Forest Certification in Zambia

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Paper presented at the Symposium

Forest Certification in Developing and Transitioning Societies:
Social, Economic, and Ecological Effects

Yale School of Forestry and Environmental Studies
New Haven, Connecticut, USA

June 10 & 11, 2004

ABSTRACT

Interest in forest certification as a means of promoting sustainable forest management arrived in Zambia in the early 1990s. Before then, all forest management was done by the government and users were only required to obtain licenses for the use of forests. Both local and national events lead to development of interest in certification. Locally the need to earn higher incomes from various forest products coupled with an increased awareness and concerns by western consumers prompted local companies and organization to seek chain of custody or forest certification. The certification efforts have, however, met a number of roadblocks and challenges arising from uncertainty, the cost of certification and the absence of tenurial rights by certificate users. The nature of tree and land ownership in Zambia is the biggest challenge as all trees are government owned. This makes private management to meet the certification principles very difficult unless in occurs a forest plantation. Presently government, the owner of forests, has no specific policy or official stand on forest certification.

The main driving force for forest certification has been the accessibility to foreign markets that are large and reliable, rather than better prices. The first companies to seek certification were those that are involved in rural development and the use of natural resources as a means to combat poverty. Private sector companies came in as a result of liberalization of the national economy, which saw an increase in competition and a decline in economic activity resulting in a depressed local market.

Being a new phenomenon, the future of certification in Zambia depends on the success of the five certificates that are currently operating in the county. The sixth certificate has been suspended due to controversy over the certificate and forest ownership. Should current certificate owners meet with success in terms of improving the management of the forest while at the same time increasing returns from the utilization of the forest resource, then the future of certification will be bright, as more companies are likely to seek certification.

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ACRONYMS

AU – African Union
CDC – Commonwealth Development Corporation
CDO – Community Development Organization
COMESA – Common Market for Eastern and Southern Africa
ECAZ – Environment Conservation Association of Zambia
FD – Forest Department of the Republic of Zambia
FSC – Forest Stewardship Council
GMA – Game management area
ha – Hectare
IRDP – Integrated Rural Development Programme
JFM – Joint forest management
km – Kilometre
Ltd – Limited
MCL – Muzama Crafts Limited
MCOSC – Mpongwe Coffee Organic Smallholder Cooperative
MDC – Mpongwe Development Company
MENR – Ministry of Environment and Natural Resources
NGO – non-governmental organization
NPP – Ndola Pine Plantations Ltd
NWBP – North Western Bee Products Ltd.
NWFP – Non-wood forest products
NZG – Norzam Glulam Limited
SADC – Southern African Development Community
SGS – Société Générale du Surveillance
UK – The United Kingdom
UMT – Uchi-Mukula Trust
UNCED – United Nations conference on Environment and Development
USA – The United States of America
VAT – Value added tax
WPI – Wood Processing Industries Limited
ZAFFICO – Zambia Forestry and Forest Industries Corporation

I. INTRODUCTION

This paper gives an overview of forest certification in Zambia. It highlights trends and ends with a description of the current status of certification in the country.

The change in the economic direction from socialist command to market economy resulted in government pulling out of many industries, and removing protection for those industries that were partially government owned. This has brought about increased competition and the proliferation of forest based industries.

The issue of forest certification is not very old in Zambia. Interest in certification arose after those that are involved in forest products development and marketing realized that the local market was too restrictive. In an effort to export these products, the local companies faced a number of roadblocks. As the target market for forest products was in Europe and America, where consumer awareness is much higher, it was not possible to export Zambian goods without offering any assurance to the foreign markets about the quality of forest management. Foreign consumers also needed assurance about the quality of the products. In view of this it was deemed necessary to satisfy the foreign market by meeting the European and American standards. To this end certification was sought with the hope that it would open export opportunities for these certified products. In Zambia it has mainly been non-wood forest products (NWFP) that are of interest in certification process.

Certification was also seen as a way of going around the economic non-tariff barriers that exist in European and American markets. Some of the foreign importers were already reducing quantities of imported non-certified products. The fear of losing market share also forced Zambian companies to enter into certification processes.

The expectation of better prices for forest products has not really been the driving force for forest certification. The main concern has been the accessibility to foreign markets that are large and reliable. Such markets provide reliable income to local suppliers, in addition to providing opportunities for expansion.

The first organizations to get certified were those that handle forest products from poor rural communities. These organizations are in business not necessarily for profit but for community development and poverty alleviation. These organizations were started by donor funds. Sustainability of the operations after the departure of donors could not be assured under the existing micro-economic conditions in Zambia. Development of export markets was seen as a way of achieving sustainability. The donors, therefore, agreed to fund the certification process, as it was not possible to do so internally. Subsequent certifications have also been paid for mainly by donor funds.

The situation for commercial companies is slightly different. Whereas the motivation has been the same, private companies have had no subsidy for funding the certification process. To them it has been a business risk that has to be undertaken in order to safeguard the market share. There is no guarantee that certification will bring increased profitability.

The effects have been mixed. Different stakeholders view certification differently. Whereas the certified organizations view it as a way to sustain their businesses, landowners look at it as a process that reduces their power and control over forests.

Benefits have not yet been noticed, as the certificates are new. In one case the certificate was suspended as it contravened some of the regulations of the certifier.

II. BACKGROUND FACTORS

Zambia is a land locked country in Southern Africa surrounded by Congo DR, Tanzania, Malawi, Mozambique, Zimbabwe, Botswana, Namibia and Angola (Refer to figure 1 below). There are two main routes to the sea, the South African ports to the south and the port of Dar es Salaam to the Northeast. The country belongs to a number of regional political and economic groupings such as the African Union (AU), the Southern African Development Community (SADC) and the Common Market for East and Southern Africa (COMESA).

In order to understand the rise in interest in forest certification, it is necessary to know the background to the socio-economic development of the country. The main export commodity has been copper which is exported to Europe. Within the region the major trading partner is South Africa, from where a number of companies that operate in Zambia originate. The bulk of Zambian timber exports are also to this country. Since independence in 1964 the country has relied on mineral export for foreign income earnings but efforts are now being made to diversify the economic base of the nation. Wood is one of the natural resources that is abundant but there has been little investment in this sector. The shift from a command economy to a market economy in 1991 has encouraged private sector participation in the forestry sector and this has resulted in efforts being made to export forest products. However, the world market for these products is now demanding certified products hence various attempts to certify forest products from Zambian forests.

Zambia is regarded as one of the highly forested countries in Southern Africa with a forest cover about 55 percent (64 million hectares) of the 752,600 square kilometers surface area most of which is administered traditionally under customary law. Gazetted[1] forest reserves occupy about 9 percent of the total land area and national parks another 9 percent. The importance of forests and woodlands to the development of the country is widely acknowledged.

Zambia's forest vegetation is classified into three major categories. In the first category are the closed forests which comprise *Cryptosepalum* evergreen, the deciduous

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[1] *To gazette an area is to officially designate the particular piece of land in terms of land use through legislation. In this case, the official land use is forestry.*

Baikiaea forests and to a limited extent the *Parinari*, *Marquesia*, montane, riparian swamp and itigi. In the second category are the open forests (savannah woodlands), which account for 71 percent of the total area in Zambia. These woodlands are dominated by the miombo woodlands followed by the Kalahari woodlands, Mopane and Munga woodlands to a lesser extent. The last category of vegetation is the grasslands, including wetlands and dambos[2]. Table one below shows the major forest types in the country. The most common tree in the miombo woodlands are *Brachystegia, Julbernadia, Isoberlinia, Marquesia* and *Uapaca.* The soils are rather poor and the trees have thus developed collaboration with mycorrhizal fungi. Apart from wood, the miombo woodland are also a source of mushrooms and honey in addition to other NWFP.

Figure 1. Southern Africa showing geographical location of Zambia

[2] *Law laying depressions where the water table is close to the surface. Mostly covered with grass and other species that tolerate high water tables.*

Table 1. Forest types in Zambia

Forest type	Percentage of total forest area	
Closed Forests		8.2
Dry (evergreen and deciduous)	7.7	
Swamp and riparian	0.5	
Open Forests		87.4
Miombo	58.3	
Kalahari	15.8	
Mopane	7.2	
Munga (acacia)	6.1	
Other		4.4
Termitaria etc	4.4	
Total	100.0	100.0

Two major reasons have been responsible for gazetting forest areas in Zambia: the need for conservation of such areas and the need to provide industrial wood raw material for the various industries in the country, especially the mines.

The reasons for starting plantations in Zambia were: to supplement the limited supply of timber from the low-yielding indigenous forests; to establish timber resources for the mining industry, as it was feared that the indigenous forests would have been exhausted or their use would become uneconomic due to the ever-increasing extraction distances; to form the basis for the wood industries in view of the increasing consumption of construction sawn wood, wood-based panels, various types of pulp products and certain round wood products, which all had to be imported, thus exerting pressure on Zambia's foreign exchange reserves; and to provide employment for thousands of people in forest-related industries and the service sector.

The development started by the government in the 1960s on a pilot scale. Currently there are over 55,000ha of industrial forest plantations in the country. The species used have mainly been Pine (79%) and Eucalyptus (20%). Currently the commercial plantations are being reduced, as there has not been enough replanting and/or expansion. It can be stated that the forest plantations have greatly reduced the pressure on indigenous forests in the Copperbelt. Until 1991 all forest plantations were owned by government either directly or through a parastatal company called ZAFFICO (Zambia Forestry and Forest Industries Corporation). Apart from plantations, this company also operated some softwood sawmills and a pole treatment plant. With the advent of liberalization in 1991, the industrial assets were sold off together with part of the plantation. Private companies now own about 2,000ha of the original ZAFFICO plantation.

Ownership and Tenure

Ownership of all land and natural resources in Zambia is vested in the republican president who administers it on behalf of the nationals. Consequently all trees are "owned" by the republican president on behalf of all Zambians (Forest act number 7, 1999). For purposes of administration the administrative powers have been delegated to various institutions. Consequently, forests are administered by either the traditional chiefs or the Director of Forestry on behalf of the president. In terms of land tenure the country is classified as in table 2.

Table 2: Land ownership in Zambia

No.	Category	Percentage
1	State land	6
2	Reserve land	35
3	Trust land	50
4	National parks	9
Total		100

Both trust and reserve lands are regarded as traditional land and administered by traditional chiefs and their headmen who control land allocation. Ownership is sustained through cultivation and may be inherited. Land, forests and wildlife resources in uncultivated areas are communally utilized (MENR 1994) Traditional land outside of protected areas (forest reserves, GMA, national parks and bird sanctuaries) are referred to as open areas. Land designations that are relevant to forests include:

Forest reserves – which are either local or national protected forests that are protected from open access because of their national value such as protection of water catchment areas for river systems. Licensed forest activities are allowed.

Trust land – also referred to as open areas. These are open for community subsistence use. Limited harvesting is allowed through casual and pit sawing licenses.

*National parks***.** These are managed for the protection of wildlife. No forestry activities are allowed.

Table 3 below shows the major land uses

Table 3. Major land uses in Zambia

Land use	Area ('000ha)	%
Forests and woodlands	46394	61.7
Forest Reserves[3]	7437	(9.9)
National parks	6535	(8.7)
Other woodland	32603	(43.3)
Swamps and grasslands	7400	9.8
Agricultural and municipalities	20526	27.3
Water (rivers, lakes, and dams)	930	1.2
Total area	7526	100.0

Regardless of land ownership, trees remain government property. The president has delegated the authority to mange and administer all forest to the Forest Department in the Ministry of Tourism, Environment and Natural Resources. The Director of Forestry can transfer the right of utilization to any individual of institution through a licence. There are four main types of forest licences issued by the forestry department[4]. These are the production licence, the conveyance licence, concession licence and the casual licence.

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[3] *Forest plantations constitute 0.75% of the forest reserves.*

[4] *Production licences*

The production licences are used for the commercial production of sawn timber and may either be commercial saw milling licence or a pit sawing licence.

The main difference between the two is that one allows for the use of motorized saw milling equipment while the other is for the manual production (using hand tools) of sawn timber respectively.

Concession Licence

The concession licence give right to the holder to harvest tree in a given area for a specified period (usually five years). To qualify for this licence,

the applicant must produce am forest management plan and satisfy other requirements such as owning a sawmill. Production takes place within the forest. Most of the cases, concession licence owners produce timber for export.

Conveyance Licence

The conveyance licence allows for the movement of forest produce from one area to another. The main forest produce that attracts a conveyance licence is mainly timber in its round or sawn form, firewood and charcoal.

Casual Licence

The casual licence is a general licence. It allows the holder to harvest forest produce for domestic use and sometimes for sale. Where selling is involved, rough sawn timber is sold to large sawmills, construction companies and furniture manufacturers.

The various forest licences allow for the harvesting of timber from the forest. The regulations in the forest licences only stipulate the "proper" ways of cutting the trees and handling of waste the remaining material from the cut trees. These regulations are aimed at promoting continued growth of the remaining forest. The Forest Department monitors harvesting. The forest licences do not say anything about certification. The same licences are applicable in both certified areas and in uncertified areas.

NWFP are usually collected free of charge. Although a small fee may be charged for entering the forest, this has no relation with quantity collected.

Markets

Before independence and immediately after, Zambia used to import forest products in form of soft wood for construction and other industrial uses. However with the development of the forestry plantations, the country has become a net exporter of softwood timber and timber products. Currently softwood timber from Zambian plantations is utilized locally as well as exported. All harvesting at the moment is commercial. ZAFFICO sells standing trees to private sawmill owners who produce sawn timber and boards for both local and foreign markets.

The main demands for timber are accounted for by domestic firewood and charcoal consumption. Charcoal is a significant commercial forest product and provides an important source of income for rural communities. Wood fuel is the main source of domestic energy in Zambia. Construction poles, sawlogs and peeler logs are also in demand. Important non-wood products include mushrooms, game meat, honey, fruits, insects (caterpillars), fibres and medicines.

Commercial indigenous timber harvesting has mainly been for supply to the local market. The main consumer has been the mining industry (railway sleepers, under ground pit props and for copper smelting). Selected tree species of high quality e.g. *Pterocarpus angolensis, Guibortia coleosperma, Afzelia quanzensis, Baikiaea plurijuga* and *Faurea saligna* have been sawn for the construction industry and for high quality products such as furniture. Since the liberalization of the economic market and resumption of trade relations with South Africa, a number of South African companies are investing in extraction of indigenous timber species for export to South Africa and other countries. Table 4 shows the importers of Zambian timber products.

Table 4. Trade of Forest Products: Top 10 Importers of Zambian Forest Products (2001)

Importer	Value (US$)	Proportion of total FAO (%)
Tanzania	7	0.7
Norway	12	1.3
United Kingdom	16	1.7
Sudan	19	2.0
Italy	27	2.9
Egypt	32	3.4
Malawi	63	6.7
Congo (DR)	94	10.1
Zimbabwe	300	32.1
USA	662	70.8

Source: FAO STAT

Non-wood forest products

Apart from subsistence agriculture the collection of non-wood forest products is an important livelihoods activity in all rural areas. Household livelihoods have traditionally been based on the consumption and trade of NWFP. The communication system (roads) in rural areas are not developed, thus NWFP are usually marketed locally. In the urban areas the high unemployment and poverty level lead to high degree of dependence on forest products. The unemployed and poor urban dwellers rely on forests for their livelihoods and income supplementation (as firewood collectors, charcoal producers, as collectors and sellers of NWFP) while the employed urban dwellers provide the market for the forest products.

This is possible because of the nature of forest ownership in Zambia. Since ownership of all forests is vested in the president, access is virtually free for the collection of NWFP. Conflicts only arise in instances where one tries to settle, cultivate of cut trees in a forest area without legal authority. Depending on the land use designation, one can acquire a licence for harvesting of timber or a title to land for settling.

Timber products

On the indigenous timber front, the country has always been a net exporter of high value timber from *Baikiaea plurijuga, Pterocarpus angolensis, Guibortia coleosperma* and a few other species. Timber from the natural forests is still being utilized both locally and outside the market. The major export in this area is sawn timber. Harvesting in the indigenous forests in both subsistence and commercial. At subsistence level casual licence owners produce sawn timber (pit sawing) and sale it to other users including commercial establishments. Commercial harvesting is done by concession licence owners.

III. THE EMERGENCE OF FOREST CERTIFICATION

Initial Support

The issue of certification of forests and forest products is driven by international markets. Locally there is little or no consumer awareness about forestry or forest products certification. The idea of forest product certification is to link trade to the sustainable management of forest resources by providing consumers with information on the production status of the forests from which the timber and other forest products come. In Zambia certification has not developed as a national process. It has been a foreign market driven process and it began in 1990 with the organic certification of NWBP's honey which was the first of its kind in the world (Thornber, 2000). This was followed by the Muzama's certificate in 1998 which was the first Forest Stewardship Council (FSC) forest management certification in Zambia and the MDC certification on organic wild mushrooms in 1999.

The most recent certification has been that of 1092ha of a private plantation in 2003. This is part of the former ZAFFICO industrial plantations that has been lease to Ndola Pine Plantations Limited (NPP). This is complimented by two chain of custody certificates that have been awarded to WPI and NZG.

Figure 2 below shows the map of Zambia indicating the sites of certified forest and companies.

Figure 2. Map of Zambia showing location of certified areas

A combination of both local and international factors led to the acceptance and adoption of the certification process by local institutions in Zambia.

Local factors

From 1972, Zambia was politically administered as a command economy by a one party government system. Under this system most of the important means of production were in government hands administered as parastal companies. This situation also applied in the forest sector where a number of companies were involved in industrial plantations, harvesting and processing indigenous forests and secondary manufacturing using forest products as raw materials. With the collapse of the economy and subsequent adoption of a market economy, government had to withdraw from economic activities and assume the role of an overseer. This was achieved by liberalizing the economy to allow private sector, participation and also by selling (privatization) of the companies previously run by government.

The above two activities removed the protection that local companies previously enjoyed and also introduced more players on the market.

For some time the government had been trying to develop rural areas. To achieve this a number of development projects were embarked upon. One of these for the Northwestern province was the Integrated Rural Development Programme (IRDP). This programme was aimed at poverty alleviation but had a limited life span. The continuation of the activities that were started under IRDP was not assumed under government funding. As a solution, it was decided to commercialize same of the viable activities an this resulted in the formation of North Western Bee Products Ltd (NWBP) and Muzama Crafts Limited (MCL) in 1986.

The change of economic policies in Zambia found these companies in their infancy whereas previously, their operations were shielded by donor funding; this no longer was the case.

The fact that the local economy was seriously depressed meant that there was no money in the local economy. Privatization resulted in a number of retrenchments. Manufacturing companies had to struggle to sell their products to the 8 million inhabitants. The local market was, therefore, not adequate for the production taking place in the economy. A solution was to look to foreign markets in order to sell larger volumes. In addition, the pricing structure for local raw materials has not been favourable to local producers e.g. the introduction of Value Added tax (VAT) and higher fees for tree licences.

On the Copperbelt the establishment of Mpongwe Development Company (MDC), a large Commonwealth Development Corporation (CDC) funded agricultural undertaking brought some hope to the rural area. However, there are a number of people that live around this agricultural project and provide seasonal casual labour. Due to high poverty levels and in an effort to improve the livelihoods of the local inhabitants, the Miombo Project for wild mushroom collection was introduced in 1996/7. One of the activities of this project is to promote the marketing of wild mushrooms that are in season at the time when the labour requirements in the coffee plantation is low. The local people have been encouraged to deploy their energy on collection of mushrooms from the surrounding forests for export. The Miombo Project facilitates the transportation and export. Since the local people cannot, as individuals, profitably take their mushrooms to urban markets which are already saturated with the same mushroom from nearby forests, the project sought foreign markets for the product. In the process of accessing this market, the issue of product certification came up.

International Factors

Timber certification initiatives began in 1992 following the United Nations conference on Environment and Development (UNCED) in Rio de Janeiro. The Rio conference recognized that problems of poverty and food security were linked to deforestation and indebtedness of developing countries. A number of intergovernmental approaches and protocols provided a setting for the development of certification standards world wide (Bass 1998) Environmental NGO and other interested groups started the certification initiatives leading to the establishment of the Forest Stewardship council (FSC) in 1992 (Ng'andwe, 2003) Other certification schemes arose thereafter. These are aimed at validating the claims of timber certifiers and thus avoid confusion in the market. The goal of FSC is to promote environmentally responsible, socially beneficial and economically viable management of the world's forests (FSC 2000).

After Rio, international awareness on environmental conservation increased in most countries. Other research results also showed that increased damage to the environment in one locality affects the quality of life elsewhere. An alarm was raised about the cost of the ozone layer and global warning. All these, it was realized, had origins in the uncaring manner in which the natural resources were being harvested. In an effort to encourage better management of forest resources, it was thought wise to impose measures that would encourage sustainable management of these forest resources. European and American consumers also began to demand more natural as opposed to artificial products. One way to strike a balance was to come up with certification. The idea was to restrict markets for those countries and institutions that do not manage their environment sustainably. With this restriction, it has become difficult for Zambian institutions that are trying to export forest products to do so. Local institutions are interested in either poverty alleviation or industrial development. Since the local market is small and depressed, higher incomes and increased production from forest industries can only be attained through access to international markets for both wood and NWFPs.

Zambia is a signatory to over 22 international environment related conventions (refer to Appendix), some of which have been ratified. The conventions and treaties provide for a policy framework which guide the nations international policy on forests. The national forest policy does not mention forest certification but the main theme is sustainable management, conservation and utilization.

The Players and Their Roles

There is a whole range of players in the certification process in Zambia. These vary from the local community to the government and each group has its own goals and aims.

The Local Community

These are the people who live in and around the forests. They depend on forests for their livelihoods and are usually poor rural dwellers. In practice they are the owners of the forests and any decision on forestry matters affects them directly. Economic development efforts in the rural areas are aimed at improving the life of this lot. Apart from subsistence agriculture, there are no industries in rural Zambia and the infrastructure is undeveloped. Their goal is daily sustenance. What they have been told is that certification will bring increased incomes from the timber and NWFP that they sell through identified organizations. In view of this, the group has welcomed certification with high expectations.

Local communities are organized into villages that are headed by traditional headmen who fall under a chief.

Chiefs and Headmen

These form the traditional authority and have a significant influence among their subjects. They administer natural resources in their respective chiefdoms. Their goal is the socio-economic improvement in the lives of their subjects. They welcome certification as long as it does not usurp their powers.

Local Government

The local government system in Zambia is made up of district and city councils, and municipalities. Their goal is provision of services to the residents in their area of jurisdiction. Their only interest in certification is that it will bring more commerce to their areas which translates in higher revenues through taxes.

Forest Department

The department is the government arm that is tasked to manage and supervise the usage of forest resources in Zambia. Their goal is sustainable management of the forest resource. Hence any measures that promote sustainability are welcome. The concern of the department is the redistribution of powers resulting from certification process as the certificate holder becomes more involved in forest management. It is therefore the desire of the department to be closely involved I the process so that their role is not sidelined.

Donors and NGO

These have been involved with the improvement of livelihoods in rural areas. In Zambia they have recognized the important role that NWFP can play in order to improve rural incomes. To this end they have promoted processing and marketing of these products nationally with the aim of trying to maximize income from NWFP. In doing this they have also recognized the fact that the source of NWFP should be managed sustainably but that this can only be achieved if forest users receive adequate incomes. They sought certification in order to access the more lucrative foreign markets.

Private Companies

These are in business for profit. However, due to the size of the local market resulting in high competition, it has not been possible to increase production without seeking export markets which are inaccessible without forest certification.

From the foregoing it is evident that the goals of al players have not been a source of conflict. In the case where conflict was recorded, it was due to non-recognition of the role of the FD and lack of consultation at the early stage of the process and the fear of loss of authority by the FD. This has happened in only one instance, the MCL case.

Institutional Design

Almost all certified forests and forest products in Zambia hold an FSC certification. FSC is an association of voting members, who may be individuals or organizations. FSC has been formed with the aim of promoting environmentally appropriate, socially beneficial and economically viable management of the world's forests. FSC is a Civil Association (Associacion Civil), registered in Mexico. The FSC Secretariat, headed by the Executive Director as Chief Executive, is the means by which the FSC is guided and supported internationally on a day-to-day basis. The Executive Director is responsible for the finances, accounting and administration of the FSC and for ensuring that the legal requirements for business are met in all countries where FSC is operating, and for implementing FSC programmes, policy and board decisions.

FSC membership is open to organizations and individuals who are supporters of FSC's work. Membership of FSC entitles the individuals or organizations to full involvement in FSC.

On joining, members are assigned to one of three chambers, according to:

1. Their primary area of interest:

    - The economic chamber is for those with a commercial interest in forestry and forest products, e.g. producers, certification bodies, forest owners, dealers, retailers, manufactures, consulting companies;

    - The environmental and is limited to non-profit, non-governmental organizations and individuals dedicated to biodiversity and environmental conservation or studies, with a demonstrable commitment to environmentally appropriate, socially beneficial and economically viable forest stewardship;

    - The social chamber is for indigenous organizations and social movements and individuals involved in such organizations which are active in the promotion of environmentally appropriate, socially beneficial and economically viable forest management.

2. Their country of origin: North or South. Within FSC, these terms are defined in line with United Nations criteria.

There is no local certifier in Zambia so the interested institution approaches a certifying agent who does the assessment and makes appropriate recommendations.

Prior to 1990 government technocrats decided what was good for the forestry sector, the politicians adopted this as policy and implementation was done. After 1990 however, the process changed in that wide consultation on forest matters was done at all levels (Government officials, traditional rulers, civil society and other interest groups) before adoption of any standards. This is the process through which the current forest policy went through. The development of forest guidelines also goes through the process of consultation with relevant stake holders.

Standards

Except for MCOSC, in all other cases the standards that have been followed in the certification are FSC. A summary of these standards (principles) is given in the annex. These standards were not locally developed and the organization seeking certification had to satisfy them and abide by them in order to keep the certification. Modification on a case by case basis is possible but generally the established FSC guidelines and principles are followed. The lack of local initiatives and certifying agents has probably resulted in this situation where by standards that were developed elsewhere are being followed.

Forestry Problems

Forest problems in Zambia may be viewed from two angles: one is the conservationists angle whereby deforestation is viewed as a the major threat to the existence of forests. Three major causes have been identified, namely charcoal production, clearing for agricultural land, and clearing for settlements and related developments. From this view point it is necessary to introduce more stringent management and utilization guidelines in order to preserve the forests.

The other angle is an economic one, whereby despite the availability of abundant forest resources, the local communities still remain poor, hence the need to improve on the utilization of these resource in order to maximize the benefits to those that live in and around the forests and eventually the nation.

The second view point is the one that is more relevant in the case of certification for although there is more than 60% forest cover for a country with about ten million inhabitants, the major economic activity is copper mining. The contribution of the forestry sector to the GDP is about 1% and the rural population remains in poverty. Policies on economic diversification away from copper mining have largely concentrated on promoting agriculture which is a competing land use activity to forestry. Consequently more forest is lost as demand for agricultural land increases. Unfortunately the increased conversion of forestland to agriculture does not necessarily result in increased incomes for the rural communities due to the poor soils that exist under the miombo forests. Agriculture always gains an upper hand against forestry because individual incomes are higher from agricultural and are widely spread.

The current thinking is that probably there is need to increase incomes from forests through marketing of various products than converting the land to agricultural use. In this way it is hoped that both effective conservation as well as maximization of benefits will be achieved. Forest certification can go a long way in ensuring that this goal is attained.

As a result of it low contribution to the household and national economy, little resources are currently being channeled to the management of forest estate by both households and government. Consequently, it is not possible to monitor what is happening on the ground a situation that has resulted in over harvesting, encroachment, degradation etc. Certification is self regulatory as the certified companies are forces to maintain the standards that have been agreed upon in order for then to remain in business. This is a big incentive for sustainable management of the forest resource. Therefore it can be said that the main forestry problem is that of trying to conserve a resource that does not yield adequate returns to those who meet the 'cost' of conservation. This 'cost' can be in terms of actual cost of employing forest guards and other forestry personnel or, as in the case of local community. It is the opportunity cost of maintaining land under forest rather than agricultural production. The low returns are mostly due to lack of market or, where markets are available, the low prices offered for forest produce. It has not been easy to seek more markets and higher prices for forest products (export market).

Roadblocks and Challenges

The low returns for local forest products are mostly due to lack of market or, where markets are available, the low prices offered for forest produce. In an effort to open up new markets and also to seek higher prices for the products, producers (in case of companies) or those that are addressing poverty alleviation through sustainable forest utilization, have faced road blocks and challenges. These roadblocks are at both international and international level.

The international roadblocks and challenges arise from the fact that Zambian forest products cannot be accepted in the international markets, the importer wants assurance that the source of the product is sustainably managed. Hence the need for certification by a widely recognized body to assure the consumer about the origin of the products.

Since forest certification is a new idea globally and there are many certifying bodies, some bodies may become over zealous to certify forest in an effort to gain recognition as the one that have certified the largest possible forest area or largest number of clients. In one instance, an FSC certification has been issued to a company that neither owns nor manages any forest. The company simply buys forest products that they want to export.

The local challenges arise from the fact that the certification issue is not well understood by the people who own and manage the forests. The implications may not be analysed and understood by government officials. What, for example, is the role of government in the certification process or as the owner of the forest being certified through a process initiated by a private company that does not own the forest?

Being a new phenomenon, there are no local agents and no local certifiers. This means that all technical expertise has to be imported at high cost. Holding a forest certificate is no guarantee to more markets and increased prices. Therefore funding for the initial and subsequent inspections has been a challenge.

Even where the above roadblocks have been overcome, the next challenge is the choice of a certifier.

Local community projects depend on donor funding. In Zambia the challenges were sorted out by the donor. The identification of markets (sometimes even the price negotiations), identification of certifiers and paying for the assessors has been done by the donor. The private sector industries have to overcome all the roadblocks on their own.

Securing tenure

All forests in Zambia are government owned except a small and negligible part on private farms, by implication, it is only government (or its agents) that should hold the forest certificates. However, the companies that have sought certification only lease the forests. Probably this is the reason why there are not so many certificates for timber harvesting companies. Logging companies are given a maximum of five years tenure (concession) to cut trees. Ensuring that this is properly done is the job of government. In the face of this it there is no secured tenure and this make it difficult to manage forests under certification. The only private company that holds a plantation certification has tenure for only 25years. The tenure issue does not only apply to forestry, it applies to all natural resources in the country such as water, land wildlife, minerals etc. Whereas an individual or company may acquire right of usage or collection, the resource still remains the government's.

IV. THE REACTION TO CERTIFICATION

Key interest in forest certification has thus far been limited to companies and organizations who saw a market benefit and have had backer to assist them go through the certificating. Government officials have been uninterested because, although they are responsible over all the forests, government does not sell trees or other forest products outside the country. The other reason could be that they have not been properly made aware of the benefits that certification may bring to the nation as a whole and thirdly it is an institutional matter. The forestry department does not deal with land tenure matters.

These are handles by other sectors of the government. In addition the forest department does not promote selling of forest produce. Their role is well defined in statutes: to manage forest resources. The issuing of permits to collect forest products and licences to harvest trees is just a forest management tool.

Forest Policy Community and Stakeholders

Forest policy makers initially had no idea of what certification would or would not do. The effect on policy could not be envisaged so the reaction was to wait and see. To date there is no specific policy on certification as it is viewed as a marketing tool rather than a forest management tool. There is no objection for those that legally own forests to certify them.

Forest Owners

In Zambia this is the government. Villagers (members of the local community) may collect various forest products from the forest with very little management. The management is government responsibility. Since certification encouraged conservation and sustainable management of the forests, Forest Department was pleased with the development of certification as it was within their objectives.

Current Status of Forestland Certification

The current status in Zambia is that there has been six certifications one of which is suspended5. The government is currently piloting the idea of joint forest management in which local communities or other organizations may be allowed to mange forests jointly with government and share the costs and benefits arising from that particular forest. A number of organizations have shown interest in this idea and also in forest certification as a tool to promote sustainable forest management. In addition, ZAFFICO, a government company that owns the industrial plantations, is considering certifying part or the whole plantation so that their customers will buy certified raw material, and in case they are interested in certification all they will need is the chain-of-custody certification.

The status for the five certified organizations is as follows:

The certification of MCL and NPP are based on forest management with the aim of producing timber products. MCL certification did not yield any benefits as the pit sawing licences were withdrawn. For a small community based operation such as MCL, the funds that were spent on the certification process were quite huge. The company could not afford the cost. The donor agencies that funded the certification were doing so

[5] *The suspension of the MCL certification arose when government decided to withdraw the pit sawing licences that were held by pit sawyers who supplied the company with timber. MCL used to pay for the licences and then they kept the licences. In effect, MCL used pit sawyers names to obtain licences. The FD wanted MCL to apply for a licence directly. This conflict is against FSC regulations hence the cancellation of the forest certification.*

on the understanding that this would help the rural community whose members were involved in pit sawing.

There was one shipment of pit-sawn timber that was exported under certification but this was not well handled. MCL has no timber seasoning kilns and no planning machinery. The timber was exported in its rough form with no quality control.

The table below shows the current status of certified areas in Zambia.

Table 5. Status of forest certification

Certificate holder	Area under Certification (ha)	Comment
Northwestern Bee Products Ltd.	7.5m	Honey certification
Muzama Crafts Limited	800,000	Natural Forest
Mpongwe Coffee and Organic Stallholder Cooperative	185,000	Wild mushroom certification
Ndola Pine Plantations Ltd	1,092	Exotic Pine Plantation
Wood Processing Industries Ltd	-	Chain of custody
Norzam Glulam Ltd	-	Chain of custody

North Western Bee Products

Their certification is still in force with honey and beeswax exports going to UK and Germany.

Muzama Crafts Limited

Due to conflict between FD and MCL the pit sawyers licences were withdrawn. This action contravened FSC principles who suspended the forest certification in 1999. Efforts to have the situation restored have not yielded any positive results and there is no solution in sight.

Table 6. Summary of certification in Zambia

	NWBP	MCL	MCOSC	NPP	WPI	NZG
Type of certificate	Forest product certification	FSC, Forest Management and chain of custody	Forest product certification	FSC, Forest and chain of custody	FSC Chain of custody	FSC Chain of custody
Area certified (ha)	7.5 million	800,000	185,000	1050 ha	-	-
Certifier	Soil Association	Woodmark	Ecocert	SGS	SGS	SGS
Date Certified	1990	May 1998	1999	2003	2003	2003
Funding	Partners TPF, Oxfam	Donor (SNV)	CDC/EU	Own Resources	Own resources	Own resources
Motivation	To gain access to export markets and improve income for local inhabitants	To gain access to export markets and improve income for local inhabitants	Forest conservation and income generation for local people	To gain access to export markets		
Status	In operation	suspended in 2000	In operation	In operation		
Certified products	Organic honey and beeswax	sawn timber from indigenous tree species	Organic mushrooms	Pine saw logs and chip logs	Sawn timber and chipboards	Value added timber products
Export destinations	United Kingdom Germany	United Kingdom Germany	United Kingdom Switzerland USA Netherlands			USA Norway ar East

Source: Personal communication with managers of the mentioned companies.

source because the southern boundary is a big river and to the west and north are international boundaries for Angola and Congo DR respectively.

Once processed in the factory, the products are sent directly to trade partners in the UK (TFP) with whom the company has trade link and actually pay for the certification. These companies complete the processing and packaging in readiness for sale to consumers.

MCL Since their certification was never allowed a chance to develop, it is difficulty to say what would have evolved from their experience with the first export of timber. However, same market was found in German and the UK to which rough sawn timber was exported. Representatives from one of these companies actually went to Zambia to inspect the timber before shipment but it arrived in unsatisfactory. Conditions hence the problem with payments.

Ndola Pine Plantations Ltd

This company belongs to a group of three companies all of whom are in the timber business. NPP manages the source of the raw material, which is sold to WPI for mechanical processing. The sawn timber and boards from WPI may be sold to NZG for the production of value added timber products. Both WPI and NZG have chain of custody certification and products that are manufactured with any content of certified raw material are destined for export. The most likely importer in America is Home Depot, which has adopted FSC principles and is a member of CFPC. The table gives the status of the certified market for Zambian forest products.

Table 7. Status of certified market place

Company	Certified Products	Importer/ purchaser
NWBP	Organic honey	TFP,(UK)
	Organic beeswax	German
MCL	Rough sawn timber	UK & Germany
MCOSC	Organic mushrooms	UK, USA, Switzerland, Netherlands
NPP	Pine saw logs and chip wood	WPI
WPI	Pine sawn timber Particle board	NZG
NZG	Value added timber products	USA, Norway and Far East

Source: Personal communication

So far producers have been able to find buyers for their products. However, some trade arrangements are such, producers are not free to sell to whoever they like because they are bound to specific buyers (NWBP and TFP)

The major bottlenecks in the supply chain are the production technologies employed and the transportation system to the final destinations.

In the case of NWBP and MCL, production takes place in remote areas of the under developed North Western Province. The beekeepers still practice ancient ways of producing honey (bark hive bee-keeping). The processing is also the type that is no longer employed in developed countries (hone pressing). Thus productivity is low as village beekeepers engage in beekeeping as a part time subsistence activity. Production per year is less than 200 kg per beekeeper.

For MCL, the wood is sawn using handsaws (pitsaws) producing timber of low quality (surface finish and uniformity of dimensions). Production per team of pit sawyers does not exceed 2m3 per year6. Roads in the Northwestern province are bad and Zambia is a land locked country. It takes many days for the products to reach the ports for export.

NZG is situated within the developed part of the country (Copperbelt province) but still the good have to be transported by road to either South African or Tanzanian ports. This also increases the cost of exporting.

V. EFFECTS OF FOREST CERTIFICATION

In Zambia, the effects of forest certification have been varied. The issue of certification has been pushed or initiated by the market; as a result, it has had little effect on government, which is the landowner in the country. Since the results of certification have not been dramatic, the government has kept a low profile on the matter. The contributing factors that hinder certification are the existence of strong markets for non-certified products, and the high cost of the certification process. Most producers sell their products on the Zambian or South African markets, neither of which demand certification. Since the government is currently quiet over certification, the few instances of certification have not changed Zambian forest practices significantly.

Power

The power dynamics in Zambia have remained the same. In the two cases of certification in Northwestern province where the local communities depend on forests for their livelihoods, life has continued as before. Beekeepers have always known that their livelihood is threatened by forest destruction, and over time they have developed strategies to live in harmony with the forest, which were not due to certification. In fact it was easy for the two companies to abstain because the forest was in a good condition. The pit sawyers in Northwestern province operate in the same forest as the beekeepers. However, only two tree species are harvested. The most valuable timber species is *Pterocarpus angolensis* (which is valueless in terms of honey production), the other one is *Guibortia coleosperma* (also not a popular tree with bees).

[6] *Pitsawing in this part of Zambia is a part time activity performed in the dry season and before demand for labour in the agricultural sector increases.*

It was the fear of the change in power dynamics that partially resulted in the cancellation of MCL certification. The certification was perceived as authorization to manage the forests to the exclusion of government and also to the exclusion of other forest users. In fact, the initial certified forest was 1.27 million ha and it included villages and municipalities. Hence the resistance to certification by government even after the reduction of the area to 800,000 ha.

The definition of community varies depending on the stakeholders. For MCL, the community comprises the component of the local community that deals in pit sawing: the pit sawyers themselves and their representative organization, the CDO. The forest management plan was targeted at sustainable harvesting of timber tree species. What about beekeepers? Fruit and vegetable gatherers? and commercial loggers? Government still had power to authorize tree harvesting rather than MCL.

Social

The certification for NWBP has had no impact on land tenure or any other rights of the people in the area. The social benefit initially was that higher prices were paid to producers because NWBP was able to get a price premium for certified products in export markets. Nevertheless, at the moment many traders have realized the profitability of the honey business and have joined in. Honey making is good business for small businessmen with low overheads. These new traders offer cash on spot, better prices and no regard for quality. This honey sells on the local market and a few have managed to actually export.

NWBP is a big organization, which provides stability in terms of market. Unfortunately the market has been invaded. One thing that NWBP has done to counter this is to train honey producers in strict quality control right from the harvesting point. This has resulted in a high quality product and behavior change in that at all times the producers strive to attain the quality that is acceptable to NWBP.

The suspension of the MCL certificate has meant that benefits of certification have not been forthcoming, and the community has continued to live as before: obtaining casual forest licenses, cutting trees and selling sawn timber to local craftsmen. Had the MCL certification been allowed to continue it would have positively affected land tenure system in the province, including use rights for the forests.

The NPP certification has evidently resulted in improved well being of workers in terms of health and safety. Illegal logging activities in the certified forests have ceased because there are more NPP staff on the ground to guard against such practices. As a result of this presence, even free access to the plantation has been reduced.

Economic

The economic benefits are in terms of cash accrued to the local communities, company workers and government (taxes). For NWBP, honey producers obtain a higher price from the company. Certification has made it possible for the company to offer competitive prices to its supplies (Ng'andwe, 2003). In this part of Zambia any little money that reaches households goes along way to improve the welfare of that particular household in terms of accessibility to education, improved nutrition and health.

The same benefits would have been brought about by the MCL license had it been allowed to run. In the case of MCOSC, the monetary benefits go to the mushroom pickers who at certain times of the year have little to do and have no source of income.

For NPP the situation is different. Before certification, the local market was depressed, thus too small. Export markets were sought but this was at time when major markets (Home Depot in USA and B&Q in UK) where changing over to certified products. In the hope of clinching a respectable and reliable market for their products, NZG, WPI and NPP embarked on certification. Therefore, the certification has enabled them to seek foreign markets.

Although NZG thought certification was perhaps the way to gain access to American and European markets, this has not been easy especially for the UK market. Ng'andwe, 2003 identifies two reasons for this: 1) the product that NZG is trying to sell to the UK market is based on softwood, which is abundantly available within Europe; and 2) secondary major European retailers are reluctant to deal with small producers from third world countries.

The cost of certification is quite high and retailers have not passed it on to customers. The certificate holder therefore has to bear all the costs unless the operation is subsidized by donors, an option not available to many commercial companies.

Workers spoken to also testify to improved conditions as a result of certification. The current destination for exports is America.

Environmental

Since certification emphasizes proper forest management, the establishment of a forest management system is usually the first step even before the certificate is awarded. MCL had to undergo the transformation process and pay more attention to the management of the forest than previously was done. With the help of SNV they acquired the services of a forest expert who was responsible for producing a forest inventory and a forest management plan. These were the basis for the forestry practices that were to follow. There are no established or accepted management practices for Miombo forests. Research is still going on to determine which practices are beneficial so the tendency at the moment is to minimize disturbance to the natural processes and this is what is promoted by the certification -- imposed strict forestry practices on NPP. There is a marked difference between ZAFFICO and NPP plantations even though these were one plantation only three years ago. NPP plantations are well managed, all cultural operations are being done and the management plan is being followed which is not the case in ZAFFICO plantations.

For NWBP there is no forest management plan; what are used are principles of sustainable management. MCL had produced a management plan outlining allowable cuts and prescribed practices. The extent to which this has worked is not known. NPP has elaborated a forest management plan together with environmental impact mitigation plans. The plans prescribe the allowable cuts, replanting program and other cultural practices. Since it is for only 1092 ha, it has so far been implemented as planned. The sire of the area is small. NPP has no control over activities in the surrounding natural forest (Congo DR); see figure 3 below.

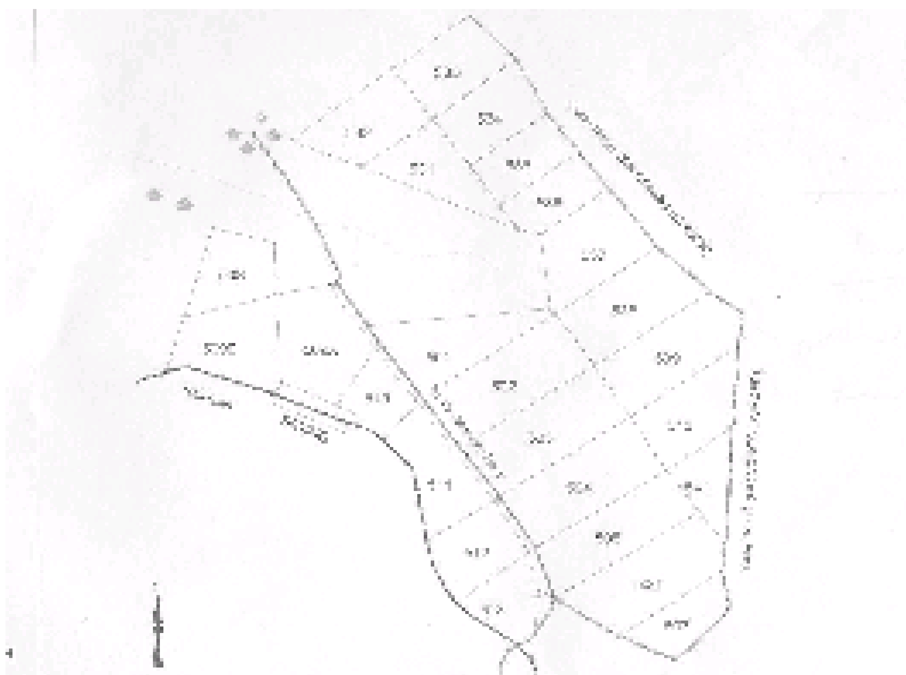

Figure 3. Map of the certified Ndola Pine Plantations

Currently there are a number of activities outside the certified area such as charcoal production, cultivation and forest harvest. These are under the control of the Zambian and Congolese governments. The surrounding area is therefore being rapidly converted to non-forestry uses although the plantation is well managed.

There are efforts to protect threatened and endangered species and also to maintain biodiversity. In case of NPP the start has been very good. Within the 1092 ha some areas have been reserved as high conservation value while conservation corridors for animals have also been created. Although this is a monoculture plantation, other tree species (normally treated as weeds) are being allowed to proliferate. Impacts of usage of heavy equipment have been identified and remedial measures recommended and are being implemented.

In Northwestern province people have always known the importance of maintaining the forests. The low population density (14 per km2) has ensured this. Since forest certification has not worked there, it is not possible to tell whether it is a beneficial exercise for the forest.

For MCOSC on the Copperbelt, the opportunity to obtain money for the mushrooms through the market is an incentive to conserve the forests rather than convert the land to agriculture.

VI. CONCLUSION

Certification in Zambia emerged through the desire of local companies to gain accessibility to foreign markets. The liberalization of the Zambian economy and introduction of a free market in all industries, coupled with the government's sale of controlling interests in the forest industry through privatization, has led to a mushrooming of forest based industries in the country. Most of these forest industries are mechanical timber industries that are now competing within the small Zambian economy. This competition has been a motivation factor for companies to seek out foreign markets. The demand for certified products by the European and American markets is viewed simply as an economic trade barrier to prevent African products from entering those markets. In view of this, many other companies are closely watching the certified company to see if there are improved business prospects after certification. The cost of the certification process has forced many to approach this matter with caution.

Certification is still in its infancy with the oldest certificate being 14 years old. Of the six certificates issued so far in Zambia, one was suspended, two are chain of custody certifications, and the other two are non-wood forest products certification. In effect there is only one forest management certificate case (by NPP) that involves the actual forest management practices, and this is in a pine plantation.

The major expected benefit of certification has been the possibility of export business opportunities. The certificate (FSC) assures would-be importers of the quality of the products and the commitment of the exporter to sustainable management and an acceptable level of production ethics. Since there is no local certifier/inspection agency, certification is a very costly exercise for Zambian organizations, as they have to rely on foreign-based certifiers.

Generally there is no problem with certification from the government's point of view, provided local conditions are fulfilled. However, the tenure system in the country is a serious roadblock, as most companies that would like to get certified do not own forests. The major economic policy at the moment is diversification of exports away from copper. Timber exports have, therefore, generated a lot of interest from government from two perspectives: how much damage is the trade causing to the environment and how much are the local people benefiting from the trade?

The government therefore supports efforts aimed at improving the socio-economic status of the local people and the country as a whole. It is consequently expected that as benefits trickle in, other companies will certainly opt to certify their products for forests under their jurisdiction. Already ZAFFICO, a government parastatal company that manages the country's industrial plantations, is exploring ways of certifying the exotic forest plantations in an effort to improve the marketability of their trees. If this succeeds, then all that the softwood-based forest industries will have to do is to obtain the chain of custody certification, as the forest management part will be taken care of by ZAFFICO.

International NGOs or governmental agencies are not necessary for certification to gain local support. What is important is that international markets should be available and willing to take certified products from the few companies that are so far certified. Should this happen, more local industries will seek certification and local support will be increased as the benefits spread to most stakeholders.

Although forest certification was pushed mainly by the desire to access export markets, local conditions catalyzed the final decisions to go ahead with certification. The small local market, which at the same time is economically depressed, increased competition as a result of economic liberalization, and the need to alleviate poverty, are some of these local conditions.

The Zambian government has adopted the policy of joint forest management (JFM) as a way to ensure sustainable management of forest resources. It is envisaged that once fully operational, this policy will enable local communities or other organizations to enter into agreements with government to jointly manage the forests. This applies to the forest reserves. The objective is that the revenues realized from such management forests will be shared among the stakeholders. Local forest fees are still low and the sharing of benefits will only be meaningful if better prices can be obtained for the forest products. This is where certification and research should look at how communities can benefit from communally owned forest resources.

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Mpongwe Coffee and Organic Stallholder Cooperative

The certification is still in force and mushrooms have been exported to the USA, UK, Switzerland and the Netherlands.

Ndola Pine Plantations

NPP produces on pine logs from the 1092ha certified plantation. The logs are sold/transferred to NZG for processing. NPP does not sell to other companies. The incentive to certify the forest came from the expected higher prices and expanded market opportunities as the local market could not absorb all products from NZG.

As long as NZG manages to export its products and the group of companies reaps the benefits, certification will be funded. The group of companies is a purely commercial organization driven by the profit motive so as long as profit roll in, certification will be supported.

Current Status of the Certified Market place

For NWBP, certification is for organic honey produced from natural forests where there are no chemicals used. The certification was paid for through the agreements with trading partners. Initially certification was paid for in full by Tropical Forest Products Ltd (TFP) in the UK. This trade link was enhanced by the director of TFP having previously worked for NWBP and was instrumental in developing NWBP. Subsequent certification costs have been shared three-ways by NWBP, TFP and Oxfam. NWBP's share is normally deducted from the sales payments and is about _1200 annually. Currently 80 % of NWBP's honey is for certified products. Finding customers was relatively easy for MCL and NWBP as it was the same customers who were pushing for certification. In the case of NWBP, TFP and Oxfam of UK were behind the certification. They pushed and paid for the initial certification and continue to pay for subsequent certifications. In return NWBP sell 80% of their produce to the two British based institutions. This has ensured a regular demand.

In the case of NZG the American market seems to be steady. Other exports have been to Norway and the Far East.

Maintenance of the chain of custody from Zambian certified forests has been easy. This is done through a number of measures taken by each organization that hold the certificate.

North Western Bee Products

Their certificate prescribes purchase of semi processed honey products from village beekeepers in the 1.7 million hectare forest in Northwestern province. The company only purchases honey from this area. It is relatively easy to maintain this

APPENDIX A: CONVENTIONS AND TREATIES SIGNED BY ZAMBIA

1. Convention on Biological Diversity (1993).
2. Convention on climate change.
3. Convention on the Control of Transboundary movements of Hazardous Waste (Basel) Vienna.
4. Convention for the protection of the Ozone layer (Vienna – 1985).
5. Convention to combat desertification (1996).
6. African convention on the Conservation of Nature and Natural Resources (Algiers).
7. Treaty Banning nuclear tests in the atmosphere
8. Montreal Protocol on Substances that deplete the Ozone layer (Montreal, 1987).
9. Treaty on principles governing the activities of slates in the exploration and use of the outer space, including the Moon and Celestial bodies.
10. Statutes of the International Union for the Conservation of Nature and Natural Resources
11. International Plant Protection Convention (1951, Rome).
12. United Nations Convention on the Law of the sea (Montego Bay, 1982)
13. Agreement on the Action Plan for the Environmentally sound management of the common Zambezi River System (Harare)
14. Convention concerning Protection against Hazards of poisoning arising from benzene (ILD No. 136)
15. Convention concerning the Protection of Workers against Occupational Hazards in the Working Environment due to Air Pollution Noise and Vibration (ILO No. 148).
16. Convention on International Trade in Endangered species of the World Fauna and Flora (CITES, 1973).
17. Convention on Wetlands of International Importance Especially as Water point habitat (Ramsa – 1971).
18. Convention on the Migratory Locust
19. Convention concerning the protection of World Cultural and natural Heritage Sites (Paris – 1972).
20. Lusaka Agreement on Cooperative Enforcement Operations directed at illegal Trade in Wild Fauna and Flora
21. International Convention to combat Desertification in those countries Experiencing Serious Droughts and /or Desertification particularly in Africa.
22. Agreements for the Establishment of Southern Centre for Ivory Marketing (SACIM) – Zambia has withdrawn its membership after having upgraded her Elephant from Appendix II to I under CITIES