

CLUSA-NATURAL RESOURCE MANAGEMENT NON-TIMBER MIOMBO FOREST PRODUCT RESEARCH

FROM EASTERN AND WESTERN SIDES OF CHIULUKIRE LOCAL FOREST,
EASTERN PROVINCE, ZAMBIA



CONCLUSION

Fieldwork: Jan – Feb 2000

Researched and compiled by
Grace Mutale
and
Choolwe Haamukwanza

TABLE OF CONTENTS

<u>ACKNOWLEDGEMENTS</u>	<u>i</u>
<u>INTRODUCTION</u>	<u>iii</u>
<u>1. OBJECTIVES</u>	<u>1</u>
1.1 MAIN OBJECTIVES	1
1.2 SPECIFIC OBJECTIVES	1
<u>2. METHODOLOGY</u> 1	
<u>3. PLACES VISITED AND DURATIONS</u>	<u>1</u>
<u>4. FINDINGS</u>	<u>3</u>
4.1 SUNDE (BROOMS)	3
4.2 HONEY	8
4.3 BAMBOOS	13
4.4 MUSHROOMS	17
4.5 KATETE MARKET	19
4.6 CHIPATA MARKETS	20
<u>5. PROBLEMS FACED</u>	<u>21</u>
5.1 PROBLEMS FACED BY THE VILLAGERS IN MARKETING OF THE PRODUCTS	21
5.2 PROBLEMS FACED BY THE RESEARCHERS	21
<u>6. RECOMMENDATIONS</u>	<u>22</u>
<u>7. CONCLUSION</u>	<u>22</u>

ACKNOWLEDGEMENTS

We would like to thank the program co-ordinator, Mr. John Heermans for giving us the opportunity to carry out this research. It was both a learning experience and a chance for us to gain some experience out in the field. Our thanks also go to Cecilia Polansky and Mr. Samuel Simute for their encouragement and support and the knowledge that they shared with us. We would also like to thank the facilitators who assisted us in taking us around to visit the villages far from our posts, the villagers we interviewed and other villagers for welcoming and accommodating us in their midst. Lastly we would like to thank all the members of staff at CLUSA for their friendliness and moral support.

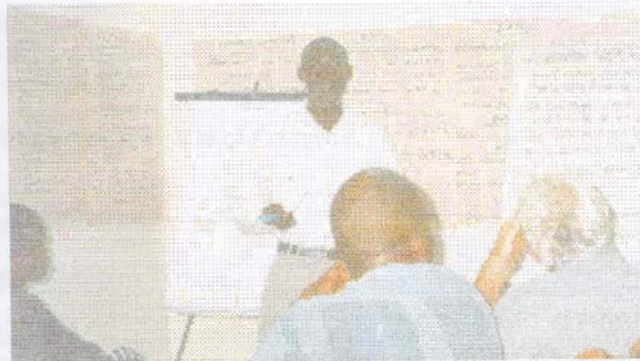
INTRODUCTION

The following report is about a research that was carried out on non-timber forest products in Chiulukire Local Forest.

Non-timber forest products are also known as minor forest products and as the name suggests, they are products obtained from the forest other than timber or wood. A common misconception is that only timber or wood is obtainable from the forest. However, there are a number of other products that can be obtained from the forest such as; honey, mushrooms, bamboos, sunde brooms, caterpillars, fruits, tans/dyes. Most of these products are a common sight on our markets and even in some of our shops and it was on this that the research was based. It focused on the non-timber forest products that are found in the Chiulukire Local Forest and how the surrounding villages exploit these products by either using these products for home consumption or by selling them in markets and other towns.

The products of interest were; mushrooms, honey, sunde brooms (*Vellosia equisetoides*) and bamboos (*Oxytenanthera abyssinica*). Other products are also found in the forest like fruits, fibres, caterpillars, medicines, but these are not usually sold.

The product collection methods were documented by accompanying collectors during collection and by photographing the process. Interviews were conducted to determine collection techniques, quantities collected, processing done to get the finished product; and a market research was also done on these products, i.e. prices, markets and where products are sold. The report thus comprises tables of collection information, village market information, and also market information from Katete and Chipata. Problems faced by the villagers during collection and marketing of the products, as well as those faced by the researchers are also covered, followed by recommendations and a conclusion marking the end of the report.



Results of the market study were presented to CLUSA and then used in the Chiulukire Management Plan.

1. OBJECTIVES

1.1 MAIN OBJECTIVES

To carry out a research on non-timber forest products in Chiulukire Local Forest, both east and west of the forest. See attached terms of reference.

1.2 SPECIFIC OBJECTIVES

- To identify management issues and conflict resolution mechanisms
- Assess availability of markets/market potential and selling prices
- Assess seasons when NTFP are available
- Monitor collection techniques and processing of NTFP'S

2. METHODOLOGY

Questionnaire, semi-structured interviews and walk and talk:

Questionnaires included questions on the collection of the products, storage of these products, the processing done, markets where the products are sold, prices and quantities collected and sold. Please refer to the attached questionnaire.

Semi-structured interviews were just casual talks with the villagers without using the questionnaires.

Walk and talk methodology involved talking to the villagers when going to the forest to observe the collection techniques.

3. PLACES VISITED AND DURATIONS

26/01/2000 to 10/02/2000 – western side of the forest

Villages visited :-

Nthambwa Musonda, Kazungulile, Kambale, Kasanka, Kamkukute, Ndelemani, Mutaya, Mutopa and Kolowela

10/02/2000 to 17/02/2000 – eastern side of the forest

Villages visited :-

Kazembe, Tambala and Mkokeza

17/02/200 to 20/02/2000 – Katete

Places visited :-

New market, boma market, shops and roadside area before Msoro road junction

23/02/2000 to 24/02/2000 and 1/03/2000 – Chipata markets

Markets visited :-

Kapata market, Musatdabwe market, Navutika market, Magazine market, Diakanane market and Kawumbwe market

4. FINDINGS

The findings are presented in the form of tables for the collection and market information of the products. Following this, are tables and related information on the Katete and Chipata markets. The main focus was on honey, sunde (brooms), bamboos and mushrooms. However, other non-timber forest products such as caterpillars are also discussed under the Chipata and markets.

4.1 SUNDE (BROOMS)

The botanical name of sunde is *Vellosias Equisetoides*. It is a grass and is characteristic of hilly/mountainous areas. The sunde are found throughout the \ year, although they tend to harden in the dry season. They grow to an average height of about one (1) metre with a diameter of about ten (10) cm. The sunde have an outer covering which has a brownish – black colour with very small fine thorn like projections and they have long narrow green leaves. It is these sunde that are used to make the brooms.



Some problems in sunde collection include:

- In the dry season, the sunde are hard and this makes it difficult for the collectors to remove the outer covering
- Collectors usually have to go deep into the forest to collect them (far from their villages)
- There are encounters with snakes in the forests

TABLE 1: SUNDE COLLECTION INFORMATION

VILLAGE	COLLECTION PERIODS	TRIPS PER SEASON	(# OF STEMS/TRIP) COLLECTED	NUMBER OF M/F PER TRIP	COLLECTION TECHNIQUE	SUBSEQUENT PROCESSING	STORAGE
Nthambwa Musonda	All year, but usually done in the rainy season	Varies	20-50 per trip	2-3 males only	Cutting using an axe, heaping together, removal of outer covering by hitting against a tree stump or stone (if dry soak in water to make it easier to remove outer covering), separation of individual strands, bundling together	Assortment into different lengths, tying with fibre, weaving of miaza onto broom of the broom), levelling with an axe	Done to come and sell in the dry season (when sunde are difficult to work with) Done by putting in sacks and keeping them where termites cannot reach and can be stored for more than a year
Kazungulle	All year	Varies	25-50 per trip	2-5 males only	As above	As above	Rarely, but if done it is while looking for market for product Brooms are put in sacks or just bundled together and can stay for over a year No storage done since brooms are only made when an order is made
Kasanka	All year	4 times per month in rainy season & twice per month in dry season	About 50 per trip	2-3 males only	As above	As above	
Kambale	July - December	Varies	20-30 per trip	4-6 males only	As above	As above	Done to sell in the dry season when sunde are difficult to work with Stored in sacks & can be stored for two years or more
Kazembe	All year	Three times per week	40-50 per trip	2-4 males only	As above	As above	Done to sell later usually when the retailer does not have money to hire transport to take product to market or if he is busy in the fields Storage is the same as above and product can be stored for a year or more
Tambala	All year	3 times in a week	30-35 per trip	1-5 males only	As above	As above	As above
Kamukukute	All year, but usually done in the rainy season	2 trips per season	Bundle of about 75 cm high	1 male	As above	As above	As above

NOTES ON TABLE ABOVE

1. The collection techniques are basically the same in these villages.
2. Tambala and Kazembe villagers sometimes just get the finished product from villages in and outside the forest but they also go to the sunde from the western side of the forest because they have exploited the sunde so much on their side of the forest that the small regenerating ones found there.
3. The soaking of the sunde in water is only done for a few hours before hitting against a tree stump or stone whilst still wet.
4. Mlaza comes from *Borassus Aethiopicum* which is a palm and it is the leaves that are used i.e. after drying them.
5. The weaving of mlaza is done to add value and for decorative purposes.

collect
there are only



Removing the outer covering of sunde by hitting on a tree stump.



Brooms can have different degrees of processing. Three kinds of brooms are for sale at Kapata market: woven with mlaza on left, sunde with part of outer covering as a handle, and bundled grass species for outdoors sweening

TABLE 2 : VILLAGE MARKET INFORMATION FOR SUNDE

VILLAGE	MARKET	TRANSPORT TYPE & COST ONE WAY	QUANTITY SOLD PER UNIT OF TIME	WHO BUYS	PRICE/ UNIT	GRADING BY WHO & HOW	MONTH OF HIGHEST PRICE & HIGHEST PRICE	MONTH OF LOWEST AND HIGHEST PRICE	REASONS FOR FLUCTUATIONS IN PRICE	IS PRICE DIFFERENT FOR DIFFERENT CLIENTS
Nthambwa Musonda	home use, nearby villages and Lusaka (before 1992)	oxcart-K15, 000 to roadside and trucks to Lusaka	varies	women	K500 in villages and K800 Lusaka	size, processing done, transport costs Grading done by both men and women	June-Nov K1, 000/ broom (biggest)	December - April K500/broom (biggest), K800/broom in Lusaka	processing, transport costs, period of year	yes, if whites or people driving are buying, the prices are increased
Kazungulle	Katete boma and nearby villages	manually& bicycle if bicycle is hired - K1,500-K2000	15-20 brooms/ day	mostly women	K250- K300	size, processing, transport costs grading done by men	no specific month but prices are increased when the brooms are taken to the boma K500/ broom	no specific month K100/broom	income of buyers (in the villages) and transport costs	yes for the same reason as above
Kasanka	home use, roadside, Tambala (orders)	manually or bicycle no charge	25 brooms/ month	men & women	orders- K150 & Katete K250- K300	no grading (makes only one size)	no change (same price)	no change (same price)	no fluctuations in price	no
Kambale	home use, villages, Katete boma and Lusaka	bicycle K3,500	village- 10-15/ day; Katete 30-40/day	women	village K350 & in Katete; K400- K500	size, processing, men do the grading	June-August K600/ broom	Jan-April K300/broom	income of buyers (in the villages), grading done transport costs	yes when whites are buying or those driving and also when taken to Katete when orders are made the prices are reduced

TABLE 2 : VILLAGE MARKET INFORMATION FOR SUNDE -- CONTINUED

VILLAGE	MARKET	TRANSPORT TYPE & COST ONE WAY	QUANTITY SOLD PER UNIT TIME	WHO BUYS	PRICE/ UNIT	GRADING BY WHO & HOW	MONTH OF HIGHEST PRICE & HIGHEST PRICE	MONTH OF LOWEST AND HIGHEST PRICE	REASONS FOR FLUCTUATIONS IN PRICE	IS PRICE DIFFERENT FOR DIFFERENT CLIENTS
Kazembe	home use, villages, Katete, Chipata and Lusaka	bicycle to Katete K750; vehicle to roadside K5,000; bus to Chipata K5,000 bundle of brooms + K9,000 person; to Lusaka (1998) bundle K8,500+K16,000 person	in Katete 50/day Chipata; 2 bundles (about 350 brooms per bundle)/month; Lusaka 2 bundles (about 350 bundle) in two months	mostly women	in village & Katete K250-K300; Chipata K500; Lusaka K800; orders - K200, K250, K500 respectively	no grading	no change in price	no change in price	change depends on when orders are made	yes as above
Tambala	home use, villages, Katete, Chipata and Lusaka	bicycle to other village K2,000; vehicles to Katete, Lusaka, Chipata K7,000; K6000/ bundle of 300 brooms & K15,000/bundle	villages 20/day; Katete 40-50/day Chipata 70/day Lusaka 250-300/two weeks	mostly women	village K200; Katete K250; Chipata K300; Lusaka K800- K1000 orders - K150, K200, K250, K500-K600 respectively	no grading done	Sept-Jan prices increased by about K200-K500/ broom Lusaka K1,500 broom	June-Oct reduced by about K200-K600/broom Lusaka K-450/broom	fluctuations are dependent on the availability of grass brooms and when there are a number of people selling the sunde brooms	yes as above

NOTES ON TABLE ABOVE

- The villagers on the eastern side of the forest are more into this business than those on the western side.
- The grading done in terms of size, is such that if the broom is big/long, the broom will be more expensive and vice versa; and in terms of processing, some villagers (Nthambwa Musonda) make some brooms without weaving miiza onto the broom and these are cheaper than those with miiza; and when transport costs are high, the prices of the brooms are also increased.
- For Nthambwa Musonda and Kambale, the prices are highest between June and November (dry season) because the sunde are hard at this time of the year and the collectors have problems working with them, hence the prices are increased; and the prices are lowered between December and April because the sunde are soft at this time of the year (rainy season).
- In the case of Tambala, prices are highest during this period (September-January) because this is the period when grass brooms are out of season and hence there is no competition from the grass brooms so prices are increased and the prices are low between June and October because the grass brooms are in season and hence prices are lowered.

4.2 HONEY

Traditional beekeeping may be defined as the art of keeping bees using traditional methods such as barkhives for production of honey, bees wax and even propolis. Propolis is a red or brown resinous substance collected by bees from buds for use in constructing hives (Concise Oxford Dictionary, Ninth Edition). Propolis can be used to bait hives.

Honey as a product can be used for food and barter, while at the same time providing income to the villagers when sold.

Traditionally in the study area, people do not utilise beeswax. They are primarily interested in the honey. This is largely due to lack of knowledge on the uses of beeswax.

It was discovered in the study area that to make barkhives, the trees are ring-barked. The bark to make the hive can be obtained either from a standing tree or the tree can be felled. The process involves cutting of two rings around the trunk of a tree. The rings are spaced according to the desired length of the hive. After making the rings, the bark is split in between the rings. Then using an axe the bark can be removed from the tree trunk. The process kills the tree. The most commonly used tree species by the people are *Julbernardia paniculata* and *Brachystegia* species.

During the research, it was discovered that there are more Traditional Beekeepers on the west of Chiulukire Local Forest than on the east. All those we talked to use mainly propolis and sometimes beeswax to bait their hives. A block of propolis or beeswax is held close to a flame of fire and then the softened or molten part of the block is smeared inside the hive. Having baited, the hive is hung or perched on a fork of a tree in areas where bees normally swarm.

The collection periods differ from one area to another and this is due to differences in tree species and their flowering seasons. Some amount of honey is usually left after cropping to prevent bees from absconding. Bee stings



Some of the problems described by beekeepers include:

- Problems in hanging the hive up the tree
- There are also threats from snakes in the tree and hives sometimes as cropping is done at night

TABLE 3. HONEY COLLECTION INFORMATION

Village	Collection Periods	Trips Per Month	Amount Collected (comb honey)	Male or Female/ Trip	Collection Technique	Subsequent Processing	Storage
Kamkukute	December, May to June	3 trips	1 (15lit) bucket/ trip	1 - 2, males only	Equipment required: a knife; bark fibre rope for hoisting and lowering bucket; smoker (dry sundle); fire or matches; bucket to put honey. Climb tree to where hive is. Smoke the hive entrance. Open the grass-door. Start cropping using knife. Place combs in bucket. When finished one side replace grass-door and switch sides to crop from the other end, after cropping lower bucket to the ground and take home.	At home the honey combs are crushed. Most of the honey not processed but some boiled on demand by customers and for home use. Both men and women process.	Stored in clay pots, bottles if it is boiled as well as in plastic containers. can stay for more than a year.
Tambala	Jan - Feb, Jun - July, Nov - Dec	6 trips	1-2 (20lit) bucket/ trip	2 -4, males only	Same as above	Honey usually sold without boiling it, but for consumption it is boiled to store it better (prevent rotting).	Stored in bottles, plastic containers and clay pots. can stay for more than a year.
Mutaya	May - Feb	18 trips	1 (20lit) bucket/ trip	2, males only	Same as above	Left in the container for sometime to settle. Then combs can be separated from liquid honey, it is also boiled to add value and get wax for candle making, most of the honey is boiled.	Stored in clay pots, buckets and cooking pots. Can be stored for five months and more.
Kambale	May - Jun, Oct. - Nov	4 trips	3 (20lit) buckets/ trip	atleast 2, males only	Same as above	All the honey is not processed.	Stored in Nsupa (calabash) or Chipanda and in clay pots. Stored for 2 years
Kazungulle	Feb - April	6 trips	2 (20lit) buckets/ trip	2 - 3, males only	Same as above	Honey is squeezed out of the combs and then sieved using a fine cloth net. Sometimes it is left in the bucket so that over time honey settles to the bottom and combs on top (no boiling).	Stored in bottles and plastic containers. Can stay for over six months.

TABLE 4. VILLAGE MARKET INFORMATION FOR HONEY

Village Name	Location	Transport type and cost	Quantity sold/day or other (comb honey)	Who buys	Price/unit	Grading by who and how	Month of highest price + price (comb honey unless specified)	Month of lowest price + price (comb honey unless specified)	Reasons for fluctuations	Is price different for different clients
Kamkukute	Katete, and (home use)	Bicycle, K2,000/ trip Katete and back	1 (15lit) bucket/ day in Katete	Both men and women	K10,000/ bucket K500/ cup(tea cup)	Grading by men, -thick honey, -watery honey -pollen honey	Same price, K10,000/ bucket K500/ cup(tea cup)	Same price, K10,000/ bucket K500/ cup(tea cup)	Grading (see column on grading)	No
Tambala	Villages nearby and far away	manually and bicycle K2,000/ trip to villages	1½(20lit) bucket/ day within the villages	mostly women and men	K20,000/bucket, K500/ cup(tea cup)	No Grading	uniform price K20,000/bucket, K500/ cup(tea cup)	uniform price K20,000/bucket, K500/ cup(tea cup)	No fluctuations (see notes at end of table)	Rarely yes, see descriptive
Mutaya	Villages and home use	Manually and bicycle	1 (15-20lit) bucket/ day in villages	Both men and women	K10,000/ bucket K500/ cup(tea cup)	Grading by men, -honey without pollen K500 / cup, -honey with pollen K250/ cup	Jun-Dec when villagers have money from farm sales (K500/ cup)	Jan-May peoples buying power low K300/ cup	Grading (see column on grading)	No
Kambale	Boma/town Village (home use)	Bicycle K2,500/ trip, town or village	1 (20lit) bucket/ day	.women	K500/ cup and K14,000/bucket	No grading	Uniform price in all months	Uniform price in all months	No fluctuations	Yes, though rarely. If orders are made prices are reduced by about K500- K1,000
Kazungulle	Boma/town Village (home use)	Bicycle K5,000/ trip(town/ village)	3(20lit) bucket/ day in katete	Men and women	K500/ cup (tea-cup)	No grading	Uniform price	Uniform price	No fluctuations	Same as the previous one

TABLE 5. BAMBOO COLLECTION INFORMATION -- continued

Village	Collection Periods	Trips/season	Amount Collected	Men or Women/Trip	Collection Technique	Subsequent Processing	Storage
Kambale	March to November	depend on orders	7 canes per trip	1, male only	cutting using an axe, debranching using the axe, splitting into desired lengths/sizes -bundle them and carry home	planing of pieces using a knife to smoothen them, drying the pieces and dyeing them if need be or painting them.	No storage done since chairs are made on order
Kasanka	Through out the year	one trip per week	10 canes for mataza, 2 stems for lichelo/ trip	1-2, males only	cutting using an axe, debranching using the axe, splitting into desired lengths/sizes -bundle them and carry home	planing of pieces using a knife to smoothen them, drying the pieces and dyeing them if need be, for dyeing-Combretum molle or Pterocarpus angolensis barks are boiled together with the pieces.	Storage done only for bamboo pieces and not for the finished product

CHIULUKIRE LOCAL FOREST

BAMBOO RECORDED DURING JULY 2000 INVENTORY

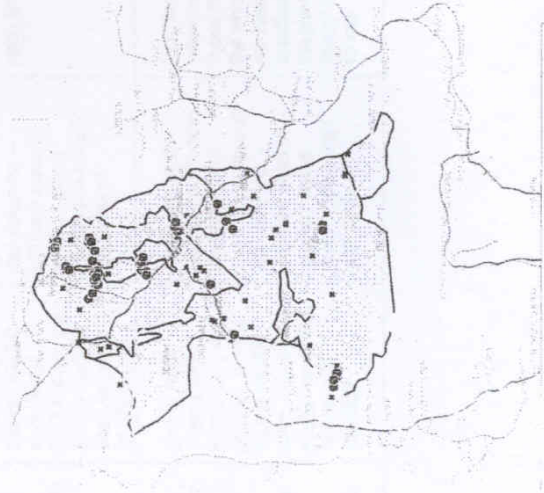


TABLE 6: VILLAGE MARKET INFORMATION FOR BAMBOO PRODUCTS

Village Name	Location	Transport type and cost	Quantity sold/day or other	Who buys	Price/unit	Grading by who and how	Month of highest price + price	Month of lowest price + price	Reasons for fluctuations	Is price different for different clients
Nithambwa Musonda	nearby villages, boma/town (home use)	bicycle and manually, k5,000/trip to katete.	about 5to6 mataza, malichelo & baskesper day	mostly women	big taza k1,500 each, big lichelo k2,500 each, big basket k2,500 each	grading by men and criteria used is sizes (small sizes fetch low money)	uniform prices during all months (see price / unit column)	uniform prices during all months (see price / unit column)	Grading influences the prices. Different sizes fetch different amounts of cash	Yes, if orders are made, the prices are reduced since clients are buying in bulk.
Kolowela	villages, boma/town (home use)	manually on shoulder, hence no transport cost incurred.	hats 10 to15 per month, baskets 5 to 8 per month	hats both men and women but baskets mostly women	big hat k3,500 each, small one k2,000 each, big basket k3,500 each & small ones k2,500 each.	grading by men and criteria used is sizes (small sizes fetch low money)	uniform prices during all months (see price / unit column)	uniform prices during all months (see price / unit column)	Grading influences the prices. Different sizes fetch different amounts of cash	No
Ndelema ni	nearby villages, boma/town	bicycle, owns one so no cost incurred.	Mataza 15to 20 per week, lichelo 10 to 15 per week	mostly women at times men too	big mataza k2,500 each, small ones k1,500 each, big lichelo k2,500 each, small one k1,500 each	grading by men, rarely by women too. Criteria used is sizes (small sizes fetch low money).	July to August when people sell farm produce -big taza k3,000 each, small taza k2,000 each, -big lichelo k3,000 each, small one k2,000 each.	Oct. to Feb. when people have hardly any money. Big mataza k2,000 each, small lichelo k2,000 each, small k1,000 each	-Seasons when people have money and when they don't. See previous two columns. - different sizes of product also a factor. See price / unit column.	Only for those clients buying in bulk - a reduction of about k5,00 for each item is made.
Tambala	villages near and far away, (home use)	bicycle as well as manually, k2,000 per trip for a bike load.	mataza and lichelos 20 to 30 per day, Nkhokwe 2-3 in three months	mostly women, rarely men too.	the largest taza is k14,000 each, and the smallest is k2,500 each, big lichelo k5,000 each, small one k1,000 each, big nkhokwe k35,000 & small one k3,000.	Grading by men, criteria used is by size (which influences prices)	June to August when people have money from sale of farm produce. largest taza is k14,000 each, big lichelo k5,000 each, big nkhokwe k35,000	Nov to April, when people hardly have any money. largest taza is k8,000 each, big lichelo k2,500 each, big nkhokwe is k20,000	-Seasons when people have money and when they don't. See previous two columns. - different sizes of product also a factor. See price / unit column.	Yes, for working class people, those driving and the whites. Prices are hiked drastically since the above are thought to have money.

TABLE 6: VILLAGE MARKET INFORMATION FOR BAMBOO PRODUCTS

Village Name	Location	Transport type and cost	Quantity sold/day or other	Who buys	Price/unit	Grading by who and how	Month of highest price + price	Month of lowest price + price	Reasons for fluctuations	Is price different for different clients
Nthambwa Musonda	nearby villages, boma/town, (home use)	bicycle and manually, k5,000/trip to katete.	about 5to6 mataza, malichelo & baskesper day	mostly women	big taza k1,500 each, big lichelo k2,500 each, big basket k2,500 each	grading by men and criteria used is sizes (small sizes fetch low money)	uniform prices during all months (see price / unit column)	uniform prices during all months (see price / unit column)	Grading influences the prices. Different sizes fetch different amounts of cash	Yes, if orders are made, the prices are reduced since clients are buying in bulk.
Kolowela	villages, boma/town, (home use)	manually on shoulder, hence no transport cost incurred.	hats 10 to 15 per month, baskets 5 to 8 per month	hats both men and women but baskets mostly women	big hat k3,500 each, small one k2,000 each, big basket k3,500 each & small ones k2,500 each.	grading by men and criteria used is sizes (small sizes fetch low money)	uniform prices during all months (see price / unit column)	uniform prices during all months (see price / unit column)	Grading influences the prices. Different sizes fetch different amounts of cash	No
Ndelemani	nearby villages, boma/town	bicycle, owns one so no cost incurred.	Mataza 15to 20 per week, lichelo 10 to 15 per week	mostly women at times men too	big mataza k2,500 each, small ones k1,500 each, big lichelo k2,500 each, small one k1,500 each	grading by men, rarely by women too. Criteria used is sizes (small sizes fetch low money).	July to August when people sell farm produce -big taza k3,000 each, small taza k2,000 each, -big lichelo k3,000 each, small one k2,000 each.	Oct. to Feb. when people have hardly any money. Big mataza k2,000 each, small lichelo k2,000 each, small k1,000 each	-Seasons when people have money and when they don't. See previous two columns. - different sizes of product also a factor. See price / unit column.	Only for those clients buying in bulk - a reduction of about k5,00 for each item is made.
Tambala	villages near and far away, (home use)	bicycle as well as manually, k2,000 per trip for a bike load.	mataza and lichelos 20 to 30 per day, Nkhokwe 2-3 in three months	mostly women, rarely men too.	the largest taza is k14,000 each, and the smallest is k2,500 each, big lichelo k5,000 each, small one k1,000 each, big nkhokwe k35,000 & small one k3,000.	Grading by men, criteria used is by size (which influences prices)	June to August when people have money from sale of farm produce. largest taza is k14,000 each, big lichelo k5,000 each, big nkhokwe k35,000 each, small one k20,000	Nov to April, when people hardly have any money. largest taza is k8,000 each, big lichelo k2,500 each, big nkhokwe is k20,000	-Seasons when people have money and when they don't. See previous two columns. - different sizes of product also a factor. See price / unit column.	Yes, for working class people, those driving and the whites. Prices are hiked drastically since the above are thought to have money.

Village Name	Location	Transport type, cost	Quantity sold/day	Who buys	Price/unit	Grading by who and how	Month of highest price + price	Month of lowest price + price	Reasons for fluctuations	Is price different
Kambale	village (home use)	manually (no cost is incurred)	4 chairs and at times a table in one month (when orders are made)	Men and women	k1,500 for an unpainted chair, k2,500 for a painted chair	Grading done by men i.e painting (see previous column on prices)	June to Nov. people have money after selling agric. products k2,000 per chair	Dec. to March, people hardly have money during this period k1,500 per chair	if painting is done, prices will increase, and vice versa.	No, prices don't vary regardless of clients.
Kasanka	villages	bicycle and manually own bike and no cost incurred	8 tazas per month, 13 lichelos per month	women	biggest taza k5,000, smallest k1,500, biggest lichelos k2,500, smallest k1,500	Grading done by men and criteria used is size. (see previous column on prices)	prices do not change regardless of month	prices do not change regardless of month	Size, if products are big they will be expensive and vice versa.	No, prices don't vary regardless of clients.



Some of the bamboo products produced by men and women of Chiulukire

4.4 MUSHROOMS

Mushrooms are a form of fungus and some are edible whilst others are poisonous. Mushrooms are found during the rainy season and their availability in the forest or fields is dependant on the frequency of the rains. There are over ten (10) species of mushrooms in the Chiulukire Local Forest and villagers on both sides of the forest pick the mushrooms. The women interviewed from Nthambw, Musonda and Kazembe villages said they do not sell the mushrooms they pick, the mushrooms are only for home consumption as a relish.

The table below describes eleven (11) species of mushrooms found in the forest.

TABLE 7: DESCRIPTIONS OF MUSHROOMS IN THE FOREST

SPECIES	COLLECTION PERIODS	DESCRIPTION
Bowakombo	November	Red and the stem grows deep into the ground
Ndelemya (Zanje)	December	White, quite big, the top is flat and the stem is short
Kalabelabe	Beginning of January Also in April	Yellowish colour, small and flat on top
Nthimbwa	December – January	Red, small and secretes milky substance when plucked
Chipindi	December – January	Mixture of red and white and slightly big
Manyame	February	Red-orange and small
Nyonzwe	February	Small and black
Bowafisi	November	Very big (largest specie in the forest), mixture of red and black, flat on top and very soft
Kachipande	February	Black, small and when plucked a milky substance comes out
Kalimtafu	February	White, small and hard
Katelela	January – February	On top black on the inside white and they are small

NOTES ON THE TABLE ABOVE

- Nyonzwe and Kalimtafu are found in the fields.
- Bowafisi are very soft such that before storing they are not boiled, they are just dried straight.



Collection of mushrooms in the forest

COLLECTION, PROCESSING AND STORAGE OF MUSHROOMS

For the collection of mushrooms, it is the women who go, and they usually go when they come back from the fields. The mushrooms are handpicked and put in mataza. A collector can collect about one (1) taza of mushrooms per trip. After the mushrooms are picked, only a bit of the fresh mushrooms are cooked for consumption. About 90% of the mushrooms picked are processed for storage purposes. The processing done is boiling all the mushrooms together in a big pot for about fifteen (15) minutes and then sun drying them. After drying the mushrooms, they are either wrapped in *Zabwani*, *Chipepe* or *Masuku* (*Uapaca Kirkiana*) leaves and tied with fibre; or they are put in sacks and put in the house. The leaves are used because they help to retain the flavour of the mushrooms, and they store longer in the leaves.

Processing is done to prevent the mushrooms from rotting and can be stored for about a year.

The problems noted by mushroom collectors include encounters with snakes.

Records of mushroom poisoning occur each year due to similarity in colour between some poisonous and non-poisonous mushrooms, eg the kalabelabe (yellow) and others. This was brought out by the Forestry Department personnel during presentation of the findings.



Mushrooms (Manyame) at Kapata market



4.5 KATETE MARKET

A research on markets (new Katete market and boma market) and shops in Katete as well as the roadside markets was also done. The following were the findings:

TABLE 8: MARKET SUMMARY OF KATETE

Product	Quantities	Order Prices	Retail Prices
Brooms, (Tsatirani Mwambo shop)	100 – 200 per trip at the beginning of the month.	K200 per broom	k500 per broom
Brooms, (villager going round selling in Katete)	25 brooms per trip from Tambala	K150 per broom, he orders them from Tambala and neighbouring villages.	K300 per broom
Mataza(big rectangular hauling baskets with no handle)(Tsatirani Mwambo shop)	50 mataza per trip per month	K500 per taza (big one), K300 per taza (medium size)	K4,000 per taza (big one), K3,000 per taza (medium size)
Malichelo(winning baskets[(Tsatirani Mwambo shop]	50 malichelo per trip per month	K300 per lichelo (smallest), K500 per lichelo (big one)	K2,000 per lichelo (big one), K1,000 per lichelo (smallest)
Honey, (stocked in all Indian shops)	not disclosed	K15,000 for a 20 litre bucket unprocessed (i.e not boiled but filtered)	K1,500 per bottle (jam bottle), K10,000 per 2.5 litre container (not boiled)
Honey, (villagers going round selling in Katete)	They carry a bucket from village to Katete (about 20 litres comb honey usually)	They don't order since they crop themselves from the villages)	K500 per cup, comb honey.
Mushrooms, (not found at any of the Katete markets but only along the roadside before Msoro road junction)	hand picked from nearby forests, about a taza per trip.	not ordered	K500 per heap
Mlaza (Borassus aethiopum)	20 palm leaves per trip/ month.	They don't order since they make themselves within the village.	big hatK3,500 each, small ones K2,000 each, big basket K3,500 each and small ones K2,500 each.

NOTES ON THE ABOVE TABLE

1. The Tsatirani Mwambo shop owner orders the mentioned products from Chiboko and Tambala.
2. Mataza and malichelo are also found at the new market sometimes.
3. In Katete the Indians were unwilling to disclose any information on honey.
4. For Mlaza (Borassus aethiopum), an axe is used for cutting the palm leaves, the thorns are removed using a knife. At home the palm leaves are sun dried for about two weeks in the rainy season, one week during the dry season. Once dry the palm leaves are split into smaller pieces using a knife. The pieces can be dyed or painted if need be. The baskets, hats and the Mlaza can be stored for three months or more in a dry place where moisture regimes are low and there are no termites. Grading by size is done and this influences the prices as shown in the table above.

4.6 CHIPATA MARKETS

In Chipata the markets visited are Kapata, Magazine, Musatdabwe, Diakanane, Kawumbwe, Navutika and Saturday markets. No products were found at Magazine market.

The table below shows products found in these markets, quantities ordered, order price and where the products are ordered from.

TABLE 9: MARKET SUMMARY FOR CHIPATA

Product	Quantity	Order price	Retail price
Sunde Kapata, Navutika, Saturday markets	Kapata: 50/100 from Chadiza; Navutika: over 100/trip from Katete villagers; Saturday: over 100/trip from suppliers who come to the market	Kapata: K300/broom Navutika: K300/broom Saturday: K300/broom	Kapata: K500/broom Navutika: K500/broom Saturday: K500/broom (with mlaza) and K400/broom (without mlaza)
Honey Kapata market	interviewees unsure of where the honey brought to the market comes from	unknown	2.5litres : K15,000 (processed honey) and K12,000 (comb honey)
Mushrooms all markets except Musatdabwe	Kapata: a 10kg basket from villagers along Malawi road Kawumbwe: 20litre tin from villagers along Malawi road Diakanane: unknown Navutika: unknown Saturday: big taza from along Malawi road	Kapata: K10,000 Kawumbwe: K15,000 Diakanane: unknown Navutika: unknown Saturday: K3,000 (medium taza) and K15,000 (big taza)	K500/heap at all the markets
Malichelo, Mataza, baskets Kapata (tazas only)and Saturday (baskets) and Navutika markets (malichelo)	Kapata: unknown Saturday: quantity varies but the baskets are ordered from along Malawi road	Kapata: K2,000/taza (medium); Saturday: K2,000/basket (slightly);	Kapata: K2,500/taza Saturday: K2,500/basket Navutika: K600 (smallest) and K2,500(biggest)
Caterpillars all markets	Some order from Lusaka (the caterpillars are imported from Zimbabwe) and there are others who order from along Malawi road and the quantities ordered vary	Saturday: K5,000 a 5 litre bucket Order prices for other markets are unknown	Navutika: K200/heap Musatdabwe: k1,000/heap Saturday: K10,000 a 5 litre bucket other markets sell K100/heap

NOTES ON TABLE ABOVE

1. The species of mushrooms that we found in these markets are *manyame* and *ndelemya*.
2. There are two types of caterpillars that we found; *vinkubala* and *vilungulungu*, the former being black with some thorns (imported from Zimbabwe) and the latter are brownish (local).



Caterpillars for sale at Kapata market.

5. PROBLEMS FACED

5.1 PROBLEMS FACED BY THE VILLAGERS IN MARKETING OF THE PRODUCTS

- Problems from the Forestry Department in Katete. If the villagers are found in Katete selling bamboos and honey, the products are confiscated from them and they are asked to pay a fine. It is required by the department that villagers in and outside the forest should have permits to commercially sell these products. The villagers said that the permits are expensive and they cannot afford them.
- Transport problems – Villagers have problems transporting their products to the Katete markets and to towns like Lusaka and Chipata. In the case of honey, spillages are also a common occurrence.
- Low incomes realised when product is sold in villages – Because of problems getting permits (outlined above) and transport problems, the villagers are forced to sell their products in the villages and hence make little money than what they would expect in the markets.

5.2 PROBLEMS FACED BY THE RESEARCHERS

- Suspicions from villagers who thought we were from the Forestry Department. This made it difficult to do work in some villages, e.g. Kazungulile.
- Access to far off villages was difficult because there were no means of transport to get there.

- The methodology (questionnaire) used was restrictive and some questions were difficult for the villagers to understand.
- Interviews could only be conducted in the evenings, when the villagers came back from their fields.
- In Katete, it was difficult to interview the Indians because they were not co-operative.

6. RECOMMENDATIONS

- There is need to create harmony between the Forestry Department and the villagers with regard to the policy issues. That is to say the user groups must know the do's and don'ts when collecting the non-timber forest products and the department must take it upon themselves to explain the policy issues to the villagers.
- There is need to share information on the economic value of these products with the villagers. The enterprises of non-timber forest products could often benefit from improved organisation, protection against middlemen taking excessive profits, a knowledge of how to process the products they harvest at least one step further, the introduction of improved technology for example encourage modern methods of beekeeping, and better access to more reliable markets for their produce.
- In future work, it is important to note the time of the year when villagers are less busy in the fields.

7. CONCLUSION

The assessment of Non-Timber Forest Products and market research went on well despite the problems of mobility from village to village and suspicions from the villagers some of whom were not willing to disclose information or only disclosed little information. Focus was mostly on; bamboos, mushrooms, honey and sunde (brooms), although caterpillars and fruits are also found. With regard to traditional medicine, villagers are knowledgeable but guarded this indigenous knowledge jealously. Hence no information gotten on this.

By and large, the research was informative and very educative. Worthy of note is that there is a lot of potential for the NTFP's on the market. The income obtained from the sale of these NTFP's can go a long way in alleviating poverty in the villages. It is however sad to note that few forest dwellers devote themselves to harvesting or processing these products full time; more often, they present additional sources of income which can be exploited when agricultural or other work is slack.

The enterprises of NTFP's could often benefit from improved organisation, protection against middlemen taking excessive profits, a knowledge of how to process the products they harvest at least one step further, the introduction of improved technology and better access to more reliable markets for their produce. To ensure sustainable use and management, all the stakeholders (the Department of Forestry, the villagers and CLUSA as a facilitator) must work together in Chiulukire local forest.

NAME OF VILLAGE

DATE:

GROUP

MARKET INFORMATION/SURVEY FOR NTFPs

1. RETAIL LOCATION

- a) Where do you sell your product?
- [] roadside [] village [] boma/town

2. TRANSPORT

- a) What form of transport do you use to transport your product to the market?
.....
- b) What is the transportation cost one way?
.....

3. QUANTITY

- a) How much is sold per day? (specify units – bucket, basket, cups etc.)
.....
- Conversion to metric units.....

4. CUSTOMERS

Who buys the products? (men, women children etc..)
.....

5. PRICING

- a) What is the price per unit?
.....
- b) How do you determine the price? (if done by grading then indicate and criteria used e.g colour, size etc.)
.....
- c) Who does the grading?
.....
- d) In which month do you get the highest price?
.....
- e) What is the highest price?
- f) In which month do you get the lowest prices?
.....
- g) What is the lowest price?
.....

h) Give reasons for the fluctuations in the prices.

.....

i) Do the prices vary according to the clients?

.....

PROCESSING AND PACKAGING

a) What percentage of the product do you process?

.....

b) Why process?

to add value to stop it from rotting

.....

c) What type of processing is done?

drying salting

fermenting filtering

extracting frying

boiling weaving (brooms)

d) Who does the processing?

.....

e) Is storage done in order to come and sell later (when out of season) to get more money?

.....

f) What is the longest time that you can store product?

.....

g) In what do you store it?

.....

COMPETITION

a) Do you have competition from other exotic species?

(fruits: apples, oranges..).....

(brooms: synthetic materials).....

(mushrooms: tinned..).....

} POLICIES

a) What are the difficulties related to marketing of product? government permit access rights
 other