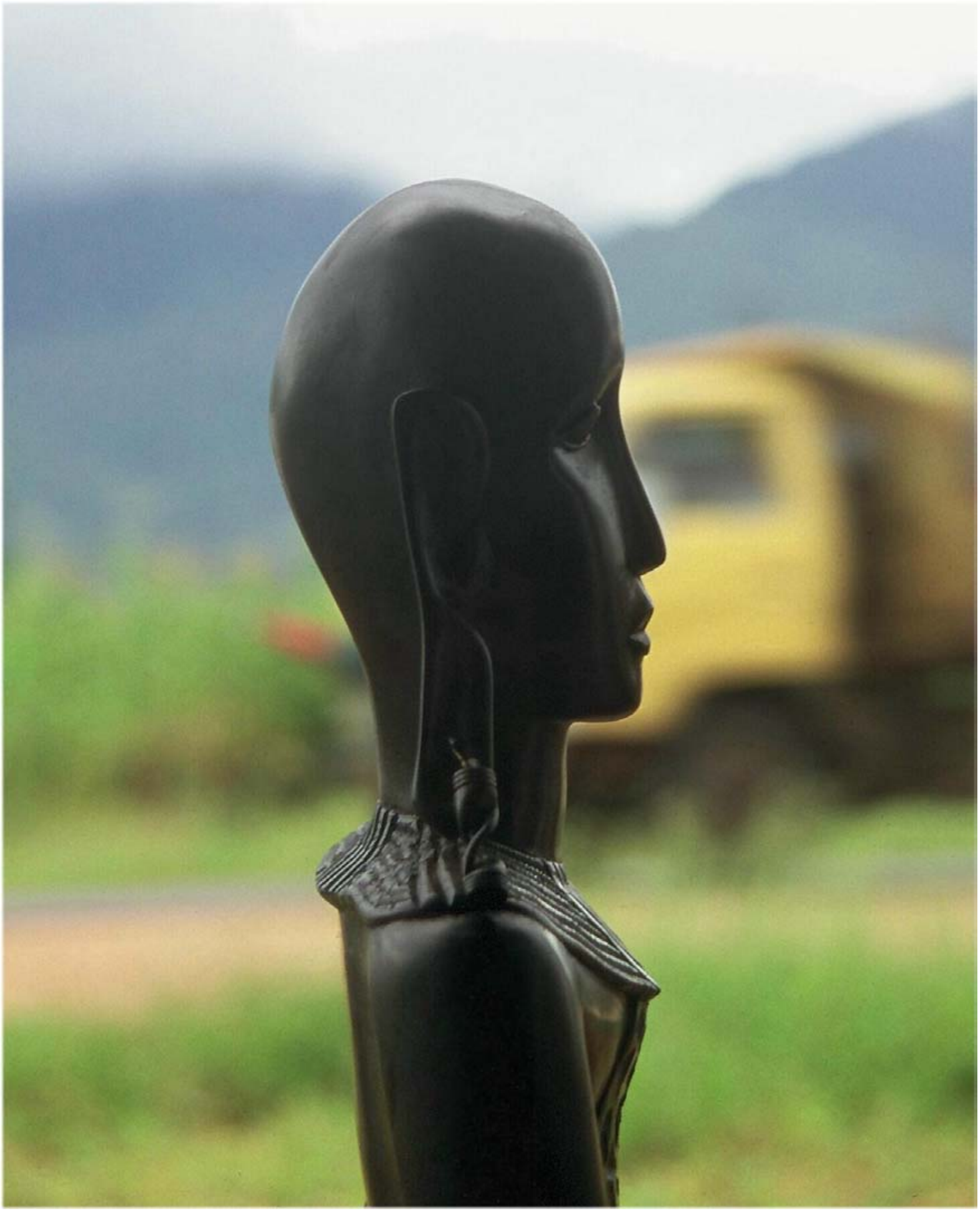
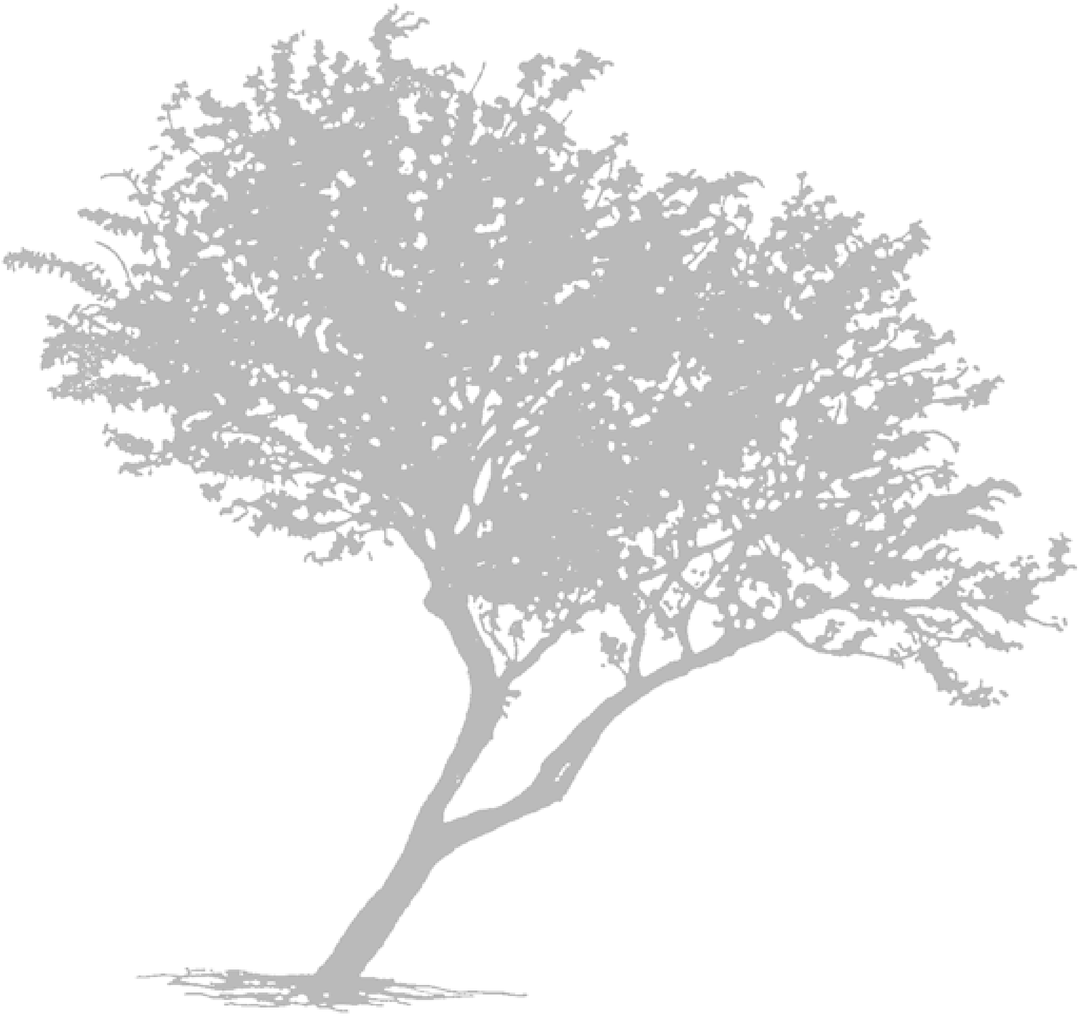
The Mpingo Conservation Project

# *Mpingo Carvings Investigation 2001*

## Full Report



**West, V.W. & Malugu, I.**



**West, V.W. & Malugu, I. (2003)**
**Mpingo Carvings Investigation 2001 Full Report.**
**Mpingo Conservation Project.**

# Executive Summary

Effective management and conservation of the Mpingo or East African Blackwood (*Dalbergia melanoxylon*) in Tanzania relies upon an understanding of carvings supply and demand drivers. We interviewed carvers and traders in Dar es Salaam and other major Tanzanian outlets to establish the current state of the carvings market, and the impediments to sustainable development of the industry. We were also able to investigate some of the limiting factors in generating profit from carving sales. The information collected by the present study contributes to creating a complete picture of the future prospects for the sustainable exploitation of this tree species. Our recommendations aim to simultaneously increase profits for carver groups and ensure sustainable usage of mpingo in the future.

## *Achievements*

- Developed a replicable protocol for monitoring the carving industry
- Assessed supply of and demand for mpingo carvings
- Increased understanding of problems facing the carving trade
- Estimated how much timber carvers at Mwenge Carvers Market use
- Interviewed over 40 groups of carvers and traders

## *Main Recommendations*

- Promote the carving industry
- Establish formal links between carvers and sawmills
- Increase or vary the harvesting fee

# Muhtasari

Ili Tanzania kuwa na utunzaji na uhifadhi endelevu wa mti wa mpingo (Kwa jina la kitaalamu *Dalbergia melanoxylon*) ni muhimu kuelewa mfumo wa mahitaji na matumizi ya sanaa za vinyango. Tuliweza kufanya mahojiano baina yetu na wachongaji wa sanaa za vinyango waliopo Dar es Salaam na maeneo mengine yanayopitishia biashara ya vinyago, ili kujua maendeleo ya soko la sanaa za vinyago kwa ujumla na matatizo yaliyopo katika kuendeleza sekta hii.

Katika mahojiano ya wafanya biashara kwenye soko kubwa la Mwenge, Dar es Salaam, tuliweza pia kuona matatizo wanayokabiliana nayo katika upatikanaji wa faida kutokana na biashara za vinyago. Taarifa zilizokusanywa katika utafiti huu zitachangia katika kujenga mwelekeo wa uvunaji na matumizi endelevu ya mti wa mpingo. Mapendekezo katika ripoti hii yanalenga katika kuendeleza biashara za sanaa za vinyago na pia vilevile kuhakikisha uvunaji endelevu wa mpingo unafanyika kwa ajili ya matumizi ya baadaye.

## *Mafanikio yaliyopatikana kwa utafiti huu*

- Kuweka taratibu za ufuatiliaji wa viwanda vidovidogo vya uchongaji wa sanaa za vinyago
- Tathimini ya usambazaji na mahitaji wa vinyago vya mpingo
- Kuongeza ufahamu wa matatizo yanayowapata wafanyabiashara wa vinyago vya mpingo
- Makadirio ya kiasi cha miti ya mpingo inayotumiwa na wachonga vinyago wa soko la Mwenge
- Kufanyika kwa mahojiano ya wachongaji na wafanyabiashara zaidi ya 40 wa sanaa za vinyango

## *Mapendekezo*

- Kuwepo na mikakati madhubuti ya kuendeleza viwanda vya sanaa ya uchongaji wa vinyago
- Kuwepo miundo mbinu na uhusiano baina ya wachongaji wadogo wadogo na viwanda vikubwa vya mbao
- Kuwepo na marekebisho mazuri ya uwekaji wa viwango vya ada ya uvunaji wa miti ya mpingo

# The Team

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# Findings

# Introduction

The wood of *Dalbergia melanoxylon,* the East African Blackwood is extremely hard and heavy, naturally oily and of fine texture.[1] The timber (hereafter referred to by the common Swahili name of mpingo) is used by Tanzanians to meet basic needs (firewood, building materials, tools such as hoes, and medicine[2]), and also for profit derived from carvings and timber exports to make woodwind instruments (principally clarinets and oboes).[3] Research suggests that current harvesting levels are unsustainable[4], a problem likely to become exacerbated by the advent of major infrastructure improvements to the Lindi region of southern Tanzania, which is the major source of mpingo exports from the country.[5] Understanding the processes and people driving mpingo's utilisation is vital for developing long term management practices for the sustainable exploitation of the countries national tree.

Tanzania is the one of the poorest countries in the world. Like other developing nations its rural communities depend heavily on natural resources. While there is little danger that mpingo will become biologically extinct, it is currently very vulnerable to commercial and local extinction. The pressures from local and international demand are such that in the 1980s some were predicting that there could be no harvestable mpingo left in Tanzania by 2010.[6] A better knowledge of the factors driving such demand should facilitate the identification of those stocks that are in most urgent need of management.

The threat to mpingo stocks is such that international organisations are becoming increasingly concerned. Trade in mpingo has been given priority status by TRAFFIC, and plans are afoot to "go forward with a proposal, firstly an overview of the trade in Tanzania and secondly, a study on illegal trade." [7] An in-depth study of the international trade in mpingo, commissioned by Flora and Fauna International under its *Soundwood Programme*, is due to report soon, and its suitability for Forest Stewardship Council-style certification is under consideration. DANIDA (Danish Agency for Development Assistance) have commenced a major initiative to put in place a framework of sustainable harvesting and conservation of precious forest resources in the Lindi region before the whole region is opened up to uncontrolled exploitation.[8]

As the tourism industry in East Africa expands further, the relative importance of the carvings industry should increase, especially as demand for musical instruments has been more-or-less static for the last few years.[9] Carvers are able to use a broader range of mpingo wood compared with the music trade, as they can incorporate the natural twists, turns and faults of the wood into their work.[10] Despite recent interest the relative importance of harvesting for the music industry versus for local use is still uncertain. The export price of sawn-timber is significantly higher than that for carvings, but the total value of exported carvings is catching up with the value of mpingo

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[1] Lovett, 1987

[2] Lewis & Berry, 1988; Moore & Hall, 1987; the bark, roots and leaves have all been recorded as used in traditional cures, Mbuya *et al.*, 1994.

[3] Luoga, 1995

[4] Gregory *et al.*, 1999

[5] Ball *et al.*, 1998

[6] Hall, 1988

[7] *Pers. comm.* Simon Milledge, Programme Officer, TRAFFIC East/Southern Africa – Tanzania.

[8] DANIDA, 2000

[9] Krauth, 1995

[10] Lovett, 1987

timber exports.[11] Therefore there is likely to be continued demand for mpingo, increasingly driven by the carvings industry.

According to Bevan & Harrison, mpingo carving has a long history; originally, mpingo masks were used in initiation rituals and *Ngoma* dance ceremonies, such as the *Unyago* initiation rites. These have declined with the arrival of world religions, and such instruction masks are now considered antiques. Several distinctive styles of sculpture have also been developed to represent scenes from everyday village life as well as more abstract work, such as *Shetani* spirits or the *Ushirikiano* family groups. The Makonde are also known for their intricate carvings of drummers, hunters and dancers. However carvers now primarily supply the tourist trade, with the distinct Maasai figurines and representations of African wildlife being amongst the most popular. Practical objects like tea sets, with less emphasis on the purely aesthetic, are produced for wealthy Tanzanians. Mpingo carvings are also available in craft shops and markets in many European and North American cities. [12]

Mpingo is traditionally used for carving by several peoples in East Africa, particularly the Makonde whose lands straddle the Tanzania–Mozambique border. The long drawn out civil war in Mozambique coupled with increased poverty has lead to many thousands of refugees, including large numbers of Makonde people, crossing into Tanzania over the last three decades. Many moved into the Dar es Salaam region[13] and established carving co-operatives there. However, while the Makonde still dominate this art, the increasing tourist trade has encouraged carving in the last two decades and owing to the increasingly lucrative market, carvers now come from a range of ethnic groups.

The capital, Dar es Salaam, and in particular the Mwenge carvers market about 10km north east of the city centre, is the major hub of the Tanzanian carvings industry.[14] Mwenge has become a tourist attraction where visitors can buy mpingo items ranging from letter openers to two-metre high carvings. The carvers market stretches along the roadside between Mwenge bus terminal and the University-Ubungo road. There are 70+ shops, nearly all of which sell mpingo products. In fact, close to 80% of all sales at the market are of mpingo carvings.[15] The pieces come to Mwenge both from carvers who come to sell their own wares, either complete or still requiring finishing, and from procurement trips by the salespeople. Loggers also sometimes bring raw logs and surplus scraps to Mwenge to be carved. Once in the shops, some carvings are retailed to tourists, and some exported. Both ends of exports operate in Mwenge; buyers come from abroad to place orders, and Mwenge businessmen deal with sending orders out.[16] The Mwenge market therefore provides a unique opportunity to investigate the mpingo carvings industry

This study aimed to research how the wood carvers co-operative and market at Mwenge, in Dar es Salaam operate and exploit mpingo carvings. This information is combined with data from other carving groups to suggest how the carvings industry can be changed to improve the long term economic survival prospects of this important timber.

[11] FBD, 1999

[12] Whole paragraph sourced from Bevan & Harrison, 2003

[13] East African Movies, 1998

[14] Ball *et al.*, 1998

[15] Bevan & Harrison, 2003

[16] Bevan & Harrison, 2003

# Methods

## 1 General Approach

We decided to conduct interviews to investigate the trade in mpingo carvings around Dar es Salaam. The strategy of the investigation was decided early on. We would interview traders first, then carvers based at the market. This approach allowed us to gather information on both the supply of and demand for mpingo carvings. We devised two questionnaires, one for traders[17] and one for carvers.[18] Both questionnaires were divided into two sections, qualitative and quantitative.

Earlier drafts of the questionnaires were used in a series of small surveys prior to the main study to make the qualitative section as informative as possible. As a result of these surveys some questions were found to be irrelevant and the development of further questions was stimulated e.g. the investigation of the traders' remuneration system.

## 2 Qualitative section

To obtain consistent and comparable results we needed to present clear and concise questions; specifically they needed to be:

- Easy to understand (i.e. short, making use of clear language),
  e.g. "Are you worried about the stocks?" not "Do you think stocks will decline in the next five years due to the carvings industry?"
- Open ended (rather than dichotomous choice) for qualitative data elicitation,
  e.g. "What other woods do you sell?" not "Do you sell other woods?"
- Closed for quantitative questions,
  achieved by banding answers.
- Devoid of prior judgments or assumptions,
  e.g. "What are the greatest threats to the Mpingo tree?" not "What are the greatest threats to the Mpingo tree apart from logging?"

## 3 Quantitative Section

### 3.1 Piece Selection

Reconnaissance of the Dar outlets allowed us to identify four popular categories of carving; Maasai, Ujamaa, animal and functional. To compare like with like, where necessary, we selected a particular piece within a category; for example, within animal carvings sets of five elephants were chosen and, say, tortoises and hippos were ignored. These representative pieces were selected primarily on the basis of their popularity, as, ideally, we wanted to find identical pieces in all markets and stalls surveyed. We surveyed three bands within each category, based on the volume of wood that would have been needed for each carving: small, medium and large.[19]

[17] The questionnaire used for trader interviews is presented in *Appendix 1*.

[18] The questionnaire used for carver interviews is presented in *Appendix 2*.

[19] For carving dimensions see *Appendix III*

### 3.2 Price Determination

Bargaining is the norm in carvings markets so the perceived wealth of the prospective buyer matters. Consequently, the notion of a fixed price is not valid and traders have a range of possible price points, bounded at the lower end by the trader's reservation price, and the upper end by the buyer's willingness to pay. We wanted to elicit both the pre-negotiation tourist price and the reservation price (we were aware that the tourist price tends to be subjective, rather than a mathematical calculation, yet we hoped that a wide sample would generate a realistic mean).

The incentive for traders to honestly reveal the reservation price is small, and bargaining as if one were buying is an imprecise and fairly outrageous technique. We hoped to gauge reservation prices either by looking through store records and finding the lowest sale prices, or by inference from carvers' sale prices.

Prices are quoted in Tanzanian Shillings (TSh) throughout. At the time of the expedition the exchange rate was approximately US $1 = TSh 800/-.

### 3.3 Price Variability

As the stated price varies according to the time of day [20] and the season of the year, we sampled at different times of the day so that averaging would overcome the first problem. Seasonal variation was impossible to gauge due to the short duration of the investigation. However, we did ask market players how they responded to the annual demand cycle.

### 3.4 Statistics Adopted

We realised that dissimilar items might have been mistakenly placed in the same category, meaning that some of our data was unreliable. The sensitivity of the mean to outlying points was therefore a cause for concern, so we concentrated on modal values. Likewise, although the range is known to be an unstable measure of dispersion, more sophisticated measures (such as the standard deviation) are problematic when there are worries about the reliability of some of the data. We expressed the range as a % of the modal price to compare price dispersion across different categories.

The carvers' price data was not used as it was unreliable. We were often told that the price paid to a given carver was the same across sizes despite marked differences in time taken. This seems implausible; surely carvers would just reallocate their labour time. Moreover, three refused to divulge any prices and many were reticent in their responses.

## *4 Technical Problem of Systematic Bias in Reporting*

Answers to questionnaires vary as a result of variation in respondents' attitudes and character. To control for this and provide comparable results we therefore:

- made contact with traders and carvers prior to interviewing them to break the ice and bring down barriers (and to gather information to improve the questionnaires).
- approached the market Secretary explaining our purpose and approach; he duly communicated this to market players.
- incorporated truth-testing devices. We asked questions to which we already knew the answer, e.g. "Is there competition for licenses?", and cross-checked

[20] This can be especially acute when traders are dependent on the daily income for their sustenance that day.

answers, e.g. "How much does it cost to transport wood to market?" vs. "Do you transport goods to market yourself?"[21]

# 5 *Sampling Strategy*

At Mwenge we exploited the principle of replication[22] by repeating the questionnaire as much as possible in different stalls in the available time to minimize sampling error. Elsewhere, averaging over stores was not possible, making inter-market price comparison error prone. Systematic sampling was used to provide replicable data collection, allowing future studies to investigate temporal changes in the trade in mpingo carvings. With this in mind, the units of analyses are described below.

## 5.1 Traders at Mwenge

We utilized a complex random sampling design. The basic idea is to select every *n*th item (e.g. stall) on the list. An element of randomness is introduced by using random numbers to determine the first stall interviewed. This is equivalent to random sampling if the items (stalls) are random in order, an assumption that pre-interview questioning revealed to be entirely reasonable.

There are 67 shops listed under the numbers 8-73, 76, 1 and 78. Occasionally one finds sub-divisions of a shop, for example, 20 split into 20a and 20b. In these cases we treated each stall in the shop separately, on the basis that they have to get separate licenses. Thus we were presented with 72 stalls in total, and we interviewed every third stall-owner starting with number 8. Our method was to follow the physical pattern of the shops, and work our way around the market, rather than the numbering system. References to individual shops throughout the text proceeded by a hash and surrounded by brackets, e.g. (#10) refers to shop 10.

## 5.2 Carvers at Mwenge

The Vice-Chairman of the Mwenge carvers market, Mr. Nyunga, told us that there were approximately 1500 individual carvers supplying the market. They have organized themselves into groups to obtain carving licenses, as is required under Tanzanian law. Members of each group do not necessarily work in close proximity to each other (they move around sharing equipment and skills), however there is some spatial selection, making a location-based sampling technique invalid.

Although not all stalls have groups, all groups are attached to a particular stall, so we again used the store as the unit of analysis. This approach is known as a stratified random sampling technique, and is justifiable, as the sub-populations (groups) are more homogenous than the overall population. We approached the head of each carvings group hoping that he would know most about the workings of the group.

## 5.3 Carvers at Morogoro Store

We counted 22 carvers working in a row, located on a road behind the Morogoro Store. We interviewed every 4th carver (25% of the population) along the road.

[21] Thanks to Simon Milledge of TRAFFIC for this advice.

[22] Kothari, 1992, p50.

### 5.4 All Other Carver Groups

Interviews typically involved 6 carvers and always included the Chairman[23], to whom questions were primarily addressed. Interested parties were able to contribute to the discussions as and when they wished.

# Characteristics of the Mwenge Carvers Market

The information in this chapter comes from interviews with the Chairman of the Mwenge Carvers Association, Mr. Focus and the Vice-Chairman of the Mwenge carvers market, Mr. Nyunga.

## *6 History*

The plot at Mwenge was allocated to carvers by the Tanzanian government for a period of 99 years starting in 1984. Carvers were granted this land on the condition that they set up a co-operative. In 1987 the Carvers Association was formed and a Chairman elected. There are no written records of this history, and it is subject to the influences of oral pass-down.

[23] See *Characteristics of the Mwenge Market*, section 4.3 for details of the position of group chairman.

The site was offered as a fillip to those forcibly ejected from the Oyster Bay area to make space for road construction. However, the good transport links[24] and buoyant prices together with the considerable size of the plot encouraged the voluntary relocation of carvers from many small outlets in the Dar area.[25] Resellers and other merchants (not carvers themselves) have subsequently moved to the Mwenge area to set up shops/stalls.

# 7 Government Regulations and Definitions

## 7.1 Community

The community at Mwenge is registered and recognised by the Government under the name CHASAWATA[26], hereafter the Carvers Association. Traders can be subdivided into two separate groups: Mwenge Handicrafts Village and Mwenge Arts. Mwenge Handicrafts Village is the name given to 36 carving co-operatives; Mwenge Arts comprises merchants exploiting business opportunities.

## 7.2 Carving Groups

Carvers are legally required to be members of groups. Individuals are licensed to carve when their group is associated with a shop/stall that has registered, for a fee, with Mwenge Carvers Association, while stallholders must obtain government licenses for their businesses. There are currently 36 groups officially registered with the Carvers Association.

# 8 The Carvers Association

## 8.1 Financing

The Carvers Association is an umbrella organisation, headed by a Chairman, Vice-Chairman and Secretary. Each group of carvers pays the Association a membership fee of TSh 10,000/- per annum, and the Association pays the government land levy on their behalf. Strictly speaking only the paying representative of each carving group are members, but in reality the association represents all the carvers at Mwenge.

## 8.2 Functions

The association has 4 primary functions:

- Protecting the rights of the carver; by co-ordinating and lobbying (for lower taxes for example), thereby ensuring that carvers have a voice.
- Arbitrating in disputes between carvers and traders; carvers need to sell their carvings immediately to support their families and may accept a low price for their work, as the time and effort spent is a sunk cost. The Association does not, however, set prices for carvings.
- Marketing carvers' work by searching out new markets.

[24] Mwenge is situated within 5 minutes walk of a major dala-dala (local minibus) interchange, connecting to Posta, Ubungo and Kariakoo.

[25] Namely Kisarawe, Bagamoyo Rd., Ubungo, Kurasini, Boko, Kinondoni and Vigunguti.

[26] Literally an abbreviation of *Chama cha Sanaa na Wachongaji Tanzania*, which translates as *Association of Artists and Carvers of Tanzania*.

- Ensuring carvers maintain standards, thought this is also modulated by demand.

# 9 Organization of Carving Groups

## 9.1 Size

The average group size (of the 36 groups in the Mwenge Carvers Association) was 17.4 members, but there were in fact three distinct clusters. Seven groups numbered 10 people or less, three groups were in the range 21-23, and two groups were very large (35 and 42 members).

## 9.2 Criteria under which new members are admitted

29% of carving groups require new members to pay an up front fee. This is used for maintenance and also helps prevents individual carvers joining when the inspectors visit the market (so as to prove that they are members of the group), only to leave before the license fee is due.

One group (#24) specified that new members must make a contribution of 15 pieces to stocks and another (#73) required family membership

## 9.3 Internal Structure

There is division of labour within a group based on the principle of task-specific specialisation; members are categorised as carvers, finishers (polishers) and traders and have associated responsibilities.

Each group has a leader who is primarily responsible for delegating these specific responsibilities. 50% of leaders were elected (from a short list of nominees), and 40% were appointed on the basis that they owned the shop. Other methods were consensus and shop -owner appointment.

# 10 Shops

## 10.1 Ownership

The physical infrastructure of a shop is owned by a particular trader or collectively owned by a group of carvers. The land is rented from the government through the Carvers Association.

A single owner either allows a group of carvers to sell through the shop taking 10%, or occasionally 15%, of sales revenues for him or herself, or buys from any carver to sell on at a profit. Revenues received cover the license fees and any excess is pure profit. Often a family member or two helps run the shop; sales, promotion, dusting etc.

Where shop-owning co-operatives are formed each carver contributes 10% or, rarely, 15% of the sale price realised on each item. Revenue generated and not used for license payment may be put to a whole host of different uses; it is used to cover overheads but can also serve as a health insurance pool and sometimes was divided between carvers as a bonus at the end of the year. When the shop is fully stocked the carvers attached to it may sell to other shops or stalls.

## 10.2 Tribal Influences

Three tribes dominate trading; Chagga comprised 42% of those surveyed, Zaramo 25% and Makonde 17%. All Makonde and Zaramo traders carved or finished off pieces; three of the four Makonde were carvers and finishers, whilst four Zaramo out of six surveyed were finishers only. All tribal shop-owners who were not Makonde and Zaramo worked only as traders.

The average age and sex of each trader varies systematically by tribe. Makonde and Zaramo both average 39 years, whilst the typical Chagga is 28. All Zaramo and Makonde traders were male and all Chagga bar one were female.

### 10.3 Licensing

There is considerable bureaucracy and expense associated with obtaining official licenses. The criteria that must be satisfied to be granted a trading (and, automatically, a carving) license are:

- Ownership of the physical store infrastructure.
- Record of past tax payments to Tanzanian Revenue Authority (TRA).
- Recommendation from Health Officer and Ward Executive Officer if it is a new application.

The payments required are:

- Licensing fee (average annual rate) TSh 200,000/- with large variation depending on years in business and location of stall.
- Income Tax (annual) approx. TSh 400,000/- with large variation depending on revenue/sales.
- Stamp duty (monthly) approx. TSh 10,000/- depending on capital stock.

# Market Forces

Through 24 interviews with traders at the Mwenge carvers market we were able to assess some of the factors influencing revenue generated from the sale of mpingo carvings.

## *11 Customers – the source of demand*

### 11.1 Variation by Customer Group

All traders indicated that most sales are to tourists. However the proportion of carvings purchased by tourists varied between shops/stalls, from 99% to 55%. The modal proportion of sales to tourists was 70%, elicited from 16% of traders. Important tourist groups come not only from Europe and North America but also Asia, South Africa, Kenya and Uganda. Only a small percentage of tourists visiting the major Tanzanian attractions (game parks, Kilimanjaro and Zanzibar) ever come to Mwenge.

Two traders (#34 and #56) said that the proportion of sales to Tanzanians had increased over the last five years, whereas one carver (#21) said that the instability following the elections in Zanzibar had a negative impacted on sales to Tanzanians. Tanzanian purchasers are usually businessmen, who transport pieces en masse to sell on at a profit at other domestic markets. Kenyan and Ugandan traders come to Mwenge to stock up on mpingo carvings, many of which will be sold at the large Nairobi market. Gift buying is the norm amongst the remainder of local buyers, e.g. western merchants.

### 11.2 Variation by Carving Category

The demand for different types of carvings is likely to influence their cost. The qualitative responses of traders were used to provide an indication of the relative popularity of the different categories of carvings[27] (Table 1).

| Carving category | Relative popularity |
|---|---|
| Varies | 17 |
| Ujamaa | 9 |
| Animals | 5 |
| Maasai | 4 |
| Functional * | 2 |

**Table 1. Relative popularity of different carving categories.**
*** Includes items other than just candlesticks: bowls and plates were mentioned by separate traders.**

The high number of traders who were uncertain of their answer and responded that the preference for different categories of carving varies indicates that other factors, such as the type of customer and the quality of finishing, were of importance. Asian tourists tended to prefer animals, African tourists went for functional items, and Europeans liked Ujamaa. Maasai figures were the most popular because they were bought by all types of customers. Many traders also indicated that small sizes were preferred, and speculated that this was because of the maximum baggage allowances for international transit.

## *12 Factors influencing the cost of mpingo carvings*

### 12.1 Interpretation Difficulties

Inter-store price variation for a given piece could reflect differences in quality or different mark-ups. We believe that the sellers' perception of the customer is the principal determinant of the mark-up, making this a good indication of quality variation.

Volume carved per unit time was taken to indicate the detail and therefore the requisite quality of workmanship that a piece demanded. This ignores the impact of the skill or dedication of the individual carver on time taken, but averaging should account for such variation.

Modal price per unit volume gives a good indication of the surplus that traders and carvers collectively derive from sale of a particular piece.

[27] For definition of carving categories see *Appendix III*.

| Carving category | Pieces found | Mean price (kTSh/-) | Modal price (kTSh/-) | Price range (kTSh/-) | Range as % of modal price | Mean volume ($cm^3$) | Mean time taken (days) | Carving Speed ($cm^3$ / days) |
|---|---|---|---|---|---|---|---|---|
| **Elephant sets** | | **8.1** | **11.3** | **11.5** | **185** | **1,912** | **1.3** | **1425** |
| Small | 7 | 6.5 | 6 | 8.5 | 192 | 485 | 1.6 | 303 |
| Medium | 12 | 3.7 | 3 | 20 | 283 | 1,056 | 0.9 | 1173 |
| Large | 11 | 14.1 | 25 | | 80 | 4,200 | 1.5 | 2800 |
| **Maasai pairs** | | **27.5** | **21.3** | **6.5** | **236** | **13,207** | **3.1** | **3380** |
| Small | 4 | 4.1 | 4 | 70 | 160 | 456 | 1.3 | 350 |
| Medium | 16 | 36.5 | 20 | 80 | 350 | 14,164 | 4.0 | 3541 |
| Large | 10 | 41.8 | 40 | | 200 | 25,000 | 4.0 | 6250 |
| **Candlesticks pairs** | | **8.6** | **7.2** | **1.8** | **109** | **6,426** | **1.6** | **1381** |
| Small | 15 | 2.5 | 2.5 | 3.5 | 72 | 190 | 0.4 | 237 |
| Medium | 17 | 3.7 | 4 | 25 | 88 | 1,654 | 0.7 | 2632 |
| Large | 11 | 19.7 | 15 | | 167 | 4,582 | 3.6 | 1273 |
| **Ujamaa** | | **28.1** | **23.3** | **16.5** | **213** | **3,979** | **7.1** | **588** |
| Small | 14 | 8.7 | 15 | 57 | 110 | 1,385 | 2.2 | 620 |
| Medium | 14 | 26.6 | 15 | 60 | 380 | 3,119 | 5.1 | 612 |
| Large | 6 | 49.1 | 40 | | 150 | 7,434 | 14.0 | 531 |

**Table 2. Comparison of price variation in different carving categories. Headline row for each carving type is the combined mean of the size categories. All prices are expressed in thousands of Tanzanian shillings. The carving speed is the volume carved per day.**

## 12.2 Inter-Store Quality Variation

Prices of the candlesticks varied least (Table 2), as a superficial observation of comparative quality would have given one to expect. Given the vastly different degrees of finish exhibited by Ujamaa, we expected these to be the most variable. Although the most variably priced piece was the medium sized Ujamaa, Maasai varied most on average. This statistic may reflect the inability to compare identical pieces; for example, not factoring in the impact that face-shape has on price (as mentioned by trader #70).

## 12.3 Between Categories

Ujamaa pieces are relatively time intensive as the facial features are relatively detailed, compared with Maasai pieces may be described as being wood-intensive as a large volume can be carved in the same amount of time.

In general, larger pieces are less detailed and therefore quicker to make per unit wood used. In other words a carver specialising in large pieces will go through more wood than one who concentrates on miniatures. The exceptions to this rule are the Ujamaa carvings which has a relatively stable time taken per unit wood for different sizes. This is probably because the figures carved in the structure are equally detailed regardless of the size of the piece.

**Elephant Set** **Maasai Pair**

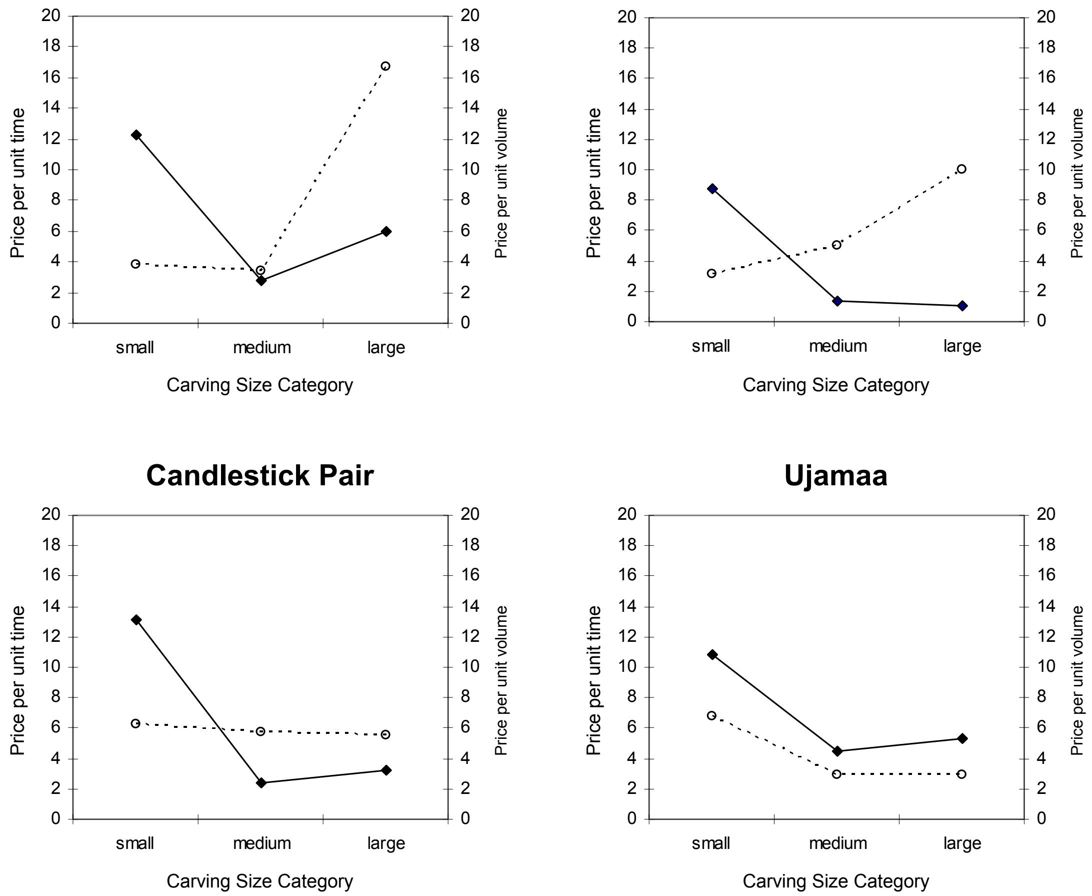


**Figure 1. Comparison of the cost effectiveness of different sizes of carvings. The modal price per unit time (open circles) indicates the profit from the carvers' effort (in days) and the modal price per unit volume (solid diamonds) represents the profit from 1cm$^3$ of mpingo (all points are mean values).**

# *13 Factors influencing trader profit from mpingo carving sales*

## 13.1 Prices and Mark-ups

Although large pieces command a higher price (Table 2) smaller pieces had higher worth per unit volume for all carving categories (Figure 1). This might be partially explained by the fact that they took longer to carve per unit volume, so reflecting carver costs. But may also reflect the traders realisation that in general tourists prefer smaller pieces (as they weigh less and take up less space) allowing them to charge relatively more and an effective transaction cost of the sales-person's time.

Despite their popularity with tourists Maasai carvings stand out as rendering less value to market players as these carvings had the lowest price per unit volume for all size categories (see Figure 1). Given that Maasai are not labour intensive, it seems that they are marked-up less. Raising the question, is their popularity purely due to lower mark-ups i.e. purchasers get more wood for their money? And, if so, how well do consumers distinguish between different skill-levels?

In general, when supplies or raw materials are restricted goods of higher worth are tend to be favoured. However in this case it seems that smaller items are the basic stock-in-trade of the market, and thus ignoring them could be risky.

## 13.2 Spatial Variation

Three separate groups of shops have been identified by the Tanzanian Revenue Authority: those near the road (#8-31; #73-64; #78), those working in behind the shops by a sports field, and those that arise from a sub-division of a particular shop. One would expect to find systematic variation in prices if all traders have the same mark-up.

To simplify the analysis we looked at the effect of proximity to the road only, by comparing prices of representative pieces. Small and medium candlesticks were chosen as their prices varied least between shops/stalls.

| Carving size class | Average Modal Price | |
|---|---|---|
| | Near road | Away from road |
| Small | 2.5 | 2.3 |
| Medium | 4.4 | 3.6 |

**Table 3. Spatial variation in trader price**

It appears that there is a significant spatial variation in the modal price charged (Table 3); therefore traders that operate near the road are able to charge more for their carvings. This could be due to there being more trade close to the road as this location is people’s first point of contact with traders and there is also likely to be more “passing trade”.

# *14 Trends in Price Movements*

## 14.1 Final prices

No traders indicated that prices had increased in the past five years; 50% of traders asked said that prices had decreased over the past five years and 50% said they had remained constant. If one thinks in real terms (considering inflation) or relative to the average national income, there is little doubt that traders’ income has decreased as prices have undergone a relative decline. Explanations offered included:

- more traders and increased competition.
- exports to Western markets increasing, so tourist demand has weakened.
- fewer visitors to Mwenge.

Inflation may have some impact on prices, but traders emphasised the effect of the TSh-US$ exchange rate.

## 14.2 Carvers Prices

It is not immediately clear whether nominal prices (the price in a certain year/period that is not corrected for inflation or cross-sectional differences in cost of living) have risen. Of traders interviewed 28% concurred but 35% said they have fallen. It may be that carvers who sell on to traders have managed to increase prices eating into traders’ margins, whilst those who sell direct have suffered from a decrease in demand. This hypothesis fits with traders’ complaint that their margins had been squeezed from both sides in recent years.[28]

[28] Despite the (previously) higher prices carvers might have little incentive to join co-operatives as they then have to pay the license fee and support themselves prior to sale of their output.

# 15 Other Price Determinants

## 15.1 The Season

June-August was identified by 76% of those interviewed as the peak sales period. The season picks up in April and ends in December, shadowing the “dry season”. Although sales wind down from September, three stall owners and two carvers mentioned a mini-peak in December.[29]

Traders stressed that prices were sensitive to demand, however a couple of them (#12 and #30) said that the monetary deviation was small in practice relative to carving/item price. Traders’ reluctance to raise prices in high season indicates that the price elasticity of demand may be great.

Carvers take a share of seasonal excess profits, as 57% of them mentioned demand as a cause of price increases. However, the percentage variation is small to the extent that one carver (#37) said that there is “no seasonal variation”.

## 15.2 Carving Costs

63% of traders placed orders from time to time; in such instances, they would approach a specific carver with their requirements. These tend to be more expensive, though the time scale imposed on the carver and the artistic quality required would also influence the price.

Carvers do not charge different traders different prices, as they realise that traders know prevailing prices.

## 15.3 Bulk purchasing

Bulk-buyers can get a significant discount; wholesale prices tend to be approximately 80% of tourist prices, although the first price offered is usually the same. Two categories of wholesalers can be identified: Tanzanians who supply domestic markets and exporters (who ship goods out to supply European, American and other African markets). The proportion of sales accounted for by bulk-buyers has increased in the last half-decade.

## 15.4 Trader characteristics and attitudes

The tribal origin of traders also seemed to have an indirect influence on revenue generated from carving sales. For example, the Chagga are known as business people, and evidence was found to support this contention. They seemed to stock more of the popular goods; small goods were common and the relatively unpopular Ujamaa was rare. An additional feature of their shops was the propensity to stock other craft goods, such as malachite and soapstone items.

Makonde and Zaramo traders often said this was the only career open to them. Their degree of integration in the supply process is greater, and so they will be more affected by changes to the market.

Many traders are unhappy at Mwenge; one trader (#24) went as far as to say that “no pieces are popular”. However, to move one requires adequate capital[30] and a detailed knowledge of another area. Zanzibar and Arusha are thought to be more lucrative, though the high season is relatively short in Arusha.[31]

[29] Presumably attributable to purchases for Christmas giving.

[30] Relocation is costly marking borrowing necessary. Creditworthiness assessment is based on the accumulated assets of the applicant.

[31] see *Other carving groups*.

# Impact on Stocks

## 16 Origin of Wood at Mwenge Carvers Market

Carvers often buy logs directly from harvesters; 30% only buy ready-made (pre-finished) pieces. 35% of carvers only buy off the lorries at Mwenge, whilst 15% sometimes buy at source and transport the wood to Mwenge themselves.

The mpingo at Mwenge comes from a variety of geographical sources (Table 4), but only one carver admitted that the wood was not always obtained legally (see section 6 below). Most interviewees were taken aback when asked this question.

| Source of mpingo | Mentions |
|---|---|
| Bagamoyo | 11 |
| Mtwara | 8 |
| Tanga | 3 |
| Morogoro | 2 |
| Kisarawe | 2 |
| Chanika | 2 |
| Rufiji | 1 |
| Kibiti | 1 |
| TOTAL | 30 |

**Table 4. Geographical sources of mpingo for carving. First responses were recorded as an indication of importance of different sites, and only these are listed.**

Less than a third of first mentioned mpingo sources to Mwenge are currently from south of the River Rufiji suggesting that the relative low cost of transportation from northern supplies is a major factor. It will be interesting to see how this changes with the completion of the bridge and upgrading of road links down to Lindi and Mtwara.

## 17 Costs

### 17.1 Per Log bought at Mwenge

The price of a 2m log can vary enormously depending on the circumference of the log. TSh 7,000/- was the modal response given thrice, however, TSh 18,000/- is reasonably common, mentioned twice, and logs can be as expensive as TSh 30,000/-.

### 17.2 Per Trip to the Bush

The cost of transportation depends on the origin of the wood, the number of logs and the size of the logs. The data obtained did not adequately deal with these other variables.

The carvers that go into the bush to fell carve at source. This reduces the transportation costs; there is no need to have logs certified and stamped by Government. The procedure is to pay the District Officer of Natural Resources for a license, costing a flat rate of TSh 100,000/-, and go into the bush in a group “to fell as much as possible” (#53). If mpingo costs TSh 60,000/- per cubic metre, the license equates to 1.67m³, or approximately 10 harvestable trees[32]. However, one trader and carver (#73) merely pay a Village Fee. Large logs are favoured in these instances. The costs involved in obtaining mpingo logs seem to also vary with the area where they are harvested as carvers in Nangurukuru (Kilwa district, about 400 km south of Dar es Salaam) pay TSh 18,000/- per quarter to harvest in the area.[1]

# 18 Alternative woods

The carvers identified a number of other tree species as viable mpingo alternatives (Table 5).

| Wood Mentioned | Scientific Name | Frequency mentioned |
|---|---|---|
| Mninga | *Pterocarpus angolensis* | 12 |
| Mkarambati | *Brachylaena huillensis* | 8 |
| Mahogany | *Khaya nyasica* | 8 |

**Table 5. Principle alternative woods mentioned by carvers. 13 other species are also carved. Also mentioned more than once were Neem (*Azadirachta indica*), Mkango (*Afzelia quanzensis*) and Mchogoma (*Cassial simea*).**

The inter-substitutability of mpingo and soapstone is debatable, but three traders mentioned the possibility.

# 19 Time Taken

Mpingo is acknowledged to be a very difficult wood to carve. In general, soft dry woods are easiest, and the time required to carve a given piece varies significantly depending on the wood used.

35% of respondents said they used one 2m log per month; all stressed that the category and size of piece have important impacts. Moore and Hall (1987) estimate that most carvers using less than 1m$^3$ timber each year.

# 20 Perspectives of Market Players

50% traders and 35% of carvers were concerned about stock levels, however 35% of carvers and 30% of traders were unconcerned. The usual solution suggested was for Government to sponsor replanting in nurseries to replace stocks. Other ideas were for legislating against charcoal making and a campaign to increase awareness.

# 21 How much Mpingo is used by the carvers?

Unfortunately it was not possible to assess how many logs the carvers at Mwenge market use to give a quantitative appraisal of their impact on mpingo stocks. Accurate information on how many trucks carrying logs enter the market is not easy to obtain as many logs enter illegally. For example sometimes suppliers bring half-finished sculptures and sell them to carvers at Mwenge market for final polishing. Such incomplete carvings can be transported using public transport e.g. passenger buses which are not checked. The legal business documented at check-gates is mostly big business men who export the logs and does not record logs used by small scale carvers.

[32] Gregory *et al.*, 1999

However, if 35% [(33)] of carvers at Mwenge (35% x 1500 [(34)] = 525 carvers) use one 2m mpingo log each month and we assume the rest of carvers use 1m (which we consider a minimum) with an average 15cm radius the monthly volume used by carvers is 143$m^3$ ($\pi$ x 0.15$m^2$ x 2m = 0.14$m^3$ x 525 carvers plus $\pi$ x 0.15$m^2$ x 1m = 0.07$m^3$ x 975 carvers). Assuming carvers use this volume in each of the six months of the dry season, the Mwenge carvers use a minimum of 859$m^3$ of mpingo a year, the equivalent of 5270 harvestable trees.[35] A maximum figure could be based on the estimate of each carver using 1$m^3$ a year giving a total of 1500$m^3$ for Mwenge market or a maximum of 9200 harvestable trees.

# Other Carving Groups

The information presented in this chapter comes from interviews carried out with six carver groups located in four areas. In Dar es Salaam the Morogoro Store known locally as *Rhino Ebony Carvings* is found 5 kilometres east of Mwenge market. The *African Ebony Wood* group are based in Morogoro which is found approximately 190 kilometres south-west of the capital. The *Antique Makonde Carvings Co-operative Society*, found in Arusha a city in the north of the country, 650 km from Dar es Salaam. Finally the *Anglican Church*, *Msalabane Carvers Art* and the *Mvinjeni Carving Group* are all located in Bagamoyo, a small town 60 km north east of Dar es Salaam. Although every effort was made to interview a representative cross section of carvers, the information presented is the views only of the carvers interviewed.

## *22 Carver Characteristics*

| Group name | # Carvers[1] | Carvers ages | Gender[2] | | Tribal composition[3] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Male | Female | Makonde | Zaramo | Zigua | Mwera | Manyema | Luguno | Yao | Ngoni |
| *Rhino Ebony Carvings* (Morogoro Store) | 22 | 30-55 | 100 (22) | 0 | 100 (22) | | | | | | | |
| *African Ebony Wood* (Morogoro) | 12 (6) | 20-40 | 100 (12) | 0 | 50 (6) | 8 (1) | 8 (1) | 8 (1) | 8 (1) | 16 (2) | | |
| *Antique Makonde Carvings Co-operative Society* (Arusha) | 12 (10) | 36-65 | 100 (12) | 0 | 100 (12) | | | | | | | |
| *Anglican Church* (Bagamoyo) | 5 | 22-35 | 100 (5) | 0 | 20 (1) | 20 (1) | | | | | 20 (1) | 20 (1) |
| *Msalabane Carvers Art* (Bagamoyo) | 15 | | 93 (14) | 7 (1) | 87 (13) | 13 (2) | | | | | | |
| *Mivinjeni Carving Group* (Bagamoyo) | 14 | 16-24 | 100 (14) | 0 | 71 (10) | 29 (4) | | | | | | |

**Table 6 Characteristics of carvers in groups interviewed.**
**[1] Total count of carvers in group, number of apprentices in parenthesis.**
**[2] Number of male (M) and female (F) carvers in group expressed as percentage of group total, count in parenthesis.**
**[3] Tribal composition expressed as percentage of total count of carvers in group, count in parenthesis.**

[33] section 4 of this chapter

[34] see section 5.2 in the *Methods* chapter

[35] Gregory *et al.* (1999) reports an average 163$dm^3$ of usable timber per harvestable tree (p. 36).

Carvers interviewed were predominantly male; only one out of the 80 carvers recorded in the interviews was female. Tribal influences seemed to affect the gender of traders at Mwenge and probably also plays a significant role for the carvers. Makonde were the predominant tribe as they were found in all groups interviewed, with two groups consisting of carvers solely from this tribe. Generally speaking Makonde seem the most heavily involved in terms of their overall participation in the carving trade.[36]

# 23 History

There was considerable variation in the history of the carver groups interviewed. The oldest group was at Morogoro Store. The chairman, Mr. Abdallah Lukango said that *Tingatinga*[37] artists had started trading at the store in 1961 (Swiss Aid financed the construction of the store), and were joined by 12 carvers in 1975. The *Makonde Carvings Co-operative Society* in Arusha, started when carvers moved from their homeland, where carving was a hobby, to exploit the business opportunities presented by the expansion of the tourism industry. The first carvers arrived from Mtwara and Kabdelhand (Mozambique) in 1973 and in 1979 they were registered as a co-operative.

The *African Ebony Wood Carvings* group at Morogoro had a similar history to the Makonde Carvings Co-operative Society, in that carvers moved to a new area to exploit new business opportunities. The “yard” (shed in which they carve) was constructed in 1992. The difference is that these carvers moved away from their fathers, who were based at Dar es Salaam. The most recently established groups of carvers working with mpingo were found at Bagamoyo. There are currently three separate groups and all have moved there in the last three years. These different histories have contributed to the different organization of the groups interviewed.

# 24 Organization

As their name suggests the *Makonde Carvings Co-operative Society* in Arusha are highly organized. The apprentices are sons of the carvers and all the carvers learnt “from their ancestors”. The carvers in Arusha also differed from all the other groups in that the primary determinant of price for their carvings was requisite artistic talent. They have an Executive Committee comprising the Chairman, Mr. Matete, the Secretary, and five Committee Members. Secret electoral ballets are held every third year. Their primary responsibilities are discipline, sales and administration. A 10% cut of sales is taken which goes towards paying the license fee for small-scale industry costing TSh 250,000/-. Similar systems for paying licenses were found at two of the other carver groups.

The *African Ebony Wood Carvings* in Morogoro formed a revolving fund (financed by taking a 10% cut from sales) in 1998, after some of the group moved away. In addition to paying license fees, this money has helped construct two shops on the road from which they trade. They are yet to be registered as a co-operative. These carvers do not own the plot from which they trade and could be ejected at any time[38]; a particular concern is the development of a petrol station adjacent to the plot. This group of carvers need to supplement their income through agriculture. However the carvers are young (average age of 31) and from a great variety of tribes, and appear to be more business-orientated; they are trying hard to raise awareness and research new markets.

At the Morogoro Store, *Rhino Ebony Carvings*, use 10% of the revenue from each piece sold (irrespective of purchaser) to pay for a license and sales tax (which is based upon estimated revenues). Any remaining funds go towards providing cess-pit services, electricity, and water.

[36] See *Characteristics of the Mwenge Carvers Market* for further details

[37] Popular textile art similar to batik.

[38] This limits the value of advertising their location stifling their development.

Only 3 of the stores 12 founder carvers are alive today; there are 22 group members, most of which are trainees undergoing an 18 month apprenticeship.

The organisation of the 3 groups of carvers found in Bagamoyo, differed from the more established groups found at Morogoro and Arusha. All charge a membership fee, and are raising funds to get registered as co-operatives with the Ministry of Unions and Co-operatives (a one-off payment). At Mivinjeni, they do not have a collective fund; carvers carve for themselves and keep the revenue generated from their own carvings. To pay the carvers licence each member pays TSh 5,000/- when the license is due. If a carver has no cash he is compelled to give the revenue generated from the carvings he sells to the group until the deficit is cleared.

# *25 Origin of logs*

For two of the groups interviewed mpingo is not available locally, the transportation of logs therefore incurs additional costs affecting their profit margins. At Morogoro Store, individual carvers purchase mpingo logs at Mwenge. Logs are transported by local minibus (*dala-dala*), a service for which a charge of TSh 5,000/- per bag is levied for mpingo. For larger loads a pick-up is hired. Rising log prices are linked to stock shortages. Mwaraka wood was used by all carvers interviewed, and so represents a serious alternative. If there were economies of scale in transport the group could purchase in bulk and maybe secure a discount.[39]

There is also no mpingo in the Arusha region. The carvers at the *Makonde Carvings Co-operative Society* obtain their mpingo logs from the Tanga region. They hire a 7 tonne lorry and collect approximately 150 Mpingo logs. Carvers in Arusha did not mention the transportation of logs affecting stock or profit margins. However logs are thought to be cheaper at Mwenge as bulk economies can be exploited and stocks are closer. A corollary is that Mwenge carvings are cheaper than the locally made ones sold at Arusha. If undercutting is so severe it is not clear why the Arusha carvers do not buy logs from Mwenge themselves: the competition is clearly resented.

The carver groups at Bagamoyo obtain their mpingo locally, as do carvers at the *African Ebony Wood Carvings* in Morogoro. Most of the wood used by the group in Morogoro comes from firewood stores. These carvers therefore avoid additional costs incurred by log transportation. Being able to obtain logs locally also seemed to affect carvers' perceptions of the threats to mpingo stocks. Carvers at Mivinjeni said that the main threat to stocks comes from exporter exploitation not the carvings industry.

# *26 Customer groups*

The only carver groups for whom tourists were not important were in Bagamoyo where the main customers were Tanzanian and the Mivinjeni group also occasionally exports to Mombassa and Zanzibar by dhow. Tourists were identified by the other carver groups as important customers.

Approximately 70% of sales revenue at the Morogoro Store is generated by sales to 'Mama Nana' of the Oyster Bay Hotel. She places daily orders with individual carvers for specific pieces (which she herself designs) at discounted prices, and primarily sells on through the Oyster Bay Hotel.[40] She also finances log buying by advance payment. Final consumers are also accessed directly through the carvers' co-owned shop. Sales to exporters are very much the exception.

Tourists are also important in Arusha where 75% of sales revenues are generated by sales to curio shops, and for *African Ebony Wood Carvings* in Morogoro. Other important customers for the

[39] The variable cost of transporting an extra log by pick up is very low, so economies of scale are expected. According to the Chairman funds prevent this, but it seems a sensible use of group funds.

[40] Other outlets are the *Slipway Hotel* and the *Sea Cliff Hotel*.

latter group are missionaries and religious carvings are common (e.g. "the Last Supper" and "Bethlehem").

# *27 Comparison with Mwenge*

There was variation in all categories among the different carver groups. However the one consistent response was that the peak season for carving sales was summer. A shorter peak in December was also mentioned by 3 groups, Mwenge, Morogoro Store and *African Ebony Wood*. This "mini-peak" coincides with the season when tourists travel for a Christmas break and Tanzanians are also likely to be purchasing more for Christmas presents. However, we do not know how important economically the peak season is for the carvers.

In addition to the questionnaire responses a number of carvers expressed more general opinions about the carving industry. The unhappiness and dissatisfaction of carvers at Mwenge was mirrored by carvers at three of the other groups interviewed. Carvers at Morogoro Store and *African Ebony Wood Carvings* also highlighted the lack of publicity or promotion as a serious problem, and felt they did not get the recognition they deserve from the government.

| Group name and location | Organisation | | Years since group formed | Peak season[1] | Important customers | Mpingo obtained locally? | Prices increased in the last 5 years? |
|---|---|---|---|---|---|---|---|
| | Co-op | Revolving fund | | | | | |
| Mwenge (Dar es Salaam) | Yes | Yes | 18 | Summer (mini peak in Dec) | Tourists | No | No |
| *Rhino Ebony Carvings* (Morogoro Store, Dar es Salaam) | Yes | Yes | 27 | Summer (Dec sales at least as high as June) | Tourists | No | No |
| *African Ebony Wood* (Morogoro) | No | Yes | 4 | Summer (mini peak in Dec) | Tourists | Yes | Yes |
| *Antique Makonde Carvings Co-operative Society* (Arusha) | Yes | Yes | 29 | Summer (short peak season) | Tourists (curio shops) | No | Yes |
| *Anglican Church* (Bagamoyo) | No | No | 3 | Summer | Tanzanian | Yes | . |
| *Msalabane Carvers Art* (Bagamoyo) | No | No | 3 | Summer | Tanzanian | Yes | . |
| *Mivinjeni Carving Group* (Bagamoyo) | No | No | 3 | Summer | Tanzanian | Yes | . |

**Table 7. Comparison of other carver groups with Mwenge carvers.**
**[1] Summer season is June to August.**

# Discussion and Recommendations

The aim of promoting the carving industry is to improve the revenue generated from carvings, not drive the unsustainable exploitation of mpingo stocks. Boycotting mpingo carvings[41] is unlikely to promote the long term sustainable exploitation of the species and could seriously impact sectors of the countries delicate economy. The only long term way to increase the socio-economic "value" of mpingo and the Miombo habitat to the Tanzanian people is by working with them and encouraging sustainable development.

## *28 Improving Marketing*

### 28.1 Rationale

Mwenge is the largest carvings market in Tanzania[42], and as such it provides a useful model to develop methods to promote the carvings industry. Improved promotion could form part of the government's strategy to increase tourism outside of the northern game reserves. It would also increase economic equality in the medium-term by helping to alleviate poverty amongst these low-income but highly skilled carving groups. Note that these ideas are equally applicable to all the carving outlets studied, not confined to Mwenge market.

### 28.2 Methods

Publicity for the market in the Dar es Salaam area could easily be improved: most tourists have not heard of it. It should be mentioned in pamphlets in the Tourist Information Centre and cultural tours of the market should be available on request; visitors would undoubtedly be interested to meet the carvers and see them at work.

Cultural tours could also be organised through lodgings or hotels. Publicity could be increased in a similar way and advertising on billboards, and by employing touts to guide tourists to market, or handing out fliers to new arrivals at the airport are possibilities. Adverts could even be placed in the international woodcarving magazines, and therefore attract more tourists to Tanzania. Internet-based advertising might also be exploited.

### 28.3 Strengthening the Carvers Association

The Association's central fund should be used to market the whole community. At present there seems reluctance to use it for anything other than licenses; for example, the Chairman has been invited to attend a conference in Arusha on artisan industries but cannot afford it.

### 28.4 The Role of Government

The New Forest Policy (1998) commits the Government to promoting the woodcarving and artisan industries, so government could justifiably take a role in improving marketing. This might involve improving awareness of marketing mechanisms and/or providing development grants or loans tied to promotion[43].

[41] see section 3.3 in this chapter

[42] Moore & Hall, 1987

[43] These could be administered under the Poverty Alleviation Programme run by UNDP in conjunction with the Tanzanian Government.

The government could sponsor, or help organise, a short national forum to introduce these ideas, strengthening the Carvers Association in the eyes of its members, and build relationships between leaders of carvings groups. In addition to marketing, discussion could cover tourism and art market movements, business opportunities, and alternative organisational structures. Carving groups could increase efficiency or sales by sharing information in this way.

It must be stressed that policies to develop the woodcarving industry must be developed as part of an adaptive management programme if over-exploitation is not to be encouraged.

# 29 Ensuring Sustainability

It was not in our remit to assess the sustainability of carving practices (particularly in relation to the harvesting of mpingo), past projects have done this.

## 29.1 Evidence

Examples include

- The *Tanzanian Mpingo 98* expedition reported that harvesters today have to travel over 20 km to find trees of suitable quality for carving at Nachingwea.[44]
- The 1999 vice chairman of the Carvers Association, who has been carving since 1970, stated that between 1970-1990 mpingo was plentiful around the houses of Garibovu but since 1990 it has been necessary to travel increasingly far.[45]
- Carvers complain that log prices have increased and are increasing, as harvesters have to go deeper and deeper into the bush to find stock.

Unsustainable levels of exploitation are not in Tanzania's best interests, raising the question of how the economically important utilisation of mpingo can be maintained in the long term.

## 29.2 Supply restriction: a poor response?

Illegal felling becomes lucrative once supply is capped as there is unsatisfied demand. The price of legally supplied timber will inevitably rise, exacerbating the problem.

If mpingo stocks become a limiting factor in carver/trader profits suppliers will turn to pieces with a higher profitability e.g. with higher prices per unit volume of timber used. For local markets, dependent on tourists, small carvings present the most profitable pieces. However big business, depending more on export to international craft shops may not be as sensitive to stock shortages (being better able to cope with increases in transportation costs) and may be more likely to drive unsustainable exploitation.

There is clearly a high level of inter-stall competition;[46] margins are already under pressure. If high-surplus pieces and alternative species are not substituted in, some level of redundancy will undoubtedly occur if mpingo supply is restricted.

Carvers are vulnerable to market contraction; 64% could name no conceivable alternative career and their advanced age makes retraining unlikely. Of the remaining 36% some would hope to

[44] Gregory *et al.*, 1999

[45] Bevan & Harrison, 2001

[46] Not only for sales but also for licenses as many traders talked about this when asked about competition for licenses.

become drivers or stall owners, whilst others would be forced to return to the bush to farm. Traders' business and management skills would mean that they were more likely to find work.[47]

### 29.3 Supply Alternatives; a package for the future?

The most commonly mentioned alternatives were mninga (*Pterocarpus angolensis*) and African mahogany (*Khaya nyasica*). Mninga is already over exploited, validating the concern that the problem may simply be shifted elsewhere. Mahogany is usually shipped as finished carvings from Kenya and bartered for mpingo carvings (which go through the Nairobi market), such exchange also seems unlikely to alleviate over exploitation of existing stocks.

However, at the Morogoro Store they said that any hardwood species is a viable commercial alternative. Indeed, carvers at all the markets often sell other woods, such as Mkongo (*Afzelia quanzensis*) and the exotic Neem (*Azadirachta indica*).

There are alternatives to the exploitation of alternative stocks as a method of reducing the impact of the carvings industry on mpingo stocks. The opinion that carving is far less of a threat to mpingo than logging, and that if mpingo destruction is to be halted, felling licences should be granted only for carvers, not loggers is common. Where loggers take only the prime part of the trunks, carvers could potentially use the entire tree. Although we have no quantitative data to support such opinions it does raise possible ways to encourage the more efficient use of mpingo logs. If carving groups could establish formal working relationships with sawmills (who are acknowledged as being inefficient in their extraction process[48]) they would be able to utilise parts of the tree of no commercial value to the sawmills. This has the advantage of reducing carvers costs (they would not need to hire transportation, obtain harvesting licenses, and it would also reduce time collecting the timber. Such a partnership would also allow sawmills (who sell scraps of mpingo for firewood) to generate additional revenue.

Any measures to reduce the carving industry's impact on mpingo stocks would be made far more effective by educating consumers.

Evidence of the impact of this approach comes from two sources:

- Increased awareness of mpingo exploitation and forest certification issues had reduced demand in Scandinavia, causing traders to cease exporting.[49]
- The traders at Morogoro Store claimed that Swedish and Norwegian tourists knew about mpingo and boycotted these carvings.

## *30 Replanting Programme*

### 30.1 Benefits

Despite the long rotation time of mpingo trees[50] replanting has the potential benefits of focusing education and awareness programmes; using mpingo as a key economic species to safeguard the Miombo habitat. Re-planting would also create employment opportunities.

### 30.2 Financing

The cost of re-planting need not be financed from general tax revenues. The excess raised from increasing harvesting levies could be ring-fenced and tied to a replanting programme.[51] This would

[47] Perhaps unsurprisingly, business orientated Chagga were most optimistic of this.

[48] Puhakka, 1991, Moore & Hall, 1987, McCoy-Hill, 1993

[49] Mr Massawe of Africulture Intertrade *pers. comm.*, 2001

[50] Gregory *et al.*, 1999

lead to the strengthening of the FBD's *Retention Programme* under which 70% of revenues accruing to forest use go towards forest management. However the success of such an approach is debatable in light of basic education and health care priorities. There are also concerns that funds are being misappropriated at present, so a strong supervisory body should be set up and, or transparency in revenue obtained and how it is spent improved.

Voluntary contributions could be secured from consumers whilst at Mwenge; contribution boxes could be placed alongside each poster or collection missions could be set up. NGOs could have a role in eliciting charitable contributions and international donations; Fauna & Flora International's *Soundwood Programme* may be interested. Indeed, the African Blackwood Conservation Project (ABCP) has already begun a replanting project in Moshi[52] and their experience and expertise should be used.

The Carvers' Association might help fund replanting, drawing on the reserves in the central fund. Many carvers are concerned that stocks are being depleted and there might be support for such a move, particularly if they were allocated land as part of the deal. These issues could be raised at the forum, and might help strengthen the body in the eyes of its members; allowing it to use the central fund for other activities that benefit the whole community, such as attending conferences and marketing Mwenge.

# 31 Modification of Current Government Policies

## 31.1 Group Licensing

An individual-based licensing procedure could help encourage competition. However, group organisation is considered desirable for the following reasons:

- It gives the option of registration as a co-operative, which gives access to loans and accessibility to Government.
- Tax avoidance may be decreased, as it is easier for Government to keep track of groups compared with individuals.

Individual licensing is problematic because:

- Tool sharing and/or training might become contract-based increasing transaction costs associated with devising, monitoring and enforcing contracts.
- Increased bureaucracy as more licences would be required with all the associated processing costs.

## 31.2 Income Tax

In Mwenge hops near the road charge higher prices, possibly implying that the position of the road distorts competition towards accessible shops and so justifying a spatially-differentiated tax. The variation could, however, represent a necessary extra mark-up to cover costs e.g. higher site rent. Thus, the evidence for or against this policy does not provide a definite answer.

The fact that carvers in different regions pay different taxes seems counterproductive to the carvings industry. The Government should remove distortions by homogenising taxes across regions; this allows competition to operate from a level playing field, ensures equal treatment of carving groups, and removes a perverse influence on the location of carving groups.

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[51] This would not only make such a levy politically palatable, but would ensure that those who benefit from exploiting the tree help to ensure it has a future.

[52] ABCP, 2001

### 31.3 Vary sales tax

If sales tax varied inversely with time taken carving a shift in demand towards labour-intensive carvings could be expected. This would act to shift demand towards small Ujamaa and abstracts at the expense of pieces demanding greater volumes of mpingo especially animals and Maasai.

However, such a proposal is at odds with the Government's policy of flat rate sales taxes.[53] A further problem is that there is no way of verifying year end sales composition, and traders will have an incentive to say that time-intensive sales dominate. These problems make such a response unfeasible at present; however, carvers should be made aware that there is immense variety between pieces as far as the profit/unit volume is concerned.

### 31.4 Harvesting fee

The simplest mechanism to reduce demand for mpingo is to increase the harvesting fee.[54] Concerns that this may just increase illegal logging of mpingo presents a need for better enforcement. The mandatory roadside police checks provide an ideal opportunity to check the cargo of vehicles; if thought necessary policeman's remuneration could be tied to the number of arrests they make/illegally felled mpingo confiscated (being less open to abuse) to combat corruption. In addition reducing the harvesting fee for carvers or any one who can show they will generate revenue from over 50% of the trees they cut (thereby encouraging sawmills to formalise links with carvers) and increasing the fee for business which does not efficiently use the timber they harvest may encourage sustainable exploitation and an increase in revenue from each tree.

# Limitations and Extension Work

## *32 Methodology Improvements*

### Qualitative Section

Questions concerning competition for licenses (8.e) and market regulations (8.d) were always answered in the negative. These questions could be dropped, though they do have a valuable truth testing function.

For questions regarding the origin of the logs (2.b) and alternative woods (2.f), respondents could indicate the most important source and alternative from extensive lists. This approach was not available to us, as the range of responses had not previously been established.

### Quantitative Section

More popular categories might be:

- 10a (i) compare price of single elephant not a set of five
- 10b (i) take smallest Maasai as 28cm high and 20 cm circumference.
- 10c (iii) choose a smaller size for this.

[53] Dr. Baldus, GTZ, *pers. comm.* 2001

[54] Ideally, demand should thus be spread over a range of wood types and, over time, the price tariffs charged by the Forest and Beekeeping Division (FBD) could be altered to achieve this.

Possible extensions include adding really large items to each category, and adding separate categories for half-figures, *Shetani* spirits[55], and skeleton figures.

# 33 Methodological Limitations

Although we tried to compare similar categories between stalls and markets, this was, in practice, extremely difficult. For price comparisons to be concrete, the pieces should be identical in every respect. One should hold constant the tribe of the finisher (as Makonde finished carvings sell for more), the face of the statue (Maasai fetch more than other tribes), and also control for variations in the quality of finish (especially important for Ujamaa). Follow-up projects should consider employing a carver to overcome these problems.

There was some level of clustering of traders by tribe: the Chagga were mainly found from 8-35, and we surveyed four Zaramo consecutively (#51, #55, #58, #61) This means that the methodology is not strictly correct, as it assumed there was no systematic spatial relationship.

The relatively high incidence of 'don't know' responses [56] means it may be worth trying to improve the questions used in the light of our findings.

# 34 Future Projects

TRAFFIC will support future projects if recommended assuming that donations can be found to cover the cost.[57] March and April are low season and traders were remarkably demand focused, so a survey in the high season would make for a more balanced assessment.[58]

The project did not have the time or the resources to document outflows. In particular, the volumes that flow from Tanzania to the outlets in Nairobi, and bulk exports to Western countries, were not investigated. To estimate the sustainability gap attributable to the carvings industry further research is necessary.

The success of repeat projects depends upon the appropriate handling of sensitivities within the market; if offence was caused it is possible that market players would not co-operate by refusing to answer or deliberately misleading. It is essential that future projects make use of *Swahili* speakers who understand linguistic subtleties and body language.

[55] These are said to be fairly unpopular.

[56] Which also arise when respondents reply 'it depends'

[57] Simon Milledge, TRAFFIC East Africa, *pers. comm.* 2001

[58] The response rate may be lower, however, as traders are busier.

# Appendices

# Appendix I : Traders Questionnaire

## 35 Introduction

(a) What is your name?

(b) What tribe do you belong to?

(c) What is your age?

(d) What gender is the interviewee?

## 36 Origin of wood

(a) Do you buy the logs yourself?

(b) Where does the wood come from?

(c) How much does it cost to transport logs to market (e.g. per trip)?

(d) How much does wood cost (e.g. per metre)?

(e) What other wood types do you sell?

(f) Do you make more money from selling Mpingo than other species?

(g) Are you worried about the stocks, and what are your plans?

## 37 Seasonal variation

(a) When are sales highest?

(b) What causes you to increase prices?

## 38 Trends

(a) How have prices changed over the last five years?

(b) How often do you put up prices (considering inflation)?

## 39 Variation by Category

(a) In your opinion what share of each carvings category is sold to tourists (exporters) and Tanzanians?

(b) Which carving category is most popular?

## 40 Linkages

(a) Who do you buy from?

(b) Is it legal?

(c) Do you place orders?

## *41 Lifestyle*

(a) Do you own this store?

(b) How are you rewarded (salary, commission)?

(c) Do you own the land on which it stands?

(d) Do you employ anyone or receive help from anyone (sometimes; e.g. sickness, always)?

(e) What other careers could you pursue?

## *42 Licensing*

(a) What criteria must be met to possess a licence?

(b) How much do you pay to hold a licence?

(c) What are the market regulations?

(d) Is there competition for licences?

## *43 Prices and Volumes*

(a) Elephant set

(i.) small (ii.) medium (iii.) large

(b) Maasai figures

(i.) small (ii.) medium (iii.) large

(c) Candle-sticks

(i.) small (ii.) medium (iii.) large

(d) Ujamaa

(i.) small (ii.) medium (iii.) large

# Appendix II : Carvers Questionnaire

## *44 Introduction*

(a) What is your name?

(b) What tribe do you belong to?

(c) What is your age?

(d) What gender is the interviewee?

## *45 Origin of wood*

(a) Do you buy the logs yourself?

(b) Where does the wood come from?

(c) How much does it cost to transport wood to market (e.g. per trip)?

(d) How much does wood cost when bought here (e.g. per metre)?

(e) How many logs per week do you use for making all your carvings?

(f) Are you using other species, and what are they?

(g) Are other species easier to carve?

(h) Are you worried about the stocks?

# 46 Linkages

(a) Which traders place orders with you and how often do they do this?

(b) Do you sell at different prices to different traders (if so, how discriminate)?

(c) Do you sell at different prices to exporters?

(d) Do you transport the goods to market yourself?

# 47 Seasonal variation

(a) When are sales highest?

(b) What causes you to increase prices?

# 48 Trends

(a) How have prices changed over the last five years?

(b) How often do you put up prices (considering inflation)?

(c) What affect does the Association have on prices (if applicable)?

# 49 Variation by Category

(a) In your opinion what share of each carvings category is sold to tourists (exporters) and Tanzanians?

(b) Which carvings category is most popular?

# 50 Lifestyle

(a) How did you learn to carve?

(b) How long is an apprenticeship, and what does it involve?

(c) Do you employ anyone or receive help from anyone (sometimes, always)?

(d) What are your other family members doing?

(e) What other careers could you pursue?

Mwenge only:

(a) Where were you based before Mwenge?

(b) Why did you move to Mwenge?

## *51 Licensing*

(a) Do you belong to an Association of carvers?

(b) What criteria must be met to join the Association?

(c) Do you have a licence and how much does it cost?

(d) What are the market regulations?

## *52 Group Characteristics (group leaders only)*

(a) How many carvers are in your group?

(b) What criteria must applicants possess?

(c) What are your responsibilities?

(d) How did you attain leadership position?

## *53 Prices and time taken carving*

(a) Elephant set

| | | |
|---|---|---|
| (i.) small | (ii.) medium | (iii.) large |

(b) Maasai figures

| | | |
|---|---|---|
| (i.) small | (ii.) medium | (iii.) large |

(c) Candle-sticks

| | | |
|---|---|---|
| (i.) small | (ii.) medium | (iii.) large |

(d) Ujamaa

| | | |
|---|---|---|
| (i.) small | (ii.) medium | (iii.) large |

# Appendix III : Carving Category Dimensions

## *54 Animals-elephants*

(i) Small (set of five): height 4cm, length 6cm

(ii) Medium: height 12cm, length 11cm

(iii) Large: length 20cm, length 21cm

## *55 Maasai figures*

(i) Small: height 20cm, circumference 12 cm

(ii) Medium: height 66cm, circumference 37 cm

(iii) Large: height 85cm, circumference 43 cm

## 56 Functional – candle-sticks

(i) Small: height 12cm, circumference 10 cm

(ii) Medium: height 26cm, circumference 20cm

(iii) Large: height 50cm, circumference 24cm

## 57 Ujamaa

(i) Small: height 28cm, circumference 22cm

(ii) Medium: height 32cm, circumference 35cm

(iii) Large: height 59cm, circumference 40cm

## 58 Notes

- 10% error margin used e.g. if height = 10cm accept if it lies between 9 and 11 cm.
- circumference measured around widest point
- height measured between highest and lowest points

Elephants, trunks lowered

Maasai, pair of full length figures (woman and man) with separate base.

Functional candles, pairs; (ii) twisted; (iii) carved elephant, Maasai or giraffe (not family tree) in stem.

Ujamaa, immature wood not counted. (i) 4-6 human beings in figure.

# Appendix IV : Accounts

## Funds Raised

| | £ |
|---|---|
| National Lottery Commission | 1,500 |
| The Panton Trust | 500 |
| Other Contributions | 100 |
| British Airways | Free flights |
| **Total** | **2,070** |

## Spending

| Pre-Project | £ |
|---|---|
| Proposal admin costs | 120 |
| Insurance | 61 |
| Tanzanian Visa | 38 |
| Film | 20 |
| Medical | 72 |

| Pre-Project | £ |
|---|---|
| Books & Equipment | 30 |
| **Total** | **341** |

| In Tanzania | £ |
|---|---|
| Research Permit | 374 |
| Accommodation | 233 |
| Food | 183 |
| WCST (Isaac's time) | 228 |
| Petrol | 26 |
| Public Transport | 59 |
| Medical | 71 |
| Equipment | 24 |
| Other | 59 |
| **Total** | **1,257** |

| Post-Project | £ |
|---|---|
| Report Publication | 440 |
| Film Development | 25 |
| **Total** | **465** |

| | |
|---|---|
| **Project Total Cost** | **2,063** |

The post-project figures are estimates. Any surplus will be returned to the *Mpingo Conservation Project* central account.

# Appendix V : Acknowledgements

*(From Vernon)*

All the staff of WCST were wonderful. They were kind and friendly; making me feel at home, accommodating and generous; allowing me access to all the facilities. It was a pleasure to work with Isaac Malugu who was hard working and enthusiastic, and became a great friend, and Paul Nnyiti, with whom I shared an office, was always great fun.

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# Appendix VII : Contact Details

## *Mpingo Conservation Project*

The Mpingo Conservation Project exists to assist mpingo conservation initiatives primarily by facilitating long term research and concentrating on obtaining quantitative data on the ecology of the tree and the impact of exploitation. It is committed to a substantial research programme conducted through two principal means: regular student expeditions, and secondly by funding on-going research at other times of the year by Tanzanian students and foresters. The *Mpingo Carvings Investigation 2001* was the fifth expedition from the project. At the time of writing the sixth expedition is preparing to head out in June 2003.

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## *Fauna & Flora International (FFI)*

Fauna & Flora International, founded in 1903, is the world's oldest international conservation charity. Its mission is to safeguard the future of endangered species of animals and plants through action based on sound scientific principles. FFI has members in over 100 countries and its programmes offer creative and innovative solutions to conservation problems. They involve and empower local people, ensuring that conservation gains for threatened species are sustained into the future.

The Soundwood Programme was established to promote the conservation of numerous valuable hardwoods about the world which are endangered by high rates of exploitation to supply raw materials for the manufacture of a whole range of musical instruments. Mpingo is just one amongst many species which are threatened in this way.

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