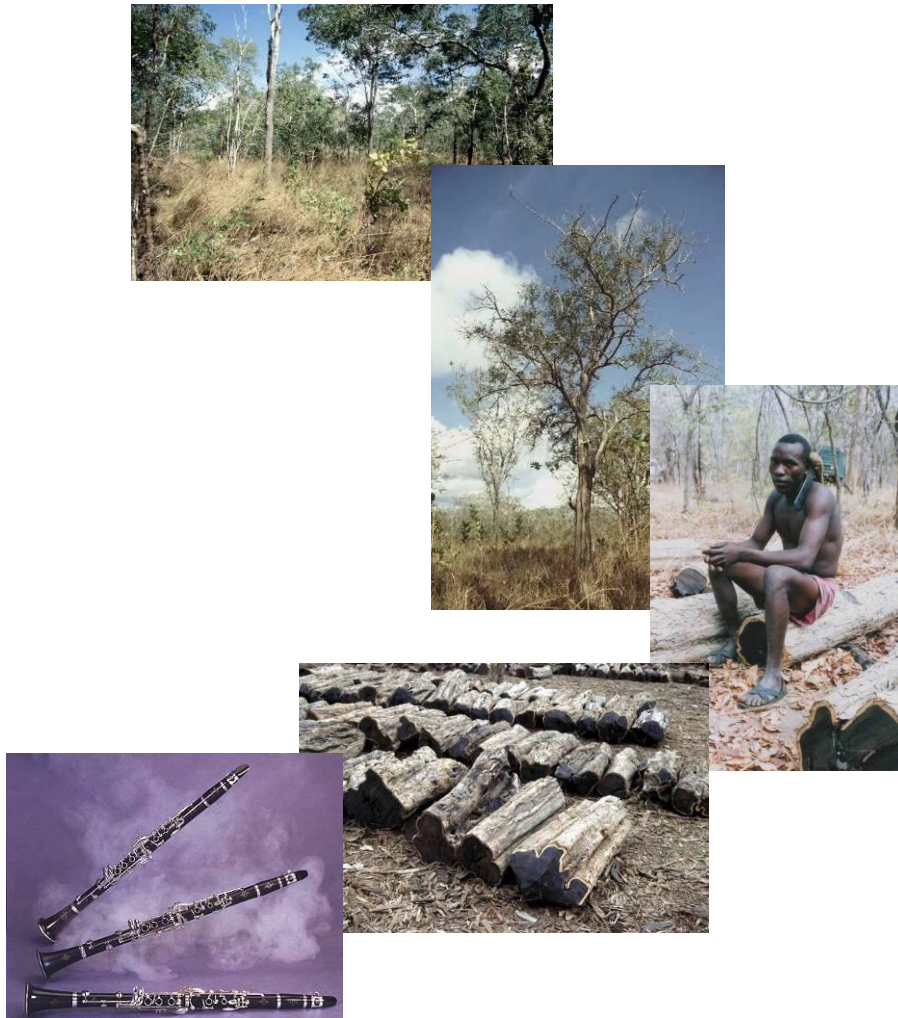


A Summary of the Supply Chain for African Blackwood, Market Economics and Opportunities for Community Forest Certification



Paul Harrison

January 2008

Produced by Environment Africa Trust, UK
With the support of the Mpingo Conservation Project and Kilimanyika



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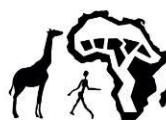


Table of Contents

Acknowledgements.....	3
Abbreviations and Acronyms	3
Executive Summary	4
1 Background	4
2 Key Findings	4
Context.....	6
Understanding the Supply Chain	7
1 Communities and Forests	7
2 The Logging Process	8
3 Sawmills and Billet Production	8
4 Export, Import, Shipping & Handling	9
5 Manufacturing Instruments	9
6 UK Distribution & Wholesale	11
7 Retail of Musical Instruments	11
8 Consumer: the Musician.....	11
Certification of the Supply Chain	13
Supply Chain Economics.....	14
1 The Source	14
2 Supply & Demand.....	15
3 Community Forest Management Scenarios.....	16
4 Value Chain Analysis.....	18
Supply Chain Timeline	20
Developing Trade in FSC-CAB.....	22
References	23

Tables and Figures

Tables

Table 1:	Profit & Loss Forecasts; Normal, Under PFM, Under Certification Years 1 and 5	17
Table 2:	Price of an Oboe; Normal (A), Under PFM (B), Under Certification Years 1 (C) and 5(D).....	19
Table 3:	Estimated Minimum Timeframe Required to Complete Supply Chain	20

Figures

Figure 1:	From Forest to Retail: Stages of Supply Chain.....	7
Figure 2:	Volumes by Instrument (as a Percentage).....	10
Figure 3:	Certification: Forest Management & Chain of Custody Stages	13
Figure 4:	MCP pilot area, showing boundaries of each village, and location of VFLRs.	14
Figure 5:	Illustration to show Anticipated Number of Instruments that can be produced for one 2,000ha VLFR.....	15
Figure 6:	Anticipated No. of Instruments Saleable by Instrument for one 2,000ha VLFR	16
Figure 7:	Supply Chain Timeline Illustrated	21

Acknowledgements

My grateful appreciation for all those who assisted in the funding and development of this report. In particular I would like to thank the following:

- Comic Relief, our funders.
- Mike Chandler, Chairman of EAT and Steve Ball, Project Coordinator, MCP for oversight and administrative support and the use of internal documents.
- Fauna & Flora International, in particular Lizzie Wilder and consultant Tim Cumine for advice and useful inputs, particularly on costs and timber trade specialist information.
- Michelle Spearing for her insights and patient support.
- Neil Bridgland, associate to Kilimanyika, for insights, close support and interaction over the creation of this and other studies carried out for EAT during the same period.

Paul Harrison
January 2008

Abbreviations and Acronyms

CAB	Certified African Blackwood
CSR	Corporate Social Responsibility
EAT	Environment Africa Trust
FFI	Fauna & Flora International
FM	Forest Management (a type of FSC certificate)
FSC	Forest Stewardship Council
MCP	Mpingo Conservation Project
NGO	Non-governmental Organisation
PFM	Participatory Forest Management
SAW	Soil Association – Woodmark
TTF	Timber Trade Federation
VLFR	Village Land Forest Reserve
WWF	World Wide Fund for Nature

Executive Summary

1 Background

The African Blackwood tree (*mpingo* in Swahili) is one of the most valuable timbers in the world. Dark, lustrous heartwood makes it the medium of choice for wood carvers and strong international demand comes from producers of musical instruments including clarinets, oboes and bagpipes. Extensive demand and poor forest management is pushing it towards commercial extinction in much of East Africa where it is found in greatest quantities.

Under-resourced governments in the region lack the ability to enforce their own regulations, and illegal logging is widespread. Instead governments are slowly devolving the responsibility for managing the forests, together with the attendant benefits, to poor rural communities. Sustainable management of these forests would thus have substantial benefits for both the environment and poverty alleviation. However, in order to get the best price for their timber communities need to differentiate it from wood sourced from other areas. Guaranteeing a fair price for communities and ensuring environmental best practices in management can be ensured by supplementing community forest management with certification by the Forest Stewardship Council (FSC), so that products can be labelled as made from blackwood which has been felled sustainably from community-managed forests, and for which a fair price has been paid.

Founded in 1995, the Mpingo Conservation Project (MCP, registered Tanzanian NGO No. 1739), has been carrying out practical work to develop Participatory Forest Management (PFM) in south-eastern Tanzania since 2004. MCP is working in partnership with the Environment Africa Trust (EAT, UK Charity No. 1025443) in order to develop new opportunities in fair trade for African blackwood. EAT and MCP's shared vision is to continue to develop the work in Tanzania, securing long term livelihoods for the forest communities based upon sustainable management of their forest resources.

In July 2007, EAT was awarded a Project Development Grant (PDG) from funders Comic Relief to develop the processes required for certification of community managed forests in Tanzania and a sustainable trade between communities and end-users in the UK. This report is an output from that work. It assesses the supply chain and economic issues related to such a trade. In doing so the report builds upon ongoing work by MCP, EAT and other partners in both the UK and Tanzania in the development of a sustainable trade in African blackwood from community managed sources.

2 Key Findings

Looking at the source of supply (the forests and the communities managing them), it has been possible to gain a greater understanding of how the economics of the supply chain must impact upon those communities positively (and significantly) if it is going to be feasible long term. EAT & MCP carried out profit and loss analysis of various scenarios, which enabled us to understand the viability of the trading system for the communities themselves. A premium on the retail price will be essential, and this will need to be reflected in the profit margin at each stage in the supply chain, which should therefore be kept as short as possible. The price premium on the more expensive, top end of the oboes and clarinets will yield the biggest benefits for producer communities with proportionally lower mark-ups required than for cheaper instruments.

The research also provided an opportunity to understand what the chain of custody would look like under certification. MCP will act as a management body overseeing and monitoring individual community forests to ensure that they meet both ecological and social requirements related to forest management, and to ensure they get the best outcomes in terms of economic yield and social development. The loggers union will work under MCP's supervision to ensure adherence to health and safety standards and quality control in the logging process.

Logs are purchased direct from the village by the sawmill – MCP have identified an initial partner sawmill who are keen – and who will have their own chain of custody certificate, as will the appropriate import-export agencies. Manufacturers will also require a chain of custody certificate, possibly obtained through a

cooperative buyers' group to reduce costs. Providing the margins are adequate, stakeholders at each stage in the supply chain appear willing to devote resources to this process, stating that "the time is right to do so."

Our findings indicate that the supply chain is likely to take an absolute minimum of just under two years from village to point of sale (of a musical instrument). Assuming a first harvest in November 2008, by which time MCP expects to be FSC certified, the first UK instrument sale will be October 2010. The longest stage in the supply chain is that when the wood is left to dry out (seasoned) by the instrument manufacturer, which can be up to five years.

Context

Natural resources are the most valuable assets of most developing countries; the recent global commodities boom has significantly boosted the economies of countries throughout sub-Saharan Africa. However often the benefits of exploitation are captured principally by economic and political elites, with little trickle down to the communities living in, on and around the natural resources being exploited, and who typically remain mired in poverty.

One potential solution to this problem is community-based management of natural resources, which has been tried and developed across the global South over the last twenty years. Repeatedly, the biggest challenge has been to ensure real and direct benefits to the rural communities who are being passed the burden of management responsibility. This is no different in Tanzania, where a programme of Participatory Forest Management (PFM) has achieved noteworthy successes in giving rural communities rights over their local forests, but thus far few communities have realised significant financial benefits. Poverty is widespread in rural Tanzania, and PFM must contribute to community social and economic development in order to be relevant.

The most valuable species found in the forests of south-eastern Tanzania is African Blackwood (*Dalbergia melanoxylon*), also known as *mpingo* in Swahili and *grenadilla* in Spanish. It is a highly valuable timber in international trade which is used in the manufacture of high quality musical instruments. In the UK, blackwood is used in the manufacture of clarinets, oboes, flutes, recorders, whistles, smallpipes and bagpipes. In Africa, it is used extensively for the production of carvings. The first step to ensuring a sustainable supply of blackwood in future is to ensure it has a market, guided through a secure supply chain. Another step is to entrust the management of blackwood stocks to communities in Tanzania who will benefit from a sustainable trade in this timber. One cubic metre of billets can fetch up to \$18,000 on the export market, making it one of the most valuable timbers in the world. The Mpingo Conservation Project (MCP) was formed to leverage that incredible value for the benefit of local communities. However illegal logging is widespread, with some 96% of timber emanating from the region not properly licensed.

Communities wishing to manage their own forests must thus compete in a market flooded by unrealistically cheap timber. The project therefore seeks to supplement PFM with certification by the Forest Stewardship Council, so that products can be labelled as made from blackwood which has been felled sustainably from community-managed forests, and for which a fair price has been paid. Musicians, thereby able to distinguish ethically-sourced instruments, will be able to support the industry in improving its practices through buying power. At the same time communities will benefit from the substantial revenues that they can earn from selling logging rights, the profits of which can be invested in locally-prioritised development actions for the benefit of all community members.

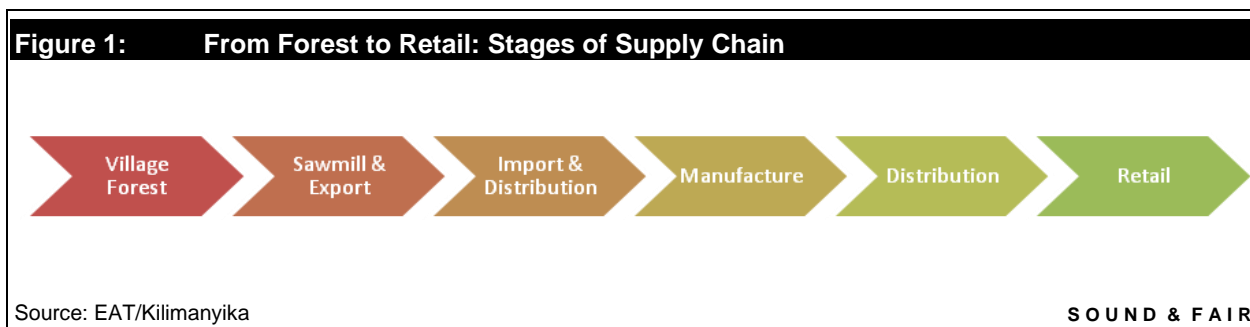
In musical instrument manufacture worldwide, blackwood is used principally in the manufacture of woodwind instruments. According to Jenkins *et al.* (2002), the “single most important export market for African blackwood timber is that to supply manufacturers of musical instruments, principally woodwinds, and particularly clarinets, but also oboes, bagpipes, wooden flutes and, in lesser amounts, other instruments or their parts.”

The manufacture of musical instruments is a precise enterprise and as such, according to Cumine (2006) manufacturers are demanding customers, wanting only the darkest wood, and billets which must be free from faults that would cause the wood to split on the lathe. Consequently only a proportion of blackwood billets may be used to make musical instruments. Because of the high level of work required in making an instrument, purchasing the timber represents only a small fraction of the total cost of an instrument (up to 6% of the retail value) and as such there is considerable opportunity to increase the cost of the raw material with minimal impact on the final price, at least within a niche market.

Understanding the Supply Chain

EAT and MCP aim to deliver a sustainable supply of certified blackwood to musical instrument retailers' and their customers by influencing both the supply and demand aspects of the supply chain, i.e. from boosting capacity to communities through to campaigning in the UK to appeal to musicians and retailers. Consequently an explanation of the supply chain is given here in full before assessing in greater detail the retail market.

The supply chain begins with community managed forests in Tanzania, and moves through a process of harvesting logs which are turned into billets, shipped and made into musical instruments.



1 Communities and Forests

A recent report, edited by Duncan Macqueen of IIED, sums up the realities that face many forest dependent people in developing countries such as Tanzania.

Forest-dependent people face both poverty and marginalisation. Their difficulties are often much broader than low incomes. They have to do with powerlessness and insecurity, the absence of 'decent' work, geographical and social isolation, the degradation of natural resources on which they are particularly dependent, and cultural disintegration. (IIED, 2007)

In the forests of Kilwa district, timber is the most important commercial product with the potential to generate far greater financial yields than Non Timber Forest Products (NTFPs), especially given the lack of value-add activities in the area. However, simply selling the timber is not a simple matter and requires the right social and economic conditions if it going to be a viable proposition. As IIED note, "community forest producers must match what the buyer wants, often in competition with other more powerful, better informed and financed enterprises." (IIED, 2007)

Rural poverty is entrenched in Kilwa District where the supply chain begins. Some 35% of households in the district live below the poverty line, subsistence agriculture is the norm and median household income in MCP pilot villages is under \$300 per year, mostly from agriculture which is susceptible to climatic variability. Communities greatly need alternative sources of income in order to increase their well being and access social services and new opportunities. Local timber stocks are a major potential asset for many rural communities, which, if they could obtain a fair price, would provide significant extra income. However, for the most part, communities get little benefits from the timber.

In Tanzania, MCP is working with villages to establish a system known as Participatory Forest Management (PFM) which, once completed, provides forest dependent communities with ownership of and management rights over specific forest areas which are found within village lands. As part of the process, village communities elect a village natural resource council (VNRC) to govern the village land forest areas (VLFR). MCP is assisting several VNRCs to implement the state/donor-sponsored PFM process in selected villages: establishing village boundaries and VLFRs, conducting participatory forest resource assessments in the VLFRs and establishing bylaws. Although progress has been a little slow so far, MCP is working steadily towards ensuring the target villages are ready to provide a supply of sustainably managed timber of a high quality.

Completing PFM is the essential first stage, and useful in itself. However, achieving certification is another essential process and adds another level of forest management for communities to both administer and gain from. The VNRCs require Forest Management Certification if they are to produce certified timber. However, rather than requiring a separate certificate for each village, MCP will manage a Group Certificate, which communities can join voluntarily. Under this system, MCP takes responsibility for administering the group, ensuring all members adhere to the necessary standards, and monitoring their compliance. External auditors then check MCP's systems and visit only a sub-set of members each year, thus costs are reduced and spread around the group.

2 The Logging Process

The next step is the logging process. The individuals and groups involved in logging are important stakeholders in the supply chain. *Uwambali* is a union of loggers working in Lindi region. Not all the loggers who work in Kilwa District are part of *Uwambali*, some work for sawmill companies directly; others work independently, however an increasing number favour the umbrella support of a union, to which they all contribute administration costs. The union is based at Nangurukuru, a small trading centre located at the junction of the road to Kilwa Masoko on the main Dar es Salaam – Lindi – Mtwara road. Its members have expressed interest in any programme which helps provide long term security for their jobs.

While it is not strictly necessary that *Uwambali* be involved in the certification process, it has been agreed in early discussions that they will have roles supervising and enforcing safety standards required to obtain a Forest Management Certificate, as well as logging. Skills training for loggers will be essential to strengthen this aspect of the supply chain, and MCP has already provided some initial training to *Uwambali* members.

In particular, in order to develop their understanding of certification, nine representatives from *Uwambali* along with an MCP staff member spent one week at TanWat, a private sector plantation in Tanzania that already practices certification, in early December 2007. *Uwambali* members were able to see for themselves the approach taken to felling at TanWat and ask questions directly of the TanWat managers. The lessons learned were reinforced by a return visit to Kilwa on the part of TanWat's Environmental & Safety Manager to see *Uwambali*'s existing approach.

Uwambali may be an important potential partner to be involved in the certification process and they are motivated by the fact that they may earn more from cutting less. They have been positive in discussions with EAT and MCP about what a certified supply chain would bring to their livelihoods and to ensuring the sustainability of the forests. However they have expressed concern that the number of villages under PFM would need to be many, otherwise there would not be sufficient supply to meet demand and that particular market would fail, leading buyers and loggers to return to current practices and markets.

3 Sawmills and Billet Production

It is important to have a good understanding of the way suppliers and dealers trade, and with whom, and that EAT and MCP are able to identify the most efficient routes from sawmill to instrument maker. The co-operation of an experienced sawmill is necessary to successfully translate any harvest into timber suitable for the specific demands of the musical instrument manufacturers, retailers and musicians. According to MCP, the following sawmills are operational in Lindi Region and have all harvested blackwood at one point or another:

- Mahmood International (sawmills in Ikwiriri town, Rufiji and Dar es Salaam), specialise in blackwood
- Shandrong Wood Products (Chinese-owned sawmill in Kilwa Masoko town)
- Boleyn (sawmill in Nangurukuru trading centre)
- Sameja (sawmill in Lindi town)
- Majurah (sawmill in Mingoyo, Lindi District), major exporters of blackwood
- Mtua (sawmill in Lindi District, on the road to Nachingwea town)
- Rainbow Ltd are a new company with permission to establish a sawmill in Kilwa Masoko
- African Blackwood Enterprises (old sawmill on road between Lindi and Mtwara, new sawmill in Dar, now harvests mostly in Tanga region)
- Sandalwood Enterprises, based in Tanga

With the small amounts of timber involved, at least initially, it is likely that the project will use only one timber supplier. Established timber-trading relationships may dictate that, in selecting a sawmill with whom to collaborate, MCP will narrow the choice of distributors with whom the partners can work.

One or more of the companies referred to above are potential partners for the certification process. Having assessed options for engagement with various sawmills in the region, MCP have entered into discussions with the one sawmill owner with hopes of a mutually beneficial partnership. Recovery rates for blackwood vary but are much lower than for other woods. The MCP's proposed partner sawmill states that they can yield 2% of timber for top quality billets, though when taken together with lower grade products the sawmill achieves a yield of 20-25%.

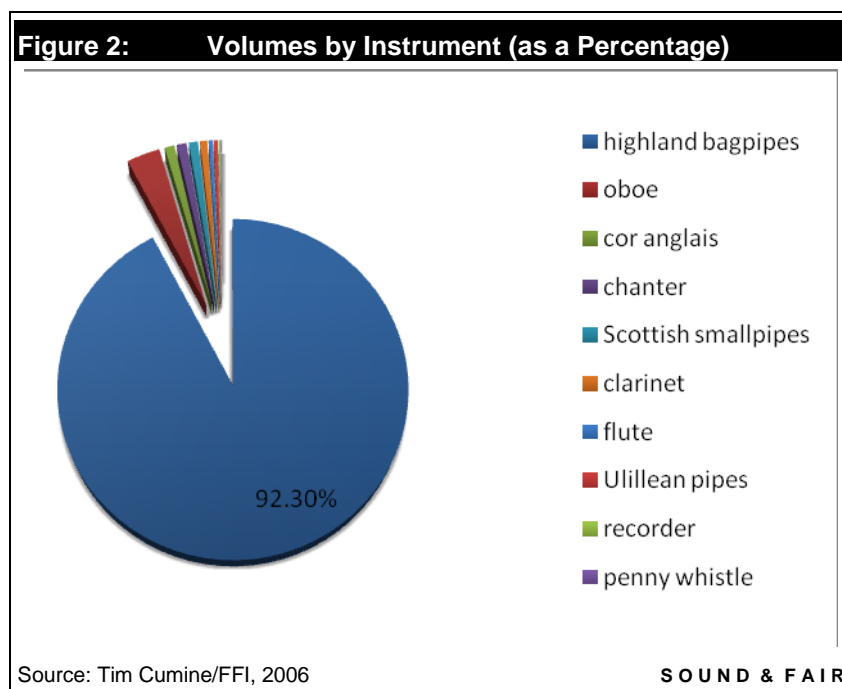
4 Export, Import, Shipping & Handling

From the sawmill, the billets are exported. They are transported to a port in a container that has been checked and sealed by Tanzanian customs. The container is then handed over to a handling agent who arranges the shipping and logistics for the container's transport to its destination. For containers arriving in the UK, the handling agent completes the process of importing the goods at a British port. Depending on the agreement, the handler may also ensure the container arrives at its final UK destination, with the UK distributor.

It is typical that a UK buyer/distributor, which is a specialist trade with limited players, purchases the billets from the sawmill, with one party taking on the handling and shipping fees. For smaller volumes, manufacturers buy directly from this distributor. Large manufacturers may buy direct from the sawmill and handle arrangements themselves, or they may also work through a distributor.

5 Manufacturing Instruments

Cumine (2006) looked at manufacturers who use blackwood in the making of musical instruments. He assessed 20 manufacturers who were said to be using over 19m³ of timber. According to Cumine, "the two largest consumers were makers of highland bagpipes accounting for a combined volume of 17m³. ... At the other end of the scale those makers who intended to make one or two instruments each year using blackwood as the fingerboard or back & sides of guitars and lutes expected to use as little as 0.0002m³."



Instrument manufacturers in the UK currently pay in the region of £25 for a set of billets to make a clarinet or oboe which will eventually retail for £2,000 and upwards. Cumine concluded that there is a demand for sustainably managed, certified blackwood timber amongst small-scale instrument makers in the UK, and that the instrument makers would be prepared to pay a premium for it. Some manufacturers even indicated they would be prepared to pay up to double the current price to get ethically sourced timber without being able to pass on the higher costs to consumers.

One option in which FSC-CAB may be made available to UK manufacturers is via an FSC-certified buyers group which manufacturers wishing to acquire FSC-CAB have to join and pay membership fees. All actors involved in the chain of custody of certified timber must themselves be certified. Under a Group Chain of Custody Scheme any company “of less than 15 staff (or less than 25 if turnover is under \$100,000) may join as a member and thus benefit from the registration which the Group has established with FSC. There is currently one such group established in the UK which operates nationally, Oxford Timber Audits (OTA).” (Cumine, 2006). A specific chain of custody group such as OTA might be most suitable for bringing together small scale manufacturers. The FSC price premium will be principally determined by the extent to which manufacturers believe in their ability to pass the premium on to customers – a market driven pricing mechanism. The desire of manufacturers to play their part in an ethical trade may play some additional part, as evidenced by the apparent willingness of some manufacturers to buy wood sourced from community-managed forests without an accompanying certification scheme.

However, the UK manufacturers using blackwood are typically small and are likely to have limited resources for supporting the campaign beyond purchasing the timber. The smaller manufacturers also have limited ability to pay extra for the timber because of their limited financial resources. The readiness of individual UK manufacturers to adopt FSC-CAB and invest in their CSR through the campaign may be reduced by splitting the limited supply of FSC-CAB amongst a number of small manufacturers.

In contrast, large international clarinet and oboe manufacturers, supply markets worldwide. Such companies have potential as manufacturing partners. The principal manufacturers include:

- **Yamaha** – A Japanese company with significant UK presence
- **Le Blanc** – a US owned manufacturer with French origins
- **Buffet Crampon** – a French manufacturer
- **Selmer** – a French manufacturer

Discussions should be held with all types of manufacturers, from sole traders to international corporations to establish the right manufacturing relationships for the product. All routes should be explored further until a suitable arrangement can be found.

6 *UK Distribution & Wholesale*

Following manufacture, a range of distribution models are in operation. In some instances manufacturers supply end-users directly i.e. musicians ordering bespoke instruments, and also supply specialist retailers. Manufacturers also supply both wholesalers, especially in larger volumes. The internet has a role for many in both supply and retailing. Some instrument retailers also offer an instrument repair service. An instrument rental service operates in some areas, particularly for students.

7 *Retail of Musical Instruments*

The penultimate stage of the supply chain is the retailer, specialist and non-specialist. A survey of selected retailers carried out in a sister EAT report (Harrison, 2008a) gave an indication of the factors which would both encourage and discourage retailers from trading in certified blackwood instruments. The primary reasons which would encourage retailers to trade in certified instruments were first fair trade, and secondly environmental or conservation concerns. Testing a new supply route and seeking better quality timber were also deemed important. However, the perceived extra cost of certification and the related concerns about additional administration were cited as potential reasons why retailers might not wish to trade in certified instruments. Overall, retailers expressed a strong interest in the future product but remarked that the real influence lies with the manufacturers and the musicians themselves.

8 *Consumer: the Musician*

An additional sister report has been carried out by EAT (Harrison, 2008b), the results of which are summarised here. Broadly speaking, classical musicians are typically highly aesthetic people, creative yet precise in the way they play their music, and similarly so in the way in which they engage with life in general. As such, the appeal of a fairly traded, certified instrument tends to fit well with the typical musician's personality and purchasing decisions. Ethics, moral choice and environmental sustainability are important to these consumers. Conservation and fair trade concerns are most important of all.

Consumers can be classified as professional, semi-professional and amateur. Students, depending on their levels can be regarded as both semi-professional and amateur. Professionals may play in symphony orchestras, as soloists, as chamber musicians or in specialist associations such as early music ensembles. Symphony players are the most common, making up perhaps three-quarters of professional woodwind players. Chamber musicians account for an estimated 15% of professionals whilst approximately 5% are soloists and an estimated 5% are specialist performers.

The purchase of a premium oboe or clarinet represents a major investment and instruments are usually repaired rather than replaced, but the wear and tear on woodwind means they are replaced more regularly than say string instruments. Buying a musical instrument is, in retailing parlance, a 'wants' rather than a 'needs' purchase. Typically the need for a functional instrument is outweighed by the aspirational aspect of buying an instrument, a purchase that makes the musician feel that not only are they investing in quality, and they are improving themselves and benefiting their audiences by paying extra for a better product.

Linked to this is the critical issue of quality. It is clear from this research that to reach the requirements of a musician, particularly above the amateur level, a fairly traded, certified product will not be enough to sway the potential buyer. The most important factor in deciding on a purchase is not its price, nor the origins of the wood, nor the social and ecological impact, but the intrinsic quality of the instrument itself. Qualities of sound, of feel, of function, and of material are all essential to the buyer. Yet if the quality aspirations and requirements of the consumer can be met, strong demand exists for FSC-certified, Fairtrade and other ethical products, sold with a price premium, especially at the top end of the market. A product's provenance and added value is a selling point. Consumers generally are increasingly making buying decisions on a product's

‘eco-value’, especially for premium and luxury products, and FSC-certified instruments would fit well into this picture.

In the current eco-conscious consumer market, asking buyers of musical instruments to pay a small percentage price premium is a realistic proposition. Some 78% of musicians questioned stated in EAT’s consumer research that they are willing to pay a more for a certified, fairly traded instrument, with three quarters of them indicating they would be prepared to pay a premium of between 10-25%. This aspect of the research is absolutely fundamental to the viability of the project. End consumers have indicated a willingness to pay the premium that is necessary to fund the FSC certified supply chain that will deliver increased incomes to forest-dependent communities.

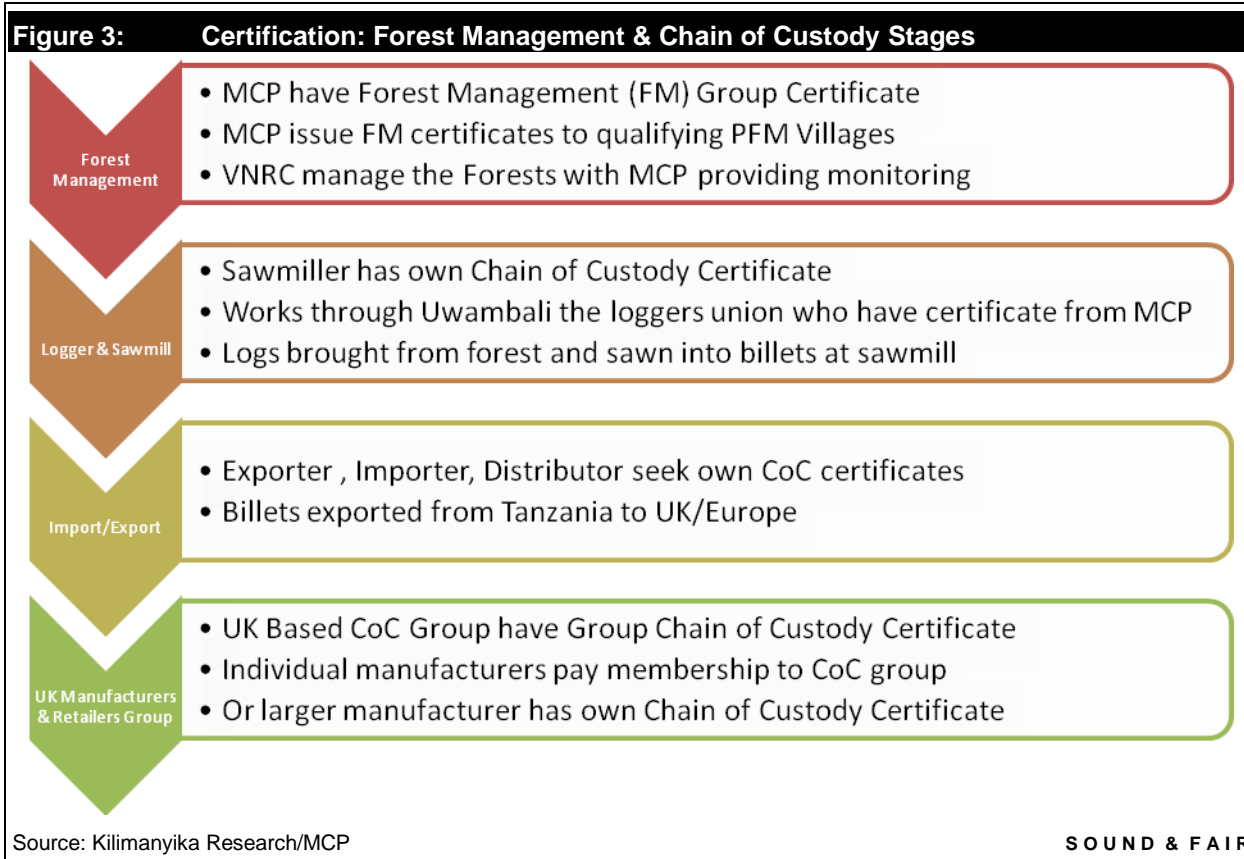
Certification of the Supply Chain

FSC’s certification principles are widely acknowledged as a international quality standard in the management and supply of sustainably produced timber. FSC certification is often about securing market access.

Because of the complexity of managing the process, however, this has yet to bring similarly large-scale yields to forest dependent communities. In theory, forest enterprises of all shapes and sizes can earn revenue by trading timber products, fuel wood and other non-timber forest products, and through selling services such as tourism or carbon credits through certification, therefore the real barriers to communities in certifying their forests are in the capacity of forest dependent people to become successful managers, access markets and, crucially, the ability for communities to successfully manage a complex system of forest management under certification.

Building on addressing these issues, supplying certified blackwood for musical instruments is currently the priority for MCP for three reasons. First, the blackwood component is a small fraction of the price of a musical instrument, offering a significant opportunity to increase prices with minimal impact on the end consumer (i.e. almost zero price elasticity of blackwood) as long as those price increases can be passed on by labelling certified instruments. Second, it is a well-established and well understood supply chain, which though extended, has only a single additional link (after the forest) in Tanzania, and with a limited number of actors (in contrast to carvings). Third, the revenue obtainable for communities by this means will realise the overall project goal of improving the livelihoods of the forest dependent people that is sustainable.

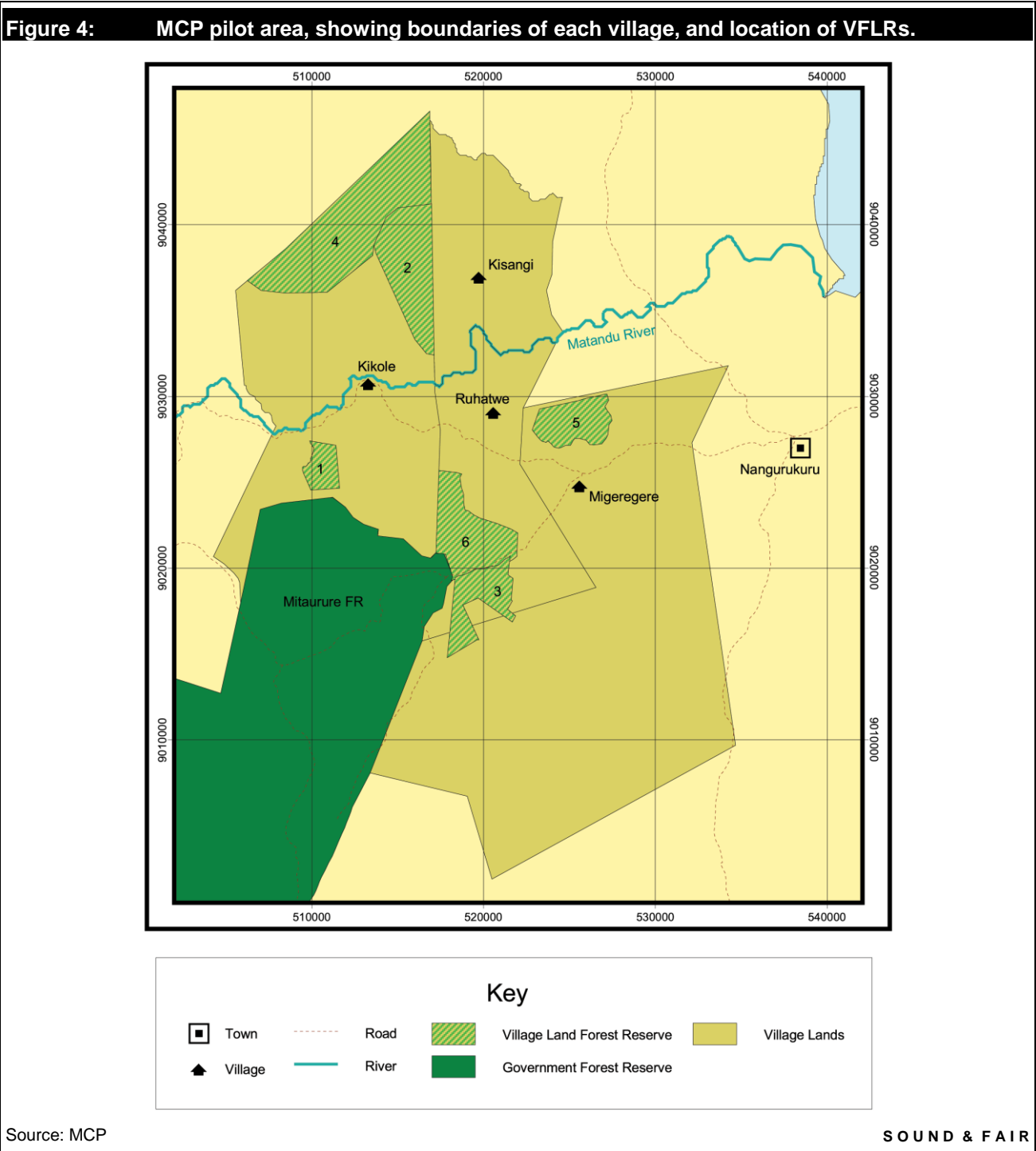
MCP will hold a Forest Management Group Certificate, and will act as a group manager for the different Village Land Forest Reserves, and will help calculate sustainable harvest rates. The next step involves ensuring that each of the other parties in the Chain of Custody agrees that they will only use sustainably harvested African blackwood and in return they get the FSC stamp. The end result is musical instruments sold with the FSC label enabling buyers to identify it as a product from a sustainable source.



Supply Chain Economics

1 The Source

MCP has modelled different approaches to managing the timber stocks found in Kilwa District. Lacking any firm data to the contrary MCP used 100 years as the rotation period in the models when in fact 70-80 years may be perfectly feasible. Over the five year period covered by a typical VLFR management plan MCP has calculated that 9.4% of medium sized trees and 5.8% of larger trees can be sustainably logged. Depending on the overall proportion and volumes of medium and large trees this will generally work out around 1.5% by volume per year is a sustainable harvest (MCP, 2007).



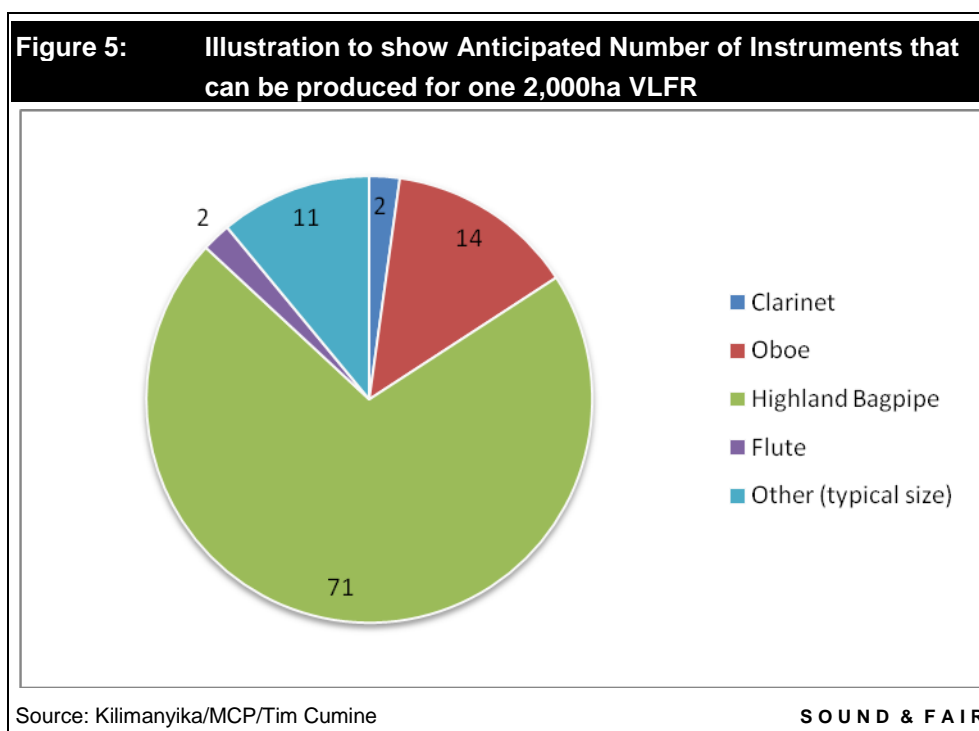
The following assumptions are given in the calculation of the economics of the supply chain:

- A typical Village Land Forest Reserve (VLFR) is 2,000ha.
- Blackwood is found at densities of around 0.88m³/ha (volume of logs only).
- The sustainable harvesting quota is 1.5%.
- The sustainable off take from a typical VLFR is therefore 26.4m³ logs per annum.
- The yield of high quality instrument-worthy billets is 2% of logs.
- Hence the volume of high quality timber for musical instruments is 0.53m³ from a typical 2,000ha VLFR.

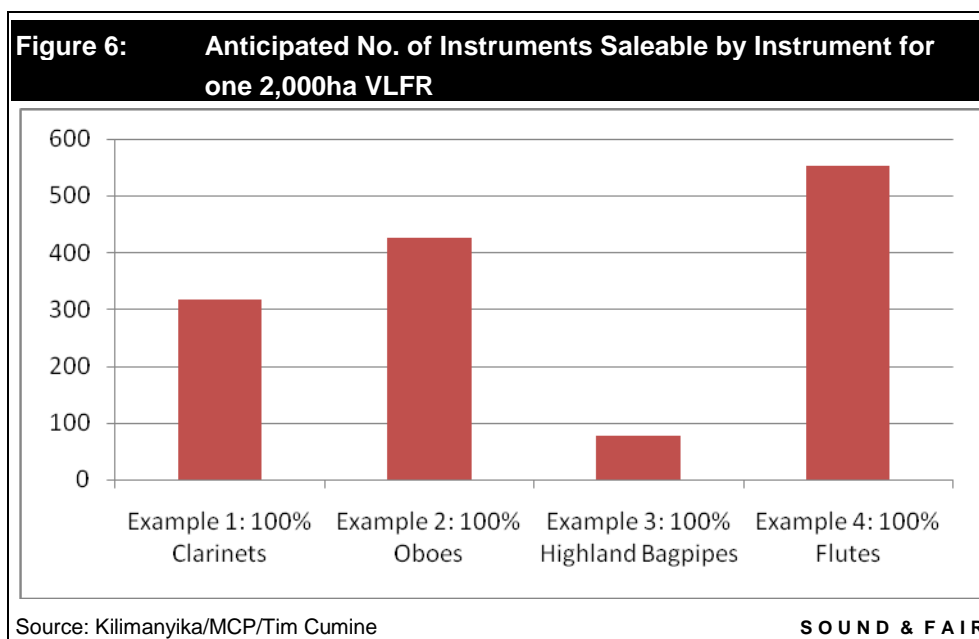
These are noteworthy, particularly because they illustrate the limited off take that will be achievable, largely because blackwood is slow growing, and thus only a small percentage of the timber can be utilised for high quality musical instruments.

2 Supply & Demand

The above calculated output from a typical VLFR is enough blackwood to make a total of 2 clarinets, 14 oboes, 71 highland bagpipes, 2 flutes and 11 other woodwind instruments of average size, where the volume has been divided in proportion with the UK manufacturing capacity, see Figure 2.



Another way to look at the supply in volume terms is to assess the total number of instruments available looking at the following selected instruments individually. A 2,000ha VLFR would thus be able to yield 318 clarinets or 77 highland bagpipes per year. Figure 6 gives examples of the number of instruments that hypothetically could be produced in a typical VLFR assuming only the timber was directed into one kind of instruments only. It is for illustrative purposes.



3 *Community Forest Management Scenarios*

In order for PFM to be successful, community management capacity needs to be developed. MCP has already made some significant progress with this, but plenty more work will be needed and a fair degree of ‘hand holding’ as PFM and FSC certification goes forward. Successes so far include basic training on good governance (accountability and transparency) and simple financial record-keeping. One community recently ejected two village leaders who they thought were not following these principles.

In order for MCP’s work on PFM and FSC certification to have popular legitimacy, the benefits need to reach all community members. There are several ways in which communities can choose to spend the profits they earn on forest management:

- Capital development projects which benefit the whole community, e.g. building a new dispensary.
- Support to social services, e.g. paying good teachers a supplement on top of their basic government salary as an incentive to stay in the village (many otherwise run away from rural postings).
- Subsidising agricultural inputs (seed and pesticides) and hiring agricultural extension advisers.
- Establishing a village microcredit scheme through which individuals and small groups can access funds to help develop their businesses.

The following profit and loss scenarios are forecast for a ‘normal village’ prior to PFM (A), a village under PFM (B), Year 1 for a village under PFM & Certification (C) and Year 5 for a village under PFM & Certification (D). Under the final scenario it is expected that MCP will be starting to charge communities for its services and the costs of maintaining the certificate, and thus moving the entire project towards financial independence.

Scenario	A	B	C	D
Revenue				
Blackwood	344	6,800	14,560	33,000
Other Species	160	4,000	4,000	42,000
Sub Total	504	10,800	18,560	75,000
Expenditure				
Patrols	0	144	624	832
PFM Service Delivery (remitted to District Council)	0	1,620	1,620	7,320
Certification Management (costs incurred by the village)	0	0	960	1,440
Certification Service provision (fee charged by MCP)	0	0	0	4,000
Administration	0	96	120	160
Sub Total	0	1,860	3,324	13,752
Total Revenue	504	10,800	18,560	75,000
Total Expenditure	0	1,860	3,324	13,752
TOTAL PROFIT/LOSS (NET)	504	8,940	15,236	61,248

Source: MCP/Kilimanyika. Figures in USD\$. SOUND & FAIR

Initially communities will be earning far more from blackwood than other species because there is a clearly identified market prepared to pay a premium for certified timber. However volumes in the forest of other species, when taken altogether, are several orders of magnitude higher, so although the same premiums are not expected for those other species, sufficient markets will open up (especially as the supply of illegally felled timber declines due to lack of sustainability) that communities will eventually earn more money from them. However blackwood will remain by far the most valuable species in the forest per unit volume, and moreover it is the foundation upon which the rest of the work will be built, and without which it would be very difficult ever to reach the situation in scenario D.

Village without PFM (Scenario A)

For communities who have not gone through the process of PFM the benefits from timber are limited to piecemeal contracts from logging. The national royalty fee (payment for the timber) itself is given to the District Government and the village receives nothing. Without PFM it is believed that for every 2,000 hectares of forest, the village is able to make between USD \$160 and \$500 a year.

Village under PFM (Scenario B)

Through the PFM process, once communities have set aside an area of forest as a VLFR they are exempt from the national royalty fee on listed timber species, which for blackwood and other Class I timbers¹ was recently increased to TZS 160,000/- per cubic metre. Most loggers however will not be content to pay this. Communities can expect to receive \$100 to \$200 per cubic metre of logs under PFM, depending on market fluctuation.

Village under PFM and Certification (Scenarios C & D)

It is expected that the market will accept a 25% increase in the top price for blackwood. According to a sawmill interested in working with MCP, the current export price of top grade blackwood billets is \$16,000 per cubic metre (Ball *pers comm.*). If the price for timber is increased at the village level to \$250 and as such, sawn billets would sell at \$20,000 per m³.

¹ High value hardwoods as defined by the Tanzanian Government Forestry and Beekeeping Division.

Going forward, anticipated boosts in value-add activities will raise annual incomes considerably. For example there is a great deal of wastage involved in trading blackwood; if unused branches and infected logs can be used by wood carvers, a typical village under PFM could make up to \$5,000 annually from selling blackwood for carving.

4 Value Chain Analysis

The price of blackwood used to make a single oboe for each stage of the supply chain, and under the different scenarios A-D described above, is set out in Table 2 below. From this it is possible to see the huge differences between the current realities of a 'normal village' prior to PFM against the PFM and certification scenarios. All figures are based on the assumptions given above. A high proportion of the cost is taken up by the manufacturer. This reflects the level of craftsmanship put in, and is thus not a target for reduction.

Table 2: Price of an Oboe; Normal (A), Under PFM (B), Under Certification Years 1 (C) and 5(D)				
Price Paid at Each Stage in Supply Chain	Scenario	Oboe Price	% Cost	% Increment
Price Paid to Village by Sawmill	A	0.02	0.0%	0.0%
Price Paid to Sawmill by Exporter	A	9.91	0.5%	0.5%
Price Paid to Exporter by Importer	A	10.65	0.5%	0.0%
Price Paid to Importer by UK Manufacturer	A	14.91	0.7%	0.2%
Price Paid to UK Manufacturer by Distributor	A	1,490.85	70.3%	69.6%
Price Paid to Distributor by Retailer	A	1,639.94	77.4%	7.0%
Retailer Take (exc VAT)	A	1,803.93	85.1%	7.7%
VAT inclusive (Sales Price)	A	2,119.62	100.0%	14.9%
Price Paid at Each Stage in Supply Chain	Scenario	Oboe Price	% Cost	% Increment
Price Paid to Village by Sawmill	B	3.71	0.2%	0.2%
Price Paid to Sawmill by Exporter	B	9.91	0.5%	0.3%
Price Paid to Exporter by Importer	B	10.65	0.5%	0.0%
Price Paid to Importer by UK Manufacturer	B	14.91	0.7%	0.2%
Price Paid to UK Manufacturer by Distributor	B	1,490.85	70.3%	69.6%
Price Paid to Distributor by Retailer	B	1,639.94	77.4%	7.0%
Retailer Take (exc VAT)	B	1,803.93	85.1%	7.7%
VAT inclusive (Sales Price)	B	2,119.62	100.0%	14.9%
Price Paid at Each Stage in Supply Chain	Scenario	Oboe Price	% Cost	% Increment
Price Paid to Village by Sawmill	C	7.74	0.3%	0.3%
Price Paid to Sawmill by Exporter	C	12.38	0.6%	0.2%
Price Paid to Exporter by Importer	C	12.85	0.6%	0.0%
Price Paid to Importer by UK Manufacturer	C	15.42	0.7%	0.1%
Price Paid to UK Manufacturer by Distributor	C	1,490.85	67.2%	66.5%
Price Paid to Distributor by Retailer	C	1,677.21	75.7%	8.4%
Retailer Take (exc VAT)	C	1,886.86	85.1%	9.5%
VAT inclusive (Sales Price)	C	2,217.06	100.0%	14.9%
Price Paid at Each Stage in Supply Chain	Scenario	Oboe Price	% Cost	% Increment
Price Paid to Village by Sawmill	D	47.87	2.0%	2.0%
Price Paid to Sawmill by Exporter	D	65.75	2.7%	0.7%
Price Paid to Exporter by Importer	D	66.08	2.7%	0.0%
Price Paid to Importer by UK Manufacturer	D	73.98	3.0%	0.3%
Price Paid to UK Manufacturer by Distributor	D	1,569.41	64.4%	61.3%
Price Paid to Distributor by Retailer	D	1,804.82	74.0%	9.7%
Retailer Take (exc VAT)	D	2,075.55	85.1%	11.1%
VAT inclusive (Sales Price)	D	2,438.77	100.0%	14.9%

Source: MCP/Kilimanyika. Figures in USD\$.

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Supply Chain Timeline

Understanding the timeline is crucial to the planning process. The supply chain is not a particularly short one in terms of time taken. Two scenarios have been drawn up in the table below, the first showing the time required for a village already under PFM with an established village forest. The second is for a village yet to undertake the PFM process, for which an additional three months have been added. The remaining stages are identical for both scenarios.

Table 3: Estimated Minimum Timeframe Required to Complete Supply Chain		With PFM Complete	With PFM Incomplete
Stage 1	Village 'X' Completes PFM	0	3
Stage 2	Village 'X' joins FSC group	0.5	0.5
Stage 3	Village 'X' sells first certified harvest	1	1
Stage 4	Logs transported to CoC certified sawmill	0.5	0.5
Stage 5	Logs sawn into billets	1	1
Stage 6	Billets stored at sawmill	1	1
Stage 7	Billets shipped to UK or Europe	2	2
Stage 8	Billets distributed to UK manufacturer	1	1
Stage 9	Storage by Manufacturer (UK or Europe)	12	12
Stage 10	Manufacturing in UK (or Europe)	3	3
Stage 11	Instrument Distribution to Wholesaler	0.5	0.5
Stage 12	Instrument Distribution to Retailer	0.5	0.5
Stage 13	Instrument Point of Sale (UK)	0	0
		23	26
Years		1.92	2.17
First Sale Date		Oct-10	Jan-11

Source: Kilimanyika/MCP/Tim Cumine. One Unit = 1 month

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However, as is clear from the table, there are a number of variables. There could be a longer delay at the sawmill than the one month given here. Further, manufacturing times will vary depending upon which instruments are being made. Manufacturers may need longer than the minimum 15 months storage and manufacturing time given here. Three years is commonly a minimum period during which timber is held simply for seasoning in the workshop, yet some makers could reduce this time to an absolute minimum of 15 months for the whole process of seasoning and manufacture (Cumine, *pers comm.*).

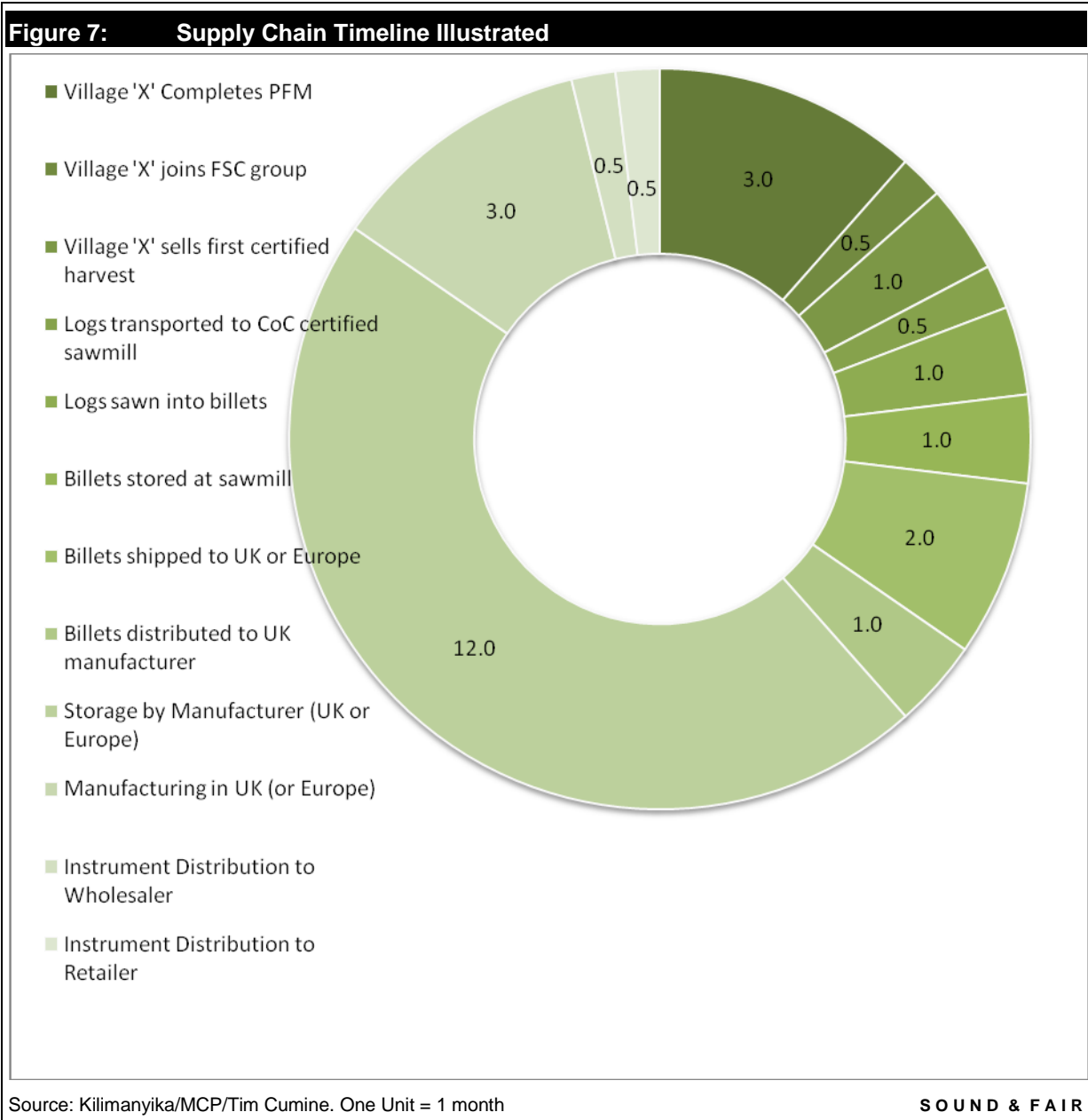
Assuming that a village has yet to go through the PFM process, that stage can be expected to take a minimum of three months because of the process required. It could also take up to two years. Standing time in the sawmill is not expected to be lengthy as the timber is expected to stand at the manufacturing stage. Another significant period in the chain is the time required for distribution.

A considerable portion of the total time required lies with the manufacturer, mostly with letting the wood season, otherwise with the manufacture itself. The time required to bring the instrument from the crafting stage to point of sale with the retailer is not expected to be lengthy.

Thus with a village already under PFM, the supply chain is likely to take an absolute minimum of just under two years from village to musical instrument point of sale. Assuming a starting point of **November 2008**², the first sale would be **October 2010**. If any of the variables in each stage change from the estimates given

² EAT/MCP's target start date for first harvest of certified timber.

above, the sale point is likely to be either later in 2010 or otherwise, depending on the delay to be in a period between 2011 and 2014. The timeline is not expected to take significantly longer than five years.



Developing Trade in FSC-CAB

Eventually the certification scheme needs to be financially self-sufficient, and no longer in need of grant support. In practice that will mean communities having to pay for the services they receive from MCP, although some revenue may also be realisable direct from the musical instrument industry and other large purchasers of certified timber. In order for this to happen communities will gradually need to be accustomed to the idea of paying for such services, and these payments will need to be introduced over time, initially subsidised, and then the subsidy being phased out as a community's income increases.

In developing this MCP will need to ensure that communities are first earning sufficient sums to be able to afford any charges, and that subsidies are only phased out in a way which does not penalise communities for earning more money. Secondly MCP will need to work hard to ensure that service delivery is efficient and cost-effective such that communities will consider reasonable.

It is difficult to estimate the time over which complete financial self sufficiency could be realised, and it depends significantly on how rapidly MCP is able to boost incomes from the forest. However a ten year time frame is probably the most realistic, but if sufficient revenue is being earned after five years then some level of charging can begin earlier. Expansion to new villages, at a cost of around \$20,000 per village, is still likely to require external funding, but if the business model is proven, it should not be difficult to raise funding for this.

In order for MCP's work on PFM and FSC certification to have popular legitimacy, the benefits need to reach all community members. There are several ways in which communities can choose to spend the profits they earn on forest management:

- Capital development projects which benefit the whole community, e.g. building a new dispensary.
- Support to social services, e.g. paying good teachers a supplement on top of their basic government salary as an incentive to stay in the village (many otherwise run away from rural postings).
- Subsidising agricultural inputs (seed and pesticides) and hiring agricultural extension advisers.
- Establishing a village microcredit scheme through which individuals and small groups can access funds to help develop their businesses.

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