

**DEFORESTATION IN MWEKERA NATIONAL
FOREST No. 6:
AN ETHICAL EVALUATION**

By

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**A Dissertation Presented to the University of Zambia for the
Master of Arts Degree in Applied Ethics**

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2010

DECLARATION

I, Shawa Patrice, declare that this dissertation:

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APPROVAL

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ABSTRACT

This study is about an ethical evaluation of deforestation in Mwekera National Forest No. 6. The objectives of the study were: to investigate why deforestation is still going on in the Mwekera National Forest No. 6 even though the Forest Policy and Forest Act are in force; to investigate to what extent the local people have been involved in the formulation of the forest policy; to investigate the effects of deforestation on the natural environment and its inhabitants; and to make an ethical evaluation followed by suggestions as to how Mwekera National Forest No. 6 should be better managed in order to control the high rate of deforestation going on. This was done through a qualitative approach employing in-depth interviews with focal persons, focus group discussion and physical observations on the forest. The target groups included the local people living in and around Mwekera National Forest No. 6, the Forest Department staff and the Zambia Forestry College staff. The ethical analysis combined relevant traditional ethical theories such as Deontology, Consequentialism, Rights Theory, Value Theory and John Rawls Theory of Justice in addition to the following environmental ethical theories: the Land Ethic, Deep Ecology, Social Ecology and Environmental Justice. The causes of deforestation were found to be poverty, political influence, non-involvement of the local people in forest policy formulation and implementation, lack of appreciation of natural values, unemployment due to privatisation of the mines in 1990 and the removal of subsidies from farming inputs and electricity. These had adverse effects on the natural environment which include the following: siltation of the dam and stream due to soil erosion, poor water quality supply to Mwekera community, reduced quantities of non-wood forest products being collected from the forest, loss of biodiversity, habitat destruction for wild animals, loss of cultural sites and effects on climate. An ethical evaluation revealed that in addition to the use value of the forest to humans, there is need for people to value nature in itself and learn to live in harmony with it. As a forest is an ecosystem, there is competition and co-operation between its diverse parts and, if this relationship is disturbed, the effects are diverse. This means that human beings have an ecological duty to seek to preserve the integrity and balance of the biotic community and to restore it where it has been degraded by human activity. The recommendations made to better manage the forest are as follows: the government should involve the local people in the management of

the forest; the government should consider the norms, values and assumptions that local people possess regarding the conservation of forests and other natural resources; there is need to include environmental ethics in the forestry training curriculum, especially in forestry extension; government should create more jobs so that the squatters in MNF can be employed; and eco-tourism should be introduced in MNF so that the local people can benefit financially and, at the same time, protect the forest.

DEDICATION

Firstly, I dedicate this piece of work to the Almighty God, whose mercy and goodness never ceases. Secondly, to my Wife Barbra Shawa, and my three lovely children Grace Shawa, Yamikani Shawa and Themba Shawa for their sacrifice during my study.

Lastly to my parents Mr. Lackson Shawa and Mrs Grace Shawa for laying a good foundation for me.

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LIST OF ABBREVIATIONS

CIFM	Community Involvement in Forestry Management
CO ₂	Carbon dioxide
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organisation
FD	Forestry Department
GHGs	Green House Gases
GRZ	Government of Republic of Zambia
IMF	International Monetary Fund
IUCN	International Union for the Conservation of Nature
MNF	Mwekera National Forest
MTENR	Ministry of Tourism Environment and Natural Resources
NARDC	National Aquaculture Research Development Centre
NGO	Non-Governmental Organisation
NRD	Natural Resources Department

NWFPs	Non-Wood Forest Products
TNC	Transnational Corporation
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
USA	United States of America
WCS	World Conservation Strategy
WCED	World Commission on Environment and Development
ZFC	Zambia Forestry College

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CHAPTER ONE: BACKGROUND

1.1 BACKGROUND

1.1.1 An overview of tropical forests and worldwide deforestation

A forest is best defined as “a community or assemblage of ecosystems dominated by trees and other woody vegetation” (Zimba, 2007a:34). The forests in the developing regions of Latin America, Africa, and the Asian-Pacific region contain a wide variety of vegetation, depending on the climatic and ecological conditions of the region. These forests are collectively called “tropical forests” (Pancel, 1993:1653). The vegetation spectrum ranges from sparse, dry, savanna forests (such as in the African Zone) to various deciduous forest formations in ecologically transitional zones, to evergreen and dense, closed, broadleaved forests (rain forests) that are extremely rich in species. They occur in humid central tropical regions and the corresponding mountainous areas (ibid.). In 1980, tropical forests covered 29.7 million Km², representing 40% of the land masses of the countries in question (FAO/UNEP, 1982).

Forests are much more than resources playing key roles in climatic systems, and comprising the habitats of at least half of the species of the planet. Forest ecosystems exist in a delicate balance with the trees and photosynthesizing plants. The plants take in carbon dioxide, from the air to manufacture food and in turn release the oxygen from the reaction back into the atmosphere. Animals ranging from tiny insects to large forest dwelling herbivores browse on the plants and are in turn eaten by other animals (Robert, 1996). It is the photosynthesizing plants that are important on a worldwide scale as they affect the composition of the atmosphere. They absorb carbon dioxide, the greenhouse gas which causes global warming, and

help to reduce it. This is one of the main reasons why we need to protect the forests (ibid.).

Forests play major service roles in the biosphere which include the supply of medicines, a variety of foods that supplement and complement what is got from agriculture. They also provide fuel wood as a source of cooking energy. Furthermore, forests provide materials for construction, baskets, and food storage structures (Lipper, 2000:25). Forest products also have an important role in food security. They are used as “buffer” foods, helping to meet dietary needs during periodic food shortages (ibid.:26). Forests also play an important role in the hydrological cycle. They are able to absorb the water in the soil and release it in the atmosphere which later falls as rain. Trees are extremely important in soil building. Their roots grow down and break up the bedrock into smaller soil particles and their fallen leaves contribute to the nutrient richness of the soil. Tree branches soften heavy rainfalls, and their roots provide a support structure within the soil. These two factors help to prevent erosion.

Deforestation is the clearing or removal of trees from an area of woodland or forest which can be due to the human desperate need for the resources the forest provides. However, the more ruthlessly the forests are exploited, the quicker the natural resources are used up and disappear. Over 40% of the original tropical rain forests have already been destroyed. Our rainforests are being cut down at a rate of 6000 acres per hour (Pancel, 1993:1653). Indeed, some people believe that if the rainforests continue to disappear at such an alarming rate, it will have a devastating effect on the planet earth.

According to FAO, cited in Shitima (2005:22), in the latest ten-year periodical assessment of world forests, the global loss of natural forest cover during the 1990s was estimated at 16.1 million hectares per year of

which 15.2 million hectares per year were being lost in the tropics. During the decade under review, deforestation is said to have been highest in Africa and southern America, and individual countries with the highest net loss during the same decade included Argentina, Brazil, Democratic Republic of Congo (former Zaire), Zambia and Zimbabwe. FAO further estimated that 56,000 hectares of tropical forests are destroyed each day worldwide and, if this rate continued, it would only take 177 years to clear all tropical rain forests.

The effects of deforestation can be categorized in three ways, i.e., local social effects, environmental effects, and global effects. For people living in or near a forest, an obvious impact can be a decrease in biomass produced, that is, a decrease in the future capacity of the forest to produce wood and non-wood products (medicine, food and fodder). Forest products are quite significant for food security and income generation for local communities throughout the developing world, many of which are food insecure (Lipper, 2000:26).

The process of deforestation in various geographical regions is destroying this unique environment. While forests are rich in biodiversity, deforestation results in loss of these species. This biodiversity took many millions of years to evolve, and there is no possibility of getting back the estimated 50,000 species that go extinct every year. The extinction of the plants and animals lead to a diminished gene pool. The lack of biodiversity and a reduced planetary gene pool can have many unforeseen ramifications, some of which could be fatal to the future of humanity (ibid.:27).

Deforestation is also known to contribute to intensified soil erosion. Loss of ground cover can result in increased erosion leading to sedimentation of water ways which may have a negative impact on fishery and dam operations. Deforestation is also a potential prime cause of climate change. Some climatic models indicate that towards 2050, temperatures in tropical forests will increase up to 2 degrees Celsius from their 1970 levels (Karsenty, 2008:27). This has been attributed to high levels of

deforestation which leaves no trees (carbon sinks) to absorb the excess carbon dioxide. According to the United Nations Environmental Programme (UNEP), 20-25% of all the carbon dioxide emissions are caused by the burning of forests. About 1.6 million tonnes of carbon dioxide are produced by deforestation in countries of the South. Poor management policies also contribute to the problem (ibid.:17). With specific reference to Madagascar, Randrianariso (2008) states that “at least 100,000 ha of forests are destroyed each year”. Such intensive deforestation accounts for 95% of Madagascar’s carbon dioxide (CO₂) emissions and severely disrupts climatic patterns. For example, climate change is already making its effects felt in Madagascar, with temperature rises, infrequent and torrential rainfall, longer dry periods and increasingly violent cyclones. In Congo DR, Andriambololonera (2008:19) notes that the shrinking of forests has contributed to local climate variations. The temperature has risen by an average of half a degree and rainfall has dropped from 1,400 to 1,000 mm/year. Local vegetation has suffered due to this climate change. Species like *Cinchona spens* and Arabic coffee can no longer grow as they did five years ago.

Deforestation ranks highly on the current international agenda (Angelsen and Wunder, 2003:1). In fact, it is estimated that if the rate of deforestation is not controlled, the forests in developing countries will have disappeared by 2020 (Attfield, 1999:84). The critically serious impact of deforestation on the global climate was raised at the Rio Summit in 1992 although, regrettably, the outcome in terms of practical action was a dismal failure (Green, 2006:468-475).

1.1.2 Overview of forest areas in Zambia

The total area of indigenous forests in Zambia is 44.6 million hectares and covers 60% of the total land area, out of which 9.6% are gazetted forests (Shakacite, 2000). Zambia has 481 protected Forest areas: 181 National Forests and 300 Local Forest Reserves (Jackman, 2000). Permanent forest areas are those that are reserved and managed by the state to secure the benefits of the forest resources for current and future generations of citizens (Sichalwe, 2008:6). National forests are demarcated into two: protective and productive areas. Protective forest areas are also categorised into two: national protection forest and local protection forest. The national protection forests are reserved for the conservation of ecosystems and biological diversity, or for the protection of water and catchment areas (ibid.). These forests are along the catchment areas of big rivers which include Kafue (which passes through Mwekera National Forest), Zambezi, Luapula, etc. The local protection forests are important mostly to the people living around them. They are usually fairly small in size and often have a source where there would be a likely cause of soil erosion if trees were cut (Zimba, 2007a:58). They are also made around the headwaters of streams used by the local people.

Production forests are also categorised into two: national and local production forests. National production forests supply forest products to the mines, industries and towns. These forests are usually large and most of them are close to the mines, industries and towns (ibid.:57). A good example can be the Lamba head waters in the Copperbelt and the Zambian teak in forests in Western province. Local production forests supply the forest products needed by the local people, small towns, local authorities, schools and villages. The local production forests are usually small and near the places where they supply the forest products (ibid.). Like the national

production forests, these forests are supposed to provide the local people with timber, poles, firewood and other forest products.

1.1.3 Deforestation in Zambia

Deforestation is considered as one of the priority environmental problems in Zambia and wood harvesting for charcoal production seems to be a main cause of forest loss. The annual rate of deforestation in Zambia ranges from between 250,000 and 300,000 hectares per year (GRZ, 1998). Other studies have put it at 900,000 hectares per year (Chidumayo, 2002:33). This state of affairs has resulted in the loss of forest cover, soil erosion, loss of biodiversity and more pollution due to the loss of the carbon sink. It has also contributed to climatic change. According to Sichalwe (2008), data have shown that forest burning is one of the largest emitters of greenhouse gases in Zambia. The emissions emanate from forest clearing and on-site burning of fuel wood and charcoal. The United Nation Development Programme (UNDP) environmental project conducted greenhouse gases (GHGs) inventories in 1990, 1994 and 2000. The results showed an increase in GHGs in the atmosphere from 32,000 giga gates to 94,200 giga gates. In 2000, the GHGs increased by 71,000 giga gates. These inventories clearly show the high levels of pollution taking place due to deforestation.

Over the years, there have been various concerns expressed from stakeholders that the destruction of forests is likely to bring ecological disaster of mythic proportions on this country (ibid.:6). Considering this high rate of destruction going on, various organisations have urged the government to find solutions to current environmental problems. This is because, if the approach is not controlled, there can be a major threat to the Zambian people, the local environment and the world at large

(ibid.). Research conducted by major environmental stakeholders in Zambia, including United Nation Environmental Programme (UNEP), has predicted that forestry resources will drastically decrease by the year 2015 if no immediate measures are taken to address the situation (ibid.). The Minister of Tourism Environment and Natural Resources was quoted in *The Sunday Post*, (December 21st, 2008) as saying that the government is in the process of reviewing the Forestry Policy and Forestry Act to strengthen its institutional capacity to protect the environment.

1.1.4 Historical Background and Deforestation in Mwekera National Forest No.6

Mwekera National Forest No.6 is located in the Copperbelt Province and it is about 26 kilometres east of the centre of the City of Kitwe. It lies to the north of Kamfinsa stream, bordered by the Ndola-Mufulira road to the east. The northeast of MNF is bordered by Democratic Republic of Congo (DRC), Kakolo in the West and Misaka in the south (Malunga, 2009:60).

The indigenous people who occupied this area were the Lamba people under Chief Mushili. At that time, collection of the forest produce in this area required permission from the chief. Cultivation was allowed and mainly concentrated along the stream banks, probably because of fertility due to the deposition from higher altitudes. According to Zimba (2007b:6), the preservation of the area has undergone several phases, all aiming in one way or another at strengthening its management and cutting off some portions for cultivation. Originally, the area was gazetted as a forest reserve through statutory instrument number 72 of 3rd May, 1946. Even after subsequent amendments through government notices (23 of 1951 and 268 of 1957), the status of the area remained the same as the forest reserve until 1975 when it changed into that of a national forest under statutory instrument No. 158. The area by

then was 46,764 ha of which 43,097 ha was a productive area of indigenous woodland and the rest for protection. It was last officially altered in 1957 when it was reduced to 17,887 hectares through government notice number 268 of 1957 (GRZ 1965). The intention of the reserve was to protect the forest which formed a catchment area for Mwekera stream. This stream drains into the more important Kafue River.

Unauthorised activities going on in the forest have caused a lot of forest resource depletion. The forest has been reduced from the original size due to destructive activities by squatters. Squatter's activities include indiscriminate cutting of trees for charcoal manufacturing, sand mining and illegal farming. According to Saxon Siame, the Principal of Zambia Forestry College, the life of the forest is being threatened by these squatters as the rate of charcoal manufacturing has been increasing at an alarming rate. He is reported to have said that the college, and other institutions like the Copperbelt University and the University of Zambia, were threatened as the forest was their living laboratory (*Times of Zambia*, June 12th, 2009). Out of the 17,887 hectares, according to Malunga (2009:90), 6,348 hectares is marked for excision. This would leave 11,539 hectares of protected forest area if approved. Of the proposed 11,539 hectares, 2,885 hectares (25%) is open land while 8,654 hectares (75%) is the forested area. This section of the forest reserve has been proposed for excision in order to resettle people illegally in MNF. The information above agrees with Shitima (2005:49) who stated that the reserve has lost much of its tree cover and that whatever remains constitutes less than 10,000 hectares. MNF, according to his preliminary findings, is heavily deforested and encroached upon.

1.2 STATEMENT OF THE PROBLEM

This particular research is about the ethical issues arising from the high levels of deforestation going on in Mwekera National Forest No. 6 which is under government control. According to the Forest policy of 1965 and the Forest Act of 1973 which are currently being used, the forest is a protected area and all forest products can only be accessed by the local people if the forest is de-gazzeted through a statutory instrument. The forest department is responsible for the management of the forest in which there is no involvement of the local people. However, although the Government is supposed to be in control, deforestation in MNF is going on at a very high rate. The local people have settled in the forest, manufacturing charcoal and farming, even though it is not legal to do so. Deforestation has also caused environmental degradation in the forest. Consequently, this situation raises ethical issues related to the wellbeing and sustainability of the forest environment.

1.3 OBJECTIVES OF THE STUDY

The objectives of this study are:

- to investigate why deforestation is still going on in the Mwekera National Forest No. 6 even though the Forest Policy and Forest Act are in force;
- to investigate the effects of deforestation on the natural environment including its inhabitants;
- to make an ethical evaluation followed by suggestions as to how Mwekera National Forest No. 6 should be better managed in order to control the high rate of deforestation going on.

- to investigate to what extent the local people have been involved in the formulation of the forest policy;

1.4 RESEARCH QUESTIONS

- Why is deforestation still going on in Mwekera National Forest No. 6 even though the Forest Policy and Forest Act are in place?
- What consequences does deforestation have on the natural environment and its inhabitants?
- From an ethical perspective, how should Mwekera National Forest No. 6 be better managed in order to control the high rate of deforestation going on?
- To what extent have the local people been involved in the formulation of the forest policy?

1.5 SIGNIFICANCE OF THE STUDY

Whether consciously or not, many decisions are made relating to the natural environment that involve ethics and have ethical implications. For example, Do forests have any value in themselves other than for human use and for economic purposes only? Should we continue depleting the forests for the sake of human consumption? Do we have any moral obligations to non-human forms of life in the forests? Is the degradation of forests ethically evaluated within the overall ecosystem? What obligations do we have to future generations with regards to our care for the natural environment? Are humans responsible for the extinction of species? Are local

inhabitants adequately involved in policy decision making? To what extent is environmental justice observed?

It is hoped that this study will add an ethical dimension to the management of forests in Zambia in general and that it will help to improve the management of MNF in particular. It is further hoped that it will lead to the inclusion of an ethical dimensions in the forest policy which is in the process of being reviewed. Finally, it is hoped that an ethical component might be included in the forestry training curriculum in which it is currently missing.

1.6 RELIABILITY AND VALIDITY OF THE RESEARCH

According to Finn (2000:28), reliability is about consistency of the results obtained from a measuring instrument in a piece of research. If a measuring instrument is a questionnaire, then the questions included should obtain the same answer from a person each time it is asked. Validity refers to whether a measuring instrument measures what it is supposed to measure, or the degree to which the finding is interpreted in a correct way. To ensure that this study produced realistic, valid and reliable results, the triangulation method was used. This method used various data collection techniques such as in-depth interviews, focused group discussion, and observations. The data collected from different sources (i.e., FD, ZFC, the local community and the forest) was cross checked for credibility. However, despite the efforts taken to make this study realistic and reliable, some limitations were encountered are as explained below.

1.7 LIMITATIONS OF THE STUDY

The study was confined to Mwekera National Forest and the local inhabitants in and around the area. The focus was restricted to ethical issues arising from an analysis of the data emerging from the occurrence of deforestation in this area. As the study was done during the rainy season, most of the people were not found in their homes as they were busy with farming. This involved a lot of time as MNF is quite vast. Movement in the forest was also a problem, as the vehicle I was using could not move properly. Hence, most of the movement was done on foot. Furthermore, many of the focal persons were afraid of open interviews as they feared to be evicted from the forest. Lastly, financial resources were also a limiting factor on the coverage of the study.

1.8 METHODOLOGY

The study consisted of two parts: An empirical part and an ethical evaluation part. In the empirical part, qualitative methods were used in order to find out the current state of deforestation in MNF.

Primary data was collected through focus group discussion, in-depth interviews with focal persons and physical observation in the forest. In-depth interviews were done with 10 Forestry Department staff, 10 Zambia Forestry College staff, and 30 local people in and around the forest. Semi-structured interviews and open ended questions were used to probe for more complete data.

Secondary data was collected from the University of Zambia library, Philosophy and Applied Ethics Department, Zambia Forestry College (ZFC) library, Forestry Department (FD), Environmental Council of Zambia (ECZ), Natural

Resources Department (NRD), and the Internet. Primary and secondary sources of information were used as the empirical basis for the ethical analysis part.

The second part was philosophical and consisted of an ethical evaluation that was based on the findings of the empirical part. The ethical evaluation combined relevant traditional ethical theories such as Deontology, Consequentialism, Rights Theory, Value Theory, and John Rawls' Theory of Justice in addition to the following environmental ethical theories: the Land Ethic, Deep Ecology, Social Ecology and Environmental Justice.

1.9 SUMMARY

This chapter has discussed the background of the study by giving an overview of tropical forests and their importance. It has explained what deforestation is along with its effects at global level, the context of deforestation in Zambia and, more specifically, the situation relating to deforestation in Mwekera National Forest No. 6. It has given an overview of the establishment and purpose of MNF. It has further identified the statement of the problem, the objectives of the study, the research questions, the significance of the study, reliability and validity of the research, the limitations involved and lastly, the methodology being used.

CHAPTER TWO: THEORETICAL FRAMEWORK

Ethical theories and principles act as a foundation for ethical analysis because they are the perspectives which guide ethical decisions. However, in order for ethical theories to be useful, they must be directed towards a common set of goals. Ethical principles are the common goals that each theory tries to identify in order to be successful. Therefore, this chapter looked at some of the theories that are relevant to this research.

2.1 TRADITIONAL ETHICAL THEORIES

2.1.1 Deontology

The word deontology comes from the Greek roots *deon*, which means duty, and *logos*, which means reason. Deontological moral systems, therefore, typically stress the reasons why certain actions are performed. Simply following the correct moral rules is often not sufficient; instead, we have to have the correct motivations and intentions. Kant holds that, as distinct from desires and consequences, categorical “oughts” are binding on rational agents simply because they are rational. Kant (1965) says that categorical oughts are derived from a principle that every rational person must accept. He calls this principle the categorical imperative which is expressed in the following two maxims:

“Act as if you were legislating for everyone.”

“Always treat a human being as an end in him (her)self and never as a means.”

These principles identify a procedure for deciding whether an act is morally permissible or not.

To treat a person ‘as an end’, according to Kant, is to act on the recognition that he/she has purposes just as you have, that is, to make his/her ends your own and to act towards his/her purposes as you naturally do towards your own. To treat persons as ends in themselves, then, is to help fulfil their desires and allow or enable them to carry out their decisions. The idea is that you should act as a member of a rational community of persons, *all* of whom make moral decisions. This implies that each member treats all the others as moral beings who act on the basis of reason. (cf. Raphael, 1981:57).

Although the focus of Kantian ethics does not explicitly refer to the natural environment, an extension of this approach can be found in the moral consideration due to life-forms and non-life forms as discussed under value theory below.

2.1.2 Rights Theory

As in the International Declaration on Human Rights (1964), while many countries are formulating human rights, the current emphasis on human rights is not enough. Human rights should also work towards becoming less destructive to our world or less dangerous to the ecology. Hence human rights need to be harmonised with protective rights of the earth and other living things.

The human rights being talked about are the human capacity to make moral choices. We have the right to life, liberty, security, freedom of association, bodily integrity and property because we have as our central task in life to act morally (Machan, 1991:483). If we did not have rights, we would not have such a sphere of personal jurisdiction and there would be no clear idea as to whether we are acting on our own behalf or on behalf of those of other persons. But it needs to be realised that the protection of nature from destruction by human beings is one of the minimum guarantees of human dignity. Nature must be protected from degradation by human

beings for her own sake, for the sake of her own dignity as well as for her contribution to human dignity.

Similarly, when we say animals deserve moral consideration, this is sometimes labelled as ‘animal rights’. These ‘animal rights’ serve as a catchy way to draw attention to the plight of animals. The view that animals have rights was mainly expressed by Tom Regan in *The Case for Animal Rights*.

Regan (1993) abbreviated his view as follows; only beings with inherent value have rights. Inherent value is the value that individuals have independent of their goodness or usefulness to others and rights are the things to protect this value. Only subjects-of-a-life have inherent value. Only self-conscious beings, capable of having beliefs and desires, only deliberation actors who can conceive of the future and entertain goals, are subjects-of-a-life. Regan believes that basically all mentally normal mammals of a year or more are subjects-of-a-life and thus have inherent value which allows them to have rights. The rights which all subjects-of-a-life hold are moral rights, not to be confused with legal rights. When people are talking of animal rights, they are not talking of animals to vote but about the right an animal has to be treated with respect as an individual with inherent value. All beings that have inherent value have it. Inherent value cannot be gained by acting virtuously or lost (ibid.).

2.1.3 Value theory

Value theory is a concept concerned with the value or worth of people or things. Value theory encompasses a range of approaches to understanding how, why, and to what degree humans should value things, whether the thing is a person, idea, object, or anything else. Therefore, three types of value can be distinguished as intrinsic, instrumental and inherent value.

The term *intrinsic value* has a number of senses. The first meaning is that values are objective, that is to say, they are intrinsic to the object and are found or discovered there and are not simply imputed by an observer. Secondly, the term might be used to indicate that the value something possesses is not only objective but is independent of its instrumental or use value to something else. It has freestanding, self-sufficient value in its own right simply for being what it is in itself. Thus we say

that human life is intrinsically valuable and therefore should be protected, preserved and enhanced. In this sense, it is also argued that living beings (sentient and non-sentient) and non-living natural objects, such as forests, rivers and wilderness, possess intrinsic value (Connelly, 1999:1). A prominent argument in environmental ethics, is that wild nature and healthy ecosystems have intrinsic value, prior to and apart from their instrumental value as resources for humans, and should therefore be preserved.

Instrumental value is the value that is of use to human beings or to something else. Whenever we regard the non-human world as mainly of value for use by human beings, we consider its value to be instrumental and it is referred to as *anthropocentric* value (i.e., human centred). Clearly this understanding of value can be destructive towards the natural environment if human beings consider the non-human world as there only to meet their needs.

Inherent value is the value attached to something when people appreciate aspects of the natural world without interfering with or consuming them; for example, appreciating a canopy of the pine plantation or beautiful flowers on a tree (Connelly, 1999:12). In this sense, the value involved requires a valuer. It should be noted, however, that inherent and intrinsic values are sometimes used interchangeably although they are different. Inherent value assumes that there is already an intrinsic value in the object which enables an observer to appreciate it, for instance, enjoying the beauty of a rainbow.

2.1.4 John Rawls' Theory of Justice

In his influential book, *The Theory of Justice* (1971:11), John Rawls explains how the logical ordering of principles of justice between humans may answer such questions as to how society should be structured, how basic rights and duties should be assigned to individuals, and how social and economic advantages should be distributed to all members of society. The primary concern of Rawls is in defining the principles of justice which would regulate an ideal society. He argues that the principles of justice which would establish the basis of an ideal society are principles which would be chosen by every individual if they were in an *original position* of equality with regard to rights and duties, and if all individuals were acting rationally in a mutually disinterested manner. This original position is a hypothetical situation in which every individual is acting behind a *veil of ignorance* as to his or her own social position, class status, individual assets, and personal abilities. Rawls' theory of justice as fairness argues for equal rights for all individuals, and denies that injustice towards any particular group of individuals is justifiable unless this injustice is necessary to prevent an even greater injustice.

According to Rawls, the theory of justice as fairness is a deontological and not a teleological theory of goals or ends. In the theory of justice as fairness, the principle of equal rights for all citizens has priority over the goal of producing the greatest amount of happiness for the largest number of individuals. Rawls argues that the term *justice as fairness* does not imply that justice and fairness are identical, but that the principles of justice are agreed to under fair conditions by individuals who are in a situation of equality. Justice as fairness also implies that the principles of justice apply equally to all individuals (ibid.:11). These principles must be decided upon in such a way as to benefit all individuals, and must not be merely designed to favour

the interests of a particular group of individuals over another group of individuals. Rawls further says that the two principles of justice which would be agreed to by rational and mutually disinterested individuals in the original position of equality are as follows: first, that each individual should have an equal right to as much liberty as is compatible with the rights of others; and second, that any social or economic inequalities which occur between individuals should be designed to benefit every individual, and should belong to positions which are equally available to all individuals (ibid.:53). In the theory of justice as fairness, equal liberty for all individuals is not merely a means to an end but is a principle of justice which must be satisfied before other political interests are satisfied. The theory of justice as fairness is thus an egalitarian theory of moral conduct which applies to all the obligations which individuals have toward each other. Rawls, however, does include a subsidiary principle which states that an inequality may be justified only if it benefits the least well-off in society.

Rawls' theory of justice does not explicitly consider the natural environment but his theory can be extended to this domain as discussed under Environmental Justice below.

2.1.5 Consequentialism

Utilitarianism is a branch of consequentialist theory that focuses on consequences relating to humans and which holds that the moral rightness or wrongness of action depends solely on their consequences, not only on the consequences for the agent but also on the consequences for everyone affected by these actions. Therefore, the basic idea of utilitarianism is that actions are morally right if they maximise the intrinsic good or if there is no other possible act that has better consequences.

There are two types of utilitarianism, act utilitarianism and rule utilitarianism (Sidgwick, 1907:30). In act utilitarianism, a person performs an act that brings about the greatest good regardless of personal feelings or societal constraints. In other words, act utilitarianism is not always concerned with justice, beneficence or autonomy for an individual if oppressing the individual leads to the solution that benefits a majority of people. Rule utilitarianism, however, takes into account the existence of laws or rules that have been established in the past. A rule utilitarian seeks to benefit the greatest number of people but through an application of these laws or rules. Rule utilitarianism values justice and includes beneficence at the same time (Brandt, 1979: 29). However, in saying nothing about the distribution of accumulated benefits, individuals and minority groups can be treated unjustly. As with traditional deontology, consequentialist ethical theory can also be extended to the natural environment in so far as diverse elements are of use value to other life and non-life forms in the hierarchical food chain.

2.2 ENVIRONMENTAL ETHICAL THEORIES

Traditional ethical theories are mainly concerned with how human beings relate to, or ought to relate to each other while environmental ethical theories have gone beyond this to include the non-human natural environment of living and non-living beings. Environmental Ethics understands itself as more than an extension of traditional ethics but rather as a more comprehensive perspective on ethics. What follows, then, are some of the environmental ethical theories that are relevant to this research.

2.2.1 Deep Ecology

Deep Ecology, founded by Arne Naess, is perhaps most easily understood when considered in opposition to its shallow counterpart. According to deep ecologists, “shallow ecology” is basically anthropocentric and is concerned with environmental pollution and resource depletion to the extent that it affects human welfare. It is therefore utilitarian in perspective. Deep ecology, in contrast, rejects anthropocentrism and takes a “total-field” perspective. In other words, deep ecologists are not aiming to formulate moral principles concerning the environment to supplement our existing ethical framework. According to Naess (1973:95-100), the Norwegian philosopher who first outlined this shallow/deep split in environmentalism, deep ecologists advocate the development of a new eco-philosophy or “Ecosophy” to replace the destructive philosophy of modern industrial society. “Ecosophy” is the designation which Naess has used for his vision of multilateral “intrinsic value”, the good of biodiversity, and a relational, ecological philosophic anthropology. In Ecosophy, Naess develops a perception of being-in-the-world which resists western philosophy’s tendency to separate the human from other species, and he counters the West’s preference for hierarchical thinking and the preferential treatment for human wants and interests. He emphasises that the moment we acknowledge that our own personal realisation is found in striving to enable natural evolution to retain the balance that it has achieved over billions of years, then our ethical approach will be one of “deep” ecology as distinct from “shallow” ecology where we only perceive the resources of the Earth as there to be used by us for our own benefit alone, and which corresponds to the utilitarian ethical approach.

2.2.2 The Land Ethic

According to Aldo Leopold (1949/1989: 218-225), the Land Ethic is mainly concerned about nature and the value of the ecosystem. He is undoubtedly the main influence on those who propose “holistic” ethics. Leopold’s “Land Ethic” demands that we stop treating the land as a mere object or resource. For Leopold, however, land is not merely soil. Land is instead a fountain of energy flowing through a circuit of soils, plants and animals. While food chains conduct the energy upwards from the soil, death and decay returns the energy back to the soil. Thus, the flow of energy relies on a complex structure of relations between living things (Wenz, 2001:151). While evolution gradually changes these relations, Leopold argues that human interventions have been much more violent and destructive. In order to preserve ethical relations towards the land, Leopold claims that we must move towards an ethic granting moral standing to the land community itself, and not just to its individual members. This results in Leopold’s famous ethical injunction: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (Leopold, 1949/1989: 220).

2.2.3 Social Ecology

What defines *Social Ecology* as “social”, according to Bookchin (1993:354), is the recognition of the often overlooked fact that nearly all our present ecological problems arise from deep-seated social problems. As such, these present ecological problems cannot be clearly understood, much less resolved, without resolutely dealing with problems within society. *Social Ecology*, then, emphasises that nature and social structure are essentially interlinked and that the environmental crisis has arisen as a result of the hierarchical organization of power and the authoritarian

mentality rooted in the structures of our society. *Social Ecology* tells us that the only way human activity can have a desirable impact on earth is by a restructuring of social relations on a more egalitarian basis.

2.2.4 Environmental Justice

According to Figueroa (2003:427), there are two dimensions of environmental justice. The first is distributive justice which looks at how environmental benefits and burdens are distributed, and the second one is participatory justice which looks at how these distributive decisions are made. Concerns of distributive justice begin with the observation that the poor and under-represented such as indigenous tribes and nations are faced with a disproportionate amount of environmental burdens. These burdens include pollution, exploitation and loss of traditional environmental practices and depletion of local natural resources. Environmental benefits include clean water and air, easy access to natural surroundings or forests, and the preservation of traditional environmental practices connected to local natural resources (ibid.). It should be noted (as Rawls notes) that not all inequities are unjust, but where inequitable distribution occurs according to some morally arbitrary characteristics or principle which ignores or does not take into consideration the impact of the environment on those concerned, we have an instance of environmental discrimination.

2.3 SUMMARY

This chapter has been looking at the theoretical framework within which the data of the research on MNF will be ethically evaluated. It has discussed briefly some of the relevant traditional and environmental ethical theories. Whereas traditional theories considered include Deontology, Consequentialism, Rights Theory, Value theory and John Rawls' Theory of Justice, environmental ethical theories include: the Land Ethic, Deep Ecology, Social Ecology and Environmental Justice. Lastly, it has noted how environmental ethics has become a broader perspective for ethical considerations.

CHAPTER THREE: LITERATURE REVIEW

3.1 GLOBAL CONCERN FOR THE ENVIRONMENT

The Stockholm Conference held in 1972 was the first major attempt to involve the nations of the world in a concerted, constructive response to environmental problems. It clearly had an international dimension in looking beyond immediate problems to deeper issues, and it succeeded in placing environmental problems, especially pollution, on the international agenda.

The Stockholm Conference led to the establishment of the United Nations Environment Programme (UNEP) based in Nairobi, Kenya. UNEP was given the mandate as a governing body on environmental issues within the UN to create wider awareness of the environment, to draw together environmental action within the UN, and to administer a fund for environmental programmes within the UN. UNEP played a major role in the production of environmental legislation especially in industrialised countries of the North. It also contributed to the preparations of International Union for the Conservation of Nature (IUCN) which produced the *World Conservation Strategy* report which was published in 1980. The term “sustainable development” was used here for the first time. The IUCN had a clear practical objective which was “to stimulate a more focused approach to the management of living resources and to provide policy guidance on how this could be carried out” (Reid, 1995:38). The IUCN had three main objectives: (a) to maintain essential ecological process and life-support systems, (b) to preserve genetic diversity, and (c) to ensure the sustainable utilisation of species and ecosystems. It emphasized that development and conservation operate in the same global context and that the underlying problems, which must be overcome if either is to be successful, are identical. IUCN identified

the main agents of habitat destruction as poverty, population pressure, social inequity and terms of trade that work against the interests of poorer countries (ibid.:40). Despite its achievements, however, in proposing sustainable utilisation schemes, promoting national strategies, and giving wide publicity to the notion of sustainable development, it also had some limitations. The greatest of these was its lack of attention to the social and political obstacles to integrated development.

The Rio Summit took place in 1992. This was the largest world conference ever to take place where over 178 governments and 500 NGOs were present. This Summit came twenty years after the Stockholm Conference. The major areas to be considered by the Conference were conventions on climate change, biodiversity and forests, an earth charter, and a global action plan which was expressed in Agenda 21 (ibid.:181-2). High on the agenda was the issue of forests and deforestation. At the Summit, it was hoped that a legally binding instrument on forests similar to conventions on climate change, biological diversity and desertification could be launched. However, although a non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests was adopted by more than 178 governments, the outcome of the forest convention was later described as “an unmitigated disaster”. The major failure of the Rio Summit was a failure to reach firm agreement on targets for reducing emissions and the refusal of the USA to commit to the reduction of carbon dioxide emissions.

The Biodiversity Convention discussed at the Summit gave support to the South by asserting that individual states had sovereign rights over their own biological resources, as well as being responsible for maintaining diversity and making use of it in a sustainable manner. Unfortunately, however, this was weakened

by the USA whose principle stance was to protect its own biotechnology industry (ibid.:183).

The Kyoto Protocol was adopted in 1997 although not implemented until 2005. It was a compromise which allocated to the various developed countries emission quotas according to the agreed 1990 emission levels, and which also permitted countries to trade their quotas with countries wishing to exceed their allocated quotas (ibid.:193-4). The Kyoto Protocol for the first time adopted mandatory emission reduction targets for the majority of industrialised countries who were supposed to reduce their emissions by 5.2% compared to the 1990 levels between 2008-2012. It also addressed the connections between poverty and climate change which was to facilitate the development of climatic friendly technologies. It was also under Kyoto that new financial resources for technological transfers were agreed (e.g., the Clean Development Mechanism). The withdrawal of the US from the Kyoto Protocol created uncertainty over which measures the US would take to reduce emissions, and consequently about the extent to which greenhouse gases emissions would be reduced between the period 2008-2012 (ibid.:194).

The Johannesburg Earth Summit took place ten years after Rio in 2002. There was a general agreement that greenhouse emissions needed to be drastically reduced to avert global warming. However, no framework was established to monitor, assess and control the behaviour of large transnational corporations (TNCs). On the extractive side, the TNCs logged tropical forests in an unsustainable manner and promoted mining in unsuitable places. But the greatest disappointment of the Summit was its unwillingness to tackle global warming and promote cleaner energy options (McDonagh, 2002:491).

Although the *Johannesburg Earth Summit* was a failure in many respects, nevertheless there was an acknowledgement by the nations involved of the critical nature of environmental destruction. As such, they were looking at ways and means of trying to solve the problems of environmental degradation. It was hoped that the Conference due to take place in Copenhagen in Sweden in December, 2009 would agree on fixed target dates but, once again, this was not to happen.

3.2 FOREST POLICY FORMULATION.

Policy generally refers to the principles that govern action directed towards given ends. It defines agreed or settled courses of action for adoption by governments and institutions. At the national level, policy embraces general goals and acceptable procedures and actions to achieve its goals. A policy thus provides an important means to achieve goals considered essential and desirable by society. The effectiveness of a policy, therefore, depends on achieving defined goals. According to FAO (1979), a national forest policy specifies principles regarding the use of a nation's forest resources intended to contribute to the achievement of national objectives. In this context, the forest resources include land where such resources can be developed. Diverse and often conflicting concerns and interests at various levels affect people's perceptions of potentials and problems relating to the multiple roles and uses satisfied by forests today.

Forest policy-making does not start from a blank sheet of paper. Almost all countries have written forest policy statements. At the most basic level, the question is, "Who will manage forests and for what purpose?" The "who" might be comprised of government agencies, private companies, community groups, indigenous people, or a mix of all these. Policies are mostly made by governments responding to what

they believe is in the best interest of their country. For a national forest policy to be effective, however, it should not just come from the department or ministry responsible for forests, but must have the commitment of the whole government and society-wide support (Byron, 2006:11).

3.3 FOREST POLICY FROM PRE-COLONIAL TIMES (1949 – 1965)

3.3.1 Pre-1949 Policy

During the pre-colonial period, unwritten policy/legislation was the norm. The local people created, managed and utilized forest resources under unwritten rules and regulation. Established traditional forest reserves were managed by the local people and were for local use. They were created mainly for circumcision and dance ceremonies, as meeting places for elders, for religious rituals and cultural ceremonies, for medicinal plants, food and supply of poles and timber (Zimba, 2007a:53). Access to, and utilization of these forest areas were prohibited, sometimes through taboos. Chiefs were the custodians of the unwritten regulations. If anyone broke the rules, he/she was punished.

3.3.2 The 1949 Forest Policy

When the country was colonised, forest regulation by written rules started and was continued even after the post colonial period. The 1949 Forest Policy gave to the government powers to shoulder all the forest activities, that is, protection and management of forests (ibid.:54). This policy aimed at maintaining forest reserves for both production and protection, for the supply of fuel wood to the mines, and for safeguarding water catchment areas. However, although central government had

overall control over the forest reserves, local authorities were encouraged to manage forests and trees in the open areas.

3.3.3 The 1965 Forest Policy

The 1949 Forest Policy was overtaken by the 1965 Forest Policy under which, along with the 1973 Forest Act, Zambia has until recently been operating. Both of these documents expressly denied local communities and traditional rulers a role in the management of their land-based resources, thereby engendering frustration and outright conflict (Kasubika, 2005:72). Through the Ministry of Local Government and Housing (circular minute 29 of 15th July 1965), this Forest Policy effectively removed from local authorities the power to perform any of the functions related to forest extension and control work over forest resources (Zimba, 2007a:56). The Government thus became the sole controller of the forest resources. This policy did not provide for the participation of local communities in the management of forest resources, and neither did it recognize private sector involvement (cf. Shitima, 2005:67). Furthermore, gender issues were silent in this policy and the Department of Forestry enjoyed a monopoly in running the forest sector. The local people felt alienated from the forest resources which they perceived as government property.

The fact is that communities had no official recognition in the formulation of the forest policy and the management of the forests. Furthermore, the local people did not benefit from the profits accrued from the forests. Sufficient emphasis was not placed on mobilisation of the people (especially in rural areas) and for increased participation in the management of forest resources. Furthermore, little emphasis was put on strengthening extension works towards enhancing the role of villagers, farmers, women and children in forestry development (ibid.:65). In this policy, the

usage of fuel wood, which 90% of Zambians depend on for energy, was not mentioned at all (ibid.).

Although there is external pressure to institutionalize community participation through Community Involvement in Forestry Management (CIFM) approaches in Africa, Zambia is also facing pressure from its local communities and traditional authorities to hand some forest rights back to them. This is as a result of socio-economic, demographic and political changes which have occurred in Zambia in the last 30 years, and simply by virtue of the passing of time (cf. Kasubika, 2005:72).

3.4 NATURE CONSERVATION AND ITS CHALLENGES

Contrary to claims that nature conservation is a western-oriented practice devised to help countries in the developing world to conform to acceptable norms of governing natural resources, African communities have practiced nature conservation for centuries. Unfortunately, the colonisation of the continent has deprived these communities of this ancient practice. Conservation is an activity that has been practiced in Africa long before colonisation. As noted by Zeka (2008:1), local communities should be legitimate beneficiaries and managers of these natural resources which exist in their land. Colonisation resulted in the rejection of traditional African conservation practices such as using the forests as sacred places for communicating with the ancestors and the selective harvesting of plants for medicinal purposes. These practices were replaced by western-oriented practices such as using conservation for tourism ventures rather than for the benefit of local communities. These divergent and often contradictory norms, values, and assumptions with regard to conservation have to a great extent fuelled animosity between local communities and government-led conservation practices (ibid.:2). It is imperative, therefore, that

the norms, values and assumptions that local people possess regarding the conservation of forests and other natural resources are recognized by the Government in an effort to harmonise relationships between the two.

3.5 FACTORS PROMOTING SUCCESSFUL FOREST MANAGEMENT.

3.5.1 Indigenous (Traditional) Knowledge and Experience

It is important that modern scientific knowledge should be combined with indigenous knowledge in managing forests. According to Zimba (2004), local communities are warehouses of vast accumulations of indigenous knowledge and experience, and they have a historical relationship with their lands and natural resources. Generally they are descendants of the original inhabitants of such lands and, over many generations, they have acquired a holistic traditional scientific knowledge of their lands, natural resources and environment. For example, pastoralists may show a high degree of knowledge of flora, with an emphasis on nutritive values in fodder, food, and medicine to sustain their livestock and themselves.

3.5.2 Participation and involvement of the local communities

Participation can be defined as a voluntary process by which people, including the disadvantaged (by income, gender or ethnicity), influence and control the decisions that affect them. This can embrace the notion of contributing, influencing, sharing or redistributing power and control of resources, benefits, knowledge and skills to be gained through beneficiary involvement in decision making (cf. Ibid.). Participation is a process designed to develop and strengthen the capacities of local communities to

gain responsibility for, and authority over local natural resources, and to effectively contribute to all decisions on how these resources are used.

3.5.3 Local institutions

The importance of local groupings and institutions should not be underestimated in the management of the forests. Traditional institutions and groups can perform an important function in society and in land management by regulating the use of forest resources and controlling access to the forest. Local institutions and groups can ensure that natural resources are used properly, and that the agreed rules are followed. Participation in, and involvement of these institutions/groups are key factors that can ensure active, effective and sustainable management of forest resources (cf. Zimba, 2004).

3.6 CONFLICT IN FOREST RESOURCE MANAGEMENT

Conflict is a disagreement or an opposition, classified according to its nature, e.g., conflict in value, conflict of structure resulting from unequal distribution of power or resources, or conflict of interest, that is, competition of interest in the management of resources (cf. Mashauri et al., 2001). Conflicts inevitably result on account of often competing demands, needs and interests being placed on the same resources.

Forests provide a number of products such as socio-economic and environmental benefits. While foresters are trying to address biodiversity and sustainability issues (social needs), they are often in competition and conflict with the local communities addressing survival needs. As local people are severely affected by poverty, lack of food and fuel wood scarcity, there is pressure on forests to supply the

products. On the other hand, the government would like to keep and maintain certain areas under forest protection to fulfil ecological and environmental functions (cf. Zimba, 2004). Furthermore, there can also be conflict with regards to policy and practice. Local people may be stopped from using forest resources while industrialists are busy destroying forests with government consent.

A number of forest reserves were unilaterally declared government land for purposes of protecting the resources on them. Alienation of the land occurred during the colonial era and was done without making adequate consultation with local communities who had traditionally regarded these pieces of land as theirs. With population increase, there is much pressure on customary land, and local communities are demanding that these alienated lands be returned to them. Local communities, however, have not all reacted in the same way. Some have approached government to release some land for cultivation while others have just encroached on the forest reserves (ibid.).

According to Zimba (2004), for forests to survive and in order to arrest deforestation, there has to be a workable and participatory mode of management at the grassroots level. There have to be resolutions by synthesizing conservation strategies along with the development of priorities and local needs. Every player in the game has to work as part of a team and build up a mutual trust and confidence with others. For their part, the local population has demonstrated a sense of belonging in coming forward to protect their own forests.

3.8 SUMMARY

This chapter has looked at the historical framework of growing global environmental concern. It has discussed the Stockholm Conference held in 1972, UNEP which was mandated to govern environmental issues within the UN, the *World Conservation Strategy* which was published in 1980 by IUCN, the Kyoto Protocol which was adopted in 1997, the Rio Summit which took place in 1992 and the Johannesburg Earth Summit which took place ten years after Rio in 2002. Furthermore this chapter has also looked at the definitions of policy, and more specifically, forest policy. It has explained the manner in which forest policy has been implemented in Zambia from pre-colonial times to the present. Finally, nature conservation and its challenges, factors promoting successful forest management, and conflict in forest resource management have also been discussed.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

This chapter presents first the findings on deforestation in MNF No.6 and later discusses the findings. The findings were gathered through actual observations made by the researcher in the forest, in-depth interviews with focal persons, and a focus group discussion.

Keeping in mind the research problems identified in this dissertation, data gathering has focused on the following:

- i. Deforestation in Mwekera National Forest No.6;
- ii. The extent to which local people have been involved in the formulation of the 1965 forest policy;
- iii. Consequences of deforestation on the natural environment including its inhabitants;
- iv. How Mwekera National Forest No.6 should be better managed to control the on-going deforestation.

4.1 DEFORESTATION IN MWEKERA NATIONAL FOREST NO. 6.

4.1.1 Researcher's observations

Based on my personal observation of conditions in the forest, I could see that the ecosystem had been degraded. Most of the trees in MNF have been felled and converted into charcoal. As a result, vast tracks of the forest have been opened leaving the land bare, particularly around the water bodies. As such, when heavy rains come, soil is eroded into the water bodies causing a lot of land degradation. These gullies left behind could only be reclaimed with great difficulty (see figure 1below).

It is noticeable that bird population was far less would be expected in a forest area. In terms of wild animals, I never came across any apart from snakes. This may be attributed to the destruction of the habitat which has taken place in the forest. The vegetation type was of scanty shrubs and a lot of grass, which was an indication of the land being open with frequent intense fires passing through. As it was the rainy season, it was also noticeable that a certain species of mushroom (*Tente* in Bemba) normally found was not present. This may suggest that certain tree species which grow symbiotically with this variety of mushroom had been destroyed thereby preventing the growth of this mushroom.

Most of the farming done in this forest is subsistence farming and is done on charcoal mounds. Only in a few areas could I see farming done on a large scale where the crop looked healthy. This suggests that some fertilizer may have been applied. In the forest, there are also small makeshift shops made of poles and grass where a few groceries are sold. Most of the people squatting in MNF pass the time by drinking local brewed alcohol, especially the distilled one called *Kachasu*.



Figure 1: Gullies left behind due to erosion, 2009

Source: Photo taken by researcher

The erosion taking place in the forest has affected water bodies. Most of the eroded materials from the upper land are deposited in the Mwekera stream and dam causing siltation. As a result of this, the water quality has been affected in the stream and the dam which is the only water source for the National Aquaculture Research Development Centre (NARDC) and the Zambia Forestry College (ZFC). The dam is shallow and the water is no longer flowing during the dry season. The Mwekera community also complained of a reduction in fish catch due to shallow waters in the dam. “The famous Mwekera falls is no longer flowing in dry season as it used to do the previous years”, one retired college member staff said. Figure 2 below shows the state in which Mwekera falls is.

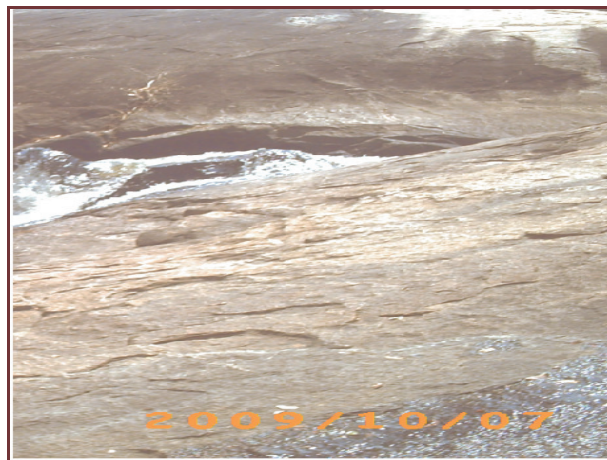


Figure 2:Mwekera falls almost drying up, 2009

Source: Photo taken by researcher

4.1.2 In-depth Interviews (see Appendices I, II, III)

Of the 30 people who were individually interviewed 15 have settled in the forest and the other 15 are on the periphery of the forest. The composition of the interviewees was 21 men and 9 women. Most of these people who have settled in the forest are not the indigenous to the area but have migrated there due to the hardships they are

facing. As shown in figure 3 below, Mr. Simukoko was one of those interviewed by the researcher.



Figure 3: The researcher (left) with Mr. Simukoko (right)

Source: Photo taken by researcher

The squatters explained that all was well when they were in full time employment but things changed when they were retrenched from the mines during privatisation in 1990. Four of the respondents found in the forest were people retired from their formal employment. These retirees even benefited from the housing scheme which was done in the 1990s but they failed to stay in these houses because they had no resources to meet their daily needs. One emotional looking woman, said that her family couldn't "eat the house" to survive so they had to look for an alternative which was to settle in the forest. 12 of respondents said they had not been in formal employment in their lifetime so manufacturing charcoal and selling non forest products became the main source of their livelihood. Only six of the thirty people interviewed said that they had been staying in the forest since birth and that

the forest had become part of them. Table 1 below gives a breakdown of the people interviewed in and around MNF forest.

Table 1: Breakdown of people interviewed in and around MNF

15 People inside the forest					15 People around the forest			
Male			Female		Male			Female
<i>11</i>			<i>4</i>		<i>10</i>			<i>5</i>
Never worked in a formal job	Retrenched	Retired	Never worked in a formal job	Retrenched	Never worked in a formal job	Retrenched	Retired	Never worked in a formal job
<i>2</i>	<i>7</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>6</i>	<i>2</i>	<i>5</i>

4.1.3 Perceived causes of deforestation

4.1.3.1 Poverty

Looking at the responses from the breakdown of people interviewed, poverty came out to be the major cause of deforestation which is linked to insecure livelihood. Eighteen of the people interviewed in and round the forest who had been in formal employment explained that they had no other source of livelihood after retrenchment as they were not given their retrenchment packages on time. They cited the following as reasons for settling in the forest: their school-going children were chased from school for non-payment of school fees and these children piled pressure on them to return to school; families were not in a position to meet their daily food requirements as food required money to be purchased; those who had houses with electricity and water had the services withdrawn for non-payments of their bills which made living a nightmare as they had no water and no source of energy; and failure to take their sick children, themselves or their relatives, for treatment to hospitals and clinics where

they were required to pay user fees. With these in mind, they said the only alternative source of livelihood they had was the forest because it did not require any investment of money apart from human capital. As a result, these people encroached upon the forest and started cutting down trees indiscriminately to provide logs for manufacturing charcoal irrespective of the tree species.

The women and children started hunting small mammals such as rats and rabbits which resulted in starting forest fires at wrong times. Furthermore, women started harvesting non-wood forest products (NWFPs) such as *munkoyo* roots for making sweet beverage, cutting small shrubs to be sold as sweeping brooms, and collecting caterpillars, mushrooms and other tubers which were sold to the nearby township to raise a bit of money. Some were engaged in shifting cultivation where they would cut trees, tie them in bunches, and later burn them when they were dry so that they could do some subsistence farming as they could not afford inorganic fertilizer.

Similar views on poverty were also expressed by five of the Forestry Department personnel (see Table 2 below) who were interviewed in Kitwe district. They said that before the mines were privatised, there were fewer settlements and less deforestation taking place in the forest. After retrenchments, however, a lot of people settled in the forest and started to manufacture charcoal to survive.

Table 2: Gender Breakdown of Forestry Department Staff Interviewed

Forestry Headquarters		Provincial Forest Office		District Forest Office	
Male	Female	Male	Female	Male	Female
1	1	2	1	4	1

Most of the people retrenched and those who had never been in formal employment (see table 1 above), especially the women, said that the clearing of the forest was still going on in MNF because they were given permission by the local area chairmen through the area councillor to occupy land on the false understanding that they could get title deeds at a later stage. This was done for the purpose of ensuring votes in an election. But when asked if the land they had acquired through politicians was secured, they said that it was not because forestry officers usually burnt their houses in an effort to evict them from the forest. However, they insisted that this tactic would not succeed because the houses were temporary made from poles, mud and grass which could be easily built again once the officers had left.

4.1.3.2 Lack of Government Subsidies

Government policies were also highlighted as a cause of deforestation taking place in MNF. Most of the respondents from FD headquarters and provincial office (see Table 2 above) said that Government policies involving the removal of agricultural subsidies in the 1990s had serious effects on peoples' livelihoods because people then had to look for new sources of income to pay for the very expensive agricultural inputs. Furthermore, the privatization of electricity generation imposed by the International Monetary Fund (IMF) and the World Bank increased electricity prices and forced the local people to use charcoal as the only source of cooking energy. This forced people to go into the charcoal business which had a ready market.

4.1.3.3 Political Issues

Political issues raised by the local people were also brought out by ZFC staff, especially men who are mostly involved in forest patrols. They said that politicians

had promised land to the local people to gain political support during elections. The college staff wondered why these government officials (politicians) tolerated this occurrence of forest encroachment and charcoal manufacturing in the forest when they were responsible for passing such policies and laws in parliament.

4.1.3.4 Lack of appreciation of natural values

College staff said that deforestation going on in MNF was due to lack of appreciation of natural value by the local people. They said that squatters valued the forest resources only as a means to meet their current daily needs and not their future needs. “Most people don’t appreciate the beauty of the forests and the long term benefits that forests offer,” one officer said. Their aim is just to make quick money at the expense of the forest.

4.1.4 Non-involvement of local people in the formulation of the 1965 forest policy

From the same 30 local people who were interviewed in and around the forest, six were 60 years age and above (see Table 3 below). These six people said that they did not remember being consulted at any time in the formulation of the 1965 Forest Policy or the 1973 Forest Act. They said that the policy was engineered by the government who imposed it on them.

Table 3: Age distribution of people interviewed in and around MNF

20-29 Years	30-59 Years	60 + Years
4	20	6

These pieces of legislation expressly deprived local communities of a role in the management of their land-based resources causing frustration. They further explained

that before the forest was grabbed from them, they had easy access to forest products and they protected it because of their close relationships to the forest. But when the government demarcated it into a National forest and barred them from having access to it, they felt offended and hence did not care about how the forest was to be utilised. This was confirmed by the forestry officers interviewed who said that the local people were not involved in the formulation of the 1965 Forest Policy and the management of the forests. Table 4 below summarises the perceived causes of deforestation in MNF.

Table 4: Summary of perceived causes of deforestation in MNF

<ul style="list-style-type: none"> • Poverty • Lack of government subsidies • Political issues • Lack of appreciation of natural values • Non-involvement of local people in the formulation of the 1965 forest policy

4.1.5 Effects of deforestation on the local environment

From a combination of physical observation and interviews conducted in and around MNF, the following effects of deforestation emerged.

4.1.5.1 Depletion of biodiversity

Most of the people interviewed in and around the forest expressed concern on how the environment has been degraded. Most of the women said that when they were settling in the forest, they used to collect a lot of forest products. These products included fruits, mushrooms, tubers and other medicinal plants but due to the cutting of trees, some of these products are no longer found. They further said that wild animals like common duiker and rabbits used to be seen, but habitat destruction through charcoal production had made these animals drift to more suitable habitats.

The larger quantities of caterpillars which were being collected from the forest had also become reduced in quantity due to the depletion of those trees which were habitats for caterpillars.

The women, especially those around the forest, said that they used to make a little money from the sale of these non-wood forest products, especially mushrooms and caterpillars, but due to the cutting of trees, these mushrooms were no longer available in larger quantities. Furthermore, the only female member of staff at the college said that the rate at which the forest is being cleared is a cause for concern especially that this forest is used as a living laboratory for college students doing their field practicals. She emphasised that if this behaviour was not controlled, there would be no forest left for students to carry out their field practicals.

4.1.5.2 Species loss

Six of the college staff interviewed said that in view of the way in which charcoal is being manufactured, certain tree species will be lost. These charcoal manufactures targeted certain species like *Julbernardias*, *Brachystegias* and *Parinaris* which produce more heat and less ash when used for cooking. They emphasised that even if regeneration would take place, certain species would be lost for good. They further said that these forests were homes for millions of non-human animals and that cutting down these trees was equivalent to killing them (see Figure 4 below).



Figure 4: Felled trees in readiness for kiln building

Source: Adopted from Malunga, 2009.

4.1.5.3 Loss of cultural sites

The local people interviewed said that former spiritual, cultural and aesthetic sites are no longer there due to the ongoing destruction of the forest. They said that sites had been created for initiation ceremonies for boys where they could teach them culture, norms and values on how to keep the family and protect themselves. Most of these aged between 45-60 said they still believed in the influence of their ancestors to solve certain social issues that they faced. Hence, they had created shrines deep in the forest where they could communicate with the ancestral spirits, but all were destroyed due to the cutting down of trees for charcoal.

4.1.5.4 Climate Change

Issues of climate change came up during the interviews with the people both in and around the forest, although it was expressed as change in weather patterns. Most of the respondents said that the weather patterns being experienced had completely changed. They are now experiencing much hotter days, and when it is the rainy season, far heavier rainfalls are experienced. Furthermore, they said that there

was great uncertainty with regard to the start and end of seasons as compared to past years.

4.1.5.5 Non-involvement of the local people in the formulation of the 1965 forest policy.

The six people interviewed, who were 60⁺ years, said that the non-involvement of the local people had negative effects on the forest, that is, people who were initially beneficiaries of the forest were denied access to the forest. As the result, people started utilizing the forest unsustainably because they were offended. They did not care about the negative effects of their action. This resulted in loss of trees, non-wood forest products and habitats for animals. Table 5 below summarises the effects of deforestation in MNF.

Table 5: Summary of effects of deforestation in MNF.

- | |
|---|
| <ul style="list-style-type: none">• Depletion of biodiversity• Species loss• Loss of cultural sites• Climate change• Non-involvement of the local people in the formulation of the 1965 forest policy |
|---|

4.1.6 Management of Mwekera National Forest No.6

4.1.6.1 Focus Group Interview

In addition to the information that emerged from in-depth interviews, a focus group discussion was arranged to come up with suggestions on how the forest could be better managed to reduce the deforestation going on. The group comprised of 9 people, 3 from ZFC staff, 2 from FD staff and 4 from the local community. Each

category had female representation. This discussion was held at Zambia Forestry College on 30th October 2009 and took two hours.

4.1.6.2 Opinions emerging from focus group interview

The following opinions were expressed during the focus group interview and they are shown in the Table 6 below. Staff from FD and ZFC said that for deforestation to stop, the people who have settled in the forest should be removed completely because they were the cause of forest degradation going on. But the local people in response said that removing them completely was not possible and could not help because people would come back to the forest. It would be better for the local people to be relocated elsewhere and to be empowered with financial resources that would enable them to start farming or to do some business. They further suggested that government should create an environment where these people could be employed and have better livelihoods. All the people in the group agreed that it was necessary for the government to involve all the stakeholders in the management of forests because none of them was anxious to destroy the forest. FD and ZFC staff said that there was need to sensitise politicians on the effects of the indiscriminate cutting down of trees going on in the forest due to the illegal issuance of plots to the local people.

4.1.6.3 Eco-tourism

The ZFC staff further said that there was need to introduce eco-tourism in MNF so that the local people could benefit financially while at the same time protecting the forest. They said that eco-tourism was very important because it would result in the conservation of trees and animals and benefits to the local communities.

They said eco-tourism would follow principles which would minimise the impact on the environment and strengthen an awareness of environmental and cultural values. They further said that it would empower the local people.

4.1.6.4 Management of MNF as woodlots

The local people on the other hand, preferred the option of being given powers to manage the forests as woodlots. They said that woodlots would be easy to manage, that they would plan for its management, and that they would make sure that there would be little damage to the natural environment or the ecosystem. They were aware of how the benefits accrued from the woodlots would change their livelihoods.

4.1.6.5 Joint forest management

Two people from the local community and all the FD staff in the discussion were in favour of Joint Forest Management (JFM). They said JFM was the only solution to high levels of deforestation currently going on in MNF. They emphasised that if both parties are involved in the planning and management of the forest, no conflict would arise as is happening today.

4.1.6.6 Training

On training, the ZFC staff said that there was need to teach environmental ethics to students so that they would help to foster change in the negative attitudes that some people have towards the use of forest resources. They said that attitude plays a major role in someone's action.

4.1.6.7 Use of firewood by Institutions (ZFC, Police and Prisons).

Staff from ZFC also said that the institutions (i.e., Police training college, ZFC and Prison) which were still using firewood for cooking should stop because it contributed to the deforestation taking place in the forest. They stressed that the quantities of firewood these institutions collect are quite large because cooking is done on a daily basis.

Table 6: Opinions of stakeholders

Stakeholders	Opinions
Forestry Department Staff (2)	<ul style="list-style-type: none"> • People living in the forest should be removed. • There is need for the forest to be managed jointly, i.e., by the government and the local people. • There should be sensitization of politicians not to politicize the management of the forest. • Transform the Forest Department into a commission.
People in and around the MNF (4)	<ul style="list-style-type: none"> • People in the forest should be relocated. • Government should create more jobs so that the squatters can be employed. • The local people should be involved in the management of the forest. • The forest should be managed as woodlots • The government should give them powers to own and protect the forest.
Zambia Forestry College Staff (3)	<ul style="list-style-type: none"> • Squatters should be removed from the forest • All stakeholders should be involved in the management of the forest. • The ZFC should be given powers to manage MNF. • Government should create jobs for the squatters. • Introduce eco-tourism so that the local people can benefit from the earnings and, at the same time, protect the forest. • There is need to teach environmental ethics to students so that they can help to foster change in the negative attitudes some people have towards the use of forest resources. • Politician should not politicize the management of the forest. • The Prisons, Police and ZFC who collect fuel wood from the forest for cooking should find alternative sources of energy for cooking.

4.2 DISCUSSION

Most of these people who have settled in the forest are not indigenous to the area but have migrated there due to the hardships they are facing. Most of them came from mining townships where they used to work as miners up to when they were retrenched or retired. The other group of people found in and around the forest are people who have never been in formal employment. Only a small number of people have stayed in this area for their life time. These people settled in MNF in search of alternative livelihoods in response to various socio-economic factors that had taken place in the Copperbelt Province and other parts of Zambia in the 1990s (cf. Shitima, 2005). They were unable to meet their basic needs which include water, health, shelter and food. According to Zimba (2007), Zambia's economic performance has declined since independence resulting in lowering living standards of most Zambians. The majority of rural people are unable to meet their basic needs due to economic liberalisation. As a result, this has caused harsh conditions for the majority of Zambians who are unable to meet their daily requirements. Privatization reached a climax in 2000 where over 13,000 people lost their jobs (GRZ 2002, cited in Malunga, 2007:133).

4.2.1 Causes of Deforestation in MNF (see Table 4)

4.2.1.1 Poverty

When the government implemented its economic reforms in the 1990s, mines were sold and a lot of people were retrenched. After being retrenched, they stayed for some time without getting paid which made their lives unbearable because they needed money for food, shelter, health and to take their children to school. To meet these basic needs, people opted to settle in the forest to manufacture charcoal and sell

NWFPs to make money. This corresponds to the point made by Rodriguez (2000, cited in Shitma, 2005:109) that the contraction of the economy leads to an increase in unemployment and that the workforce shifts to natural resource exploitation as an alternative source of income and food. There is a high correlation between poverty and environmental degradation as a result of poor people's dependence on the exploitation of the environment for survival (cf. UNDP's Zambia Human Development Report, 1998, cited in ECZ 2001). The poverty situation in Zambia has intensified resource overuse and its degradation.

4.2.1.2 Lack of government subsidies

Despite poverty being ranked as the major cause of deforestation through woodland conversion to agriculture and wood harvesting for charcoal production, removal of agricultural subsidies has also been linked to deforestation. The removal of agricultural subsidies in the 1990s had severe consequences on rural livelihoods and people had to look for new sources of income to pay for the now more expensive agricultural inputs (cf. WRM, 2001). This forced people to switch back to shifting cultivation. Furthermore, the privatization of electricity generation imposed on many countries by the IMF and the World Bank increased electricity prices and affected the electrification policy, pushing local people to use charcoal as a source of energy. This created a new incentive among rural communities to clear woodlands to supply charcoal to the urban market. Incomes from charcoal production were used to buy household requirements and, in some cases, these were invested in agricultural production after the removal of subsidies (ibid.). Thus, a forest product had become a form of subsidy for agricultural production.

4.2.1.3 Political issues

It would appear that some politicians have really fuelled deforestation by telling squatters in MNF that no one would remove them from the forest as long they were loyal to the ruling party. They even promised them title deeds to the pieces of land they were occupying. But the truth of the matter is that politicians were taking advantage of their vulnerability as no one could get a title deed in a national forest. According to WRM 2002 (as cited in Shitima, 2005), the underlying causes of deforestation and encroachment on protected forests often include deep-rooted social structures such as inequalities in land tenure, discrimination against indigenous people or the poor in general, and political factors.

4.2.2 Effects of Deforestation (see Table 5)

4.2.2.1 Socio-economic

Most of the people in and around the forest complained about the reduction in NWFPs collected in the forest. They explained that before the trees were cut, they used to collect a lot of forest products and, after selling them, they could make enough money to meet their needs. But after the cutting a lot of trees, some of these products are no longer seen, e.g., mushrooms. This is because certain types of mushroom only grow well where certain tree species grow. Forest products are of the greatest importance for food security and income generation for local communities throughout the developing world, many of which are food insecure (cf. Lipper, 2000:26).

4.2.2.2 Natural environment and biodiversity

A lot of soil erosion is taking place in the forest as a result of heavy deforestation. The eroded materials have been deposited in the dam and stream which have caused siltation. The water which used to flow all year round has stopped, especially in the dry season. The high yield of fish people used to catch from the dam has been severely reduced.

As a result of deforestation, biodiversity with reference to trees, plants and animals is seriously threatened. What has taken such a long time to develop is lost within a relatively short time. While forests are rich in biodiversity, deforestation results in loss of these species. According to Lipper (2000:26), biodiversity took many millions of years to evolve, and there is no possibility of getting back the estimated 50,000 species that go extinct every year. The extinction of the plants and animals will inevitably lead to a diminished gene pool. There is a possibility that if this high deforestation continues, future generations may not find these species of trees and animals which are found in this generation.

4.2.2.3 Loss of cultural sites

According to Zimba (2007a:53), traditional forest reserves were managed by the local people and were created mainly for circumcision and dance ceremonies and as meeting places for elders, for religious rituals and cultural ceremonies. From my interviews, the local people expressed concern at the loss of their spiritual and cultural sites due to the ongoing destruction of the forest. The sites where they used to take their boys for initiation ceremonies have been destroyed. The elders explained that places where they used to communicate with their ancestral spirits have also all been destroyed.

4.2.2.4 Effects on the climate

Issues of change in weather patterns have been observed in the forest. The local people explained that they are now experiencing very hot days, and when it is the rainy season, heavy rainfalls are experienced. This has been attributed to high levels of deforestation resulting in the absence of trees as carbon sinks to absorb the excess carbon dioxide. Indeed, according to the United Nations Environmental Programme (UNEP), 20-25% of all the carbon dioxide emissions are caused by the burning of forests. About 1.6 million tonnes of carbon dioxide are produced by deforestation in countries of the South. Some climatic models indicate that towards 2050, temperatures in tropical forest will increase up to 2 degrees Celsius from their 1970 levels (cf. Karsenty, 2008:27).

4.2.2.5 The 1965 Forest Policy and 1973 Forest Act

The 1965 Forest Policy and the 1973 Forest Act had no blessing from the local people because they were not involved in their formulation. These documents were engineered by the government and imposed on the local people. According to Zimba (2007a:53), in the pre-1949 period, the local people managed and utilized forest resources in a sustainable manner under unwritten rules and regulations. To the contrary, the 1965 Forest Policy and 1973 Forest Act denied local communities a role in the management of their land-based resources causing frustration (Kasubika, 2005:72). These documents were inherited from the colonial masters who had no regard for the local people and their needs. When the government demarcated this territory into a national forest and barred local people from having access to it, local communities should still have been legitimate beneficiaries and managers of the natural resources which existed there (Zeka, 2008:1). According to FAO, 1999 (cited

in Kasubika, 2005:68), policies and measures that are based on discussion and developed from the bottom-up should generally be chosen in preference to those that are developed from top-down. This is because forests are better managed if there is equal participation in the formulation and implementation of the forest policy in such a way that all individuals benefit and not merely a particular group.

4.2.3 Management of MNF

4.2.3.1 Relocation of people settled in the forest

Many suggestions came up on how MNF should be managed to control the high level of deforestation taking place (see Table 6 above). People in the forest are supposed to be relocated and empowered with financial recourses that could enable them to start a new livelihood. The government should create more job opportunities so that the people who have settled in the forest can be employed.

4.2.3.2 Eco-tourism

Eco-tourism should be introduced in MNF in order to create job opportunities for the local people who will be involved in the running of this venture. By involving the local people in the management of eco-tourism, there would be less harm caused to the ecosystem. According to Lizano (2001), if eco-tourism is successfully managed, it effectively promotes the preservation of the entire local ecosystem and not just individual species. The local people are financially empowered at the same time that the forest is protected.

4.2.3.3 Joint Forest Management (JFM)

During the group discussion which involved various groups of people (FD, ZFC and the local people), JFM was upheld as one of the solutions to deforestation taking place in MNF. It was stressed that government should not forget that the forests are fall-backs that provide a number of products for rural people in terms of food deficit. Conflicts often inevitably result on account of competing needs, interests and demands being placed on the same resources.

While foresters are trying to address biodiversity and sustainability issues (social needs), they are often in competition and conflict with the local communities who are addressing survival needs. As local people are severely affected by poverty, lack of food and fuel wood scarcity, there is pressure on forests to supply the products. On the other hand, the government would like to keep and maintain certain areas under forest protection to fulfil ecological and environmental functions. According to Zimba (2004), if all stakeholders are involved in the management of the forest, they would develop and strengthen their capacities, become responsible with respect to local natural resources, and effectively contribute to all decisions on how these resources should be best used. Participation in, and involvement of these institutions/groups are key factors that can ensure active, effective and sustainable management of forest resources (ibid.).

4.2.3.4 Management of MNF forest as woodlots

Some people had suggested that the forest be divided into small woodlots and given to the local people to manage on their own. This would improve the management of the forest because they would plan and implement their plans effectively. According to HMGN 1989 (cited in Malla, 2000:37), when the Nepal

government recognized the rapid depletion and deterioration of the country's forest resources and the Forest Department's limited capacity to handle the problem alone, they introduced a community forestry policy to seek local communities' cooperation in the sustainable management and use of the country's forest resources. The policy put control of forests in the hands of the users of the resources, with the role of the Forest Department staff shifting from that of manager and controller of forests (policing) to that of adviser for forest users. A similar method could apply to Zambia facing the same problems because it is important that the skills that local people possess regarding the conservation of forests and other natural resources are recognized by the Government. They should combine modern scientific knowledge with indigenous knowledge in managing forests because local communities are warehouses of vast accumulations of indigenous knowledge and experience.

4.3 SUMMARY

This chapter has analyzed and discussed the research findings. In-depth interviews, personal observation and a focus group discussion was used to collect data. From the findings, it emerged that the following were perceived to be the causes of deforestation: poverty, lack of government subsidies, political issues, lack of appreciation of natural values and non-involvement of the local people in the formulation of the forest policy and management of the forest. The above causes were perceived to have brought about the following effects: depletion of biodiversity, species loss, loss of cultural sites, land degradation and climate change. The following suggestions were made as to how best MNF could best managed to reduce deforestation: relocation of the people squatting in the forest, introduction of eco-tourism, joint forest management, and managing the forest as wood-lots.

CHAPTER FIVE: ETHICAL EVALUATION

5.1 INTRODUCTION

Environmental ethics is more than an extension of traditional ethics; it is a new and more comprehensive approach to ethical evaluation which involves the relationship of humans to the natural cosmic universe from which we humans have emerged and with which we are inseparably connected. The planet earth on which we live is our life-support system. Ethics is rooted in values, but whereas traditional ethics focus exclusively on humans and the relationship of humans to one another and to the state in view of the values involved, environmental ethics extends values to the natural world and the ethical duties and responsibilities humans should have towards the natural world. Ethical theories and principles are the foundations of ethical analysis because they are the viewpoints from which direction can be obtained along the pathway to a decision. Ethical principles are the common goals that each theory tries to achieve in order to be successful (cf. Rainbow, 2002).

5.2 ETHICAL EVALUATION OF DEFORESTATION IN MNF

Mwekera National Forest (MNF) is an ecosystem which includes all living things and all members of the holistic system within it such as water, soil and air. As an ecosystem, it represents a community that is characterised by competition and co-operation between its diverse parts. The energy flows and nutritional cycles through which the community is sustained have an ethical importance, for it is by them that the diversity of life and the health of the ecosystem is maintained. As moral beings who are part of the ecosystem in which they live, human beings need to acknowledge their responsibility towards both living and non-living beings present.

The deforestation which is taking place at present in MNF is neither right nor just to everything else that exists there. For example, as trees are homes for birds and animals, deforestation has caused the birds to reduce in number and animals to move to other habitats where they may not be easily killed by predators. The insects and other life forms living in those trees die during the process of charcoal manufacturing. Furthermore, the erosion which takes place as a result of the land being left bare after trees are cut, affects all life forms in the soil and the water bodies.

The loss of non-wood forest products also affects human life in that humans can no longer collect enough food to sustain their living. This is a clear indication of how humans are members of this community and should not be perceived as masters of all other life forms which are there to be exploited. All life forms are interconnected.

According to Kant (1959:10), in his deontological approach, an ethical action would correspond to the categorical imperative which is the duty that human beings have to act in accordance with reason. One way in which the categorical imperative can be expressed is if an action can be universalized in such a way that all rational human beings would adopt it. Although Kant's approach was with reference to humans, it can be extended to ethical actions in the context of all life forms and non-life forms in the environment. Consequently, the action of cutting down trees would be considered as unethical in itself if all rational human beings were to judge it to be wrong. The problem here, of course, is that not all people recognize the intrinsic value of forests as the value of trees may be perceived solely in terms of the utilitarian value of the extent to which they can be of benefit to humans. Nevertheless, there is a growing universal awareness of the value of forests as sinks for preserving the health of the global environment in order to prevent an increasing

threat to climate change. An extension of Kant's approach would suggest that an acknowledgement by human reason of the value of forests and trees in themselves is important independently of their usefulness to humans. His approach is opposed to that of utilitarianism which considers an ethical action to be based on the consequences of that action (ibid.:11). Extending this approach to the framework of environmental ethics, elements of the natural and animal world ought not only to be restricted to their use value or service to other things and life forms but also to be rationally evaluated with respect to their intrinsic value in themselves. Given the manner in which the MNF is being exploited, one would conclude that the forest is being used solely as a means to meet the needs of the local inhabitants. People don't really appreciate the beauty of the forests (inherent value) and the long term benefits and services that forests offer. Most of the people express no awareness that the forest has value in itself (intrinsic value). Their approach to the forest is to a large extent utilitarian; it is there for its use value to them only. In this case, trees can be used to manufacture charcoal or to be burnt to produce ash for subsistence farming.

In his *Land Ethic*, Leopold (1949/1989:218) defines an ethical approach to the environment as follows: "A thing is right when it tends to preserve the integrity, stability and the beauty of the biotic community. It is wrong when it tends otherwise". This is very different from the utilitarian approach that focuses on the maximization of pleasure/good/happiness with reference to humans only. It should be noted, however, that the term "land" in the *Land Ethic* does not just refer to the soil but refers holistically to all of the life forms within the whole ecosystem. It emphasises the moral significance of the whole, of the community of all life, rather than the moral significance of individual sensate beings within the whole. This results in a human ecological duty to seek to preserve the integrity and balance of the biotic

community or to restore what human activity has degraded. Leopold is very conscious of the food chain which he expresses in terms of the “biotic pyramid” in which every life form contributes to the health of all other life forms in a hierarchical way. From this ethical perspective, MNF needs to be seen as a holistic ecosystem in which humans are, to use Leopold’s word, “citizens” of the one community. It should be noted that an ecosystemic environmental ethic does not prohibit human use of the environment; it requires, rather, that the use be subjected to two ethical limitations. The first is holistic in that it requires that the use of the environment should as nearly as possible enhance the diversity, integrity, stability and beauty of the biotic community. The second one states that human use of the environment requires that trees cut for shelter, or animals slain or food should be thoughtfully selected, skilfully and humanely treated, and carefully used so as to neither waste or degrade them (Callicot, 1993:537). This corresponds with what Miller states as a *principle of minimum wrong* that, “when we alter nature to meet what we consider to be basic needs or non basic wants, we should choose a method that does the least possible harm to other living things; in minimising harm, it is generally worse to harm species than individual organisms and still worse to harm a community of living organisms” (cf. Miller, 1992). The activities going on in MNF do not conform to the ethical limitations mentioned above. Trees are being cut indiscriminately to manufacture charcoal or just cut to collect fruits or caterpillars and then left to rot. People do not always realise that they are causing harm to other living things.

Whereas Leopold focuses more specifically on the regional ecosystem, Naess (1973:95) focuses on the wider environment of planet Earth. He discusses the attitude that all humans should have towards the natural environment given that we humans are essentially an outcome of an evolutionary process that has gone on for billions of

years and which has culminated in the emergence of our planet Earth which is our life-support system. Hence, we are all a part of the wider environment in which we live. Our true “identity” is found in recognizing the manner in which we are essentially interconnected with the planet Earth. Once we acknowledge that our own personal realization is found in striving to enable natural evolution to retain the balance that it has achieved over billions of years, then our ethical approach will be one of “deep” ecology as distinct from “shallow” ecology where we only perceive the resources of the Earth as there to be used by us for our own benefit alone, and which corresponds to the utilitarian ethical approach.

The first conviction of deep ecology is that humans can no longer be thought of as belonging to a species which can be understood and appreciated in isolation from other living and non-living forms. They must be seen in the context of the natural evolutionary process from which they have emerged as a species with rational and moral capabilities. Hence, Naess says that cooperating with, rather than interfering with the natural evolutionary thrust is what results in the Self-fulfilment of human beings (“Self” written with a capital “S”). In the case of deforestation in MNF, this ethical approach would emphasize that humans are interfering with what is the outcome of a long period of natural history (ibid.). This does not mean that humans should never bring about changes in the natural world but that they should use their reason and moral awareness to interact with nature in an appropriate manner. Naess developed what he called a “platform” for policy decision making which would be based on a proper appreciation of the relationship between humans and the natural environment (Smith, 1997:8). This platform emphasizes the following principles: recognition of the equal intrinsic value of all beings, affirmation of multiplicity, diversity, and complexity as values in themselves, emphasis on “life quality” rather

than on “standard of living”, and an acknowledgement that humans are at present inhibiting and violating vital life processes.

Whereas the people in and around MNF opted to encroach upon the forest so that they could meet their daily needs at the expense of the forest, *Deep Ecology* rejects this form of anthropocentrism and takes a “whole-field” perspective. It is not only a focus on the natural environment but an explicit focus on the manner in which an ecological consciousness in humans results in human Self-realisation. According to Naess (1973:96), this is a level of maturity on the part of humans. The outcome of such an ecological consciousness would result in less destruction to the natural environment as this would be perceived as destruction of part of themselves. This attitude of protectiveness, based on identification with nature, would mark the shift from an ethics of destruction to an ethics of care.

From what emerged in my interviews, the value that people in and around the forest attach to the Mwekera National Forest is largely instrumental or anthropocentric. They are destroying the forest through manufacturing charcoal to meet their needs oblivious to the fact that trees are natural sinks to preserve a balanced climate. Trees purify the air by absorbing carbon dioxide and releasing the oxygen that we need. An ethical approach that restricts itself to the purely utilitarian perspective and fails to appreciate the importance of the intrinsic and inherent value dimensions of the natural environment is seriously lacking. Intrinsic value is a freestanding, self-sufficient value in its own right simply for being what it is in itself. Living beings (sentient and non-sentient) and non-living natural objects, such as forests, rivers and wilderness, possess their own independent intrinsic value that needs to be protected (Connelly, 1999:1). Furthermore, there is the inherent value attached to something when people appreciate and enjoy aspects of the natural world

without interfering with or consuming them. A recognition of both of these values would result in greater respect and care for MNF.

People living in the misery to which they have been reduced in the so-called the Third World are today demanding for their rights which include rights to life, liberty, security and freedom in addition to social and political rights (Kung and Moltmann, 1990:159). In relation to MNF, the local people consider themselves to have been deprived of many of the above mentioned rights which in turn have contributed to the forest degradation taking place. The current forest policy does not allow the local people to access the forest or participate in the management of the forest. Therefore, there is need for the government to respect these rights if the MNF is to be saved.

Similarily, there is growing discussion today about the needless and unjustified suffering imposed by humans on animals. One writer, Tom Regan (1993: 41), refers to mammals as being “subjects-of-a-right”. By this, he means that mammals have a level of consciousness, an ability to live in communities, the capacity to acquire a certain kind of knowledge and a level of emotional ties, etc. Consequently, he believes that they are entitled to rights just as humans are. Without entering into the debate on whether or not mammals should have rights in the more traditional ethical sense, the term “moral considerability” has received greater acceptance. It means that, whereas mammals may not have rights strictly speaking, they are entitled to moral consideration by humans and should not be seen as just there for human use. They are entitled to an appropriate level of respect. In the case of MNF, the animals have been negatively affected by deforestation as was noted in many of the interviews and observations.

Some writers for example, Goodpaster, (1995), have even extended moral consideration to non-life forms such as ecosystems, forests, and trees individually on account of their intrinsic value. In other words, like living things, they have interests (though not conscious ones) in striving to fulfil themselves, to seek their own fulfilment in being allowed to develop and not be destroyed. Therefore, MNF though not conscious, should be protected from harm so that it can strive to fulfil itself.

The political influence obtaining with regard to forests needs to be justly exercised if deforestation is to be controlled. What some politicians seem to be doing in promising land in protected forest areas to squatters is wrong because it contradicts the guiding principles in which forests should be managed. They are using the state powers vested in them as politicians to contravene what the Forest Department is doing to protect the forests. Whereas the FD tries to evict squatters from the forest, politicians issue counter instructions supporting the squatters so that they continue living in the forest. In his *Social Ecology*, Bookchin (1964:361) claims that the environmental crisis is there as a result of the hierarchical organization of power in society, an authoritarian mentality rooted in the unequal structures of our society. Consequently, the only way in which human activity can have a desirable impact on our planet earth is by a careful analysis and removal of the unjust and unequal structures of our society. He believes that bureaucratic state power must be replaced by a more organic community regulated through common ecological values and a commitment to a common life. He promotes a more democratic, egalitarian and decentralised structure of society. In the case of MNF, not only are the rulers (politicians) who are in a position of power harming the environment by their behaviour but they are in turn putting the poor in a position of having to exploit and degrade the forest for charcoal as a means for survival.

In the management of the forest, the government is the sole controller of the forests through the Forest Department (FD). The local people have had no hand in the formulation of the forest policy and the management of the forest. The FD has to date been controlling the running of the forest sector. This has resulted in some inequalities in the manner the forests are being managed. According to Rawls' *Theory of Justice* (1971:26), principles of justice are agreed to under fair conditions by individuals who are in a situation of equality (i.e., under a veil of ignorance about their situation in life) implying that principles of justice should apply equally to all individuals affected. But what is obtaining in the management of MNF is clearly an unjust situation because the local people are not, and have not been involved. For justice to prevail, there should be fair treatment and meaningful involvement of all people regardless of status in enforcing environmental laws, regulations, and policies. Therefore, in order for MNF to be better managed, there is need for greater participation of the local people in the formulation and implementation of the forest policy so that all individuals may benefit. Forest policy ought not merely be designed to favour the interests of a particular group (government) over another group of individuals (local people). According to Rawls, inequalities can only be justified when the least well-off benefit from any decisions made under conditions of equal opportunity.

Environmental justice goes beyond traditional theories of justice such as that of John Rawls which is restricted to humans. "Environmental justice" can be distinguished from "ecological justice". Whereas environmental justice focuses on the manner and extent to which environmental degradation is affecting various classes, races or minority groups differently, ecological justice focus on the manner and extent to which environmental degradation is affecting non-human life forms

(e.g., biodiversity) and non-life forms differently. Rawls theory cannot be applied to ecological justice, understood in terms of giving rights to non-humans, but it can be used to support environmental justice, and justice to the future generations (cf. Bell, 2004: 297-306).

Environmental justice can be categorised into two dimensions, the first one being distributive justice which looks at how environmental benefits and burdens are distributed, and the second one is participatory justice which looks at how these distributive decisions are made (Figueroa, 2003:427). Environmental burdens include pollution, exploitation and loss of traditional environmental practices, and depletion of local natural resources. Environmental benefits include clean water and air, easy access to natural surroundings or forests, and the preservation of traditional environmental practices connected to local natural resources (ibid.). What the local people in MNF are doing to the forest by indiscriminately cutting down trees for charcoal is both an injustice to the forest which has a natural value which needs to be protected, and an injustice to the many life forms and non-life forms that depend on the trees in the forest ecosystem. In addition, of course, there is an injustice to humanity in so far as a natural sink for preventing environmental pollution for the benefit of both present and future generations is being destroyed. According to Frey and Wellman (2005:281), unsustainable exploitation of natural resources, unnecessary damage to the earth's environmental ecosystems and human-caused decrease in global biodiversity are unjust and are likely to be much worse for people who will live in the distant future. In the Brundtland report entitled "Our Common Future" which resulted from the first World Commission on Environment and Development (WCED) in 1987, sustainable development was defined as that which

“must meet the needs of the present without compromising the ability of future generations to meet their own needs(cf. WCED, 1987:43).

The Zambia Forestry College along with the fisheries departments’ communities which are situated in the MNF have complained about the dirty water which is coming from the Mwekera dam, and which is due to the deforestation which is taking place in MNF and promoting erosion. This is another example of an injustice the squatters are causing to the Mwekera community.

Finally, the non-involvement of the local people in the policy formulation and management of MNF is also a case of environmental injustice because local people are supposed to be involved in the decision-making process. This injustice was highlighted at the Rio Summit which took place in 1992. In principle 10 of the Rio Declaration, it states:

Environmental issues are best handled with the participation of all concerned citizens at the relevant levels. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.

In sum, then, even if the natural environment such as MNF does not have any ethical responsibility to humans, humans as moral beings do have an ethical duty to protect and respect the natural values that the forest possesses.

5.3 SUMMARY

This chapter has been making an ethical evaluation of deforestation in MNF. It started by emphasizing how ethics in general is based on values and it went on to differentiate between traditional ethics and environmental ethics. The theories which have been applied to the data collected are Deontology, Consequentialism, the Land

Ethic, Deep Ecology, Value Theory, Rights Theory, Social Ecology, John Rawls
Theory of Justice and Environmental Justice.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The main aims of this study have been to investigate why deforestation is still going on in the Mwekera National Forest No. 6 even though the Forest Policy and Forest Act are still in force, to investigate to what extent the local people have been involved in the formulation of the forest policy, to investigate the effects of deforestation on the natural environment including its inhabitants, and to make an ethical evaluation followed by suggestions as to how Mwekera National Forest No. 6 should be better managed in order to control the high rate of deforestation going on.

The main underlying factors for the encroachment upon and deforestation of MNF which have emerged in the study include the following: poverty, political influence on the management of the forest, lack of appreciation to natural values, lack of government subsidies, and non-participation of the local people in policy formulation and management of the forest. The non-involvement of local people in the management of the forest has resulted in a fragile relationship between the Forest Department and the local community which makes collaboration between the two difficult. This has contributed to the degradation of Mwekera National Forest and it most probably applies also to other forests in the country as well.

The economic liberalisation policies that Zambia has implemented since 1990 have also exerted pressure on forest resources. This is predominantly true with regard to Mwekera National Forest where the privatisation of the mines on the Copperbelt resulted in huge job losses thereby affecting livelihoods and forcing people to settle in the forest. Government policies have made people to switch to unsustainable charcoal manufacturing and subsistence crop production to earn a living. High electricity tariffs pushed people to use charcoal instead of electricity. The government thus

needs to be made accountable for the past and current destructive processes which have emanated from its policies. The current forest policy which is being used to manage the MNF is stakeholder exclusive which means that the local and other stakeholders are not involved in the management of the forest causing outright frustration.

The influence of local political leaders in the issuance of land in Mwekera National Forest is also another factor which has been highlighted during the study. The local people seem to be in a dilemma as to who is telling them the truth about settlements in the forest. While the Forest Department insists that it is illegal to settle in the forest, politicians seem to promote a different view which encourages these people to settle in this forest. This is done so that the local people can vote for them in an election. As a result, people settle in forest reserves on a tentative basis hoping that one day they would get title deeds.

All of the issues mentioned above have had a destructive effect on the natural environment. The erosion of the soil that is taking place has affected life forms and water bodies. The community complains of poor water quality, less fish catch and low yield of non-wood forest products. Wild animals are not seen in the forest because their habitats have been destroyed. There is no telling how many unique species of plants and animals may have been threatened.

Ethical evaluation of what is happening in MNF has revealed that there is need for people to live in harmony with nature. As the forest is an ecosystem, there is competition and co-operation between its diverse parts and, when these naturally evolved relationships are disturbed through human interference, the negative effects are many and diverse. Some of these effects that have been identified as a result of deforestation are related to likely changes in weather patterns, loss of biodiversity,

and smaller quantities of NWFPs being available for collection by the local people. Furthermore, these actions constitute violations of our obligations to these future generations. In the earlier quoted words of Leopold with respect to an ethical approach to the environment, “a thing is right when it tends to preserve the integrity, stability and the beauty of the biotic community. It is wrong when it tends otherwise” (1949/1989:220). This means that human beings have an ecological duty to seek to preserve the integrity and balance of the biotic community and to restore what has been undermined or degraded by human activity.

6.2 RECOMMENDATIONS

In line with the research findings, the following recommendations are made to ensure effective protection of the Mwekera National Forest No.6 and, at the same time, to safeguard the livelihood of the local people.

- The government should involve the local people in the management of the forest. By involving the local people, the government will develop and strengthen their capacities and enable them to become more responsible in their treatment of the forest.
- The government should take steps to educate people regarding natural values and resources in the conservation of forests because it is important that modern scientific knowledge is combined with indigenous knowledge in managing the forests.
- There is need to include environmental ethics in the forestry training curriculum, especially in forestry extension, so that it may help to foster change in the negative attitudes people may have towards the use of forest resources.

- There is need to change the perceptions and attitudes of politicians, forestry officials and the local people toward forest resources by helping to educate them to appreciate the intrinsic and inherent values which diverse natural non-life forms and life-forms have as distinct from the utilitarian values which are so dominant at present.
- The government should review the Forest Policy and the Forest Act to include the participation of the local community and other stakeholders.
- The government should try to emulate forest management systems being practiced by other countries which have proven to control the extent of deforestation, e.g., in Nepal.
- Finally, I would strongly recommend the introduction of eco-tourism in the forest so that the local people can benefit from the earnings which could be generated, while at the same time protecting the forest. Eco-tourism would assist to improve the management of MNF.

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APPENDICES

Appendix I: The local community

**THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF PHILOSOPHY AND APPLIED ETHICS**

QUESTIONNAIRE

The local community

Administered in person and to be filled in by the interviewer

Respondent-----Sex-----
Age-----Date -----

1. For how long have you settled in this area?
.....
.....
2. What could be the causes of deforestation in Mwekera national forest?
.....
.....
3. In your opinion, is deforestation a good thing?
.....
.....
4. What role do you play in the management of Mwekera National Forest?
.....
.....
5. What role did you play in the 1965 forest policy formulation? (only for people above 60years)
.....
.....
6. What effects has deforestation caused on the local environment in Mwekera national forest?
.....
.....
.....
7. How best could Mwekera national forest be managed in order to control deforestation going on?
.....
.....
.....

Appendix II: The Forest Department.

THE UNIVERSITY OF ZAMBIA DEPARTMENT OF PHILOSOPHY AND APPLIED ETHICS

QUESTIONNAIRE

The Forest Department.

Administered in person and to be filled in by the interviewer

Respondent-----Sex-----

Age-----Date -----

1. What is the general status of Mwekera National Forest No. 6?
.....
2. What could be the causes of the high deforestation going on in Mwekera National Forest No. 6?
.....
.....
.....
3. What effect does deforestation have on the local environment?
.....
.....
4. Which forest policy and act are you currently using to manage the forests?
.....
5. How effective is it in addressing the stated objectives?
.....
.....
6. What role did the local people play in the formulation of 1965 forest policy? (only people who have worked since 1964).
.....
.....
7. To what extent are local communities involved in the management of Mwekera National Forest?
.....
.....
8. How best do you think Mwekera National Forests could be managed to control the high level deforestation currently going on?
.....
.....
.....
.....

Appendix III: Zambia Forestry College.

**THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF PHILOSOPHY AND APPLIED ETHICS**

QUESTIONNAIRE

Zambia Forestry College.

Administered in person and to be filled in by the interviewer

Respondent-----Sex-----

Age-----Date -----

1. What is the general status of Mwekera National Forest No. 6?
.....
2. What could be the causes of the high deforestation going on in Mwekera National Forest No. 6?
.....
.....
.....
3. What effect does deforestation have on the local environment?
.....
.....
4. Which forest policy and act are you currently using to manage the forests?
.....
.....
5. How effective is it in addressing the stated objectives?
.....
.....
6. What role did the local people play in the formulation of 1965 forest policy? (only people who have worked since 1964).
.....
.....
7. To what extent are local communities involved in the management of Mwekera National Forest?
.....
.....
8. How best do you think Mwekera National Forests could be managed to control the high level deforestation currently going on?
.....
.....
.....

Appendix IV: Zambia Forestry College.

THE UNIVERSITY OF ZAMBIA DEPARTMENT OF PHILOSOPHY AND APPLIED ETHICS

QUESTIONNAIRE

Focus Group Interview Schedule.

Administered in person and to be filled in by the interviewer

1. What could be the causes of the high deforestation going on in Mwekera National Forest No. 6?
.....
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2. What effects has deforestation caused on the local environment in Mwekera national forest?
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3. How best could Mwekera national forest be managed in order to control deforestation going on?
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