mobilisation.

Forestry Commission is a parastatal which has a mandate to encourage forestry and woodland management in communal areas. In the study area, the institution is primarily active in national tree planting days, a once per year occasion. On those days, Forestry Commission provides seedlings, and fencing for woodlots. However, the exercise has not taken meaningful steps in encouraging reforestation of degraded woodlands. In the past, Forestry Commission encouraged planting of exotics. However, more recently, the Commission has been involved in planting

and managing both indigenous and exotic trees. At present discussions are underway between Forestry Commission and Agritex to make a joint reforestation project. Forestry Commission is expected to provide seedlings while Agritex will monitor tree planting and management.

ZFU is an institution with a mandate to represent small-scale farmers. Little was mentioned about ZFU's participation in natural resources management.

Despite conflicts among various state institutions, there is an agreement that deforestation is increasing in the Ward. However, local farmers argue that "deforestation" is an officially-created myth aimed at harassing them. They support their argument by saying they have been cutting down trees since time immemorial and that trees are regenerating faster than the rate of depletion.

CAMPFIRE

Binga District is one of the several CAMPFIRE² Areas in Zimbabwe. Part of Kariangwe Ward falls under the CAMPFIRE hunting zone. At ward level, CAMPFIRE is one of the major sources of income, having supported the building of classroom blocks, teachers houses and hostels at Kariangwe Training Centre. CAMPFIRE has also supported co-operatives such as Kariangwe Community Agricultural Project. CAMPFIRE provides much support at ward level but informants complained that it has not helped at household level.

There are plans for CAMPFIRE to fund construction of a courtroom at the chief's residence. However, the idea has led to hot debate among the members of the ruling lineage. They have interpreted the construction of the courtroom at the current chief's home as a plot to ensure that only his close relatives can be future chiefs. The permanent building has been interpreted to mean permanency of chieftainship in one family. Youths are suggesting that a central place should be chosen for the building. Since the chief is an ex-officio member of the RDC CAMPFIRE committee, the youths suspect that the committee is trying to bribe the current chief, in return for covering up embezzlement of funds from CAMPFIRE.

CAMPFIRE has also not managed to completely eradicate poaching in the area. Poachers often find local support forthcoming. For example, a letter circulated by the CAMPFIRE Manager (at the RDC) to all local CAMPFIRE secretaries reported that a total of 5 elephants had been killed by poachers in the last few months. Four elephants had been killed in Lusulu. The

² Communal Areas Management Programme for Indigenous Resources

Lusulu Area is largely inhabited by immigrant groups, mostly, Ndebele and Karanga ethnic groups. The Ndebele and Karanga people were attracted to Lusulu by the good soils. They are alleged to be committed more to farming than CAMPFIRE.

Ethnic divisions shape the success of projects such as CAMPFIRE. The Ndebele and the Shona view wildlife as an impediment to their agricultural activities. On the other hand, the Tonga interpret the passive role played by the immigrants in CAMPFIRE as an indication of lack of co-operation with the Tonga. Ndebeles were accused of being responsible for killing the elephants because of what was described as their "insatiable desire for elephant meat." The Tonga were also against poaching of elephants by individuals, because it reduced the annual "quota" of animals allocated to the Ward. In response to increases in poaching activities in the area, the District CAMPFIRE Manager has proposed to halt the approval of new gun permits and confiscate all guns used to kill wild animals.

Apart from conflicts with crop and livestock producers, CAMPFIRE still has to solve the issue of Problem Animal Control. Locals want the officials to respond early and also to pay compensation for damages caused by animals. Safari Operators were alleged to be killing animals without following contractual agreements. The Department of National Parks and Wildlife Management was said to be slow in responding to problem animals. Male youths are complaining about poor representation in CAMPFIRE. They only contribute in limited capacities, normally when asked to help with mathematical calculations. Women are also under-represented in CAMPFIRE. Only one woman is a member of the CAMPFIRE Committee. The youths complain that some of the projects funded through CAMPFIRE are only aimed at people with families. Informants also complained about corruption within CAMPFIRE leadership. For example, some influential local leaders are alleged to have borrowed money, running into thousands of dollars each, from CAMPFIRE. No collateral security was asked for and most of the money has not been paid back.

As evidenced in the above discussion, CAMPFIRE is largely concerned with large game animals. At present there is only a small component dealing with other natural resources (see Box 1).

The Binga Craft Centre

The Binga Craft Centre (BCC) is probably the most important institution in respect to commercialisation of crafts in Kariangwe Ward, as well as other parts of Binga District. This has been operating from Binga Town for a decade ago. The project was initiated by a

Danish organization, the Danish Volunteer Service. The centre continues to get most of its support from Denmark.

Support for the BCC includes purchasing of crafts from women who are registered as craft producers. The club has 3000 women affiliated to it. BCC grades the products and marks prices. Poor quality products are sold in Zimbabwe while good ones are exported to Europe. The arrangement is that BCC buys all the crafts produced by affiliated members. BCC buys on average 30 000 baskets per month from registered club members. This figure gives an indication of the quantity of bark needed for decorating the crafts. However, BCC faces the problem that women now tend to over-produce and the association sometimes fail to sell all items it purchases from women. Women are very happy with the work being done by the project.

BCC also holds workshops with craft producers, at which issues such as the harvesting and management of natural resources are discussed (especially illala palm and *Berchemia discolor* bark). Some of the rules being advocated by BCC: (a) bark harvesters are not allowed to ring bark; (b) bark harvesters are not encouraged to cut too deep; (c) harvesters are not supposed to use very sharp tools when collecting the bark. One of the main problems encountered is that the rules, though agreed at the meetings are hardly followed. Another problem is that, due to financial constraints, BCC cannot provide pamphlets and conduct workshops with unaffiliated craft producers. There are probably as many unaffiliated producers as there are affiliated producers.

BCC has failed to register all craft producers. One of the reasons for not registering with BCC as the low prices offered by the BCC. Some weavers mentioned that they are dissuaded to join BCC because of the time people spend working with affiliated clubs. Others said that they could not afford the "high" membership fees of \$5-\$10 per month.

Those not affiliated to the BCC have started to form independent clubs. Interviews suggested that articulated resource harvesting rules used by these clubs are a replica of those set by BCC. This is largely a strategy by the independent clubs to legitimise themselves, as well as show that they are operating within the guidelines set by an officially recognised organisation. Both BCC and independent club leaders have no mechanisms in place to enforce the rules.

Upon further investigation it was found that craft producers in independent clubs do not follow any specific rules. Their practices are often against those advocated by BCC. For example, they seem to prefer harvesting bark from a single tree that was described as the "weeping tree" or "*Mwii ulila*". The logic in harvesting bark from a tree that has been harvested

before was that it obviously has high quality bark and that it produces sour fruits.

In the final analysis, the Binga Craft Centre has not yet embarked on active campaigns to stop unsustainable management of *Berchemia discolor*. During the time of the research, the Research Officer was busy "making reconnaissance trips" and planning to make field trips aimed to educating weavers, particularly telling them not to cut down branches when harvesting fruits. The Binga Craft Centre is also planning to embark on reforestation projects involving *Berchemia discolor*.

Utilisation of other NTFPs and sources of income

Apart from utilising crafts made from *Hyphene petersiana* and dyed with bark from *Berchemia discolor* local people earn incomes from several other activities, some of which involve harvestings of non-timber forest products. Local people, particularly men, are involved in carving stools, drums and doors. Informants claim that carvers get much money and that there is a high demand for the products, especially doors. The price for a door ranges from \$500 to \$600. Stools sell for \$15 to \$25, each. According to informants, the current buying prices for stools and chairs is encouraging further harvesting of trees. Apart from carvings, locals also sell used artifacts as antiques (e.g. carved doors, head rests). Antiques are very popular with buyers, particularly tourists visiting the area or traveling along the road between Victoria Falls and Bulawayo. Again, there are no controls in place to check the selling of carvings and other antiques.

Women and children market wild fruits such as *Berchemia discolor*, *Adansonia garkeana*, *Adansonia digitata* and *Tamarindus indica*. *Tamarindus indica* fruits are very popular and are also known by locals to be nutritious, particularly for children. Tamarind fruits are often processed and mixed with maize-meal porridge. The pods/fruits are sold in small bundles at \$1.00 per bundle.

Commercialisation of wild fruits and crafts has resulted in conflicts. Fruit sellers cut branches when harvesting fruits. Bark harvesters are against the cutting down of branches because trees end up dying. Cutting down of branches or the whole tree when harvesting fruits is more serious with the Tamarind tree.

Locals, particularly young men, produce gum from *Colospospermum mopane*. The gum is used in craft production. The harvesting of mopane gum is common in Tobwe Village where many mopane trees show signs of having been wounded. Although largely confined to this part of the country, the use of mopane

gum has shown to be a potential threat to the survival of mopane trees.

Quelea birds are another forest product being sold by locals. The birds are trapped using various techniques. The activity is done by young boys, especially between April and August. The birds are sold for \$0.20 each.

Crop production is important for people owning plots in the irrigation scheme. Culturally, men own most of the land and yet labor is provided by women and the selling of the crops is controlled by men. This is ironical because Tonga society is quasi-matrilineal and yet men control most of the means of production and make the bulk of decisions on the utilisation of incomes. In terms of agriculture, cattle production is important, but, for only for those households that own some cattle. Chicken production is conducted by a few women. Chickens sell between \$20 and \$30, each. Some of the young men and adults raise and sell a newly-introduced variety of guinea fowl. The guinea fowls sell between \$30 and \$60, each. The activity is very popular and informants mentioned that they buy the birds locally, as well as from neighbouring Zambia. The birds were reported to be easy to raise, as well as being prolific breeders, laying an average of 90 eggs in a single year.

Youth and other men also earn a living by joining local co-operatives. Urban employment, though difficult to get, is another survival strategy. However, locals end up getting low paying jobs because of low education levels. For girls and young women, craft production still remains the major source of income.

Though illegal in the district, beer brewing and selling is another common income generating activity in the study area. Brewing and selling of traditional beer is encouraged by the remoteness of the area in relation to modern business centres. Though the price at which beer is sold is very low, \$2 per litre, informants mentioned that beer brewing is lucrative. The major problem with selling beer is that locals are said to fight a lot at the beer parties. Fighting at beer parties prompted the police to attempt to ban commercial beer production. In response to harsh controls by the police, locals have instituted their own rules. The local rules prohibit presence of spears, axes or any other object that can cause grievous harm

Resource availability and tenure

Although the population of existing and usable *Hyphene petersiana* (Ilala) plants in Binga District has decreased tremendously, neighbouring Simatelele Ward still has some populations remaining. Local people from the study area have access to those plant resources even though they are in another ward. Continued access to ilala palm resources in another

ward has resulted in the continued harvesting of *Berchemia discolor* bark in Kariangwe. Informants, particularly those working in the field of natural resources management, speculate that due to current levels of ilala harvesting by people from Kariangwe Ward, Ilala resources in Simatelele will soon be depleted.

When palms were depleted in Kariangwe Ward (where basket making started), Chief Siansali of Kariangwe area asked Chief Simatelele to allow people from Kariangwe to have access to the palm in Simatelele. The two chiefs agreed because the people that were going to benefit from the palm were of the same tribe. Unfortunately for this agreement, the CAMPFIRE committee claimed that it owned the resources and suggested that all people who live outside of Simatelele Ward are supposed to pay a charge of \$5.00/day for harvesting the palm. Although this is a very small figure as compared to what the weavers get from the sale of the baskets, the policy was difficult to implement.

Harvesting of natural resources from other villages is a common practice in Binga. Villagers from areas with fewer resources freely cross over to the other villages. Administrative boundaries mean nothing more than just arbitrary lines to separate villages on a map.

It is likely that locals will turn to other dye substitutes, as *Berchemia discolor* declines in the study area. Locals mentioned that one of the likely substitutes is a shrub locally known as *Musiziya* (unidentified). Information obtained suggested that *Musiziya* leaves produce a better dye to the one derived from *Berchemia discolor*. However, most young craft weavers lack the technical knowledge on how to extract dye from that plant. Many people continue to use dye from *Berchemia discolor* because of their already acquired knowledge. They also argue that *Berchemia* dye is easy to process. Another problem is that the leaves of the substitute are only available during the rain season when most craft producers are also busy in their fields. Informants also mentioned the possibility of using carbon extracted from duplicating papers as a possible substitute. But they complained about the poor quality of the carbon dye and the possibility of it fading within a short period.

Economic value and marketing

Berchemia discolor is highly valued as a source of dye, food and income for most of the women. It is one of the few trees that are left in crop fields during land clearance.

Commercialisation of crafts dyed with *Berchemia* dye has resulted from a number of socio-economic factors. Persistent droughts over the last decade were given as the major reason for commercialisation.

Informants mentioned that crop harvests have declined and this has led many locals to turn to commercial production of crafts. Low yields are due to a combination of factors, including droughts, wild animals and poor soil fertility. Commercialisation has also increased because young women who fail to go for secondary education have no other meaningful sources of income. Most of these girls fail to get plots in the irrigation scheme.

On average a woman makes about 4-5 baskets per month. It is also estimated that the district has about 6 000 or more commercial craft producers. These figures give a range of about 24 000 to 30 000 baskets produced in a single month. In terms of financial returns it can be estimated that selling a basket for an average of \$40 produces a gross monthly income of between \$96 000 and \$1 200 000. This indicates that substantial revenue is generated though a large proportion of it may accrue to middlemen.

Money realised from the sale of the baskets is spent mostly on food. Women are responsible for securing food for the family. Increases in food prices also mean that the craft producers are left with no savings. An average family requires two buckets of maize meal every month at a cost of \$90 each. Therefore, the family uses \$180 per month which is almost the total earnings from crafts per month.

Apart from BCC there are numerous other buyers of crafts. Middlemen largely capitalise on the failure by women to organise themselves and sell their baskets in towns where prices are higher than those offered by the BCC. Social factors also militate against women's inability to sell their crafts outside villages. For example, Tonga culture strongly forces women to stay at home and tend fields and children while men go to town to look for jobs or spend most of their time drinking. On the other hand, men refuse to sell crafts on behalf of women as crafts culturally fall within the female domain. Women also fear that men will confiscate all the money derived from selling crafts and use it to buy beer and entertain prostitutes.

Middlemen have found access to the craft industry because the Binga Craft Centre is not able to purchase all the baskets. This includes baskets from unregistered weavers. Middlemen include locals and other people from major towns such as Harare (760 km) and Bulawayo (600 km). Middlemen often put a 60% profit margin on all the products they sell in town. The mark-up was reported to exceed 300% when selling to tourists. Box 3 presents the case of one of the most successful local middlemen.

Conclusion

It is well recognised by all the stakeholders that *Berchemia* is a high value resource. Efforts by the

The late Mr. J.M. extensively benefited from the selling of bark on. He managed to buy a car, open a local football club by buying a football kit and providing "equipment" for the players. He had local partners when the players had a match. One young man who used to play for the club had claimed that the sponsor used to buy a lot of beer at once and he was rich. Mr. J.M. managed to be involved in some of the money in fishing boats and used to do some work of the profit to the community work. Before starting his local club, Mr. J.M. was an unemployed young man who had only a few friends of colleagues. The fact that Mr. J.M. was able to do all these things is an indication that he owned a lot of money. From his family of Tonga origin.

Binga Craft Centre to promote sustainable practices by preparing pamphlets, may appear meaningful to natural resources researchers but their value to the Tonga fecundity is questionable. Though organizations manage most of the NTFPs exist at the local level, they do lack the necessary powers to enforce rules. Ethnicity seems to be a major factor influencing the legitimacy of local organizations. The demise of traditional institutions means that local management of natural resources is more difficult, especially as the state organizations play no role in local resource management. CAMPFIRE focuses on large game; considerable refocus would be needed if it was to play a role in the use and management of non timber forest products.

In addition, the pamphlets are only distributed to club members who are affiliated to the Binga Craft Centre. This excludes about half the people engaged in commercial craft production. Rules set by the Craft Centre and by independent clubs are not strictly enforced.

Efforts have to be made in terms of reversing the current *Cornucopia Approach* towards natural resources. Local people continue to believe that natural resources are infinite. This attitude will definitely lead to further resource depletion and perhaps local extinction of some of the natural resources, particularly *Berchemia discolor*.

Technical advice draws largely on the "woodlot model." Experiences elsewhere have shown that "woodlots" or communal plantations are not meaningful way of addressing common pool resources. Issues of tenure, access and equity seem to underlie most of the failures in relation to such models. In Binga, it is highly likely that the people who will plant the resources are largely women, who as discussed, do

not own the land. The other scenario and fear expressed by most women is the issue of security of the plants, particularly from the "vendor attached" clubs. Another complicating issue is the possibility that men will want to make crafts and may therefore take over the plantations from the women. Without a village based resource monitoring force and major changes in attitudes to *Berchemia discolor* and Illala palm sustainable harvesting is an unlikely scenario.

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