

HOW CULTURAL AWARENESS AND INGENUITY BENEFITS FOREST STEWARDSHIP COUNCIL CERTIFICATION IN THE DEVELOPING WORLD: CASE STUDY IN ZIMBABWE, AFRICA

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1. INTRODUCTION

Although the global expansion of the timber market is threatening forests and human ecosystems, the global movement among consumers to purchase items that are certified for social integrity and environmental sustainability is growing. Thus, an increasing number of industries, mostly in the developed world are earning eco-certification (Cashore *et al.*, 2006). The Forest Stewardship Council (FSC) was the first, and now the most well known, global certification scheme. The FSC symbol of the “tick-tree” is the most sought after label to have on wood products. The forest industry, environmental and social non-governmental organizations (NGOs) and wood buyers created and run the FSC. The World Wildlife Fund (WWF) a well known United States’ NGO and B&Q a well respected home improvement industry in the United Kingdom are both involved with FSC certification. Formed in 1992, The FSC endorses responsible forestry practices that are environmentally appropriate, socially acceptable and economically viable (FSC, 2010).

The basic criteria are designed by the environmental, economic, and social chamber of the main FSC office. Because there are a variety of forest types and societal constructs throughout the world, regions further refine the national standards to adapt their own specific regional criteria. Once areas have developed regional standards, independent certifiers accredited by the FSC use those approved standards for certification assessments (Cashore *et al.*, 2006; Cauley *et al.*, 2000). Through a case study, this research analyzes how regional knowledge informs the industry about how to meet local FSC criteria in long term environmentally and socially respectful ways. This model can then be applied by other countries in Africa, and throughout the world.

The FSC Principles and Criteria of Forest Stewardship (Table 1) are made up of ten sections (FSC, 2010). Most studies focus on the environmental angle, often distancing themselves from the social component. However, sustainability explicitly requires both social and environmental components (Gullison, 2003). The most understudied aspect of eco-certification is the voice of the workers who are the social actors. Requiring more attention are labor conditions, established wage rate, timely payment, improved safety equipment and practices and better health and benefits packages (Cashore *et al.*, 2006). Economic and social aspects were deemed most important by community members in a study by Humphries and Kainer (2006). Geographical differences can pose a challenge in this regard (Eden, 2009; Karsenty *et al.*, 2008). Responding to the lack of data, this paper specifically explores the social and some of the environmental aspects. These include principles: #4 Community Relations and Worker’s Rights, #5 Benefits from the Forest and #6 Environmental Impact.

The supply chain, retailers and processors are audited by the FSC to verify and monitor compliance with defined standards of forest management (Overdevest and Rickenbach, 2006). There is a need to make sure that certification includes all stages of production: forest sites, processing, shipping, manufacturing and wholesale distribution stages (Eden, 2009). This

case study is unique in that it includes the complete supply chain from the growing tree in the Mukusi forest, to the logging, to the processing, to the transporting, to the manufacturing to the sale in the Jus' Teak store. Neil Rix, the founder and owner of Jus' Teak expanded his operations beyond his store, to incorporate all of the aforementioned processes into his business.

TABLE 1
PRINCIPLES AND CRITERIA OF FOREST STEWARDSHIP

PRINCIPLES	CRITERIA
#1: Compliance With Laws And FSC Principles	Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.
#2: Tenure And Use Rights And Responsibilities	Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.
#3: Indigenous Peoples' Rights	The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.
#4: Community Relations And Worker's Rights	Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.
# 5: Benefits From The Forest	Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.
#6: Environmental Impact	Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.
#7: Management Plan	A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.
#8: Monitoring And Assessment	Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.
# 9: Maintenance Of High Conservation Value Forests	Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.
# 10: Plantations	Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

Source: FSC, 2010

The geographical location of this study is significant in terms of FSC regional coverage. Despite the fact that underdeveloped tropical countries were the initial focus of the program and that the FSC is the only international certification system with wide geographical coverage, this organization still certifies few operations in tropical countries (Gullison, 2003). In fact, about 88% of FSC certification is in the developed world (Cashore *et al.*, 2006; Eden, 2009; Raunetsalo *et al.*, 2002). Due in large part to the cost of accreditation, poorer countries are less able to pay for the certification. Furthermore, because fewer organizations are working

with eco-labeling, there is a lack of infrastructure to enable the process. Thus, it is crucial to conduct studies in the developing world, especially in areas with almost non-existent eco-certification, such as Africa and Southeast Asia (Cashore *et al.*, 2006). Information about successful FSC certification can act as an example to provide foresters, wood buyers and producers in under represented regions how to approach fulfilling FSC criteria. They can then adapt the ideas presented here for their specific region and sustainably manage their resources and businesses with more integrity, and eventually obtain internationally recognized eco-labels.

There is little to no research about FSC in Zimbabwe but it is especially necessary as the country is in dire need of environmental, social, and economic opportunities (Wolmer *et al.*, 2002). Because of the poverty in Zimbabwe and out of necessity, people fell forest trees for construction, firewood and curio carving (Frost *et al.*, 2007). Although practiced at the individual level, the overall result is the large scale depletion of forest land (Manwa, 2007). Providing an alternative, this research serves as an example of how to use regional knowledge and creativity to comply with the FSC regional guidelines, and to help more forests in Zimbabwe and other regions move towards a sustainable future. The purpose of this research is to analyze a completely eco-certified production line, focusing on how regional knowledge and creativity create a sustainable system which meets the FSC criteria.

2. METHOD

Interviews were conducted with the individual who owns the teak store, manufacturing plant, sawmill and forest. Interviewees also include the store manager, head of operations for a sawmill, 12 mill workers, 11 workers in the manufacturing plant, and two park rangers. These interviews took place from July-August 2007. Criteria for choosing the owner of this particular FSC project included his dedication to the FSC concept, and his willingness to introduce the researcher to all aspects of his operations. Criteria for the other interviewees included those who showed an interest in talking with the researcher while she observed and learned about the different facilities. The interviews with the owner, manager and head of operations were purposefully non random as the points of view expressed by those occupying managerial positions were wanted. Those workers interviewed were self-selected; the researcher spoke to those who showed an interest. Given the small set of interviewees, this methodology does not seek to represent an all inclusive opinion, but to include a diversity of actors within the various parts of the commodity chain to understand the process as a whole, a method outlined by Eden (2009). While interviews with individuals who disagree with the FSC principles would add additional information, this aspect goes beyond the scope of this study.

All interviews were conducted with informed consent in English. Each discussion began with outlining the objectives and procedures of the interview a method utilized by Fraser *et al.* (2006). Basic topics included: 1) societal and health aspects of work 2) hours and payment 3) wood waste minimization, and 4) environmental procedures. Interviews were semi-structured with the researcher initiating discussion in the place of work. The researcher asked each interviewee a similar set of questions in a conversation format, without a rigid list of questions as discussed by Bernard (2006). Through conversation oriented interviews, the researcher could follow the ideas of the informant which could then direct each interview. Each discussion developed according to the experience and expertise of the person being interviewed, a process conducted by Fraser *et al.* (2006). As seen with Telfer and Garde (2006), the general ideas were introduced by the researcher, but the specifics came from those being interviewed. This qualitative method does not lend itself to statistical analysis, because not all interviewees discussed identical questions. However, through lengthy interviews repeated throughout the study period, collective views emerged from which patterns and results could be understood, a method outlined by O' Brien (2006) and Cashore *et al.* (2003). This method

provides a nuanced description of how the FSC is functioning in the local regional context of Zimbabwe, Africa.

3. STUDY AREA

Jus' Teak, the store and manufacturing plant are located in Bulawayo, Zimbabwe, Africa. The FSC certified Mukusi forest and sawmill are located in the Tsholotsho district near Hwange, 117km Northwest of Bulawayo (Figure 1). Woodland Savanna is the major ecosystem, with smaller areas of scrubland Savanna. The mean annual temperature is 20.3 degrees Celsius with the hottest month being October, and the coldest July (Childes and Walker, 1987).



FIGURE 1
ZIMBABWE WITH THE CITIES OF HWANGE AND BULAWAYO HIGHLIGHTED

The sawmill, forest, factory and store together employ about 300 people. Neil Rix, a native Zimbabwean of European descent, is the owner of the entire operation: store, factory, forest and the sawmill. The sawmill manager is also of European descent while managers and workers in the store, factory, and forest are local Ndebele and Shona, which are the two main ethnic groups living in the region. The Ndebele are an ethnic group who split off from the Zulus in the early 1800s. The Shona tribe is separate from, although related to, the Ndebele tribe. Shona is the name for a large group of people, over 20 million, many whom speak different dialects but are collectively called and speak Shona, a Bantu language (Berliner, 1993; Dodds, 1998; Ndhlovu, 2006). Subsistence farming and small scale cattle raising are the dominant forms of livelihood for both the Ndebele and the Shona groups (Braedt and Standagunsa, 2000; Wolmer *et al.* 2004).

4. RESULTS

Neil Rix established the store and factory of Jus' Teak in 1992. The merchandise includes teak furniture, flooring and toys. Most items are made from Zambezi Teak (*Baikises plurijuga*, Fabaceae), locally called Mukusi. The trees grow in the Kalahari sand in Zimbabwe, Namibia, Botswana, and Zambia (MOBOT, 2010). As the success of the store grew, while the forests in Zimbabwe became more depleted, Rix became concerned about the raw material for

his product. In an effort to ensure that he would have a constant supply of wood for the present and the future, Rix purchased an FSC certified forest and sawmill. Durawood forestry runs the operation which is audited by Société Générale de Surveillance (SGS). The SGS ensures that the products and systems comply with global and local regulations, for governments and companies such as the FSC (SGS, 2010). Every five years, the SGS ensures the independent verification of Mukusi's compliance with the FSC regulations. This paper specifically analyzes how the case study of Mukusi and Jus' Teak address the FSC principles and specifically principles four, five and six.

4.1 PRINCIPLE # 4: COMMUNITY RELATIONS AND WORKERS RIGHTS

"Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities (FSC, 2010)."

In Zimbabwe, where poverty has become rampant, the economic aspect of principle four takes on particular meaning. In Rix's operation, workers are content with their wages and appreciate having set working hours. As for the social aspect, Mukusi works on gender inclusion in the work force. Although men fell the trees and use the large sawing machines, women are employed to sort the wood. Despite these safeguards for the economic well being of the men and women, a major problem still exists in Zimbabwe when looking after the long term economic well being of workers. The inflation rate in Zimbabwe is devaluing the currency at such a high rate that money put into savings while working may become almost worthless by retirement. For example, people talk of needing a "brick of money" to buy an item as small as a soda. So many physical pieces of paper currency are needed, that money is often not rural people's first choice of payment. More often people barter between each other for items that have inherent value, such as baskets, food, tools, weapons and animals (Fadiman, 2008). The most prized item is livestock. Animals hold their value and ownership is both an economic gain and a social status symbol. Most rural people keep their "savings" in cattle (Mupawaenda *et al.*, 2009). Thus, the pension plan for the forest and sawmill workers is in the form of cows. The employees earn increasing cattle ownership, the longer they work. The region already supports cattle, thus this mechanism merely changes animal ownership, opposed to increasing the number of animals.

Furthermore, the "social...well-being" aspect is incorporated through addressing subtle cultural aspects of the community. An example is a soccer field built on site for the workers. Soccer is a central activity during free time, thus a field has been incorporated into the housing area for the workers. Another example of incorporating social well-being into the current operation is the availability and quality of medical treatment. In addition to western medicine, the main compound area contains a garden with traditional medicinal plants. This supports both the Ndebele and Shona people in pursuing their own cultural health practices in addition to western medical attention.

Health and safety extends to the working conditions, which admittedly can be dangerous. All of the sawmill and manufacturing workers are provided with appropriate personal protective equipment (PPE). Mukusi and Jus' Teak provide new coveralls, and dust masks. For those working the largest machines, they are also issued additional plastic protective coats, hard hats and masks. However, it should be noted that a weakness in terms of safety exists. In an effort to make quota, some shifts need to work in the night which is when most injuries occur.

Another area in which improvement can be seen is the housing. Workers are lodged in wood and metal structures clustered together. Most of these people come from villages in which they lived in mud huts with thatched roofs, so the simplicity itself may not be a problem. However, village structure usually consists of family compounds with neatly kept spaces

between each extended family unit. Roofs made of grass huts aerate themselves well which is less true of the home construction on the Mukusi site.

4.2 PRINCIPLE # 5: BENEFITS FROM THE FOREST

“Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits (FSC, 2010).”

Ingenuity is particularly demonstrated with principle number five. Due to ownership of the sawmill by the same company who makes the final product, the complete process can be geared towards efficiency. The first step in the process requires that the proper size log is cut for each particular finished product. For example, flooring requires smaller wood pieces than furniture so the sawmill matches suitable logs with output requirements and therefore the company obtains the maximum amount of wood from each log.

However, no matter how much care is taken, after a log has been sawed, “off cuts” remain. These are small pieces of wood that many sawmills discard. Mukusi however, reprocesses these cuts. Since Jus’ Teak’s products include furniture and flooring they can utilize even the smallest pieces for certain flooring, such as mosaic parquet. Other small pieces are made into multiple piece chairs and picture frames.

Newer additions to the commonly sold items are “Eco-toys”. With extra chunks of wood, too small for chairs, and not so small for parquet flooring, Jus’ Teak has begun carving toys. The carvers make small animals and toy boxes. Even the tiniest pieces of wood, that are too small even for flooring, are glued together side by side until they are large enough to be a side of a child’s box, creating a multicolored container.

Some parts of the tree that never arrive at the saw are the branches. These are chopped off at the sawmill so that the logs will fit into the machines. Most logging outfits do not utilize this wood. Mukusi and Jus’ Teak however, are working on starting a program where they will give these branches to local carvers. Ndebele and Shona have traditionally carved family totems and kitchen utensils. Now, these groups are carving animals and other small items for tourists. Not only does this have implications for social sustainability, as the economic situation deteriorates in Zimbabwe, more people are turning to carving these new items as a form of livelihood (Braedt and Cambell, 2001). The large number of carvers results in an increase in tree poaching as people are desperate for material (Manwa, 2007). Since villagers poach in the national parks (Standa-Gunda *et al.*, 2007) and are depleting the forests in Zimbabwe (Mapedza, 2003), providing people with wood for carving helps protect intact forest. Moreover, because this particular wood is FSC certified, the carvings can carry the eco-label and sellers can increase the price in the future. This can reduce the quantity of items they sell, and protect the resource on which the carvers depend.

Attempting to reduce waste, Mukusi is learning about how to utilize the sawdust that is usually considered waste product of a mill. Rix is exploring ways to convert sawdust into pellets to be used for fuel. Wood pellets are being used as a substitute for electricity, propane and natural gas (Piney Woods Pellets, 2010). Rix is in contact with the company, Piney Woods Pellets, in discussion of the possibilities of incorporating the Mukusi sawdust into pellet creation. The commitment to use all parts of the tree requires adherence to 5.2 of Principle #5 which discusses the need for “Diversification”. The company works not only in material goods for the home, but with large multi faceted companies working with alternative energy sources.

4.3 PRINCIPLE # 6: ENVIRONMENTAL IMPACT

“Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest (FSC, 2010).”

To ensure long term forest health, Mukusi logs only certain areas of their property, while leaving other forest patches untouched. For the areas that are designated for cutting, Mukusi cuts in rotational cycles. This mimics the natural ecosystems in which there is constant fluctuation. In the future, they are planning to start a reforestation project. This is to maintain forest integrity in terms of the environment, and also to provide a constant wood supply for the business. Rix said, “I would like the loggers to tell their kids that they not only cut trees as part of Mukusi, but they also plant them. They can leave a dual legacy.”

Transportation often adds to the environmental footprint of an operation (Kingsolver *et al.*, 2007). Mukusi and Jus’ Teak work with the railroad which minimizes road transportation. Trains are more efficient, as less fuel is needed per unit of material being shipped. Thus, the economic and environmental impact is reduced. The mill and forest are located next to the railroad track, so they can use the rail to get the wood from the forest to the mill, and then the cut wood from the mill to the factory. The factory is then directly adjacent to the store.

5. DISCUSSION AND CONCLUSIONS

FSC certification is considered one of the most reliable eco-labels, and as this study shows, inclusion and respect for local customs coupled with creativity creates an environmentally, socially and economically successful system. A global standard is not sufficient for forestry practice (Eden, 2009), and a set of generic principles and criteria must be modified to fit local circumstances (Cashore *et al.*, 2006), thus it is of utmost importance to understand local perceptions (Humphries and Kainer, 2006). Incorporating these elements proves especially important in the developing world where eco-certification has been less implemented. This particularly applies to Africa, a region in which there has been almost no institutionalized eco-labeling efforts (Cashore *et al.*, 2006).

Looking at how the case study of Mukusi and Jus’ Teak addresses principles four, five and six, demonstrates ways in which local values and ingenuity help to promote a successful venture. In terms of principle four, addressing community relations and workers rights, the most unique aspect is the value of livestock. The company’s paying pensions in cows, demonstrates sensitivity to local people’s value system, and recognition of the unstable local economy in which money may have no value by the time people are ready to collect. Creating a long term stable payment system engenders a loyalty and mutual respect between the employee and the employer. Furthermore, building a soccer field in the main living compound illustrates how Mukusi looks after the social well being of their employees.

Moreover, although the owner may not use or believe in traditional remedies, the fact that the Mukusi mill grows medicinal plants on site, promotes the attitude that the workers’ worldview ought to be recognized. In terms of health, the company does not limit care to attending to medical needs, but also works with prevention. They provide the appropriate work gear to employees: uniforms, dust masks and hard hats. And, by including women in the work force, albeit in a different aspect of the job, they are addressing the community as a whole, and not just empowering one sector.

One of the most notable ways in which Jus’ Teak meets criteria five, benefits of the forest, is by maximizing their output. Not only are logs chosen specifically for their output at the time of cutting, but the idea to utilize small “throw away” pieces for flooring, chairs, picture frames, toys, boxes and saw dust pellets takes advantage of almost all resources the tree produces. This results in fewer trees being felled to earn the same amount of income.

And, this efficient utilization of a single resource can extend into the local communities. The concept of giving the branches, for which the wood company has no use, to local carvers, can help reduce the number of trees the artists poach from the land. Reducing illegal cutting will help the Mukusi forest, keeping people from the company's trees, and also the National Parks and other natural ecosystems. This aids in protecting the biodiversity and health of the forest. Moreover, these carvings with FSC certified wood could be sold at a higher price than items made from un-certified wood. Each piece made with FSC wood would be marked with the eco-label differentiating it from those that are made from materials without certification. Increased profit from each sale can reduce the need for high volume sales. Additionally, the formation of cooperatives would create more incentive to have FSC labeled carvings. As the program is still in the incipient phase, it should be monitored during its development and implementation for efficacy and possible improvements. Furthermore, Mukusi could start charging a minimal fee for the branches, so that the locals would still get a good deal while creating an extra incentive for Mukusi to continue the policy.

For principle number six, the environmental impact, rotational logging can serve as an example to other mills. Keeping science in the practice is important when utilizing and maintaining a forest. The ecological health of the area is important for the regeneration of trees. Since Mukusi and Jus' Teak want to continue to profit on this resource, consciously clearing while reforestation is necessary. Clearly the foresters understand the ecology of the land to effectively log today, re-plant later and still have mature trees for the future. Sustainable forestry helps maintain a healthy ecosystem and also adds to carbon mitigation. For the future, they could also look into the financial opportunities of global carbon markets. Thus, Mukusi's logging practices help the environment and provide material for the Jus' Teak store.

Finally, geographically, Africa is one of the least represented regions in terms of FSC certification, which makes this case study especially applicable. These same methods can be used in other areas of Zimbabwe, Southern Africa and in different parts of the developing world. The specifics outlined in this article can act as a model for others to follow, and help increase FSC certification and in so doing, sustainable forestry. The more forests that are managed with eco-certification as a goal, the more healthy, usable and sustainable ecosystems the world will have. Mukusi and Jus' Teak began their eco-certification, because a wood consumer wanted to find a viable and long term source for his timber. They found that the best way to achieve this goal, was to practice conscientious forestry, logging and wood utilization.

Although Mukusi and Jus' Teak are successful in many respects, weaknesses exist that need to be addressed. In spite of the attention and care given to the health and wellbeing of the workers, they still do have injuries, which could be prevented by not having the workers operate at night. And the safety conditions of the living quarters still remain questionable.

At a larger level, Rix's operation also suffers from the same problem of most FSC certified operations in poor countries, which is the high price of accreditation. The cost is prohibitive for many, which acts as a barrier for small operations in poorer countries (Cashore *et al.*, 2006). NGOs often pay the fees, especially in Africa (Humphries and Kainer, 2006). Rix's operation falls into this category. An agency pays the \$30,000 for Mukusi and Jus' Teak to be FSC certified, and they need to be re-certified every five years. Although Mukusi and Jus' Teak are currently benefitting from a donor agency's generosity, this situation creates dependence, and weakens the argument that this is an economically profitable way for companies to proceed. Market based incentives are being promoted to encourage people to want to work with the FSC (Gullison, 2003). Various organizations are trying to organize group certification schemes, so that smaller industries can get eco-certified so that each one pays only part of the cost (Gale, 2002). Incorporating local customs for multiple companies under one certification is central in ensuring that all of the small groups are following the same regional criteria.

It is essential that consumers understand the importance of FSC certification, and there is an effort to promote more effective global demand for certified products to create a

stronger incentive for certification (Cashore *et al.*,2006). As the FSC seeks to incorporate business and science within the same debate (Eden, 2009), Rix's company is an example of how these seemingly disparate ideas can come together. Rix is a businessman, and his initial motivation for purchasing a forest was to provide the raw material for his factory. He saw sustainable forestry as a good business proposition.

Future studies can examine other FSC certified ventures in Africa and neighboring regions. That would help provide a data base of methods from which others can learn, and to which they can add and share their new methods. In order for people to continue to use the forest, we need to devise ways to make this use sustainable for the ecosystem and for the people who live and work in these environments.

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