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LOSS OF BIODIVERSITY: PROBLEMS OF ITS LEGAL CONTROL IN ETHIOPIA

By

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DECLARATION

I hereby declare that this thesis is my original work. I also confirm that it has not been submitted either in part or in full for any Degree or Diploma to this or any other university.

Mellese Damtie

ACRONYMS

AAU	Addis Ababa University
ADLI	Agricultural Development Led Industrialization
AGRA	Alliance for Green Revolution in Africa
AKST	Agricultural knowledge, science, and technology
BES	Babile Elephant Sanctuary
BMNP	Bale Mountains National Park
CBD	Convention on Biological Diversity
CIMMYT	International Maize and Wheat Improvement Center
CITES	Convention on International Trade in Endangered
CSE	Conservation Strategy of Ethiopia
DDT	Dichloro-diphenyl-trichloroethane
DMS	Dimethyl sulfide
E.C.	Ethiopian calendar
ECSU	Ethiopian Civil Service University
EFAP	Ethiopian Forestry Action Plan
EIAR	Ethiopian Institute of Agricultural Research
EOSA	Ethiopian Organic Seed Action
EPA	Environmental Protection Authority
EPRDF	Ethiopian People's Revolutionary Democratic Front
ERTA	Ethiopian Radio and Television Agency
ETB	Ethiopian Birr (currency)
EWNHS	Ethiopian Wildlife and Natural History Society
FAO	Food and Agriculture Organization of the United
FDRE	Federal Democratic Republic of Ethiopia
FfE	Forum for Environment
FPAs	Forest Priority Areas

FRI	Forestry Research Institute
FSS	Forum for Social Studies
GDP	Gross Domestic Production
GTP	Growth and Transformation Plan
HF	House of the Federation
HPE	Health, population and environment
HPR	House of People's Representatives
HRW	Human Rights Watch
HSIU	Haile Selassie I University
HYVs	High yielding varieties
IAASTD	International Assessment of Agricultural knowledge,
IAS	Invasive alien species
IBC	Institute of Biodiversity Conservation
IBC	Institute of Biodiversity Conservation
ICARDA	International Center for Agricultural Research in the
ICESCR	International Covenant on Educational, Social and
ICRISAT	International Crops Research Institute for the Semi-
IFPRI	International Food Policy Research Institute
IIED	International Institute for Environment and
IPCC	Intergovernmental Panel on Climate Change
ISD	Institute of Sustainable Development
IT	Information technology
IUCN	International Union for Conservation of Nature
LGPI	The Land Deal Politics Initiative
MDGs	Millennium Development Goals
MELCA	Movement for Ecological Learning and Community
MNCs	Multinational Corporations

MOA	Ministry of Agriculture
MOARD	Ministry of Agriculture and Rural Development
MOFED	Ministry of Finance and Economic Development
NBSAP	National Biodiversity Strategy and Action Plan
NBSAP	National Biodiversity Strategy and Action Plan
NTFP	Non-timber forest products
ONC	Oromo National Congress
PASDEP	A Plan for Accelerated and Sustained Development to
PMAC	Provisional Military Administrative Council
REDD	Reduced emissions from deforestation and
TEG	Traditional ecological governance
UDHR	Universal Declaration on Human Rights
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural
UNGA	United Nations General Assembly
USAID	United States Agency for International Development
VOA	The Voice of America
WHO	World Health Organization
WIC	Walta Information Center
WMO	World Meteorological Organization

ABSTRACT

This thesis is conducted on the premise that the existing legal, policy and governance frameworks are insufficient to protect biodiversity from the alarming loss it is facing now. It argues that these frameworks are crafted to conform to the dominant paradigm of anthropocentrism; a paradigm which believes that humans are the pinnacle of creation and everything on Earth, including the Earth itself destined to satisfy only the interests of humanity without having their own purpose.

By showing how anthropocentric worldview conceived, developed and spread, and how this worldview managed to influence societal collective consciousness to govern the relationship established between humans and the nonhuman nature, the thesis argues that loss of biodiversity not a problem in itself. Rather it is a symptom of the underlying problem rooted in human thinking, guided by anthropocentric worldview. Anthropocentrism has become a powerful paradigm that succeeded in permeating into dominant religions, knowledge base and legal systems of countries of the world, including Ethiopia. The thesis contends that law, as mirror of dominant paradigms and perceptions, reflects the values of these paradigms, at international as well as national levels putting protection of biodiversity within the interpretations of these paradigms. It argues that the human treatment of the natural environment is on a scale of violence which puts the survival of humans and that of the environment at a precarious condition.

Based on evidence from the review of evolutionary science and the Holy Scriptures, the thesis argues that humans are deeply connected to and dependent on the Earth systems and are responsible to maintain these systems which are functioning in a holistic manner to support all life on Earth. Promoting the proposition of Thomas Berry that the Earth is a community of subjects not a collection of objects, it contends that biodiversity has intrinsic value in addition to instrumental value, deserving ethical extension.

Drawing on these concepts, the thesis suggests, by adopting a reformist approach, a shift from the reductionist notion of anthropocentrism to ecocentrism via the new philosophy called Earth jurisprudence. Earth jurisprudence is believed to correct and heal the conflicting relationship that humans established with the nonhuman nature, with the view to reconciling the present legal, policy and governance systems which have been dominated by anthropocentric perspectives. Through the vehicle of Earth jurisprudence, it is hoped that humans assume a stewardship responsibility for the mutual benefits of humans and nonhuman nature.

The thesis finally deals with a case study conducted in Sheka zone in the Southwest Ethiopia. The case study is done with the purpose of exploring the TEG systems of indigenous/local communities which are believed to conform to the tenets of the Earth jurisprudence, the philosophy of law which is chosen by this work to guide the protection of biodiversity. The case study came out with findings that the Sheka TEG systems are good examples of customary practices that provide better protection for biodiversity. Exemplary lessons can be drawn from the Sheka TEG systems to amend the dominant legal, policy and governance regimes.

CHAPTER 1

INTRODUCTION

1.1 Background

At present the Earth and all its systems need a conscious support of humans more than any time in the history of humankind. The Earth and all of its systems function in a holistic and coordinated manner. However, human activities are highly interfering with this integration. Biodiversity is one of the major components that constitute the Earth and its systems. Biodiversity's contribution to the normal functioning of the Earth and all of its systems is immense.¹ Irrespective of its priceless functions in maintaining the life support system of the Earth, biodiversity is being depleted in an unprecedented manner and the trend of biodiversity loss is increasing exponentially. According to Living Planet Report, the global tropical index declined by 60 percent between 1970 and 2008.² Human activities generate the paramount responsibility for this decline and if this problem continues unabated, it will continue to lead to irreparable environmental decline that will lead to economic decline and social collapse as well.³

The pressure of relentless human activities on Earth and its functional systems is so immense that one report states that: “[t]he world is entering a new geologic epoch, sometimes called the anthropocene, in which human activities will largely control the evolution of Earth’s environment...”⁴ The impact of human activities on biodiversity is feared to be causing what scientists call a sixth mass extinction.⁵ What is worse is, as time goes by the loss of biodiversity

¹ See Chapter 2 for the details of the functions of biodiversity in contributing to the normal functioning of the Earth and its systems.

² See WWF (2012), *Living Planet Report 2012: Biodiversity, biocapacity and better choices*. The tropical index is calculated from terrestrial and freshwater populations from the Afrotropical, Indo-Pacific and Neotropical realms and from marine populations between the Tropics of Cancer and Capricorn. (See *Ibid*, p.22)

³ See Lester R. Brown (2011), *World on the Edge: How to Prevent Environmental and Economic Collapse*, Earth Policy Institute, W. W. Norton & Company; and Lester R. Brown (2009), *Plan B 4.0: Mobilizing to Save Civilization*, Earth Policy Institute, W. W. Norton & Company.

⁴ National Research Council, 2011, quoted in Living Planet Report, *ibid*, p.96. See also Will Steffen *et al*, ‘The Anthropocene: conceptual and historical perspectives’ *Phil. Trans. R. Soc. A* (2011) Vol. 369, pp.842–867. The term Anthropocene suggests: (i) that the Earth is now moving out of its current geological epoch, called the Holocene and (ii) that human activity is largely responsible for this exit from the Holocene, that is, that humankind has become a global geological force in its own right. (*Ibid*, p.843)

⁵ See Chapter 2 for discussions on mass extinction.

is even more intensified. Despite some notable achievements towards reserving biodiversity through some policies, for example, increasing protected habitats, the overall trend is a serious decline in state of biodiversity throughout the world.⁶ In Ethiopia also, there is evidence that shows a similar trend.⁷

Efforts have been made to protect biodiversity at international and national levels from lawmaking to establishing governmental and nongovernmental institutions which are responsible for protection of biodiversity. The state of biodiversity shows that previous efforts were not sufficient to halt its loss. The critical nature of this situation demonstrates the need for special efforts that both shape human understanding of nature,⁸ and their actions grounded in this understanding.

The primary reason that this work focuses on human understanding of nature and the corresponding action to protect nature is the belief of the author that the present environmental crisis is caused by the human perception of nature and the consequent relationships that humans established with the nonhuman nature. Human conceptions towards nature have been predominantly shaped by anthropocentric notions which consider that only humans are important and the rest of nonhuman nature is destined to serve as a means to human ends. Even if humans are concerned about protection of the environment, they have been guided by an anthropocentric rationale, which relegates the whole of nonhuman nature as a mere resource for human use only.

This work argues that anthropocentric worldview has aggravated loss of biodiversity in governing human-nonhuman relationships in a way that biodiversity exists only to be exploited by humans without its own right to survive. The dominant rationale for protecting biodiversity is based solely on human interest. Anthropocentric rationale of protection of biodiversity puts paramount importance on human interests and is not an appropriate worldview for the protection

⁶ Will Steffen *et al*, *supra* note 4, p.856.

⁷ See, for instance, IBC (2007), *Second Country Report on the State of Plant Genetic Resources for Food and Agriculture*; and IBC (2009), *Convention on Biological Diversity (CBD) Ethiopia's 4th Country Report*.

⁸ As John Passmore (1974) *Man's Responsibility for Nature: Ecological Problems and Western Traditions*, Duckworth, p.3 said, it would be good to wholly avoid the word 'nature'. Even if this word is one of the most ambiguous words, it is difficult to avoid it. Whenever this word is used in this work, unless the context dictates otherwise, it means the whole of the nonhuman beings/things on Earth including the Earth itself and the processes that support life.

of biodiversity. Based on this understanding, this work further argues that the adoption of an anthropocentric rationale to protect biodiversity is ineffective and unable to stop its depletion.

The anthropocentric rationale considers biodiversity as a mere instrument without considering its intrinsic value. It is based on the conception of human dominance over and separation of humans from nonhuman nature. This construction does not manifest the interrelationships and dependence of humans on nature and the corresponding nonreciprocal human responsibility towards the nonhuman nature. This thesis promotes the recognition of an ecocentric rationale for the protection of biodiversity based on the principles of the emergent legal philosophy called Earth jurisprudence.

Earth jurisprudence is an emerging field of law that recognizes and respects the rights of nature and the health of all life on Earth. It invites a fundamental rethinking of the basis and assumptions of law. It focuses on sustaining the interconnectedness and interdependence of all that exists in the natural world which ensures the existence of all.⁹ Earth jurisprudence provides the foundation for restoring a mutually enhancing relationship between humanity and nature. It acknowledges that the good of the whole, the entire Earth community, takes precedence over the good of the individual parts. According to Earth jurisprudence, the way humans govern themselves needs to embody an ethical code of practice which requires them to live in conformity with nature's laws and ecological limits, for the wellbeing of the whole Earth community and future generations of all species. It calls for ecologically responsible actions, rethinking law and governance for the normal functioning of the Earth's systems and the health of the whole of life on Earth.¹⁰

This thesis argues for a paradigm shift in legal systems so that the legal systems can develop and adopt laws and policies which conform to tenets of Earth jurisprudence.¹¹ In the words of Cullinan, "[a] primary cause of environmental destruction is the fact that current legal systems are designed to perpetuate human domination of nature instead of fostering mutually beneficial

⁹ See Herman F. Greene, 'What is Earth jurisprudence?' www.earthjuris.org/pdfs/Whatisearthjurisprudence.pdf, accessed on 22 April 2013.

¹⁰ See *ibid.*

¹¹ See Chapter 5 and 6 for the discussion on the principles of Earth jurisprudence.

relationships between humans and other members of the Earth community.”¹² To halt or to significantly reduce loss of biodiversity, it is imperative to rethink the legal systems and act accordingly.

The 1992 World Scientists’ Warning to Humanity also conforms to this proposal. That is, according to the Union of Concerned Scientists;

“Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about... A new ethic is required – a new attitude towards discharging our responsibility for caring for ourselves and for the earth... This ethic must motivate a great movement, convincing reluctant leaders and reluctant governments and reluctant peoples themselves to effect the needed changes.”¹³

As indicated above, this thesis proposes a shift in human thinking via the vehicle of Earth jurisprudence which introduces a new ethic to bring about a fundamental change in the way humans understand nature and to define a new relationship between humans and nonhuman nature based on a new ecocentric ethic where humans are a part of the whole.

1.2 Research Questions

The major research question is:

“What is the underlying problem in the Ethiopian legal system that has hindered the control of loss of biodiversity in the country?” Following this major question, other subordinate but related questions are asked with the aim of further exploring the problem. These are:

1. Which philosophical paradigms predominantly influence the international and national biodiversity protection legal instruments?

¹² Cormac Cullinan, ‘Earth jurisprudence: From Colonization to Participation’ *State of the World 2010: Transforming Cultures from Consumerism to Sustainability*, The World Research Institute, p.144.

¹³ 1992 ‘World Scientists’ Warning to Humanity’ <http://www.ucsusa.org/about/1992-world-scientists.htm>, accessed on 21 July 2012.

2. What are the main causes of loss of biodiversity in Ethiopia? How far these causes have been influenced by the dominant paradigms?
3. What alternative approaches are available to challenge the dominant paradigm which would help facilitate controlling biodiversity loss in Ethiopia? How can these alternative approaches be translated into policy or legal form?
4. To what extent the Sheka TEG systems have contributed to the protection of biodiversity? Are they still strong enough in controlling loss of biodiversity?

1.3 Methodology and Methods

This research analyzes the underlying causes of loss of biodiversity in relation to legal and policy instruments at international and national levels. The research relies predominantly on a qualitative analysis of data from academic literature, government policy and strategic documents, government reports to international organizations, draft laws, NGO documents, multilateral environmental agreements, and print and electronic media sources. The analyses of literature, documents and data are corroborated by some interviews held with appropriate experts for further understanding of the issue.

The research also consists of a case study based on field visits to Sheka zone of the SNNPRS. Structured and semi-structured interviews and focused group discussions were made to obtain the necessary information. Compliance with all ethical and legal considerations of data collection and protection were made for the safety of the informants. The respondents were informed that their contribution was sought for exclusive academic purpose. Their consent was also obtained on the basis of consensus to fully respect their rights, needs, values, and desires as far as this research is concerned. The names of informants appearing in this research are the ones who consented and others who did not consent remained anonymous.¹⁴ While dealing with the local communities, deliberate efforts were made to ensure that communities were giving the correct information by building trust and friendship with them.

¹⁴ See problems associated with data collection during the case study in Chapter 7.

The fieldwork also involved observations in and around the forests of Sheka with people having direct knowledge and understanding about coffee and tea plantation activities and the traditional forest protection and farming activities.

1.4 Content Organization

The study has 7 chapters (including this Chapter). Chapter 1 sets out the background of the study, the research questions and methodology and methods. Chapter 2 provides general introduction of biodiversity. It addresses the meaning and functions of biodiversity. The meaning applied to biodiversity in Chapter 2 provides a wider framework for its protection. Then it introduces the meaning of loss of biodiversity and describes the status of biodiversity in Ethiopia. Chapter 3 highlights how the conception of human separation from the natural world and human dominion over the rest of nonhuman nature has resulted in anthropocentric notions which have influenced the human-nonhuman nature relationship. Furthermore, it explores the roles played by religious teachings, ‘modern’ knowledge which is the result of Scientific Revolution, the scientific method and the industrial revolution in advancing anthropocentric notions. It also examines the anthropocentric features of international and national environmental/biodiversity protection legal instruments which are based on the dominant paradigm.

Chapter 4 analyzes loss of biodiversity in Ethiopia by trying to show the relationship between this loss and the dominant anthropocentric paradigm. The analysis is based on two main factors; the socioeconomic and cultural aspects of the society and the developmental mindset. The former is related to the day-to-day life of the people. The impact of this anthropocentric paradigm in causing loss of biodiversity is complex, indirect and partial. The developmental mindset factor, however, is a direct cause of biodiversity loss.

This work strongly associates loss of biodiversity with the way humans think about the nonhuman nature and the type of relationships humans establish with nonhuman nature. To effectively protect biodiversity from the present large-scale loss, it suggests a shift in paradigm in the legal, policy and governance regimes through the application of principles of Earth

jurisprudence. Chapter 5 and 6 propose four specific ways in which the principles of Earth jurisprudence will be translated into legal, policy and governance regime.

Chapter 7 is devoted to a case study which is based on fieldwork done in Sheka zone of the SNNPRS. Sheka zone is selected for the case study on the assumption that it is one of the richest biodiversity areas in the country. Moreover, assumption is made that biodiversity in Sheka zone has been protected through the traditional ecological governance (TEG) of the local people with practices which approximate the tenets of Earth jurisprudence. The main purpose for conducting the case study is to examine the TEG of the local people in terms of the principles of Earth jurisprudence and derive lessons thereof. It evaluates the rights of local people in governing their ecosystem, the extent of exercising their decision making powers while practicing their TEG and how these factors impact the control of loss of biodiversity in their area.

The last chapter summarizes the arguments raised in the preceding chapters. Firstly, it briefly outlines the issues discussed in each chapter. Then it analyzes and discusses the findings of the research. Next, it provides insights on the problems and major arguments made in the work. Finally, it indicates directions for future researches and actions that are needed to reduce the loss of biodiversity and move toward government's adoption of Earth jurisprudence tenets which are hoped to protect both human and nonhuman wellbeing.

CHAPTER 2

BIODIVERSITY: MEANING, FUNCTIONS, LOSS AND STATUS IN ETHIOPIA

Introduction

There is no unanimous agreement on the exact meaning of biodiversity since the term was crafted in 1986. Biodiversity is a short form of the term biological diversity. The 1992 Convention on Biological Diversity gives meaning to biodiversity as “diversity within species, between species and of ecosystems,”¹ that is, genetic diversity, species diversity and ecosystem diversity. It is now common that the term biodiversity includes, besides these, cultural diversity. Evolutionary processes which brought biodiversity are also considered to have been included in the meaning of biodiversity. Various definitions of biodiversity have been adopted based on who is defining it and for what purpose they are defining it.

Given the complexity of services provided by biodiversity, it is very difficult to measure its services for the life support system of Earth. There is strong evidence that it plays vital roles in this system, however. Direct benefits of biodiversity such as provision of food, medicines, fiber, shelter, and indirect benefits such as material cycling, water purification, and climate regulation, and multiple other functions made biodiversity a major priority.

Thus, loss of biodiversity has become one of the world’s biggest concerns. Scientists repeatedly warn that the Earth is going to face the sixth mass extinction unless swift and strong measures are taken to avoid the risk. Five prior mass extinctions had occurred due to natural factors, and the sixth extinction, if it occurs, as predicted by scientists, is going to be caused by one of the species, *Homo sapiens*, who is a latecomer in the evolutionary history of living beings.² Even if

¹ CBD, Article 2, paragraph 1.

² See Ellen W. Chu and James R., ‘Environmental Impact, Concept and Measurement Of’ in Simon Asher Levin (Editor-in-Chief) (2009), *Encyclopedia of Biodiversity*, Volume 2, Academic Press p.565 and Gabor L. Lovei, ‘Extinctions, Modern Examples Of’, in *Ibid.*, p.743.

loss of biodiversity cannot be totally attributable to human activities, scientists still believe that the most serious cause of loss of biodiversity is human activity.

Loss of biodiversity is highly aggravated since the industrial revolution. The industrial revolution significantly increased production and consumption. These changes have created major pressure on biodiversity and when combined with ever increasing economic activities, it is leading to its severe depletion. The situation in Ethiopia, however, is different. That is, loss of biodiversity occurred to a large extent, even before modernization and development came upon the scene. Different causes have been responsible. Those most responsible have been, expansion of agricultural activities, population pressure, policy on land tenure, defective laws and policies, the perception of the relation between humanity and the rest of nature. Since the downfall of the socialist government in 1991 in Ethiopia, the implementation of development mindset is increasingly overwhelming the biodiversity of the country. The already dwindled biodiversity is facing another major challenge from this new trend in Ethiopia.

This chapter presents the meaning of biodiversity in a much broader sense than the meaning given by the CBD. This broader definition includes the various component parts which constitutes biodiversity so that biodiversity protection activities can be based on wider perceptions such as cultural diversity and evolutionary processes. The chapter will then outline the meaning of biodiversity and follow by explaining functions which exhibit the key roles played by biodiversity in maintaining the Earth's ecological systems. The crucial functions performed by biodiversity provide the most significant rationale for its protection. Irrespective of its vital roles for the normal functioning of the Earth's ecological systems, biodiversity is being decimated in the hands of humans. Finally the chapter presents the status of biodiversity in Ethiopia. Though thousands of years of agricultural activities have seriously affected Ethiopia's biodiversity, still the country is one of the mega diverse countries on the African continent. The chapter demonstrates that Ethiopia is one of the world's biodiversity hotspots, where it is rich in biodiversity but highly threatened by human actions which are causing the rapid loss of biodiversity.³

³ See (1) A. Mittermeier *et al*, 'Global Biodiversity Conservation: The Critical Role of Hotspots' in Russell Frank E. *et al* (eds.) (2011) *Biodiversity Hotspots: Distribution and Protection of Conservation Priority Areas*, Springer,

This chapter, in addition to providing the general background on the context of biodiversity and the factors affecting its loss, is relevant for the whole thesis in three ways. Firstly, it sets the meaning of biodiversity in a wider context, which leads to a wider understanding of biodiversity. A wider understanding of biodiversity will broaden the scope and horizon of its protection. Secondly, the fact that human activities are considered the major cause of loss of biodiversity shows the capacity of humans to destroy nature if they are guided by the mindset that values the whole of nature, or specifically biodiversity, only instrumentally. On the other hand, it also shows that human beings are capable of assuming responsibility to care for themselves as well as the nonhuman nature if they are guided by a conviction of caring and responsibility. Thirdly, incorporation of cultural diversity into the meaning of biodiversity shows the intertwined link between biological and cultural diversities. It also lays down the basis for the case study that is discussed later in the work.

2.1 What is Biodiversity?

Biodiversity is the short form of the expression ‘biological diversity’ and it was “used for the first time at a planning meeting of the National Forum on Bio-Diversity held in Washington D.C. in 1986.”⁴ Since then biodiversity is the term most frequently used to describe the multiple life forms and the term has become very familiar. However, there has been no commonly held clarity on its meaning. Various meanings continued to be given to biodiversity by various legal and non-legal instruments.⁵ The differences in meanings give rise to various understandings of biodiversity and different modes of actions for its protection.

The most commonly accepted conception of biodiversity seems to be abundance of life on Earth. Such kinds of generalized definitions of biodiversity do not help much in clearly understanding

pp.7-9. (2) UNEP, ‘Africa Environment Outlook: Past, Present and Future Perspectives’, <http://www.unep.org/dewa/africa/publications/aeo-1/061.htm>, accessed on 13 December 2012. (3) EWNHS, ‘A Glimpse at Biodiversity Hotspots of Ethiopia’,

www.ewnhs.org.et/wp-content/plugins/download.../download.php?id=2, accessed on 27 January 2010.

⁴ Marjorie L. Reaka-Kudla, et al, (eds.), (1997), *BIODIVERSITY II: Understanding and Protecting Our Biological Resources*, National Academy of Sciences, p.1.

⁵ For instance, compare the meaning given to biodiversity by the Encyclopedia of Biodiversity which states: “Biodiversity is an attribute of an area and specifically refers to the variety within and among living organisms, assemblages of living organisms, biotic communities, and biotic processes, whether naturally occurring or modified by humans” with the definition given by the CBD. (Ian R. Swingland, ‘Biodiversity, Definition Of’, in Levin, *supra* note 2, Volume 1, p.378.

it. Among the technical definitions of biodiversity, the one adopted by the 1992 Convention on Biological Diversity is generally quoted. CBD defines biodiversity as:

“Biological diversity” means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.⁶

According to this definition, biodiversity is the diversity within species (genetic diversity), between species (species diversity) and of ecosystems (ecosystem diversity). Genetic diversity expresses the different forms of a single gene found in an individual and the variation of genes and chromosomes between individuals. On the other hand, species diversity is the variation that existed among various species. Ecosystem diversity is the variation in the interdependence of biotic communities and the abiotic (nonliving) aspects of the environments in which the biotic communities are found.

This definition given by the CBD does not give answers to questions such as whether humans are included as a part of biodiversity or not. Contemporary literature shows that the interactions among biotic components on the one hand and between the biotic components and the abiotic factors on the other and the evolutionary processes which created and maintained biodiversity are also constituent parts of biodiversity.⁷ Another controversial aspect in the definition of biodiversity is whether it includes genetically modified organisms (GMOs) or not. These component parts of biodiversity are further addressed below.

2.1.1 Genetic Diversity

In a non-technical way, genetic diversity can be seen as the variation that exists among individuals that make up a species. In Ethiopia, for instance, there are so many varieties of crops

⁶ *Supra* note 1, Article 2, paragraph 1. It is important to note here that, even if this definition does not include population diversity, the CBD is generally concerned with the protection of population diversity, which is seen as a segment of biodiversity. (See for instance, Articles 8(d), 8(k) and 9(d) of the CBD).

⁷ See, (1) Russ Hodge (2009) *Evolution: The History of Life on Earth*, Facts On File; (2) Elisabet Sahtouris (1999), *EARTHDANCE: Living Systems in Evolution*, iUniverse; (3) Norman Myers and Andrew H. Knoll, ‘The biotic crisis and the future of evolution’, *PNAS* May 8, 2001, Vol. 98 No. 10, 5389–5392. Moreover, Ian J. Harrison, *et al*, define biodiversity as “the variety of life on earth at all its levels, from genes to biogeographic, and the ecological and evolutionary processes that sustain it.” Ian J. Harrison *et al*, ‘What is Biodiversity?’ in Niles Eldredge (ed) (2002), *Life on Earth: An Encyclopedia of Biodiversity, Ecology and Evolution*, ABC-CLIO, Inc., p.2.

such as wheat, barley, sorghum and *teff*.⁸ Even if these crops (e.g. barley) belong to the same species, there are large numbers of varieties in them. Existence of large numbers of varieties of a species is considered to be beneficial for the adaptability, resilience and generally good performance of that species.

Technically speaking, genetic diversity refers to “any variation in the nucleotides, genes, chromosomes, or whole genome of organisms.”⁹ This genetic material level of diversity is the “fundamental currency of diversity.”¹⁰ The individual differences in a given population are mainly caused by the genetic variations among them. In sexually reproduced organisms, except in identical twins or in cloned animals such as Dolly, every organism possesses a unique genetic makeup making an individual unique.

It is the genetic material that “enables both natural evolutionary changes and artificial selective breeding to occur”¹¹ and this makes genetic diversity a concern for conservation and policy issues. Genetic diversity is reliant on the heritable variation within and between populations of organisms. New genetic variation arises in individuals by gene and chromosome mutations, and in organisms with sexual reproduction it can be spread through the population by recombination.

2.1.2 Population Diversity

Besides the individual genetic difference, there is genetic variation that lies within and among populations, which may be more important for conservation purposes than the individual genetic variation. Population diversity refers to variation in the quantitative and spatial characteristics of populations, such as the numbers of individuals present and the geographic range of the population. An estimate of the overall population size provides a measure of the potential genetic diversity within the population; large populations usually represent larger gene pools and hence greater potential for diversity. The geographic range and distribution of populations (that is, their spatial structure) are key factors in analyzing their diversity, since they give an indication of the

⁸ National Biodiversity Strategy and Action Plan, IBC, December 2005, p.25. (Note that *teff* is a grass family crop with fine seeds whose flour is converted into a pancake like bread, called *injera*. *Injera* is a staple food in Ethiopia.)

⁹ Harrison, et al, *supra* note 7, p.6.

¹⁰ Williams, P. H., and C. J. Humphries, (1996) ‘Comparing Character Diversity among Biotas’ as cited in Harrison, et al, *supra* note 7, p.6.

¹¹ Ian R. Swingland, ‘Biodiversity, Definition Of’ in Levin *supra* note 2, Volume 1, p.380.

likelihood of the movement of organisms between populations and subsequent genetic interchange.

As Malcolm Hunter asserts, “[i]solated populations, with very low levels of interchange, show high levels of genetic divergence and often show unique adaptations to the biotic and abiotic characteristics of their local environment.”¹² This can be manifested in competition with other organisms, local topography, and climate. Less isolated populations may show greater genetic exchange, and those populations are likely to be more homogenous. That is, they are less diverse than populations which can exchange gene with other populations. This may have impact on disease resistance, adaptability to changing circumstances and other related aspects. It is said that “natural selection often works faster in small populations, and effects can be observed more rapidly.”¹³

There is convincing evidence that “levels of genetic variation in wildlife were related to population size ... widespread species have more genetic variation than restricted species, and endangered species have less genetic variation than non-damaged species.”¹⁴ This gives good input for policy makers who are usually satisfied by establishing a small park and/or zoo which keep isolated populations for conservation purposes. From this it can be deduced that even national parks cannot be taken as the Ark of Noah, by clearly showing the importance of wider spaces and corridors (especially for wildlife) for evolutionary processes operate in wide ranges of population diversities.

Diversity of population leads to genetic diversity which in turn leads to resilience to various calamities. On this account, Frankham writes:

“Genetic diversity is a raw material for evolutionary change within wildlife populations. It allows populations to evolve in response to environmental change, whether that be new or changed diseases, pests, parasites, competitors or predators or greenhouse warming, ozone layer depletion, or pollution.”¹⁵

¹² Harrison *et al*, *supra* note 7, p.9.

¹³ John Blamire (1994) *Life Explored: The Principles of Biology*, Wm. C. Brown Publishers, p.82.

¹⁴ Richard Frankham, ‘Relationship of Genetic Variation to Population Size in Wildlife’, *Conservation Biology*, Volume 10, No. 6, Dec. 1996, p.1500.

¹⁵ *Ibid*, p.1501.

Frankham's points can be applied to other forms of diversity of life, in addition to wildlife with the conclusion that; the greater the space and the population size in a given diversity of life, the greater adapted to new and changing circumstances. This in turn means greater possibility of protection of loss of biodiversity.

2.1.3 Species Diversity

Species diversity seems to be a misnomer of biodiversity, as it is common to perceive both concepts as one. Even legal rules and conservation strategies tend to focus on species than other components of biodiversity. Regarding this special attention of laws on species Jim Chen writes, "[t]he few laws that do respond to biodiversity loss, however, take primary aim at overkill and the marketing of products derived from endangered species."¹⁶ Jim Chen further notes that the law "imposes its clearest and harshest sanctions precisely where the drivers of extinction are weakest."¹⁷ This is probably because of lack of awareness on the meaning of biodiversity on the side of the ones who are engaged in initiating and making the laws and policies for biodiversity conservation.

Even if the concept of biodiversity is wider and pervasive, the popular understanding mainly associates it with species diversity. Even conservationists and environmentalists focus on specific species of larger animals. On this line, Joseph Henry Vogel contends that "[i]t is easier to rally support for particular biological assets such as tigers than for a relatively abstract biodiversity."¹⁸ Protection of individual species is the main concern of many national legislation, such as the Endangered Species Act of 1973 (US) and international instruments like Convention on International Trade in Endangered Species (CITES). Although such efforts are not bad, they are not sufficient to protect the whole range of biodiversity as the term is defined in this work. Loss of biodiversity could well be addressed by a holistic than a piecemeal approach.

¹⁶ Jim Chen, 'Across the Apocalypse on Horseback: Biodiversity Loss and the Law' in Charles R. McManis (ed.) (2007) *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge*, EARTHSCAN, p.43.

¹⁷ *Ibid.* This, however, does not mean that laws which have focused on single species protection are not helpful.

¹⁸ Joseph Henry Vogel, 'From the 'Tragedy of the Commons' to the 'Tragedy of the Commonplace': Analysis and Synthesis through the Lens of Economic Theory', in *ibid.*, p.127.

There is no precision as to how many species exist on Earth and the figures given by different scientists vary greatly. The estimates for the number of species are from 5 to 100 million and science has identified only about 2 million species to the best.¹⁹ This seems to create big problem for conservation strategies and legislation as the current standing of biodiversity is not known. It is a concern that the Earth is losing significant amount of biodiversity while the great majority of species are not yet known.

2.1.4 Ecosystem Diversity

The word ecosystem is an abbreviation of the term, ‘ecological system’. There is no precise definition for ecosystem and it is common to get different meanings given by different disciplines. To start with, let us see a dictionary definition for ecosystem. According to the Compact Oxford English Dictionary, “[e]cosystem is a unit of ecology ... which includes the plants and animals occurring together plus that part of their environment over which they have an influence.”²⁰ Another more complex meaning of ecosystem comes from Eugene P. Odum, a founder of ecology, who stated ecosystem as:

“Living organisms and their nonliving (abiotic) environment are inseparably interrelated and interact with each other. An ecological system, or ecosystem, is any unit (a bio-system) that includes all the organisms (the biotic community) in a given area interacting with the physical environment so that a flow of energy leads to clearly defined biotic structures and cycling of materials between living and nonliving parts. An ecosystem is ... a functional system unit with inputs and outputs, and with boundaries that can be either natural or arbitrary.”²¹

The most significant point in the understanding of ecosystem is the existence of ecosystem diversity on Earth and how these warrant human relationship with such complex systems.²² From these meanings, one can see that there can be many examples of ecosystems, from small to big

¹⁹ Andrea Thompson, ‘How Many Species Exist on Earth?’

<http://www.nbcnews.com/id/20109284/#.UmtwAVNhCbg/>, accessed on 02 January 2010.

²⁰ Compact Oxford English Dictionary (1991, 2nd edn)

²¹ Eugene P. Odum, ‘Ecosystem, Concept Of’, in Levin *supra* note 2, p.305.

²² In this work human beings are not considered as discrete observers and managers of the nonhuman nature. They (we) are considered as part of nature and have roles to play in the complex natural processes for the betterment of the whole of the Earth systems.

ones, regarding size. There is controversy on the boundary of ecosystems and usually definitions of ecosystems do not include a 'definite boundary' concept in their meanings.

The size of an ecosystem may vary from a small pond to the whole Earth. It was James Lovelock in his 'Gaia Theory' asserted that: "...life and the non-living environment are *tightly coupled*,"²³ like partners in a good marriage. This means that what happens to one partner happens to the other, and implies that all the rocks on the Earth's surface, the atmosphere and the waters have all been deeply altered by life, and vice versa."²⁴ In this theory, Lovelock explains that everything on Earth is interrelated and interconnected and the existence of life gives the Earth its characteristic features. He gives evidence for his argument that "the oxygen in the air prevents the hydrogen of water from escaping into space as it has done on Mars and Venus ..." and "the air conditioning and cloud forming capacity of dimethyl sulfide (DMS) produced by marine algae."²⁵ In many of his writings, Lovelock provides lots of evidence about how life influences the Earth's climate and the maintenance of balance of nearly all creatures. Lovelock calls this 'homeostasis', and describes that the Earth has a tremendous capacity in self-regulating and he even considers the Earth as a living organism.²⁶ Even if the theories of Lovelock seem to be controversial, recently the scientific communities appear to have come round to accepting them.²⁷ Lovelock's theories may conform to the concept of 'global ecosystem'.

The purpose of this Chapter is to show the importance of shaping human behavior so that human activities should coincide with the natural systems and contribute positively towards the survival of all life on Earth. It does not matter whether the Earth is a living organism or not for the purpose of this work; but it is certain that the Earth has the capacity to maintain things at nearly constant level (what Lovelock calls homeostasis) in the margins that are suitable for life. It has to be known that this ability of the Earth is not limitless. Earth can be seriously affected by human

²³ Original emphasis

²⁴ James Lovelock has written many short and long articles in addition to his speeches to scientific communities and university students. To get more information on this point, see for example, James Lovelock (1979) *Gaia: A New Life on Earth*, Oxford University Press, p.10, and Stephan Harding (2007), *Animate Earth: Science, Intuition and Gaia*, Green Books, p.64.

²⁵ Foreword by James Lovelock in Mary Midgley (ed) (2007) *Earthy Realism: The Meaning of Gaia*, Imprint Academic, p.1.

²⁶ For detailed discussions of Lovelock's theories and explanations, see, for example, James Lovelock (2009), *The Vanishing Face of Gaia: A Final Warning*, Basic Books, and Lovelock (1979), *supra*, note 38.

²⁷ See The Amsterdam Declaration on Global Change, <http://www.essp.org/index.php?id=41>, 08 January 2010.

activities, unless appropriate actions are made to reverse the situation. Loss of biodiversity could reduce its capacity to perform its homeostatic functions. If the Earth's homeostatic capacity is diminished, the processes that maintain the normal functioning of the ecosystems could be disrupted, which in turn has the capacity to seriously affect the whole of the environment and human civilization. To stop this situation, humans need to ensure that their activities do not unduly cause loss of biodiversity. One area of human intervention in this regard could be legal/policy consideration for the protection of biodiversity to the extent that biodiversity can function healthily and remain sustainable.

2.1.5 Cultural Diversity

There is a growing recognition now of the link between cultural and biological diversity.²⁸ It is interesting to observe that the existence of much of the world's biodiversity is in areas of cultural and linguistic diversity. A. T. Durning recognizes that, "... of the nine countries which together account for 60 percent of human languages, six of these 'centers of cultural diversity' are also 'mega diversity' countries with exceptional numbers of unique plant and animal species,"²⁹ showing the inextricable link between cultural/linguistic diversity and biological diversity. This is due to the traditional ecological knowledge (TEK) of the language communities which have lived harmoniously with their natural environment for millennia. Even within the same country, there are various TEKs from place to place depending on the cultural diversity of the local communities. Indigenous cosmologies consider that humans are part of nature and are not merely observers and users of nature.³⁰ Indigenous cosmologies are significantly different from the 'modern' thinking that is based on the separation of man and nature. This 'modern'

²⁸ On the International Day for Biological Diversity 2013, Ms. Irina Bokova, UNESCO Director-General, stated that: "[b]iodiversity is not just another factor – it is as crucial to the living world as is cultural diversity. Both sources of diversity are linked, and the future that we want to build depends on our collective ability to safeguard them both," signifying UN's concern and understanding on the link between cultural and biological diversity.

²⁹ Durning, A. T. (1992) *Guardians of the Land: Indigenous Peoples and the Health of the Earth*, cited in Darrell Addison Posey, 'Introduction: Culture and Nature – The Inextricable Link', in Darrell Addison Posey (ed.) (1999), *Cultural and Spiritual Values of Biodiversity*, UNEP, p.3.

³⁰ For detailed discussion on this point, see, for example, Posey, *Ibid.*

understanding of nature which is framed by dominant Western thinking has certain roots that reach back to the eras of Pythagoras and Plato.³¹

In contradistinction to the Western worldview, the traditional cosmologies of the indigenous peoples and/or local communities in many parts of the world do not perceive nature as something to be utilized by humans wantonly. Instead they have established and practiced a kind of relation that exists between a nourishing mother and a child.³² It is based on this traditional wisdom of these people and with the appreciation of the link between biological diversity and cultural diversity, there has been developing, since the last decade, the idea of bio-cultural diversity.³³

The introduction of cultural diversity into the realm of biological diversity widens the scope and meaning of biodiversity so that it incorporates human cultural aspects. Human cultural diversities are believed to have coevolved with biodiversity and cannot be seen in isolation from the diversity of life on Earth. It is appropriate that the meaning of biodiversity should include human cultural diversity as it broadens the understanding of biodiversity to include human cultural expressions. The cultural expressions have the capacity to enhance the relationship between humans and the rest of nonhuman nature. Enhancing the relationship between humans and nonhuman nature is a necessary step in preventing loss of biodiversity as it heightens human care and protection of nonhuman nature.

2.1.6 Evolutionary Processes

In addition to the components of biodiversity discussed above, this work considers evolutionary processes as one aspect in the meaning of biodiversity. In this regard, Ian J. Harrison *et al*, write that “[a]ny comprehensive definition of biodiversity also includes references to the [evolutionary] processes that create and maintain biodiversity.”³⁴ These writers demonstrate that the evolutionary processes have proved the intimate symbiotic relationship among organisms in

³¹ The thinking that is claimed to have separated humans from the rest of nonhuman nature is discussed in detail in Chapter 3.

³² See Cormac Cullinan (2002) *Wild Law: Governing People for Earth*, Siber Ink, pp.92-101.

³³ See for example, Luisa Maffi, ‘Bio-cultural diversity for endogenous development: Lessons from research, policy, and on-the-ground experiences’, paper presented on international conference on Endogenous Development and Bio-cultural Diversity: The interplay of world views, globalization and locality, 3-5 October 2006, Geneva, Switzerland.

³⁴ Harrison *et al*, *supra* note 7, p.4.

that the survival of one depended on the functions of others.³⁵ It is the evolutionary processes that have brought biological diversity into being. Evolution is a nonstop process that ensures the continued existence of diversity.³⁶ Sergey Gavrillets, who argues for the inclusion of an evolutionary framework as essential to understanding biodiversity states that: “[m]utation, recombination, spatial structure and gene flow, natural and sexual selection are all very important in generating and maintaining biodiversity.”³⁷ Based on these facts it is argued here that whenever biodiversity is an issue, consideration of evolutionary processes must come into the center of the issue. This is because, without evolution, there is no biodiversity. It is the evolutionary processes that have created and sustained biodiversity.³⁸ If evolutionary processes are ignored, any actions taken to protect the loss of biodiversity are inadequate and incomplete.

2.2 Functions of Biodiversity

Human beings depend on biodiversity for their survival. Many of the situations where we depend on biodiversity remain obscure, are not visible and hence have not been considered to have value in economic terms. This condition may lead us to undermine the importance of biodiversity for human existence as well as for the whole life support system. As it has been said repeatedly, the interconnections that exist in the natural world are one of the essential factors that facilitated the existence of life on Earth.

To clearly understand why biodiversity is a concern, it is important to know the various functions and values of biodiversity. In relation to the difficulty in understanding the value of biodiversity, Melina Laverty *et al* argue that “[t]he value of biodiversity is a highly subjective concept that is at times difficult to understand and often cause fierce debate.”³⁹ Many of the invaluable

³⁵ See *Ibid*, pp. 4-5.

³⁶ Dr. Melaku Worede argues that humans have no right to change the course of evolution nor should they have the right to arrest it. He claims that evolution is a nonstop process. He gives the example of seeds which are stored in the gene banks. Though there are facilities to store seeds without losing their capacity to germinate for many years, gene banks cannot ensure the performance of the seeds in the field. During the years where the seeds stayed in the gene banks, many changes have taken place and it could be difficult for the seeds to adapt to the changed environment when they are released from gene banks. The seeds which are in the field are evolving from time to time to adapt the changing environment. This is one of the proofs of the evolutionary processes. (Personal communication, 26 November 2011)

³⁷ Sergey Gavrillets, ‘Evolutionary Genetics’, in Eldridge, *supra* note 7, p. 352.

³⁸ Harrison *et al*, *supra* note 7, p.4.

³⁹ Melina Laverty, et al, ‘Why Is Biodiversity Important?’ in Eldredge, *supra* note 7, p.31.

functions of biodiversity (especially invertebrates) have been expressed by Edward O. Wilson as “little things that run the world.”⁴⁰

The functions of biodiversity may be divided into two main categories; namely, the material provision functions and nonmaterial provision functions. Human beings are beneficiaries of both types of functions of biodiversity to various degrees. It is very difficult to qualify and calculate the functions of biodiversity in life support system of the Earth and human wellbeing.⁴¹

2.2.1 Material Provision Functions

Biodiversity’s material provision functions include its source as food, medicine, clothing, and fuel. Regarding food, humans have cultivated food crops and domesticated animals since around 10,000 years ago. Very few species have been cultivated or domesticated when compared to the large number of diversity in the wild. Irrespective of this fact, “biodiversity continued to play a central role, providing the original source of all crops and domesticated animals,”⁴² making agriculture still dependent on wild biodiversity for research and the source of genetic materials. When the food provision function of biodiversity is studied, attention should not be given only to cultivated or domesticated varieties. Wild biodiversity continues to play significant roles in the food provision functions. This is true especially in the case of “fisheries, where the largest proportion goes to wild-caught fish worldwide.”⁴³ In Ethiopia, one study showed that “the edible plants of Ethiopia are estimated to account for about 8% of the higher plant species in the country. It is further analyzed that about 25% of these are cultivated as food crops and the remaining (75%) could be categorized as wild, semi-wild, or naturalized.”⁴⁴ This discloses that the future food sources are also concentrated in the wild biodiversity. That is, as humans have cultivated very few species of wild plants, many wild species are hoped to be the future source of

⁴⁰ See Edward O. Wilson, ‘Little Things that Run the World’, *Conservation Biology*, Vol. 1, No. 4 (Dec. 1987), pp.344-346.

⁴¹ On the value of biodiversity Wilson argues that: “We should judge every scrap of biodiversity as priceless.” (Edward O. Wilson (1992), *The Diversity of Life*, Harvard University Press, p.351.) Takacs also claims that biodiversity’s value to functioning ecosystems is priceless and criticizes those who are trying to calculate the value of biodiversity. According to Takacs, the value of biodiversity is ‘incalculable’. (See David Takacs, ‘Historical Awareness of Biodiversity’ in Levin *supra* note 2, Vol. 3, p.366.)

⁴² Laverty *et al*, *supra* note 39, p.33.

⁴³ *Ibid*.

⁴⁴ Zemede Asfaw and Mesfin Taddese, ‘Prospects for Sustainable Use and Development of Wild Food Plants in Ethiopia,’ *Economic Botany*, Vol. 55, No. 1 (Jan. - Mar., 2001), p. 48.

food. As a seed scientist claims, “we have now many wild species which are in a pipeline to join their cultivated relatives.”⁴⁵

In addition to their functions as food directly, both domesticated/cultivated and wild biodiversity are very important in agricultural research works for improved food production. In this respect, the contribution of the countries of the South has been great. For instance, Ethiopia has contributed many items, including yellow dwarf virus resistant barley and caffeine free coffee to the world.⁴⁶ Irrespective of its dwindling biodiversity, “Ethiopia still is center of diversity for some world’s major food plants such as barley, castor bean, coffee, onion, sorghum and wheat.”⁴⁷

In the field of medicine, “some 80 percent of the world’s people use medicines obtained directly from biodiversity.”⁴⁸ In addition to this, “many of the Western medicines were developed from a plant or animal source: 57 percent of 150 most commonly prescribed drugs originate from living organisms.”⁴⁹ Today we know that many drugs are synthesized in industries in a more efficient way, however “we still depend on the chemical structures in nature to guide us in developing and synthesizing new drugs.”⁵⁰ We may think that it is only people in the developing world that use traditional medicines directly from biodiversity. Although fewer, there are traditional medicine users in the industrialized world too. For instance, in Canada, “people of the Cree tribe use different herbal medicines for their health care and even they teach these medicinal plants in the Indian Health Studies courses.”⁵¹

Other material provision functions of biodiversity include; energy (fuel wood and lighting in rural as well as in some urban areas), timber for construction and furniture and fiber for clothing.

⁴⁵ Personal communication with Dr. Melaku Werede, Plant geneticist and seed scientist; Right Livelihood Award winner, former General Director of Institute of Biodiversity Conservation, Ethiopia, 15 December 2009.

⁴⁶ Steve Connor, ‘Caffeine-free coffee tree is discovered’, <http://www.independent.co.uk/news/science/caffeinefree-coffee-tree-is-discovered-733312.html>, accessed on 12 January 2010. Note also that Ethiopia has contributed *Coffea arabica*, as it is the native home of this coffee variety.

⁴⁷ Daniel Zohary, Domestication of Crop Plants’ in Levin *supra* note 2, Vol. 1, pp.217-227.

⁴⁸ Rômulo RN Alves and Irecê ML Rosa, ‘Biodiversity, traditional medicine and public health: where do they meet?’ *Journal of Ethnobiology and Ethnomedicine* 2007, 3:14, <http://www.ethnobiomed.com/content/3/1/14>, accessed on 22 February 2010.

⁴⁹ Lavery *et al*, in Eldredge *supra* note 7, p.34.

⁵⁰ *Ibid*.

⁵¹ Jean Goodwill, ‘Traditional Health Care in Native Canadian Communities,’ in Posey *supra* note 29, pp.270-271.

2.2.2 Nonmaterial Functions

In addition to provision of goods, such as food and medicine, biodiversity has also other indirect or nonmaterial uses also.⁵² These include the spiritual, cultural, and recreational values of biodiversity. Regarding the cultural-spiritual functions of biodiversity, traditional people and local communities around the world are exercising special spirituality in relation to biodiversity. Regarding this belief system of the traditional people, Darrel A. Posey affirms that, “they believe that they spoke the language of animals and that their shamans still have this ability... Biodiversity, therefore, means the extended family—‘all our relation’.”⁵³ This kind of belief system is not uncommon throughout the world where tribal societies are living.⁵⁴ In Ethiopia, too, there are communities who have a similar cosmology. For instance, the largest ethnic societies in Ethiopia, the Oromo people, have a wonderful world outlook in this respect. On Oromo cosmology Kelbessa writes that: “[i]n relation to the ecotheological nature of the Oromo worldview, we need to understand that the Oromo recognize some trees as sacred trees based on what are essentially *spiritual* values.”⁵⁵ According to this kind of belief system, humans and nature are a continuum and not separated and “for the Oromo also human beings are parts of nature.”⁵⁶

The other set of functions of biodiversity related to the main concern of this thesis are its ecosystem functions. Previously it was believed that biodiversity should be preserved for its potential functions; but now it is known that biodiversity is more than that. It is the source of ecosystem resilience.⁵⁷ There are a number of studies which have been conducted to show the relationship between biodiversity richness and ecosystem resilience. Although there are some sort of controversies and debates, the overall result shows that there are direct relationships

⁵² The nonmaterial functions are not separated from the material provision functions. The nonmaterial functions of biodiversity could result in quality materials. Water purification functions of biodiversity can be an example here.

⁵³ Posey, *supra* note 29, p.5.

⁵⁴ The idea of kinship between humans and nonhumans is known as ‘totemism’.

See ‘totemism’, <http://www.britannica.com/EBchecked/topic/600496/totemism>, accessed on 23 Feb 2010.

⁵⁵ Workineh Kelbessa, Discussion Paper on ‘The utility of ethical dialogue for marginalized voices in Africa’, *ibid.*, (2005), p. 12. (Original emphasis).

⁵⁶ *Ibid.*, p.6.

⁵⁷ Foreword by Partha Dasgupta in Charles Perrings *et al* (1995) (eds.), *Biodiversity Loss: Economic and Ecological Issues*, Cambridge University Press, p. ix.

between healthy ecosystem functions and biodiversity richness, even if these relationships are not linear.⁵⁸

Ecological functions of biodiversity are versatile and result from very complex processes. They include “regulation of climate and biogeochemical cycles, hydrological functions, soil protection, crop pollination, pest control ... and a number of miscellaneous services.”⁵⁹ The importance of life on Earth for the existence of water and the link between biodiversity and the atmospheric composition is discussed above.⁶⁰

The ecosystem functions of biodiversity have invaluable contributions for the human economy and the normal functioning of all Earth systems. As David Tilman, *et al* observed, “... the primary productivity of ecosystems, the amount of carbon dioxide removed from the atmosphere and stored by plants, the efficiency of resource use, and the spatial and temporal variability of productivity and resource use depend on diversity.”⁶¹ Tilman has conducted quite extensive experiments with the result of direct relations between species richness and ecosystem services up a certain level of species concentration.⁶² Based on this some ecologists considered that species in the ecosystem could be superfluous and their extinction should not be feared. But Stephan Harding asks “how are we to know which species are expendable and which aren’t? Since we cannot tell which are the keystone species, it makes more sense to protect as many species as we can.”⁶³

Tilman’s experiment has been extended by the BIODDEPTH project in eight European countries and “despite the range of climatic conditions, high biodiversity in each country was strongly

⁵⁸ There are many works in support of this proposition, for instance, see M. W. Schwartz, C. A. Brigham, *et al*, ‘Linking Biodiversity to Ecosystem Function: Implications for Conservation Ecology’ *Oecologia*, Vol. 122, No. 3 (2000), 295-305.

⁵⁹ Norman Myers, ‘Environmental Services of Biodiversity,’ *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 93, No. 7 (Apr. 2, 1996), p.2764.

⁶⁰ See Lovelock, *supra* note 24. It is also important to note here that the functions of Wilson’s ‘little things that run the world’ discussed above are in terms of their ecosystem services.

⁶¹ David Tilman, Stephen Polasky, and Clarence Lehman, ‘Diversity, Productivity and Temporal Stability in the Economies of Humans and Nature,’ *Journal of Environmental Economics and Management* 49, (2005) p. 405.

⁶² See generally Stephan Harding, *Animate Earth*, *supra* note 24, pp.211-216.

⁶³ *Ibid*, p.213.

correlated with improvements in many key ecological functions such as nutrient cycling, resistance to predators and biomass production.”⁶⁴

As these benefits of biodiversity are not usually valued in monetary terms, they may be overlooked by policy and lawmakers. However, the ecosystem functions of biodiversity are essential not only for the normal functioning of the Earth systems but also for all human activities, economic or otherwise. Ecosystem functions have more direct relevance to countries like Ethiopia where most people pursue livelihoods that depend on agriculture. Especially the soil protection function of biodiversity is a matter of life or death for the Ethiopian farming communities.

Ethiopia is a country with severe soil erosion due to loss of biodiversity and inappropriate farming practices.⁶⁵ According to a study conducted in this area:

“The average soil loss rates on croplands have been estimated at 42 t/ha/year but may also reach up to 300 t/ha/year in individual fields. This by far exceeds the natural rate of regeneration. FAO (1986) estimates that some 50% of the highlands are significantly eroded, of which 25% are seriously eroded, and 4% have reached a point of no return.”⁶⁶

The Conservation Strategy of Ethiopia (CSE) also estimated that “soil erosion in the Ethiopian highlands would reach up to 400 tons/ha/annum.”⁶⁷ Even if it is not possible to conclude that loss of biodiversity is fully responsible to such amount of soil erosion in Ethiopia, it is mainly caused by loss of vegetation cover. For the 85 percent of the Ethiopian people who live in rural areas on subsistence farming, such level of soil erosion has serious consequences. The consequences of loss of biodiversity are expressed by the CSE as:

“The Ethiopian rural environment has, therefore, got into a degeneration syndrome which starts with an accelerating devegetation leading to a loss of soil fertility, soil erosion,

⁶⁴ *Ibid*, p.214.

⁶⁵ One of the inappropriate farming practices is farming steep slopes in the highland Ethiopia. The main reason for this practice is severe shortage of farmlands in highland Ethiopia.

⁶⁶ Bekele Shiferaw and Stein Holden, ‘Soil Erosion and Smallholders’ Conservation Decisions in the Highlands of Ethiopia,’ *World Development*, Vol. 27, No. 4, 1999, p.740.

⁶⁷ CSE, Volume I; National Conservation Strategy Secretariat Environmental Protection in collaboration with Ministry of Economic Development and Cooperation, Addis Ababa, April 1996, Chapter 5 §13.1, Paragraph 293.

genetic erosion, disruption of the hydrological cycle, increased severity of the impact of droughts, and a further reduction in the ability to produce food and other biological resources demanded by the increasing human and animal populations.”⁶⁸

These conditions cannot continue for long without causing pervasive damage to the ecosystem, the livelihoods of local people and all human activities. It also seems that it is profoundly unethical to allow these conditions to continue while reversing them is a possibility. Reversing loss of biodiversity and working towards its enhancement could lead to ways of overcoming these problems.

2.3 Loss of Biodiversity

As noted earlier, loss of biodiversity can be explained in many ways. A number of studies associate biodiversity loss with reduction in species richness. This is not surprising as discussions and debates on the issue of biodiversity focus more on species than any other component of biological diversity. For instance, studies and debates focus on specific species when they are dealing with extinction. This section also addresses species richness. However, since this work is a study on general biodiversity, it is also concerned with genetic erosion, loss of ecosystem, cultural diversity and evolutionary processes. Genetic erosion is chiefly the concern of domesticated animals and plants, on which humans depend for food supply.

Loss of biological diversity can be understood as the periodical erosion or deterioration of any of its components. However it is not easy to comprehensively explain on the loss of biodiversity as there is not sufficient research on its extent. For example, it is not known how many species there are in the world today. The question becomes more difficult when it comes to genetic diversity. From this it can be seen that loss of biodiversity could occur even before humans have adequate knowledge of it.

Loss of biodiversity is one of the major global problems. Ethiopia is not an exception. The National Biodiversity Policy of 1997 states that:

⁶⁸ *Ibid*, Chapter 5, Paragraph 238. It is important to remember that it is well over two decades since these data were collected. The loss of biodiversity in the country has been more aggravated in the past two decades, as it shall be discussed in Chapter 4.

“Ethiopia, being one of the major centers of origin/diversity for many cultivated plant species, has also immense wealth of wild plant species ... However; this endowment of genetic resources is threatened by irretrievable loss of biodiversity...”⁶⁹

The Environmental Policy of Ethiopia, on the other hand, expresses its concern about the loss of biodiversity in the country as “...land, water, forests and trees as well as other forms of biodiversity, which meet the basic needs for food, water, clothing and shelter have now deteriorated to a low level of productivity...,”⁷⁰ by indicating how much this loss is creating socioeconomic problems in the country. As a country with 85 percent of its people living in rural areas, the majority of people depend directly on biodiversity for their livelihood. Loss of biodiversity has, therefore, a direct impact on the livelihood of people in addition to its influence on the wellbeing of all nonhuman nature.

2.4 Status of Biodiversity in Ethiopia

One of the difficulties in dealing with biodiversity is lack of knowledge regarding its scope and extent. In Ethiopia, the situation is even worse due to lack of organized data and detailed scientific studies on the subject. To the extent of available knowledge, Ethiopia is one of the major centers of biodiversity even by the global standard. The ecological diversity of the country is said to be unrivalled on the African continent.⁷¹

There are between 6500 and 7000 higher plant species, out of which about 12% are endemic to Ethiopia. There are about 30 cattle, 14 sheep, 14 goat, 4 camel, 4 donkey, 2 horse, 2 mule, 5 chicken and 5 honey bee breeds/strains/populations in the country. Ethiopia also has rich wild fauna including 284 mammal (29 endemic), 861 bird (18 endemic), 201 reptile (10 endemic), 188 fish (37 endemic), 63 amphibian (25 endemic) and 1,225 arthropod (7 endemic) recorded species. The actual numbers of invertebrate species is not known.⁷²

Regarding agricultural crop biodiversity, N.I. Vavilov, a Russian plant geneticist, who arrived in Ethiopia in 1920s considered the region as a great center of plant crop diversity and called it the

⁶⁹ National Biodiversity Policy of Ethiopia of 1997, §1.1.

⁷⁰ *Ibid.*

⁷¹ Convention on Biological Diversity (CBD) Ethiopia's 4th Country Report, IBC, August 2009, p.10.

⁷² See *Ibid.*, pp.8ff for more details.

‘Abyssinian gene center’. On wheat variation, Vavilov said “Abyssinia occupies the first place and on barley that there is an exceptional diversity of forms.”⁷³ That is why Ethiopia is said to be one of the great Vavilovian centers of diversity in the world.⁷⁴

The first investigators of Ethiopian biodiversity were the Italians. They came around 1840s and even Vavilov was inspired by them. They were amazed by the complexity of the ecosystem and the diversity of life in the country. They even found it difficult to classify all of the crop types and they decided to focus on wheat crop only. Of the wheat species in Ethiopia, *Triticum turgidum* had 300 varieties and *Triticum durum* had 106 varieties. Even if the origin of wheat was Asia, its evolution into different varieties was facilitated by the Ethiopian diverse ecological environment.⁷⁵ According to Dr. Alganesh, one of the reasons for the existence of wide range of biodiversity in Ethiopia is the ecological setting that has facilitated the evolution of various forms of life.

Jack R. Harlan also argues that Ethiopia remained a center of agricultural biodiversity due to “the survival of an entire agricultural system with little change from prehistoric times.”⁷⁶ As Harlan identifies, in Ethiopia, ancient methods of tillage, sowing, reaping, threshing, winnowing, dehulling and processing for consumption, all have been preserved. These traditional procedures of production and consumption are related with the traditional and ancient crop varieties.⁷⁷

There are special areas in Ethiopia, places with more endemism than many other places in the world, with rare and endemic species of animals and plants, such as the Simien Mountains and the Bale Mountains. The Simien Mountains are a UN World Heritage Site in the Northern Ethiopia. They harbor rare and endemic species like *Walia Ibex* and the Ethiopian Wolf (formerly Simien Fox). According to our present state of knowledge, close to 10% of the Simien

⁷³ GRAIN, ‘Ethiopia’s Future: Hybrids or Landraces?’, October 1992, <http://www.grain.org/seedling/?id=374>, accessed on 10 February 2010.

⁷⁴ Ethiopia is claimed to be one of the eight Vavilov centers of primary plant domestication in the world.

⁷⁵ Personal Communication with Dr. Alganesh Tessema, plant genetist, IBC, 05 September 2010.

⁷⁶ Jack R. Harlan, “Ethiopia: A Center of Diversity”, *Economic Botany*, Vol. 23, No. 4 (Oct. – Dec., 1969), p.313.

⁷⁷ *Ibid*, p.313. (It is important to note here that there are lots of changes in Ethiopia which have affected the diversity of agricultural crops.)

Mountains' flowering plants are Ethiopian endemics.⁷⁸ These areas range from below 2000 to over 4500 meters altitudinal range. This and other factors such as its topography with gorges, crests, precipices, rocks and flat areas result in a rich mosaic pattern of different habitats, which promote species richness and diversity. Moreover, the (micro) climatic differences which result in “wet” and “dry” types of afro-montane forests contribute to the biodiversity of the area.⁷⁹ There is still the possibility of discovering new species in the Simien Mountains. This is proved by the collections made between 1996 and 1999, which resulted in the discovery 19 new species of plants.⁸⁰

In the Simien Mountains, there are a number of charismatic flagship species, most notably the gelada (an endemic genus and the world's only grazing primate), the Mountain Nyala (an antelope endemic to the Afroalpine ecosystem), the Ethiopian wolf (a palaeartic descent from a wolf-like ancestor that crossed into the Ethiopian highlands just over 100,000 years ago), and the Walia Ibex (another palaeartic species confined to areas in the Simien Mountains).⁸¹

Even though Ethiopia encompasses a broad range of ecosystems with high faunal diversity, information on terrestrial fauna as a whole is limited to mammals, birds, reptiles, amphibians, and a few groups of arthropods. The variety of species and great proportion of endemism within the groups, particularly in the highlands, are the result of the isolation of Ethiopia's highland areas from other highlands within and outside the country by the surrounding lowlands.⁸² Moreover, Ethiopian protected areas harbor genetic resources of global importance. A notable example is the wild coffee found within the forests of southwest and south-central Ethiopia. Ethiopia is the origin of coffee and the center of endemism, and thus the center of coffee genetic diversity, which is valuable to coffee growers all over the world. Studies have indicated, for example, that “the potential international value of the genetic variation in wild coffee harbored in the natural forests of Ethiopia amounts to between US\$0.5 and 1.5 billion per year.”⁸³

⁷⁸ C. Puff and Sileshi Nemomissa (2001), ‘The Simien Mountains (Ethiopia): Comments on Plant Biodiversity, Endemism, Phytogeographical Affinities and Historical Aspects’ *Systematics and Geography of Plants*, Vol. 71, No. 2, p

⁷⁹ *Ibid*, p.980.

⁸⁰ *Ibid*, p.982.

⁸¹ Jonathan McKee (2007), *Ethiopia: Country Environmental Profile*, p.40.

⁸² USAID (2008), *Ethiopia Biodiversity and Tropical Forests*, pp.22-23

⁸³ *Ibid*, p.24.

In terms of estimated livestock population, the country holds first, second and third positions in cattle, sheep, and goat populations in Africa, respectively. Ethiopia also ranks third in livestock population in the world. Regarding the equine population, Ethiopia has 32.4 percent of Africa's donkeys, 41.6 percent of its horses, and 65 percent of its mules.⁸⁴

Another magnificent site of ecosystem diversity is the Bale Mountains, which contains within it a national park, the Bale Mountains National Park (BMNP). The park has a number of Ethiopia's highland endemic species and many species not found elsewhere in sub-Saharan Africa.⁸⁵ The Afroalpine moorland in this park, which is the largest Afroalpine region in Africa, is extremely rich in endemic plants, with predictions of 30% endemism.⁸⁶ The Bale Mountains montane moorlands which lie above the tree line consist of grassland and moorland with abundant herbs and some shrubs. The park harbors more than 265 species of birds with 6 Ethiopian endemics and many threatened species;⁸⁷ 80 mammals, with 17 endemics; and about 1,300 plants, with 163 endemics. The area also is the catchment for 40 springs and rivers that leave the park which are critical to some 12 million downstream users living along the rivers.⁸⁸ It can be said that the Bale Mountains are a center of endemism and the endemic species include the Ethiopian wolf (the rarest canid in the world).⁸⁹

Ethiopian biodiversity, especially its genetic diversity has contributed greatly to the world. This was well recognized with collections undertaken by Vavilov in the 1920s and used widely by breeders in the Soviet Union. It is also believed that much of the material was subsequently made available to breeders in Germany and other European countries.⁹⁰ At least 1800 wheat accessions retrieved from gene banks in the USA, Germany and Italy are currently being stored at CIMMYT. In the early 90s, six Ethiopian durum wheat varieties were known to be used in

⁸⁴ Institute of Biodiversity Conservation, National Biodiversity Strategy and Action Plan (2005), §2.1.5.3.

⁸⁵ 'Ethiopia: Hotspots', <http://www.africanbirdclub.org/countries/Ethiopia/introduction.html>, accessed on 08 October 2010.

⁸⁶ 'Bale Mountains National Park' BirdLife International Factsheet ET054, <http://www.birdlife.org/datazone/sitefactsheet.php?id=6288>, accessed on 08 January 2010.

⁸⁷ *Ibid.*

⁸⁸ USAID *supra* note 82, p.30.

⁸⁹ *Ibid.*

⁹⁰ Hawkes J.G. and Worede M (1991), *Use of Ethiopian Germplasm in National and International Programs*, Cambridge University Press, cited in McKee *supra* note 81, p.46.

CIMMYT breeding programs.⁹¹ Over 400 wheat accessions, mainly tetraploid, collected in the 70s are currently stored in the germplasm institute in Bari, Italy.⁹²

The evaluation of Ethiopian barleys shows characters such as resistance to barley yellow dwarf virus, powdery mildew, net blotch and loose smut as well as high protein quality, high tillering quality, tolerance to marginal soil conditions and vigorous seedling establishment. More than one-third of total barley collections available worldwide, totaling nearly 4500 accessions, originated in Ethiopia, ICARDA alone possesses nearly 2500 accessions.⁹³

American plant breeders made extensive use of Ethiopian barley accessions and of their resistance to the dwarf yellow virus to produce new varieties for the North American barley sector. In California alone, the loss reductions and the corresponding savings resulting from dissemination of the improved varieties have been estimated at USD 160 million/year.⁹⁴ Ethiopian biodiversity still continues to serve the world in providing disease resistant varieties. Regarding the recent rapid spread of the barley stripe rust (BSR) in North America, Jackson states that:

“Once stripe rust entered the U.S. it was evident that most available commercial cultivars were highly susceptible. Thus, a major effort to identify germplasm with resistance was begun....Many sources of resistance were identified. *Germplasm from Ethiopia was particularly useful* (Emphasis added).”⁹⁵

Even for Africa, Ethiopia’s contribution is significant. Regarding Ethiopia’s contribution in this regard, McKee states that:

“4500 accessions of Ethiopian sorghum stored in ICRISAT have largely contributed to several successful West African sorghum development programs. ICRISAT further holds 300 accessions of Ethiopian millets, 900 accessions of Ethiopian chickpea while 375 accessions of Ethiopian lentils are held in ICARDA ... value of Ethiopian germplasm as well as its contribution to world

⁹¹ *Ibid.*

⁹² *Ibid.*

⁹³ *Ibid.*

⁹⁴ WCMC (1992), *Global biodiversity: status of the Earth’s living resources*, Chapman and Hall, London, cited in McKee *supra* note 81, p.47.

⁹⁵ Lee Jackson, ‘Barley Stripe Rust: the California Front’, Proceedings of the 34th Barley Improvement Conference, January 2003, San Francisco, p.21.

food security and supply become quite simply staggering, with income streams in excess of USD 1 billion/ year.”⁹⁶

With respect to aquatic ecosystems, Ethiopia again possesses rich biological diversity, even though the country is presently land-locked. The country is endowed with inland aquatic resources including over 20 natural lakes, 12 large river basins, over 70 wetlands and many reservoirs. In these inland water bodies, there is numerous animal, plant and microbial diversity. As studies on the status of biological diversity in the aquatic environments indicate, there are quite large numbers of invertebrate species in these environments and the level of endemism of these species is also significant.⁹⁷ Generally in the country’s aquatic ecosystem, there are over 180 fish species of which some 30 to 50 are endemic.⁹⁸ In this regard, Lake Tana is unique for its *Barbus* flock, as this is the only remaining stock after the demise of similar population in Lake Lanao (the Philippines).⁹⁹

Conclusion

This chapter examined relevant information on biodiversity which will serve as foundational input for the remaining chapters. Firstly it invited a consideration of biodiversity meaning that includes diversity as influenced by the evolutionary process. It highlighted the broader understanding of biodiversity so as to pave the way for its protection in a more holistic, integrated way than a piecemeal protection approach. It is believed that such a level of understanding is necessary to enhance the relationship between humans and nonhuman nature which in turn further facilitates the protection of biodiversity. The chapter also asserted that all of the component parts of biodiversity which give it this wider meaning are equally important and need equal attention if loss of biodiversity is to be halted or significantly reduced.

Secondly, the functions of biodiversity are presented in a way that demonstrates the Earth’s ecological systems are operating in a holistic manner which gives the Earth its characteristic features so that it acts like a living organism. This feature has created favorable conditions for

⁹⁶ McKee *supra* note 81, p.47.

⁹⁷ See Seyoum Mengistou, ‘Status and Challenges of Aquatic Invertebrate Research in Ethiopia: A Review,’ *Ethiopian Journal of Biological Sciences*, Vol. 5 No. 1, 2006.

⁹⁸ NBSAP *supra* note 84, p.17

⁹⁹ *Ibid.*

life to proliferate through long time evolutionary processes. The contribution of life in maintaining the Earth's system is also seen as significant. This contribution of life to the whole of the Earth's system is seen as the result of the ecological functions of biodiversity in its evolutionary context.

Thirdly, the discussion of the status of biodiversity in Ethiopia established the fact that while the country is still biodiversity rich, threats to its biodiversity viability are on various fronts. Human activities, mainly agricultural activities, are the major causes of loss of biodiversity in Ethiopia. It looks from the prevailing pace of loss of biodiversity in Ethiopia and the strength of the sources for this loss, that the future of biodiversity is precarious, unless rapid and effective measures are taken to stop such loss by rethinking the philosophy of biodiversity protection.

In Ethiopia, as it is elsewhere, loss of biodiversity is to a great extent caused by human activities. Human activities become the major cause of loss of biodiversity when humans focus on their short-term gain without giving sufficient attention to their long-term relationships with other species. There is a growing lack of concern for the wellbeing of nonhuman nature. The type of relationship that humans establish with the nonhuman nature is believed, posited by this work, to be one of the major causes for the demonstration of a lower level of concern for nonhuman nature by humans. Anthropocentrism is the dominant type of paradigm that humans develop for the purpose of governing their relationships with nonhuman nature. This paradigm advocates that humans are at the center of everything and also believes that nonhuman nature is there only for human benefit. It cultivates the perception that, humans can wantonly destroy the nonhuman nature without the necessary and equivalent consequences. The next chapter deals with this world view in the context that the dominant conception of anthropocentrism has contributed considerably to the loss of biodiversity.

CHAPTER 3

THE CONCEPTION OF SEPARATION AND HUMAN DOMINION OVER THE NONHUMAN NATURE

Introduction

In Chapter 2 it was asserted that loss of biodiversity is occurring in a more rapid rate now than at any time in the history of humankind and that such loss is caused, to a large extent, by human activities. It was also indicated that the relationship humans have established with nonhuman nature determines the fate of biodiversity. This chapter argues that human-nonhuman relationship is governed by a dominant Western paradigm of anthropocentrism which is responsible for the aggravation of loss of biodiversity. The chapter also demonstrates how anthropocentrism influences human relationship with the rest of nature to the detriment of the latter. It contends that humans' relations with nonhuman nature are framed by this dominant thinking,¹ which is founded on the perception that humans are not necessarily connected to nature yet they are at the center of all nature. The chapter also shows how the conceptions of separation and human dominion have served as a springboard for the emergence and growth of an anthropocentric worldview, which later influenced the type of relationship that existed between humans on the one hand and the nonhuman nature on the other. It further highlights the influence of certain religious teachings in strengthening anthropocentric views and the consequent acts of humans that led to ecological crisis. It argues that the emergence of the Scientific Revolution, the scientific method and the industrial revolution have contributed to growth and development of what is referred to as the Western culture. The chapter finally examines international and national environmental/biodiversity protection legal and policy instruments for their anthropocentric features which frame this legacy. Based on this examination, it further contends that the dominant model of protection of biodiversity is contained within anthropocentric framework of human thinking. That is, all activities of biodiversity protection are influenced by this worldview of humans' separation from the rest of

¹ In this work 'dominant thinking' stands for the state of mind originated and/or developed in the Western world and spread to various parts of the world. It is also argued here that this state of mind imposes its values on other cultures.

nature and their dominance and mastery over nonhuman nature. In other words, current protection of biodiversity is designed so that it could conform to these dominant worldviews. As a result, either insufficient effort has been made by humans to protect biodiversity or the efforts which have been made focused more on anthropocentric values than those values which could well protect biodiversity and the whole of the Earth's system.²

3.1 Anthropocentrism

Anthropocentrism literally means human-centeredness and is a worldview that asserts only humans have intrinsic values and that the rest of nonhuman nature is merely instrumental for the satisfaction of human interests; thus human interests always trump the interests of nonhumans and the environment. It also posits that humans are at the center of the universe or the ends of creation.³ These conceptions of anthropocentrism have led to the dominant thinking that humans are separate from, instead of a part of the natural system. Contrary to the tenets of anthropocentrism, the Earth's systems operate in a holistic manner by engaging all of its inhabitants, including humans. Anthropocentrism, therefore, is based on two central ideas; separation and human mastery over the nonhuman nature to promote its tenets.

The notion of separation in the dominant 'Western' thinking can be ascribed to the times of Plato. Plato believed that "mind, acting on matter, is absolutely separate from it,"⁴ misrepresenting the interconnectedness and coordinated functions of the mind and the body. As it can be seen later in this chapter, this idea of Plato impacted significantly the relations between humans and nature.

The idea of individual nature of existence proposing that everything consists of insular, understandable parts influences the development of anthropocentrism.⁵ This reductionist view posits that parts of a whole can have independent existence that it is possible to study and

² This work proposes a value other than anthropocentrism for the protection of biodiversity, ecocentrism, which will be highlighted in detail in Chapter 5.

³ Ben Minter, 'Anthropocentrism' in J. Baird Callicott and Robert Frodeman (Editors-in-Chief) (2009), *Encyclopedia of Environmental Ethics and Philosophy*, Vol. 1, Gale Cengage, pp.58-59.

⁴ Edward Hicks (1896), *Traces of Greek Philosophy and Roman Law In The New Testament*, Society For Promoting Christian Knowledge, London, p.23.

⁵ See Descartes R., (1983) *Principles of Philosophy*, 51st section, cited in Alexander Gillespie (1997), *International Environmental Law, Policy, and Ethics*, Oxford University Press, p.6.

understand those parts at an individual level, without necessarily considering them as part of a whole. This is the central idea of atomism that advocates for conceptual individualism that sees all things as isolated and individual units.⁶ This counters the features of nature that are interconnected and functioning in a systemic manner. As this chapter will argue, this worldview influenced the scientific world and shaped human behavior to act in a detrimental way against the natural environment. In other words, the application of these theories had not been restricted to individual atoms but rather has shaped human relations with nonhuman nature.

It appears that the human-nature dichotomy is created due to the unique feature of humanity's rationality. It is true that we humans have unique capabilities like language, tool-making, and rational thinking. It is based on these unique features of humans that moral philosophers from Plato to Rawls have spent considerable energy explaining what makes human beings so special and what makes us and us alone worthy of moral treatment.⁷ The argument in this chapter, however, is that uniqueness is not only characteristic of humans. In nature, all organisms have their own uniqueness. There is no valid reason to give the uniqueness of humanity a special quality for the purpose of ignoring uniqueness of the rest of nature for moral treatment. Other organisms also have unique capabilities which we humans do not. In this regard, Warwick Fox points out that there are countless functions that other animals do better than us.⁸ However, the cumulative capacity of humanity to change the world around us is enormous as compared to other organisms. This is primarily the result of our rationality and our body structure.⁹ It is also argued here that this human uniqueness has been misused and led to human dominion over nature, rather than being utilized in a responsible manner to support the natural processes that in turn maintain all life on Earth. This means that this enormous human capacity could have been

⁶ See Peter Marshall (1992), *Nature's Web: An Exploration of Ecological Thinking*, 6971, cited in Gillespie, *Ibid*, p.7.

⁷ Michael E. Zimmerman (2001) 'General Introduction' in Michael E. Zimmerman (et.al.) *Environmental Philosophy: From Animal Rights to Radical Ecology* (3rd ed.) Prentice-Hall, Inc., p.9.

⁸ Warwick Fox (1990), *Toward a Transpersonal Ecology: Developing New Foundations for Environmentalism*, 15-17 cited in Robyn Eckersley, (1992) *Environmentalism and Political Theory: Towards an Ecocentric Approach*, UCL Press, London, p.49.

⁹ Our opposable thumbs and the structure of our backbone, in addition to our mental capacity, enabled us to affect the environment more than others do. See 'The Importance and Evolutionary Significance of the Opposable Thumb',

http://www.associatedcontent.com/article/261705/the_importance_and_evolutionary_significance.html, accessed on 10 October 2009.

utilized as trustee and guardian to support and sustain the nonhuman nature for the mutual benefit of all.

Equally important to discuss is the centrality of humans over the whole of the universe. This view places humanity in a superior position in its relation to nonhuman nature. The idea proposed by Protagoras that “[m]an is the measure of all things,”¹⁰ describes this supremacy. Regarding the mastery of humans over the nonhuman nature, Aristotle asserted that “nature ... has made all animals for the sake of man.”¹¹ He also continued saying in his *Politics* that “plants are created for the sake of animals, and the animals for the sake of men,”¹² showing the purpose of all nonhuman nature is simply satisfying the needs of the superior beings, with no other purpose of their own. This position is also attributed to Francis Bacon, whose importance and influence stretches from the Enlightenment to the present day.¹³ He stated that, “humanity would subdue nature with all her children, to bind her to service, and to make her a slave.”¹⁴ Bacon, who lived and worked during the birth of ‘modern’ science and technology, clearly indicated his wishes and hopes that the powers of humans would make the whole of nature a slave for serving their interests. The relationship between humans and nonhuman nature would be of a master-servant kind. It can be imagined from the works of these thinkers that nonhuman nature is simply a collection of chattels in which human-nature relationship is explained only in terms of property relations.¹⁵

Fichte also argued: “I will be the Lord of Nature, and she shall be my servant. I will influence her according to the measure of my capacity, but she will have no influence on me.”¹⁶ Fichte’s argument combined both the separation of nature and humanity and human dominance over nature. According to him, only humans have the capacity to influence nature but not the other way round.

¹⁰ Protagoras, cited in Gillespie, *supra* note 5, p.4.

¹¹ Aristotle, *Politics*, cited in Gillespie, *supra* note 5, p.12

¹² Aristotle, *Ibid*, cited in John Passmore (1974) *Man’s Responsibility for Nature*, Gerald Duckworth and Co. Ltd., p.14.

¹³ Leiss, W. (1972), *The Domination of Nature*, cited in Gillespie, *supra* note 5, p.12.

¹⁴ Bacon, F., *Novum Organum* (1620), Book 1, XV; *Essays; The Wisdom of the Ancients and the New Atlantis* (Oldham Press, 1977), 134, 166, cited in Gillespie, *supra* note 5, p.13.

¹⁵ Even in property theory human relation is not with the property but with other humans.

¹⁶ Fichte, J. G. (1946), *The Vocation of Man*, Routledge, cited in Gillespie, *supra* note 5, p.13.

Anthropocentric thinking which was cultivated by the notions of human-nature dichotomy and mastery of humans over nature is not only limited to the philosophical world but also to other aspects of societal life. It has profoundly influenced human behavior towards the nonhuman nature.¹⁷ For instance, as Mary Midgley concludes, the notion of human dominance over nature escalates to exploitation and even warfare against nature.¹⁸ For Midgley, anthropocentrism is a “simple *human chauvinism, narrowness of sympathy*, comparable to national or race or gender chauvinism. It could also be called exclusive humanism, as opposed to the hospitable, friendly, inclusive kind.”¹⁹ Here Midgley is criticizing anthropocentrism for its exclusive concern for humanity by not extending a mutual relationship with the rest of nature. Daniel Quinn’s statement, “if the world was made for us, then it belongs to us and we can do what we damn well please with it,”²⁰ also tells us how much the present day mindset is guided by destructive intentions towards the natural world.

3.2 Religious Teachings

The concepts of separation and dominion of humans over nature which are the pillars of anthropocentric views are also common in the teachings of various modern religions.²¹ In Christian religious teachings, the concept of human dominion over nonhuman nature has emanated from the book of Genesis of the Holy Bible which states:

“And God went on to say: “Let us make man in our image, according to our likeness, and let them have in subjection the fish of the sea and the flying creatures of the heavens and

¹⁷ In this work human behavior can be explained in terms of human values, interests and thoughts. Although this chapter argues that anthropocentric view is one of the major causes of loss of biodiversity, it does not argue that human beings, by being guided anthropocentric notions united against nonhuman nature. There are lots of injustices among human beings themselves based on power, gender, property and other differences.

¹⁸ Mary Midgley, ‘The End of Anthropocentrism’, in Robin Attfield and Andrew Besley (1994) *Philosophy and the Natural Environment*, Cambridge University Press, p.104.

¹⁹ *Ibid*, p.111. (Original emphasis)

²⁰ Daniel Quinn, *Ishmael: An Adventure of the Mind and Spirit* (1995) 21, cited in Peter Burdon (2011), *Earth jurisprudence: Private Property and Earth Community*, PhD Thesis, The University of Adelaide, p.47.

²¹ Only the viewpoints of Christianity and Islam are discussed here briefly, as these are the commonest religions in Ethiopia.

the domestic animals and all the earth and every moving animal that is moving upon the earth.”²²

This biblical verse is interpreted to prescribe both separation and dominion. Man was made in the image of God and hence unique from the rest of the creation of God, which was not created in God’s image.²³ Man also got the blessing of subduing the Earth with all its inhabitants.²⁴ These biblical grounds were used by some thinkers for the distinction between humans and the rest of nature. According to Michael Northcott, a significant number of thinkers have based the distinction between humanity and the rest of creatures “on religious grounds in Western Christianity such as Augustine and Thomas Aquinas who have emphasized the dominion over Creation given to Adam and Eve as creatures made in the image of God.”²⁵ For instance, in the fifth century St. Augustine argued that “[t]here is no legal or moral tie of any kind between man and animal.”²⁶ Here St. Augustine emphasized the separation between humans and other animals in that, humans are not necessarily connected to animals and have no obligation to care for the latter, because humans are superior to animals and treat them (animals) without any legal or moral responsibility. Analyzing the views of St. Augustine, Passmore writes, “[e]ventually Augustine came to the conclusion that God was quite unconcerned about the human treatment of Nature, and was only concerned with issues involving people and the Church.”²⁷ According to St. Augustine, God cares only for humans but not the rest of His creation, as He created the latter only for the enjoyment of the former. It is not difficult to imagine the implications of Augustine’s teaching in the relationships that humans create with nonhuman nature.

²² New World Translation of the Holy Scriptures, Watchtower Bible and Tract Society of the New York Inc., Genesis 1: 26. (Unless otherwise stated, citations are from this source.)

²³ And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul. [Genesis 2: 7, King James Version] It is this breath of God that seemed to have led thinkers and religious teachers to believe that only man has an immortal soul. For instance, Descartes argued on this line. (See René Descartes (1976), *Discourse on Method and the Meditations*, Penguin, cited in Gillespie, *supra* note 5, p.11.)

²⁴ See Genesis 1:28.

²⁵ Michael Northcott, ‘Christianity’, in Callicott and Frodeman, *supra* note 3, p.149.

²⁶ Augustine, *The City of God* (Clark, Edinburgh, 1877), p.31, cited in Gillespie, *supra* note 5, p.74.

²⁷ Passmore, p.143, cited in *Ibid*, p.74.

St. Thomas Aquinas also suggested that: “[i]t matters not how man behaves to animals, because God has subjected all things to man’s power.”²⁸ In relation to this ‘absolute’ power of humans on the nonhuman nature, Aquinas argued that the only reason for which humans should be concerned about cruelty to animals, is that it may lead to cruelty against humans. He continues writing, “[t]hrough being cruel to animals, one becomes cruel to men.”²⁹ On this account Aquinas’ concern was avoiding a cruel treatment to animals not for the sake of the animals themselves but for the sake of humans. Similar teachings are found in the writings of the sixteenth century Cornelius Agrippa. He argued that “[m]an has a supreme destiny beyond the common range of other creatures,”³⁰ indicating the dichotomy between humans and the rest of nature.

The teachings of these and other thinkers have influenced the worldviews of various societies in the world, especially in Christian dominated societies. They have also contributed to undermining interconnectedness in nature that has facilitated the existence of all life on Earth. Based on these conceptions humans gave a different and special value for themselves; expressed in great importance and self-love at the expense of others. Self-love is not in itself a problem. In this regard, Joseph Butler contends “the trouble with human beings is not really that they love themselves too much; they ought to love themselves more. The trouble is simply that they don’t love others enough.”³¹ The argument in this chapter aligns Butler’s contention. The source of the problem of loss of biodiversity does not merely lie in self-love of humans, but it lies in giving less significance to biodiversity. That is, while humans have the capacity to reverse loss of biodiversity by developing a system that could facilitate the harmonious coexistence of all life on Earth, they failed to do so. Humans’ self-idolizing and lack of respect and concern for the rest of nature has shaped or defined the type of relationship that humans established with nonhuman nature. With terrific capacity to affect his environment and other creatures, with enormous self-love and self-importance and with little consideration for others, the human has continued to be a

²⁸ Thomas Aquinas, *Summa Contra Gentiles*, in the *English Dominican Fathers* (Burns and Oates, 1928), Vol. 1, Q 64.1 and 65.3, cited in *Ibid*, p.74.

²⁹ *Ibid*.

³⁰ Cornelius Agrippa, ‘On the Occult Philosophy’, in George Hersey (1976), *Pythagorean Palaces*, Cornell University Press, p.904.

³¹ Joseph Butler (1969) *Butler’s Sermons*, cited in Midgley, ‘The End of Anthropocentrism?’ in Attfield and Belsey, *supra* note 18, p.103.

threat to nonhuman nature.³² On the other hand, if this great capacity is guided in the right direction, the human has the ability to reverse problems of loss of biodiversity for the good of all – where all life forms lead a decent life.

Religious teachings were not independent from thinking and teachings of ancient and medieval philosophers and they influenced each other to a large extent. The influences of philosophers and thinkers on the religious teachings were not unidirectional. They were complex and in many instances indirect. Greek philosophy had greatly influenced the Roman legal system. On the other hand, “the Roman Catholic Church has been influenced substantially by Roman legal theory.”³³ Individual thinkers’ influence was also significant. For instance, “Plato was a major influence on the Church, particularly through Augustine and his successors.”³⁴ St. Thomas Aquinas “applied Aristotelian Categories to theology, in an attempt to develop it into a logical system. It is widely believed that Aquinas based his theology on Aristotle and in the process developed an Aristotelian theology.”³⁵ Addressing the relationship between Aristotle and Aquinas, Ralph McInery notes: “[i]t has been said that without Thomas, Aristotle would be mute; it can equally well be said that without Aristotle, Thomas would be unintelligible.”³⁶ These facts show the roles played by both the Christian Church and the ancient and medieval period philosophers in influencing each other in strengthening and disseminating human separation from the rest of nonhuman nature and their dominion over the latter.

The Christian Church also played a pivotal role in shaping the Western culture, especially the medieval Western culture. This is demonstrated in the dominant legal, societal, psychological and attitudinal framing which emerged from the West. One is the major influence of Church teaching. The Christian religion, due to its closeness to the Western culture, has largely contributed in the furtherance of the conception of humanity’s mastery and dominance over nature in the West. As Lynn White argued, especially in its Western form, “Christianity is the

³² This does not, however, mean that humans will benefit indefinitely from these activities. Eventually, all organisms, including humans will be affected from these human activities.

³³ Gordon Arthur (2006) *Law, Liberty and Church*, Ashgate Publishing Company, p.4.

³⁴ *Ibid*, p.59.

³⁵ *Ibid*, p.191.

³⁶ Ralph McInery, St Thomas Aquinas (1977) 30, cited Burdon, *supra* note 20, p.59, (Note 83).

most anthropocentric religion the world has seen.”³⁷ White criticizes Christianity for establishing a dualism of man and nature by destroying the ancient pagan animism and thereby facilitating the exploitation of nature by man.³⁸ From White’s analysis it is evident that the conception of man’s mastery over nature and human-nature dualism has assisted ecological degradation and loss of biodiversity by man.

It could be safely concluded that, encouraged by Christian teachings and the views of prominent ‘Western’ thinkers, humans have toiled very hard for their wellbeing at the expense of the rest of nature. On this account, theologian Gloria Schaab writes:

“It is a particular interpretation of this command to subdue and to have dominion that seems to have given license to the human community to ravage and despoil the natural environment. It enables human beings to look upon the environment as having only instrumental value – that is, as valuable solely in terms of what it supplies the human being.”³⁹

The cumulative effect of all these views motivated humans to believe that, as Berry contends, “[a]ll the world was for humans, humans were for themselves.”⁴⁰ Berry’s contention evidently tells us the type of relationship that humans established with the natural world. That is, the relation based on unidirectional exploitation of nature by humans without the necessary care, in a responsible manner, to nature. So long as human-nature relation is guided by such a philosophy, it is not surprising that nature ended up in ecological crisis; one of the manifestations is loss of biological diversity.

Religious teachings which have facilitated ecological crisis are not limited to Christianity. Though not as much as Christianity, Islam has also been criticized for being anthropocentric and for valuing nature instrumentally.⁴¹ The bases for these critiques were verses from the Qur’an. The Qur’an has nearly similar statements as the Bible about man’s supremacy over all other creatures, including the angels. Qur’an 2: 34 states that: “And behold, We said to the angels:

³⁷ Lynn White, ‘The Historic Roots of Our Ecologic Crisis’, *SCIENCE*, 10 March 1967, Volume 155 No. 3767, p. 1205.

³⁸ *Ibid.*

³⁹ Gloria Schaab, ‘Beyond Dominion and Stewardship’, in Peter Buron (ed.) (2011), *Exploring Wild Law: The Philosophy of Earth jurisprudence*, Wakefield Press, p.107.

⁴⁰ Forward by Thomas Berry in Cormac Cullinan (2002), *Wild Law: Governing People for Earth*, Siber Ink, p.ix.

⁴¹ See, for instance, Richard Foltz, ‘Islam’, in Callicott and Frodeman, *supra* note 3, p.534.

‘Bow down to Adam’ and they bowed down.”⁴² The Qur’an also states that: “We have indeed created man in the best of molds,”⁴³ showing man’s superior position and the difference between humans and other nonhuman organisms. With respect to the creation of man in the image of God, Nomanul Haq claims that the Qur’an, unlike the Bible which explicitly declares the creation of man in the image of God, reflects this idea by implication.⁴⁴ In this regard, Nomanul cites several verses from Qur’an in support of his argument that the entire bounty of nature has been created for the sake of human beings.⁴⁵ Like the Bible, “[w]ithin the hierarchy of Creation, the Qur’an [also] depicts humans as occupying a special and privileged status.”⁴⁶

Both Christianity and Islam, though they do not take exclusive responsibility, have contributed their share in shaping societal attitude and for the rise of the myth of separation of humans from nature and their dominion over the natural world. Irrespective of these facts, some writers argue that it is not the essence of the Holy Scriptures but the way they are interpreted and applied that has contributed to the development of the notions of separation between humans and nature as well as human dominion over nature.⁴⁷ This perspective, where the Holy Scriptures support the systemic functions of Earth by placing humans as part of nature, and giving them special responsibility to care for all creatures on Earth rather than masters to wantonly destroy nature, will be discussed in Chapter 5. It is one of the central points of this work that humans have nonreciprocal responsibilities towards the nonhuman nature so as to have an Earth that belongs to all and is a safer place for all.

⁴² Abdullah Yusuf Ali, *The Meaning of Glorious Qur’an: Text, Translation and Commentary*, www.islamicbulletin.org, accessed on 07 February 2011.

⁴³ *Ibid*, 95: 4.

⁴⁴ S. Nomanul Haq, ‘Islam’, in Dale Jamieson (2001), *A Companion to Environmental Philosophy*, Blackwell, p.111. Qur’an 15: 29 states that: “When I have fashioned him (in due proportion) and breathed into him of My spirit,...” In his commentary to this verse of the Qur’an, Abdullah explains that the breathing of Allah’s Spirit into man, i.e., the faculty of God-like knowledge and will, which, if rightly used, would give man superiority over other creatures. (See Ali, *supra* note 42, p.167.)

⁴⁵ See *Ibid*, p.111.

⁴⁶ Richard Foltz (2006), *Animals in Islamic Tradition and Muslim Cultures*, Oneworld, p.15.

⁴⁷ For instance, see Gillespie, *supra* note 5, and Roderick Nash (1989), *Rights of Nature: A History of Environmental Ethics*, University of Wisconsin Press.

3.3 The Scientific Revolution and 'Modern' Knowledge

Cormac Cullinan considers the period of the Scientific Revolution as a time where, “in European history the rise of myth of separation from nature appears to be strongly associated with a change, in people’s image of nature from that of a nurturing mother to that of a machine.”⁴⁸ The works of Galileo Galilei, Francis Bacon, René Descartes and Isaac Newton have contributed significantly in the development of the myth.⁴⁹

Galileo revolutionized “natural philosophy from a verbal, qualitative account to a mathematical one by his insistence that the book of nature was written in the language of mathematics (circles, squares, and triangles.)”⁵⁰ by making the scientific world focus on the mechanical and mathematical features of the natural world by ignoring its qualitative and intrinsic values.

The empiricist philosopher Francis Bacon is credited for developing the empirical method of science. Commenting on the works of Bacon, Cullinan writes: “[h]is [Bacon’s] writings graphically illustrate how by the 17th century some human societies and scientists in particular, no longer saw the Earth as a bountiful mother but rather as a female to be dominated and enslaved.”⁵¹ Building on the philosophy of Galileo, Bacon advocated a ‘violent shift in perspective’, rejecting all information received through subjective sources such as faith or experience and relied only on knowledge gained by scientific inquiry.⁵² Bacon worked hard to make science and technology control and dominate nature.⁵³ Moreover, he was an advocate of humans’ mastery over nature and advanced the idea that the existence of the nonhuman nature is merely for the service and enjoyment of man. He writes:

“Man, if we look to final causes, may be regarded as the center of the world; insomuch that if man were taken away from the world, the rest would seem to be all astray, without aim or purpose, ... and leading to nothing. For the whole world works together in the service of man; and

⁴⁸ Cullinan, *supra* note 40, p.23.

⁴⁹ *Ibid*, pp.23-24.

⁵⁰ ‘Galileo Galilei’, <http://www.crystalinks.com/galileo.html>, accessed on 07 September 2009. See also Callicott and Frodeman, *supra* note 3, p.87.

⁵¹ Cullinan, *supra* note 40, p.25.

⁵² Burdon, *supra* note 20, p.61.

⁵³ See Philip J. Cafaro and Richard B. Primack, ‘Ethical Issues in Biodiversity Protection’ in Simon Asher Levin, Editor-in-Chief (2009) *Encyclopedia of Biodiversity*, Vol. 2, p.605.

there is nothing from which he does not derive use and fruit ... insomuch that all things seem to be going about man's business and not their own."⁵⁴

Lovejoy states that this was an elaboration of Bacon on the theme, "[a]s man is made for the sake of God, namely, that he may serve him, so is the world made for the sake of man, that it may serve him."⁵⁵ To fulfill this service to humans, Bacon wished and wrote:

"I come in very truth leading you to nature with all her children to bind her to your service and make her your slave...the mechanical inventions of recent years do not merely exert a gentle guidance over Nature's courses, they have the power to conquer and subdue her, to shake her to her foundations."⁵⁶

According to Hwa Yol Jung, "Bacon masterminded and spearheaded an industrial civilization grounded firmly on scientific and technological advancement."⁵⁷ Bacon laid the foundation that the new development in science and technology would enable humans or scientists to 'torture' nature to reveal her secrets and extend their dominion over inert nature.⁵⁸

The other influential thinker who was perceived as father of modern philosophy was René Descartes. Descartes is famous for his proposition "I think therefore I am", in which he perceived "everything outside his own identity had a questionable existence ... that the 'outside' surroundings were not important to his material dependence."⁵⁹ According to this view, we humans are not necessarily connected with nature and are a separate entity. For Descartes, "...nature consisted of only tangible qualities, like size and weight."⁶⁰ That is, the natural world has no other qualities except the physically quantifiable ones. Even in the anthropocentric worldview, this perception could be taken as extreme since beauties such as sceneries of a landscape are considered to be values of nature, even if they are not measured quantitatively. From this it can be inferred that, for Descartes, nature has no intrinsic value. Descartes was the

⁵⁴ Paradiso, XIII, 56, 58-63, cited in Arthur O. Lovejoy (1964), *Great Chain of Being: A Study of the History of Idea*, Harvard University Press, p.187.

⁵⁵ *Ibid.*

⁵⁶ Benjamin Farrington (1949), *Francis Bacon: Philosopher of Industrial Science*, 62, cited in Burdon *supra* note 20, p.62.

⁵⁷ Hwa Yol Jung, 'Bacon, Francis', in J. Baird Callicott and Frodman, Vol. 1, p.87.

⁵⁸ *Ibid.*

⁵⁹ Gillespie, *supra* note 5, p.5.

⁶⁰ 'Meditations' One, Two (especially §303), 'Meditation Five', (Concerning the Essence of Material Things), and §71, and 74 of 'Meditation Six', as cited in Gillespie *supra* note 5, p.6.

most famous advocate of mind-matter dualism, which is referred to as ‘Cartesian dualism’. This understanding of mind and matter has had, and still has a profound impact on how we see the world and understand our place in it.⁶¹

Thomas Berry comments on Descartes’ views: “Descartes killed the Earth and all its living beings. For him the natural world was a mechanism. There was no possibility of entering into a communion relationship. Western humans became autistic in relation to the surrounding world.”⁶² The scientific method of the Scientific Revolution was used to strengthen the anthropocentric paradigm and separate human beings from nature,⁶³ in that nature was conceived to have no value other than serving human interests. As David Harvey contends, “[d]eprived of any autonomous life force, nature was open to be manipulated without restraint according to the human will. Nature became one vast gasoline station for human exploitation.”⁶⁴

Another critical crafter of the Scientific Revolution was Isaac Newton. Cullinan expresses the contribution of Newton as:

“The work of Copernicus, Bacon, Galileo and Descartes was synthesized by Isaac Newton, thereby completing what became known as ‘The Scientific Revolution’. The physical world at this point was seen as a complex machine that could be understood by reductionist analysis (i.e. by dissecting it and looking at each of the parts to understand how it worked). The fact that human consciousness was separate from this world, coupled with religious beliefs that encouraged humans to adopt a superior, arrogant and dominating attitude towards nature, led to

⁶¹ See Ed. L. Miller (1987), *Questions That Matter: An Invitation to Philosophy*, (2nd ed.), McGraw-Hill Book Company, p.104 and Cullinan *supra* note 40, pp.25-26. (Descartes’ contentions considered the Earth and all of the nonhuman creatures she harbors as not more than machines that can be manipulated to fulfill the needs of the human species. For instance, the cruelest unanesthetized vivisections on animals were so common during the early ages of the development of medical sciences. The experimenters justified their actions on Descartes’ philosophy that animals did not feel any pain. Animals, according to Descartes, were insensible and irrational machines or instruments. They moved, like clocks, but could not feel pain. Lacking minds, animals could not be harmed. They did not suffer. (See Nash, *supra* note 47, pp.17-18.) That is why Descartes urged his students to ignore the screams of vivisected animals, for such sounds were, after all, little more than the creaking and grating of a complicated machine. (See Stephan Harding (2006), *Animate Earth: Science, Intuition and Gaia*, Green Books, p.27.) This human action on individual animals, irrespective of their suffering, is a clear manifestation of the idea that all nonhuman nature is an instrument to be utilized in any way so long as that has served human interest. Although it is difficult to attribute every responsibility to Descartes’ views, it can be concluded that it has contributed to the instrumental value of biodiversity and hence its reckless exploitation and abuse to the level of its severe degradation and loss.

⁶² Thomas Berry (1991), *The Ecozoic Era*, cited in Burdon, *supra* note 20, p.63, [Note 111.]

⁶³ Nicole Graham (2011), *Lawscape: Property, Environment, Law*, 31, cited in Burdon, *Ibid*, p.64.

⁶⁴ David Harvey (1997), *Justice, Nature and the Geography of Difference*, 134, cited in Burdon, *Ibid*, p.64.

nature being viewed as something that existed for the benefit of humans. The idea of Earth as mother was dead.”⁶⁵

The assault on the natural world which was perpetrated by the Scientific Revolution was not geographically restricted to the Western world. It has spread throughout the ‘modern’ world where science and technology are able to influence. The philosophies and the methods of the Scientific Revolution had continued to the industrial revolution, even with greater intensity of assault on the natural environment.⁶⁶ The conceptions of separation and human mastery over nature, married with advancements in science and technology, have caused serious damage to the natural environment, such as climate change and loss of biodiversity. The scientific method developed during the Scientific Revolution has further strengthened the belief that humans are separated from the nonhuman nature and the possibility of understanding the whole by studying the parts, that is, reductionism.⁶⁷ Reductionism has fragmented the way we see everything and obliterated the rhythms, patterns, and cycles within which the parts operate. It also has severed the sense of interconnectedness and any feeling of responsibility regarding human acts against nature.⁶⁸

This reductionist approach and the consequent emergence of the scientific method in Europe has aggravated the assault on nature to the point of violence. Claude Alvares comments that “modern science and violence are inextricably connected, and that the relationship has made possible a

⁶⁵ Cullinan, *supra* note 40, p.26. David Suzuki also comments on the works of Newton as: “This mechanistic description of nature appears first in the writing of Isaac Newton (1642-1727) who argued that the cosmos was like an immense clock whose basic principles and features could be revealed through a reductionist scientific methodology. This involves separating and dissecting nature into individual parts and allowing scientists to piece the final product together, much like pieces of a jigsaw. Thus, according to Newton, not only is nature ‘knowable, adjustable [and] manageable...it belongs to the people who control it.” David Suzuki, *The Sacred Balance: Rediscovering Our Place in Nature* (1997), 14, cited in Burdon *supra* note 20, p.63, [Note 110.]

⁶⁶ It is undeniable fact that the scientific method which was evolved and developed during the Scientific Revolution and in subsequent times has brought many positive changes in the lives of people.

⁶⁷ Commenting on the reductionist scientific method, David Suzuki writes: “Ever since Isaac Newton and René Descartes, scientists have assumed the cosmos is like an immense mechanical construct whose components can be examined piece by piece. If this is so, then, in principle, we can learn about parts of nature and eventually acquire enough knowledge of the fragments that we could put them all together to recover a picture of the whole. Biologists have been especially critical of any suggestion that the whole is greater than the sum of its parts; they see this idea as an expression of vitalism, a discredited notion that living organisms possess a kind of vital essence absent in nonlife.” See David Suzuki (2003), *A David Suzuki Collection: A Lifetime of Ideas*, Allen & Unwin, p.174.

⁶⁸ Suzuki, *Ibid*, pp.1-2.

degree and intensity of violence hitherto unknown.”⁶⁹ From Alvares’ views two points may be drawn. Firstly, because of the Scientific Revolution and the rise of the reductionist scientific methods humanity’s treatment of nature became heartless, which is a reflection of the separation and human mastery over nature. Secondly, modern science has increased the ‘efficiency’⁷⁰ of exploitation and destruction of ‘resources’ due to advancements in technology by exerting greater pressure on nature.

Shiva also contends that;

“This reductionist method has its uses in the fields of abstraction such as logic and mathematics, and in the fields of manmade artifacts such as mechanics. But it fails singularly to lead to a perception of reality (truth) in the case of living organisms such as nature, including man, in which the whole is not merely the sum of the parts, if only because the parts are so cohesively interrelated that isolating any part distorts perception of the whole.”⁷¹

Shiva argues that modern knowledge inappropriately applies the reductionist method to natural entities which normally function in a systemic and holistic manner with devastating consequences. She further contends that “[t]he multidimensional ecological crisis all over the world is an eloquent testimony to the violence that reductionist science perpetrates on nature.”⁷² It can be safely argued that reductionist methods do not focus on what Harding calls ‘emergent’ properties of the whole which we cannot get in parts.⁷³

Reductionist science is also at the root of the growing ecological crisis, because it entails a transformation of nature such that the processes, regularities and regenerative capacity of nature

⁶⁹ Claude Alvares (1992), *Science, Development and Violence: The Revolt against Modernity*, Oxford University Press, p.64.

⁷⁰ Efficiency is a very controversial issue. Efficiency in a certain ‘desired’ character could be obtained at the expense of other ‘undesired’ characters.

⁷¹ Vandana Shiva, ‘*Reductionist Science as Epistemological Violence*’, in Ashis Nandy (ed.), (1989), *Science, Hegemony and Violence: A Requiem for Modernity*, United Nations University, p.89. Note that Shiva considered the whole nature as a living organism.

⁷² Shiva, *Ibid*, p.86. This Shiva’s argument has implications on the livelihoods of the local people in Ethiopia due to large-scale commercial farming, which is the result of Western knowledge of ‘development’. (See Chapter 4 for details.)

⁷³ Harding, *supra* note 61, pp.32-33. Harding gives a simple example by taking salt, which is a compound formed by a chemical reaction between sodium and chlorine. Salt has emergent properties which neither sodium nor chlorine possess individually. (Lecture by S. Harding, at Schumacher College, Devon, UK, March 2005).

are destroyed.⁷⁴ On this point Shiva further argues that, though there are claims that humans are the ultimate beneficiaries of modern science and scientific knowledge, people – particularly the poor – are its worst victims as they are deprived of their life-support systems in the reckless pillage of nature.⁷⁵

Klaus Bosselmann analogizes this reductionist approach by giving the example of concentrating on trees rather than on forests.⁷⁶ He criticizes the hyper-specialization in science that ignores forests but focuses on trees which is the result of an atomistic (or reductionist) worldview that seeks to break complex objects of study into smaller and smaller parts.⁷⁷ In his seminal work, ‘A Sand County Almanac’ Aldo Leopold also criticizes the reductionist approach of modern science.⁷⁸ Leopold considered the scientific method as an effort that is made to understand realities in nature in a compartmentalized manner while nature is functioning and existing in a manner of an orchestra.

Boaventura de Sousa Santos critically analyzes the impacts of Western scientific knowledge and terms it as ‘abyssal thinking’.⁷⁹ Santos argues that modern Western thinking is the result of Western science which is reductionist by its nature as it does not accept the existence of other forms of knowledge such as an indigenous way of understanding nature. He even compares it to

⁷⁴ Shiva, *supra* note 71, p.86.

⁷⁵ Shiva, *Ibid*, p.87. See Chapters 4 & 6 for the impacts of reductionist approaches on the livelihoods of the local people and in Ethiopia.

⁷⁶ Forests are more than just a collection of trees. A natural forest may represent the concept of biodiversity as perceived in this work. However, monoculture plantation of trees may even be seen as a threat to biodiversity.

⁷⁷ Klaus Bosselmann, ‘Losing the Forest for the Trees: Environmental Reductionism in the Law’, *Sustainability*, 2010 (2), pp.2430-31, www.mdpi.com/journal/sustainability, accessed on 25 September 2012. This work does not deny the successes of hyper-specialized fields in science, though they are, in the words of Bosselmann, “vastly outdone by system failures.” (See Bosselmann, *Ibid*.) The concern here is that biodiversity protection needs more of holistic than reductionist thinking.

⁷⁸ Leopold writes: “There are men charged with the duty of examining the construction of the plants, animals, and soils which are the instruments of the great orchestra. These men are called professors, each selects one instrument and spends his life taking it apart and describing its strings and sounding boards. The process of dismembering is called research. The place for dismemberment is called a university. A professor may pluck the strings of the instrument, but never that of another, and if he listens for music he must never admit it to his fellows or to his students. For all are restrained by an inbound taboo which decrees that the construction of instruments is the domain of science, while the detection of harmony is the domain of poets.” (Aldo Leopold (1949), *A Sand County Almanac and Sketches Here and There*, Oxford University Press, p.153.)

⁷⁹ See Boaventura de Sousa Santos, ‘Beyond Abyssal Thinking: From Global Lines to Ecologies of Knowledge’, <http://www.ces.uc.pt/bss/documentos/AbyssalThinking.pdf>, accessed on 28 May 2010, for detailed discussion on how Santos considered the modern Western thinking as abyssal thinking.

totalitarianism.⁸⁰ Santos distinguishes Western knowledge as abyssal because it persuaded people to believe that science is the only valid and exact form of knowledge. Shiva also accuses modern scientific knowledge for its monopoly. She characterizes it reductionist because it considers that knowledge is obtained only through scientific methods.⁸¹ Santos further criticizes modern scientific knowledge for not investing enough time and energy to enhance the natural process for the harmonious and peaceful coexistence for all, humans and nonhumans. He suggests the confrontation of modern science with the ecology of knowledge,⁸² is post abyssal thinking. In addition to his comments on modern scientific knowledge as reductionist, he also establishes the relationship between modern knowledge and modern law claiming that they are mutually interdependent.⁸³ The arguments made by Santos and Shiva are supported by Stephan Harding. Based on the analysis of C. G. Jung, Harding argues that there are four “ways of knowing, common to all humanity, namely: intuition, sensing, thinking and feeling.”⁸⁴ By this Harding meant that scientific method is not the only way of knowing and understanding things.

The knowledge systems of the indigenous/local people in protecting and harmoniously living with nature, which this work promotes, is dynamic evidence of the existence of other forms of knowledge. The argument is not to deny the importance of scientific knowledge and scientific method. Rather it is to demonstrate the need to accommodate epistemological diversity. It is argued in Chapter 2 that cultural diversity and biological diversity are inextricably linked to each other. That is not a mere coincidence that the world’s most biodiversity concentration areas are also areas occupied by culturally diverse indigenous/local communities.⁸⁵ Biodiversity in this sense encompasses diverse forms of indigenous knowledge systems. A total replacement of these diverse knowledge systems also leads to loss of biodiversity.

⁸⁰ He writes, “[t]he new scientific rationality, being a global model, was also a totalitarian model, inasmuch as it denied rationality to all forms of knowledge that did not abide by its own epistemological principles and its own methodological rules.’ See Santos, ‘A Discourse on the Sciences’, Fernand Braudel Center, Vol. 15, No. 1, *The “New Science” and the Historical Social Sciences* (Winter, 1992), p.13.

⁸¹ See Shiva, *supra* note 71, pp.86-97.

⁸² Ecology of knowledge is defined as “the study of the relationship existing between humans and the body of knowledge.” (See Jerzy A. Wojciechowski (2001), *Ecology of Knowledge*, The Council for Research in Values and Philosophy, p.1.)

⁸³ Santos, *supra* note 79.

⁸⁴ Harding, *supra* note 61, p.30.

⁸⁵ See Darrell Addison Posey (ed.) (1999), *Cultural and Spiritual Values of Biodiversity*, UNEP, pp.1-18.

Emphasizing the importance of diversity of knowledge, Santos, *et al*, argue that the North's epistemological dominance is a reflection of colonial dominance.⁸⁶ They also contend that "alternative forms of knowledge were destroyed and the social groups that relied on them to pursue their own and autonomous paths of development were humiliated, all in the name of modern science."⁸⁷ The fact that one form of knowledge becomes more powerful than another form, in terms of scientific and technological advancements, should not legitimate its authority to eliminate other forms. Dominating or eliminating all other forms of knowledge systems and replacing them with only one form is not only detrimental to the knowledge systems and the cultures that resulted in them and the biodiversity protected by the knowledge systems, but also it damages the 'modern' scientific knowledge itself.⁸⁸

Modern scientific knowledge is one form of knowledge which needs to be complemented by other forms of knowledge. It should not be seen as the sole solution for all problems in the world. It is wrong that the West/North is exporting its knowledge under the name of "transfer of scientific knowledge and technology" based on the premise that "the South has problems and the North has solutions to them."⁸⁹ Though different in type and intensity, problems exist everywhere. Solutions for these problems may come from different directions, not only in one direction. Flow of knowledge in a unilateral direction with the intention of dominating and eliminating other forms of knowledge systems can end up in the epistemological and cultural uniformity, which in turn would facilitate loss of biodiversity.

Relatively recent developments in the scientific world in the area of quantum physics sparked some promises in revisiting the hitherto dominant mechanistic and reductionist thinking. The discoveries in quantum physics are applicable to systems thinking which perceives the Earth's systems holistically functioning systems. Regarding this issue, Fritjof Capra writes:

⁸⁶ See Boaventura de Sousa Santos *et al*, 'Introduction' in Boaventura de Sousa Santos (ed.) (2008), *Another Knowledge Is Possible: Beyond Northern Epistemologies Reinventing Social Emancipation: Toward New Manifestos*, Verso.

⁸⁷ *Ibid*, p.xxxv.

⁸⁸ There are instances where modern scientific knowledge receives inspiration and information from traditional knowledge. This is particularly true in the area of medicinal plants.

⁸⁹ *Supra* note 86, p.xxxviii.

“In the shift from mechanistic thinking to systems thinking, the relationship between the parts and the whole has been reversed. Cartesian science believed that in any complex system, the behavior of the whole could be analyzed in terms of the properties of its parts. Systems science shows that living systems cannot be understood by analysis. The properties of the parts are not intrinsic properties, but can be understood only within the context of the larger whole. Thus systems thinking is ‘contextual’ thinking; and since explaining things in terms of their context means explaining them in terms of their environment, we can also say that all systems thinking is environmental thinking. Ultimately – as quantum physics showed so dramatically – there are no parts at all. What we call a part is merely a pattern in an inseparable web of relationships.”⁹⁰

There may come a time when the present dominant Cartesian dualism will be discredited and eventually replaced by systems thinking. When humans reach that level of collective consciousness it is hoped that controlling loss of biodiversity will be much easier than present level of consciousness. This level of consciousness is hoped to recognize the intrinsic value of biodiversity, which is believed by this work to be a key element in controlling loss of biodiversity. It appears that it is credible prediction that is made by the World’s Resource Institute; Millennium Ecosystem Assessment that biodiversity would be best protected if we adopt the intrinsic value philosophy and it would be highly deteriorated if we adopt the business as usual, as has been approached by the environmental protection legal and policy instruments.⁹¹

3.4 The Legal Regime

The previous sections discussed the contributions of the conceptions of human-nature dualism and the centrality and mastery of humans over nature in the cultivation and development of anthropocentrism. It was also argued that anthropocentrism had significantly contributed to an unjustifiable destruction of nature leading to an ecological crisis on Earth. The roles of religious teachings, particularly Christianity and Islam, the emergence of the Scientific Revolution in

⁹⁰ Fritjof Capra, ‘Systems Thinking for Environmental Responsibility’ in Martin Reynolds, *et al* (eds.) (2009) *The Environmental Responsibility Reader*, Zed Books, p.126. System is “an integrated whole essential properties arise from the relationships between its parts, and “systems thinking” the understanding of a phenomenon within the context of a larger whole.... Systems thinking is a thinking in terms of connectedness, relationships and context.” See Fritjof Capra (1996), *The Web of Life: A New Scientific Understanding of Living Systems*, Anchor Books, pp.27–30.

⁹¹ See _____ (2005), *Ecosystems and Human Well-Being, Biodiversity Synthesis, A Report of the Millennium Ecosystem Assessment*, World Resources Institute p.7. (Figure 2) The importance of recognition of intrinsic value of biodiversity is discussed in chapter 5.

Europe with its reductionist methods furthering a dualistic worldview and human centrality have been considered. The models of dualism and human dominion over nature have manifested in other aspects of societal life including the legal regime. Most of the legal and policy instruments have clearly manifested their inclination towards the promotion of human separation from, and human dominion over nature. It is expected that the laws and the policies are crafted with such tendencies as they have been crafted on the mental background of anthropocentrism. This next section examines examples of these instruments at both the international and national levels.

3.4.1 International Legal Regime

Legal instruments are enacted based on the prevailing societal philosophies and world outlooks. In many instances, they reflect the dominant culture and thinking that prevail in a particular polity or even at global level. There is a widespread belief that international legal instruments are the reflections of the dominant Western culture.⁹² As the result of this fact, most of the international and national environmental/biodiversity laws tend to be anthropocentric. Regarding the necessary connection between societal culture and the law such culture creates, Phillip Allot writes, “[s]ociety cannot be better than its idea of itself. Law cannot be better than society’s idea of itself. Given the central role of law in the self-ordering of society, society cannot be better than its idea of law.”⁹³ This supports Kermit Hall’s idea that “law is a mirror of society.”⁹⁴ From these contentions it is clear that the societal collective thoughts, aspirations and attitudes are commonly reflected in its laws and a given society generally does not have legal frameworks that are outside its realms.⁹⁵ Hence, it is not surprising to have anthropocentric oriented biodiversity protection or environmental laws at international and national levels, since the world is saturated by the dominant anthropocentric views.⁹⁶

⁹² See, for instance, Emmanuelle Jouannet, ‘Universalism and Imperialism: The True-False Paradox of International Law?’ *The European Journal of International Law*, Vol. 18 No. 3 (2007), pp.379–407, <http://www.ejil.oxfordjournals.org/>, accessed on 10 September 2012. Here Jouannet argues that international law reflects the Western culture and it tries not only to internationalize the Western values but also to universalize it.

⁹³ Phillip Allot, (1990) *Eunomia: New Order for the New World*, Oxford University Press 298, cited in Burdon, *supra* note 20, p.12.

⁹⁴ Kermit Hall, *The Magic Mirror: Law in American History* (2009) 1, cited in Burdon, *supra* note 20, p.224.

⁹⁵ But this does not mean that there are no societies who have been imposed to accept the laws which do not reflect their own societal conditions and are alien to them.

⁹⁶ It is important here to note that many of the international environmental law instruments do not particularly refer to biodiversity. The term biological diversity (or for short biodiversity) is the invention of 1980s and it is not

Although most of the international instruments reflect anthropocentric worldview, the first ones are definitely steeped in that approach. Moreover the earlier instruments focused on the conservation of certain specific species of wildlife (such as fisheries, birds and seals) and, to a limited extent, on the protection of rivers and seas.⁹⁷ The purpose of the conservation was also only utilitarian. As Michael Bowman expresses, “the early conservation efforts were in piecemeal and short-sighted fashion.”⁹⁸ They were meant to facilitate the exploitation of wildlife by humans and thus were based on utilitarian rather than conservation principles. Wildlife was seen as a mere resource available for human utilization alone. Even if conservation was sought, it was for the sole economic interest of humans. A notable example of such an instrument was the 1902 Convention for the Protection of Birds Useful to Agriculture. The title of the convention is self-explanatory in this regard. Kiss and Shelton comment that:

“The convention concerned useful birds, especially insectivores, and was aimed primarily at enhancing agricultural production. Annex 2 numbered among “non-useful birds” the majority of predators, including some eagles and falcons, which are strictly protected today. The criterion was short-term utility, the immediate usefulness of the protected species to the targeted human activity. The role of other birds in ecosystems, particularly hunters of small rodents, was ignored.”⁹⁹

Such an anthropocentric legal instrument totally ignored the ecological services of other species in the ecosystem and the holistic functions of the Earth systems. It was simply reflecting the utilitarian values of biodiversity based on parochial human interests.

possible to find the term in the international environmental instruments which have been made before its coining. However, there are instances where the instruments issued before the coining of the term have made indirect references to the concept of biodiversity. For instance, Principle 4 of the 1972 Stockholm Declaration on Human Environment clearly states the responsibility of humans in safeguarding and wisely managing the heritage of wildlife and its habitat. (Principle 4 of the Declaration reads as: “Man has a special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperiled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.”)

⁹⁷ Philippe Sands (2003), *Principles of International Environmental Law*, (2nd edn.), Cambridge University Press, p.26.

⁹⁸ Michael Bowman, ‘The Nature, Development and Philosophical Foundations of the Biodiversity Concept in International Law’, in Michael Bowman and Catherine Redgwell (1996) (eds.), *International Law and the Conservation of Biological Diversity*, Kluwer Law International, p.10.

⁹⁹ Alexander Kiss and Dinah Shelton (2007), *Guide to International Environmental Law*, Martinus Nijhoff Publishers, p.32.

Another instrument was the adoption of 1900 London Convention on the Preservation of Wild Animals, Birds and Fish in Africa. The preamble of this convention addressed the desire to protect species which were “useful to man or harmless.”¹⁰⁰ This means that those species which were ‘harmful’ to humans had been excluded from protection. These included lions, leopards, crocodiles and poisonous snakes and birds of prey.¹⁰¹ In addition to these, the earlier conservation instruments had also been concerned with the rational use of shared resources such as fish, the protection of migratory animals and their habitat, and the suppression of international trade in endangered species.¹⁰² Such economic rationale for the protection of wildlife became a mainstream concern of international environmental law over the decades.¹⁰³

Having briefly reviewed these first instruments, let us now turn to the consideration of relatively recent instruments.

A) The CBD

The CBD is the first international legal document to directly address the term ‘biodiversity’. Its preamble acknowledges that biological diversity is a common concern of humankind and that biological diversity is being significantly reduced by certain human activities. It also recognizes the vitality of anticipating, preventing and attacking the causes of significant reduction or loss of biological diversity at its source; and the importance of the application of the precautionary principle to prevent loss of biological diversity.¹⁰⁴

The objectives of the Convention are stated in Article 1.¹⁰⁵ To achieve these objectives the Convention endorses principles such as the precautionary principle,¹⁰⁶ and environmental impact assessment.¹⁰⁷ The term ‘biological diversity’ is defined by the Convention as “the variability

¹⁰⁰ See the first preambular statement and Schedule I of the Convention. Although this convention never entered into force, it has been recognized as one of history’s earliest agreements on nature conservation.

¹⁰¹ See Schedule V of the Convention.

¹⁰² Alan E. Boyle, ‘The Rio Convention on Biological Diversity’ in International Law’, in Bowman and Redgwell, *supra* note 98, p.33.

¹⁰³ Gillespie, *supra* note 5, p.28.

¹⁰⁴ See preambular paragraphs 3, 6, 8 and 9.

¹⁰⁵ The objectives of this Convention, as per Article 1 are: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

¹⁰⁶ Preambular paragraph 9.

¹⁰⁷ Article 14.

among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”¹⁰⁸ The scope given to biological diversity is narrower than the meaning proposed in Chapter 2 of this work, which includes population diversity, cultural diversity and evolutionary processes, in addition to those components considered by the CBD. The narrowed definition considered by the CBD limits both the understanding of biodiversity and the remedial efforts available in fighting against biodiversity loss.

Although the CBD was adopted in 1992, it also inclines to be more anthropocentric than ecocentric or Earth-centered in its application.¹⁰⁹ This chapter argues that the CBD continues in its anthropocentric approach in, at least, three ways. Firstly, the Convention mentions the intrinsic values of biodiversity in its first preambular statement; it does so without accompanying it with any substantive provisions. Preambular statements, unlike substantive ones, are simply declarations of general objectives of an instrument without binding effects. The substantive parts of the Convention are instead framed within anthropocentric ideas. Let us consider some provisions from the substantive parts and examine them for their anthropocentricity.

(1) Article 1¹¹⁰ of the CBD sets forth its objectives. These objectives do not deal with intrinsic value of biodiversity which was stated in the first preambular paragraph. Rather the objectives focused on conservation of biological diversity and sustainable use of its components and fair and equitable share of benefits arising out of the utilization of genetic ‘resources’. At the center of these objectives lie the clear human interests. The first objective, protection of biological diversity, is there to make the second and the third objectives effective.

(2) Sustainable use of biological ‘resources’ is not considered for the purpose of protecting biodiversity but rather to meet the needs of present and future human generations.¹¹¹ That

¹⁰⁸ See Article 2, paragraph 1.

¹⁰⁹ The very first preambular statement of the CBD provides for the intrinsic value of biodiversity. The ecocentric views of the Convention will be dealt with in Chapter 5.

¹¹⁰ See contents of this article in *supra* note 105.

¹¹¹ See *infra* note 116 for the definition of biological ‘resources’ in Article 2, paragraph 2.

is, the purpose of conserving biodiversity is to ensure its sustained availability for humans.¹¹² Even where the sustainable use standard is applied in some instances; it is done in a relaxed manner, drawing upon expressions ‘as far as possible and as appropriate’.¹¹³ This means that conservation of biological diversity shall be made for the purpose of meeting the needs of present and future generations. However, there are circumstances where protection of biodiversity is not a priority.¹¹⁴ ‘Development’ activities are among the excuses. For governments, like the Ethiopian government which frequently declares that it is committed to an ideology of developmental state, such provisions could be interpreted to mean – bring ‘development’ at whatever environmental costs.

- (3) Biological diversity is used generally as a synonym for biological ‘resources’ throughout the Convention.¹¹⁵ From this it can be seen that, the Convention’s attention is on exploitation of biodiversity for the mere satisfaction of human beings rather than for conserving biodiversity for its own sake. These features indicate that the CBD is more of anthropocentric than it is ecocentric in its scope and application.

Secondly, one of the major foci of the Convention is on the economic values of biological ‘resources’ and their international commerce.¹¹⁶ The fact that much of biodiversity is not marketable shows that the CBD’s concern is on that portion of biodiversity which is considered to have the greatest economic values at present. Also it has a plan for biodiversity poor countries of the North to access genetic ‘resources’ through a scheme known as access and benefit sharing. This is a plan where biodiversity rich countries of the South receive benefits from the North in cash or in kind.¹¹⁷ Two major points can be drawn from these facts. Firstly, protection of

¹¹² Sustainable use is defined in Article 2 paragraph 16 as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, *thereby maintaining its potential to meet the needs and aspirations of present and future generations.*” (Emphasis added)

¹¹³ Article 10 is devoted for sustainable use of components of biodiversity and all the paragraphs under it shall be applied under the ‘as far as possible and as appropriate’.

¹¹⁴ See, for instance, preambular statement 19 of the CBD.

¹¹⁵ The term ‘resources’ is used 49 times in the form of biological resources, genetic resources or natural resources.

¹¹⁶ Biological resources are defined as “genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with *actual or potential use or value for humanity.*” (Emphasis added). See Article 2, second Paragraph of the CBD.

¹¹⁷ The existence of the plan is not bad. But, as experiences proved in Ethiopia, its enforcement is difficult to achieve. Access to genetic ‘resources’ and benefit sharing schemes are governed by Articles 15 and 16 of the CBD.

biological diversity by the CBD does not cover the whole range of biodiversity but is primarily restricted to biodiversity demonstrating economic value. The rules prescribed by the CBD are dominated by the urgent economic needs rather than maintaining the whole of biodiversity for its life support functions. Secondly, even if agreements are made between countries of the North and South, there are instances where corporations from North refuse to transfer the agreed benefits to the countries from which they accessed genetic ‘resources’.¹¹⁸

The third reason for arguing that the CBD is tilted towards an anthropocentric approach is that – the meaning applied to biodiversity is highly fragmented and does not represent biodiversity’s holistic roles and functions in the Earth’s life support system. The definition focuses on the instrumental values of biodiversity rather than its intrinsic values. It concentrates on the material or use aspects of biodiversity. For instance, it ignores the evolutionary processes that bring forth biodiversity and ensures its sustained existence. The CBD’s definition of biodiversity does not also consider human beings as part of biodiversity, thus seemingly reinforcing the concepts of human separation from the rest of nature and their centrality over nature. The narrow meaning provided by the CBD limits the understanding of biodiversity and thereby restrains possible mechanisms protecting it.¹¹⁹ This inadequate consideration of the meaning of biodiversity by the legal instruments can even lead to devastating consequences in protecting biodiversity. For instance, absence of including evolutionary processes into the definition of biodiversity may

Though Ethiopia has concluded two bilateral agreements with two European companies and transferred the genetic materials of *teff* and *vernonia*, the alleged benefits were not obtained from the companies. (For details, see Fikremarkos Merso and Imeru Tamrat, ‘Access to Genetic Resources and Benefit Sharing in Ethiopia’, Proceedings of Gathering of the Access to Knowledge Global Academy, Hosted by the Information Society Project at Yale Law School, August 2009, pp. 230-256; Fikremarkos Merso, ‘Challenges and prospects of implementing the access and benefit sharing regime of the Convention on Biological Diversity in Africa: the case of Ethiopia’, Springer Science+Business Media B.V. 2010; Regine Andersen and Tone Winge (2012), *The Access and Benefit-Sharing Agreement on Teff Genetic Resources Facts and Lessons*, Fridtjof Nansen Institute; and ‘How Ethiopia Lost Control of Its *Teff* Genetic Resources’, *FNI News*, <http://www.fni.no/news/121112.html>, accessed on 29 Nov. 2012.

¹¹⁸ Ethiopia made only two agreements in this regard and it was not possible to enforce the terms of the agreements. As the Nagoya Protocol which is adopted in 2010 is now in force, similar agreements in the future can be better managed as far as their enforcement is concerned.

¹¹⁹ Many of the instruments which were enacted to protect biodiversity deal with components of biodiversity in the form of flora and fauna, (for instance, see Principle 2 of the Stockholm Declaration) or specific species, such as migratory species, (see for instance, the Bonn Convention on the Conservation of Migratory Species of Wild Animals of 1979) or endangered species, (see for instance, the CITES) or nature/natural resources.

allow the consideration of genetically modified organisms (GMOs) as part of biodiversity, while in actual fact GMOs are seen as a threat to healthy biodiversity.¹²⁰

The CBD underlines the critical importance of conservation and sustainable use of biological diversity for meeting the food and health needs of the growing world population.¹²¹ Even if the CBD follows this anthropocentric rationale for protection of agricultural as well as wild biodiversity, it also provides for the importance of the contribution by traditional knowledge of local people in the protection of biodiversity, agricultural as well as wild.¹²²

As indicated above, when evaluated in general terms, the CBD is more inclined to anthropocentrism than ecocentrism, though it contains some elements of ecocentrism. The fact that it provides for the protection of biodiversity on its face is positive, yet it repeatedly dilutes the commitments of states by its inclusion of the standard ‘as far as possible and as appropriate’.¹²³ Its recognition that economic and social development and poverty eradication are the first and overriding priorities of developing countries,¹²⁴ puts biodiversity protection in a secondary position to serve these anthropocentric purposes, or at least makes biodiversity protection a secondary commitment of states.

B) The CITES¹²⁵

The first preambular statement of CITES begins with words which incline towards non-anthropocentric approach. However, it immediately shifts to its anthropocentric rationale for the protection of wild flora and fauna.¹²⁶ The Convention’s focus is on the protection of endangered or potentially endangered species from extinction due to trade activities. Trade is seen by the

¹²⁰ See (1) Úrsula Oswald Spring, ‘Genetically Modified Organisms: A Threat for Food Security and Risk for Food Sovereignty and Survival’ in Hans Günter Brauch (ed.) (2011), *Coping with Global Environmental Change, Disasters and Security: Threats, Challenges, Vulnerabilities and Risks*, Hexagon Series on Human and Environmental Security and Peace, Vol. 5, pp.1019-42; (2) Dirk S. Schmeller and Klaus Henle, ‘Cultivation of genetically modified organisms: resource needs for monitoring adverse effects on biodiversity’, *Biodivers Conserv* (2008) 17:3551–3558 for detailed analyses of the impacts of GMOs on biodiversity.

¹²¹ See preamble, paragraph 20.

¹²² See preamble, paragraph 12; Articles 8(j) and 17(2).

¹²³ See Articles 5, 6(b), 7, 8, 9, 10, 11, and 14.

¹²⁴ See preamble, paragraph 19.

¹²⁵ Convention on International Trade in Endangered Species of Wild Fauna and Flora of 1973.

¹²⁶ The first preambular statement provides that: “Recognizing that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come.”

Convention as one of the causes of overexploitation and consequently a drive to extinction of species. It prohibits or strictly regulates trade in thousands of listed endangered or potentially endangered species. Accordingly, the CITES regulates international trade in some 30,000 species of plants and animals through a system of certificates and permits. Interpol estimates the illegal trade in these species at \$12 billion a year, second only to drugs.¹²⁷ It apparently is difficult to control extinction of such endangered species while the underlying premises consider them as mere instruments for the satisfaction of human interest. Unless the overarching, interconnected roles played by biodiversity in the whole life support system are considered to be the reason to protect it, it will be difficult to halt loss of biodiversity.

C) The Rio Declaration

The Rio Declaration is one of the documents issued at the 1992 Earth Summit. It is a declaration that builds upon the Stockholm Declaration of 1972.¹²⁸ It has been praised by some for being a negotiated compromise between developed and developing countries and for creating a balance between environmental protection and economic development.¹²⁹ However, others, like Porras argue that it is “a text of uneasy compromises, delicately balanced interests, and dimly discernible contradictions, held together by the interpretative vagueness of classic UN-ese.”¹³⁰ Regarding the issue of anthropocentricity, the Declaration clearly manifested it in its Principle 1.¹³¹ According to this principle, all nonhuman nature could be sacrificed for the sake of sustainable development which is geared to benefit human beings. This interpretation of the Declaration is further strengthened by Principle 4. This principle has seen environmental protection as a means to an end, the end being sustainable development. It states that: “[i]n order to achieve sustainable development, environmental protection shall constitute an integral part of

¹²⁷ Melina F. Laverty and Eleanor J. Sterling, ‘Threats to Biodiversity’, in Niles Eldredge (ed.) (2002), *Life on Earth: An Encyclopedia of Biodiversity, Ecology, and Evolution*, Volume 1, ABC-CLIO, Inc., p.62.

¹²⁸ Rio Declaration, 1st paragraph of the preamble.

¹²⁹ See for instance, Sands, *supra* note 97, p.54. See also Principles 2, 3, 4, 6, 11, 20, 21, and 25 of the Rio Declaration.

¹³⁰ Ileana M. Porras, ‘The Rio Declaration: A New Basis for International Cooperation’, in Philippe Sands (ed.) (1993), *Greening International Law*, EARTHSCAN, p.23.

¹³¹ Principle 1 provides that: “Human beings are at the center of concerns for sustainable development.” Boyle and Freestone also criticize this Article to be explicitly anthropocentric for it makes no reference to animal rights or the preservation of natural heritage. (See Alan Boyle and David Freestone, ‘Introduction’ in Alan Boyle and David Freestone (eds.) (1999), *International Law and Sustainable Development: Past Achievements and Future Challenges*, Oxford University Press, p.4.)

the development process and cannot be considered in isolation from it.” From this statement it can be seen that the one which is achieved is sustainable development at whose center are humans.

The other point that makes the Rio Declaration more anthropocentric even in comparison to the 1972 Stockholm Declaration is its relaxation on the sovereignty of states in exploiting their natural ‘resources’.¹³² The Rio Declaration in its Principle 2 reiterates Principle 21 of the Stockholm Declaration, except its addition of two words, ‘and developmental’. Under the Stockholm Declaration, states could exploit their natural ‘resources’ only pursuant to their environmental policies. In Rio, developmental policies were added on top of environmental policies. There is a clear difference between the two. In the former case, natural ‘resource’ exploitation is restricted by environmental policies while in the latter case; such exploitation could be justified by developmental policies, in addition to the restrictions imposed by environmental policies.¹³³

The argument here is not to propose that no ‘development’ activities should take place at all; but it is to argue that development activities should be comprehensive enough to incorporate and be supported by nature and natural processes. If humans alone are at the center of development activities, as prescribed by the Rio Declaration, it opens the door for ignoring the nonhuman nature and it becomes an effort to ‘develop’ a certain small segment of nature alone, at the expense of its interconnected larger entity. It is argued here that it is reductionist to bring humans alone to the center of ‘development’ activities and then try to ensure human wellbeing by such an activity. Human wellbeing cannot be ensured by only focusing on humans. Rather it will be better ensured by giving attention to all actors, human and nonhuman. Humans have a special responsibility to fulfill this balancing relationship with nature.¹³⁴

¹³² Principle 21 of the Stockholm Declaration provides that: “States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”

¹³³ See chapter 4 for detailed discussion as to how developmental activities are taking precedence over environmental protection activities.

¹³⁴ See chapter 5 for details on human responsibility for the nonhuman nature.

D) The Ramsar Convention¹³⁵

Originally the emphasis of the Ramsar Convention was the conservation and wise use of wetlands primarily as habitat for water birds. Over the years, however, the Convention has widened its scope to incorporate other aspects of wetland conservation, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation and for the wellbeing of human communities.¹³⁶ It can be said that it is the first global agreement to address the conservation of wetland ecosystems and their biological diversity by adopting a holistic approach of conservation. This work promotes an ecosystem based approach of conservation on the basis that such approach provides protection for the wide range of biodiversity, be it species, population, gene, or ecosystem diversity. Wetlands are known for their rich biodiversity and based on this richness; some writers call them ‘biological supermarkets’.¹³⁷ Research shows that wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs, and they are also among the most threatened ecosystems.¹³⁸

Like most of the rest of the instruments, the Ramsar Convention is also predominantly crafted on an anthropocentric basis. The whole purpose of the Convention boils down to a ‘wise use’ methodology of wetlands and their diverse life forms.¹³⁹ Moreover, states can delete or restrict the boundaries of wetlands for urgent national interests after getting them registered in the Convention’s List.¹⁴⁰ The reasons for the deletion clause are – there may be urgent national interests which can be interpreted very broadly. In the context of developing countries, there could be many ‘urgent national interests’ including rapid economic growth and ‘poverty’ eradication. On the face of such pressing priorities, wetlands can be deleted from the List even

¹³⁵ The Ramsar Convention is a convention on wetlands. It is an intergovernmental treaty adopted on 2 February 1971 in the Iranian city of Ramsar.

¹³⁶ Ramsar Convention Secretariat (2004), *The Ramsar Convention Manual: A Guide to the Convention on Wetlands*, (3rd ed.), p.6.

¹³⁷ See for instance (1) Edward B. Barbier, et al., (1997) *Economic Valuation of Wetlands: A Guide for Policy Makers and Planners*, IUCN, p. ix. http://www.ramsar.org/pdf/lib/lib_valuation_e.pdf, accessed on 06 June 2012; and (2) US Environmental Protection Agency, ‘Wetlands: Functions and Values’, Distance Learning Modules on Watershed Management, <http://www.epa.gov/watertrain>, accessed on 10 June 2012.

¹³⁸ Adam Young, et al, ‘Wetlands’, <http://www.mass.gov/czm/waecofun.htm>, accessed on 10 June 2012. See also Yilma D. Abebe, ‘Wetlands of Ethiopia: An Introduction’, in Yilma D. Abebe and Kim Geheb (2003) (eds.), *Proceedings of a seminar on the resources and status of Ethiopia’s wetlands*, IUCN, p. 3.

¹³⁹ See Articles 2(6); 3(1); 6(2)(d); and 6(3).

¹⁴⁰ See Article 2(5). Though a state is obliged to compensate the deleted wetland by allocating another wetland to the list, this obligation is limited by a parameter of ‘as far as possible’.

without fulfilling legal requirements such as the precautionary principle and environmental impact assessment.¹⁴¹ Whenever the main rationale for protection of biodiversity is anthropocentric, it can be sidelined for other pressing anthropocentric rationales and this can be observed from the provisions included in the Ramsar Convention.

E) The Bonn Convention on the Conservation of Migratory Species of Wild Animals

The 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals is another international environmental law instrument that clearly declares its anthropocentric nature in its preamble. The first paragraph of the preamble states that “wild animals in their innumerable forms are an irreplaceable part of the earth’s natural system which must be conserved for the good of mankind.” Although the Convention recognizes the diversity of wild animals constitutes an integral part of the Earth’s natural system, it calls for their conservation merely for the benefit humans. According to this preambular paragraph wild animals are conserved exclusively for human benefit, not for their own sake.

The second paragraph of the Convention is equally anthropocentric even if it appears to impose obligations on humans to conserve the ‘resources’ of the Earth. It reads: “each generation of man holds the resources of the earth for future generations and has an obligation to ensure that this legacy is conserved and, where utilized, is used wisely.” According to this preambular statement, members of the present human generation are obliged to use the natural ‘resources’ wisely. The purpose of the wise utilization is to allow the future human generations to have enough of these natural ‘resources’.

The third preambular paragraph seems to combine ecocentric and anthropocentric rationale for the protection of wild animals. It emphasizes on the “the ever-growing value of wild animals from environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic points of view.” Even if the role of wild animals in maintaining a healthy ecosystem and their contribution to the holistic functions of the Earth’s systems has been

¹⁴¹ In Ethiopia, for instance, it is very common to conduct very big projects without fulfilling the legal obligations of EIA. For details see (1) Mellese Damtie and Mesfin Bayou (2008) *Overview of Environmental Impact Assessment in Ethiopia: Gaps and Challenges*, MELCA-Ethiopia; (2) Dejene Girma (2012) *Environmental Impact Assessment in Ethiopia: Laws and Practices*, PhD dissertation in the Department of Interdisciplinary Studies in the Graduate School of the University of Alabama.

recognized by the third preambular paragraph the ultimate reason for conserving these wild animals appears to be their instrumental value for human beings.

Owing to their nature of mobility, ecocentric rationale for conserving biodiversity is more relevant for migratory species of wild animals. Under the guise of the sovereign right to exploit their own natural ‘resources’ pursuant to their own environmental and developmental policies, the range states may compete to exploit the migratory species of wild animals while the animals are within their territories. The protection of these species of wild animals needs special cooperation and concerted actions of range states. Effective cooperation and coordinated actions of range states and also of other states may lead to the realization of the idea of common concern of humanity for the proper protection of biodiversity.

Irrespective of the above instruments which tend towards anthropocentrism, there are two international legal instruments which are based on ecocentric conceptions for the purpose of protecting nature. These are the United Nations World Charter for Nature and the Earth Charter. They incorporate ethical principles with a vision of sustainable wellbeing for humans and the whole community of life as well as a call for action.¹⁴²

3.4.2 National Legal and Policy Instruments

The previous section set forth several international environmental instruments which have been enacted, predominantly, for the purpose of facilitation of ‘resource’ exploitation rather than nature conservation. This trend has shown a slight shift towards recognition of the intrinsic values of nature. However, the overall direction remains to be anthropocentric. The Ethiopian legal system has not special status in this regard: its legal, policy and strategic instruments are inclined towards anthropocentric conceptions as well. In this section several selected instruments shall be examined for their anthropocentricity after briefly introducing the link between Ethiopian legal system and the Western legal traditions.¹⁴³

¹⁴² See Chapter 5 for a detailed discussion of these instruments.

¹⁴³ For more details on the link between the Ethiopian legal system and the Western legal traditions, see Mellese Damtie, ‘Anthropocentric and Ecocentric Versions of the Ethiopian Legal Regime’ in Burdon, *supra* note 39, pp. 159-172.

A significant part of Ethiopia has practiced Christianity for nearly 2000 years and Christian Ethiopia had been governed by *Fetha Nagast* since around the 15th century.¹⁴⁴ In his preface address to the English translation of the *Fetha Nagast* Emperor Haile Selassie stated that, "...the Ethiopian people were governed by the Mosaic Law before the advent of Christianity and they came later to be governed by *Fetha Nagast*... The *Fetha Nagast* has been venerated, supported and applied by both the government of Our Empire and by the Church."¹⁴⁵

The *Fetha Nagast* was not limited to medieval Ethiopia and to the Christian highland alone. Its influence crept into the modern laws of the country which have universal application throughout the country. Emperor Haile Selassie made this point clear in his Imperial Preface to the first printed edition of the English version of the *Fetha Nagast* that the Penal Code of Ethiopia was enacted on the basis of *Fetha Nagast*.¹⁴⁶ On the other hand, however, writers such as Peter Sand trace the origin of the *Fetha Nagast* to the ancient Roman law.¹⁴⁷

Even if Ethiopia is a country that has not been formally colonized, it did not escape the influence of the West through the infiltration of Western legal notions into its legal regime. The Western legal influence has been manifested in Ethiopia through direct copying of legal rules to engaging legal experts in crafting Ethiopian laws.¹⁴⁸ The affinity between Ethiopian law and European law, especially Roman law, has also been pointed out by the draftsman of the Ethiopian Civil Code of 1960, Professor René David, who specifically alludes to Roman origins of the Ethiopian 'Law of Kings'.¹⁴⁹ This is one of the frontiers where Roman law found its ways into the Ethiopian legal system. Moreover, there is clear evidence that the modern Ethiopian laws have been highly influenced by *Fetha Nagast*. For instance, in the Imperial Preface of the 1930 (1923 EC) Penal Code, Emperor Haile Selassie noted that:

¹⁴⁴ *Fetha Nagast* is a collection of laws which has been in use in Christian Ethiopia for centuries. It was originally written in Arabic by the Coptic Egyptian writer Abu-l Fada'il Ibn al-'Assal between 1235-1243. It has spiritual (22 chapters) and secular (29 chapters) rules.

¹⁴⁵ Paulos Tzadwa, (Translator, 1968) *Fetha Nagast: The Book of Kings*, HSIU, p.v.

¹⁴⁶ Tzadwa, *supra* note 145, p.v.

¹⁴⁷ See generally Peter H. Sand, "Roman Origin of the "Ethiopian Law of Kings" (*Fetha Nagast*)" *Journal of Ethiopian Law*, Vol. 11, 1980, pp.71-81.

¹⁴⁸ The major modern legal instruments in Ethiopia, beginning from the 1931 Constitution to the major codes of the 1950s and 1960s were mainly drafted by foreigners. Even if the 1931 Constitution was crafted by Bejirond Teklehawariat Teklemariam, its contents were taken from the Meiji Constitution of Japan.

¹⁴⁹ R. DAVID, 'A Civil Code for Ethiopia: Considerations of the Codification of the Civil Law in African Countries' 37 *TULANE LAW REVIEW* 187, 192 (1962-63), cited in Peter H. Sand, cited above, p. 71.

“... in order that the people may be able without difficulty to distinguish what is forbidden by law and what is not forbidden, and that by learning European practice they may attain to a high degree of knowledge, because the basis of our code of laws in many places fits in with the European code, we have, without changing the law which has been in the country up to now, harmonized the two and established this law in the year 1923 (1930).”¹⁵⁰

The Emperor made it clear that Ethiopia should not totally abolish the traditional Ethiopian system. Instead, European laws would be incorporated into the Ethiopian system and the two systems would be harmonized. This gives us good evidence that Ethiopian legal tradition has been influenced by the Roman/European legal tradition. The Ethiopian law was not only influenced by incorporation of the European laws but also by appointing European judges in the courts, especially in the higher courts. This did not merely exist in practice but also supported by the law itself.¹⁵¹

Religious teachings and the infiltration of Western legal traditions into the Ethiopian legal system resulted in the latter being significantly anthropocentric. It is believed also to have contributed to the loss of biodiversity of the country. The fact that biodiversity rich areas in Ethiopia are mainly concentrated around communities who practice traditional belief systems can be an evidence for the modern religions’ and Western influences in the inculcation of anthropocentric notions in the people.¹⁵² Below is a brief survey of national policies/strategies and legal instruments indicating their anthropocentric features.

A) The National Biodiversity Policy of 1997

The 1997 National Biodiversity Policy is a very brief document which provides only general policy statements. Under this policy, the rationale for conserving biodiversity is purely and

¹⁵⁰ The 1930 Penal Code, Imperial Preface, paragraph 5

¹⁵¹ See the preambular Proclamation to the 1930 Penal Code, Article 2 which stated that: “These tribunals shall be composed of judges appointed by Us [the Emperor] from time to time. Not less than six shall be British Judges proposed by the Deputy Chief Political Officer at our request. For more evidence on the influence of the Christian as well as Western legal system, see the Imperial Preface to the 1930 Penal Code; the Imperial Preface to the 1957 Penal Code; the Foreword message to a book by Steven Lowenstein (1965), *Materials for the Study of the Penal Law of Ethiopia*, Faculty of Law, HSIU, Addis Ababa; the Imperial Preface to the 1960 Civil Code of Ethiopia.

¹⁵² See case studies in Chapter 7.

simply utilitarian.¹⁵³ It has no single statement that shows the intrinsic value of biodiversity. This shows that the crafters of the policy had no intention to consider biodiversity's intrinsic values even if the Policy was issued after half a decade since the adoption of the CBD, which considers intrinsic values of biodiversity at least in its preamble. The National Biodiversity Policy, therefore, reduced biodiversity only to resources for fulfilling human interests.

B) Environmental Policy of Ethiopia, 1997

The overall policy goal of the EPE is protecting the environment for a sustainable utilization of 'resources' by present and future generations.¹⁵⁴ The wording in the policy goal is highly related to the definition of sustainable development of the Brundtland Report.¹⁵⁵ The aim of the EPE is protecting the environment for the sake of economic and social development of humans for generations to come. The notion of sustainable development does not escape anthropocentric views.

'Our Common Future' which is also known as the Brundtland Report is the UN document on sustainable development. The document is inclined towards anthropocentrism due to its focus on humans as beneficiaries of sustainable development. In that document, human beings are considered to be at the center of sustainable development.¹⁵⁶ As is repeatedly indicated in this work, the Earth's systems function in a coordinated and holistic manner. Development or

¹⁵³ §1.3 of the Policy states that, "the national policy on biodiversity conservation and development is formulated based on the rationale that the conservation of biodiversity is one of the conditions of the overall socioeconomic development and sustainable environmental management goals. Hence, because of its vital importance in the socioeconomic wellbeing of the Ethiopian people, the conservation, proper management and the use of biodiversity need to be supported by policy, legislation and national capacity building." The objectives of the Policy have been enshrined in §2.1. One of the objectives is "to ensure that the Ethiopian plant, animal and microbial genetic resources and essential ecosystems as a whole are conserved, developed, managed and sustainably utilized."

¹⁵⁴ §2.1 of the policy provides that: "The overall policy goal is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs."

¹⁵⁵ Our Common Future, Chapter 2: paragraph 1 defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts."

¹⁵⁶ In addition to its anthropocentric inclination in the body part of the document, the Chairperson's foreword clearly indicates the anthropocentric nature of the report. It is read as, "...our message is directed towards people, whose wellbeing is the ultimate goal of all environment and development policies." However, there is an ecocentric view in the report. It reads as, "... the case for the conservation of nature should not rest only with development goals. It is part of our moral obligation to other living beings and future generations." (See Chapter 2, paragraph 55 of the Brundtland Report.)

environmental protection plans are expected to align with these natural processes. A development/environmental protection plan that brings only one species to its center and makes all the rest 'resources' to be destined for the satisfaction of the central species appears to be reductionist and against the rules of nature. Because a development plan inserted a prefix 'sustainable', cannot necessarily make it holistic so long as its meaning does not go beyond the human and includes the rest of nature.

Dick Richardson considers sustainable development even beyond anthropocentrism. He contends:

"Sustainable development is a political fudge: a convenient form of words, promoted, though not invented, by the Brundtland Commission, which is sufficiently vague to allow conflicting parties, factions and interests to adhere to it without losing credibility. It is an expression of political correctness which seeks to bridge the unbridgeable divide between the anthropocentric and biocentric approaches to politics. Beneath the rhetoric of the political platform, the reality is that the concept of sustainable development as presently used is inherently contradictory and begs a number of important questions."¹⁵⁷

When Richardson's words are briefly considered, they meant 'sustainable development' is more of politics than development. On the other hand, Katz and Oechsli argue that environmental or developmental policies are benefiting only the human society. They claim that such policies need to be guided by moral principles that transcend the human society. They reject such human centered policies for they are based on anthropocentric justifications for development activities.¹⁵⁸ When seen in light of these arguments, the EPE is anthropocentric in that it considers only humans in its goals. The idea of sustainable development is not only limited to the overall policy goal of the EPE but also it considers the idea in its specific policy objectives and other body parts.¹⁵⁹

¹⁵⁷ Dick Richardson, 'The politics of sustainable development', in Susan Baker *et al* (eds.) (1997), *The Politics of Sustainable Development: Theory, Policy and Practice within the European Union*, ROUTLEDGE, p.41.

¹⁵⁸ Erik Katz and Lauren Oechsli, 'Moving beyond Anthropocentrism: Environmental Ethics, Development and the Amazon', *ENVIRONMENTAL ETHICS*, Vol. 15, Spring 1993, pp.49-59.

¹⁵⁹ See for instance §2.2 (a); 3.7 (c); 4.1 (b); 4.2 (e); 4.8 (d); and 5.2 (c).

C) Ethiopian Wildlife Policy and Strategy, 2005

This policy and strategy document is also anthropocentric in that its major purpose is protecting wildlife ‘resources’ for their economic benefits.¹⁶⁰ It is not intended here to make argument against obtaining economic benefits from wildlife. However, if the main rationale for protecting wildlife is relegated to only economic gain for humans, the rationale could be easily defeated. That is, if only economic rationales are there to protect wildlife, that could be detrimental for the protection of biodiversity in whole. In other words, attention may be given only to those which will bring economic gain. This could even happen at the expense of the rest of biodiversity.¹⁶¹ Such policy directions fail to answer questions like: what if wildlife can no longer bring economic benefit for humans or what if the destruction of wildlife brings more economic benefit for humans than protecting them.¹⁶²

D) Forest Policy and Strategy

Although the 2007 Forest Policy and Strategy document provides for the ecological functions of forests and forests need to be protected for this reason, the main objective of forest protection is satisfying human needs and economic development.¹⁶³ When this becomes the main purpose of conserving forests, it may lead to consequences which could be detrimental for biodiversity of the country. For instance, industrial or commercial monocultures can be considered as forests so long as they fulfill the main policy objectives, that is, meeting public demand in forest products and enhancing the economy of the country. In Chapter 2 it was discussed that such monoculture

¹⁶⁰ Many of the sections of the document are underlining the rationales for conserving wildlife, which are economic. See for instance, §1, first and fourth paragraphs; §2 first paragraph.

¹⁶¹ Some organisms may play crucial role in maintaining the Earth’s system. For instance, the roles played by microorganisms may be ignored because these important creatures, at present level of legal protection of wildlife, are not considered to bring economic importance from tourists or sale of wildlife products. However, Wilson writes on their ecosystem functions that, “[a] stable ecosystem can probably be created from an eternal cycling of microorganisms and plants.” See Edward O. Wilson (1984) *Biophilia*, Harvard University Press, p.117.

¹⁶² Presently the most attractive economic benefit of wildlife comes from tourism. For some reason, say, flight interruption if tourism declines what will be the rationale for protecting wildlife? On the other side, if more economic benefits are obtained by, say, leasing out/selling the land occupied by the wildlife what will be the reason to stop the land deal?

¹⁶³ Under the general objective, the policy document provides: “The basic aim of the policy is to meet public demand in forest products and foster the contribution of forests in enhancing the economy of the country through appropriately conserving and developing forest resources.”

tree plantations, especially the ones which are exotic for their ‘fast growing’ features are one of the worst threats to biodiversity next to loss of habitat.

E) The Ethiopian Water Sector Strategy, 2001

This strategic document is another example of instruments with anthropocentric goals. It is designed to drain the country’s wetlands and convert them into agricultural fields. Let us see some of its provisions in relation to wetlands:

- Reclaim existing wetlands, and prevent the formation of the new ones by using appropriate mechanisms;
- Develop preventative mechanisms to avoid formation of waterlogged areas;
- Develop guidelines for how to reclaim wetlands, and enforce these guidelines;
- Carryout appropriate drainage works on all wetlands.¹⁶⁴

Draining wetlands and waterlogged areas is one of the strategies in the Ethiopian agricultural development plan. The main purpose of this plan is ensuring food security for Ethiopia by using the water ‘resources’ of the country. This is not a bad plan in itself. The destructive aspect is totally sacrificing one of the most significant ecosystems, the wetlands, for the purpose of ensuring food security for humans. As it is believed now, it is not even possible to sustainably ensure food security by degrading the natural environment. However, this strategy totally ignores the ecological functions of wetlands in the life support system of the Earth. It can be argued that the Ethiopian Water Sector Strategy of 2001 is equivalent to waging war against nature, even in the eyes of anthropocentrism.¹⁶⁵ The Ugandan Wetland Policies, by way of an interesting

¹⁶⁴ See Ethiopian Water Sector Strategy, 2001 §4.1.1

¹⁶⁵ For instance, the 1995 National Wetland Policies of Uganda are tilted to anthropocentric views. They intend to protect wetlands predominantly for human benefit. Irrespective of this fact they strictly prohibit drainage of wetlands, unless more important environmental management requirements supersede, (§7.1 (i)); no modification, drainage or other impacts will be entertained on protected wetlands, (§7.4 (iii)); parts of utilized wetlands will be set aside for conservation activities and/or protected from modification, drainage or exploitation, (§7.4 (iv)); any wetland serving as a source of water supply or receiving effluent as part of a designated service to any human settlement shall be declared a fully protected wetland from any encroachment, drainage or modification, (§7.5 (i)); government may require that some wetlands which have already been drained, should be allowed to regenerate, (§7.7 (i)).

comparison, though anthropocentric, are better than the Ethiopian Water Sector Strategy on three grounds. Firstly, they completely prohibit drainage of wetlands except for more important environmental management requirements; the Ethiopian strategy instead allows a complete draining of wetlands for the purpose of producing food. (2) If a wetland is protected, no human activity is allowed to be conducted on it. In the Ethiopian case, there is no distinction of protected wetlands or otherwise. (3) The government makes efforts to regenerate drained wetlands. In the Ethiopian case, let alone regenerating drained wetlands, the government makes efforts to drain all existing wetlands. Policies, laws and strategic documents are expected to balance the protection of wetlands and their utilization by adopting non-anthropocentric strategies. Non-anthropocentric strategies regarding the protection and utilization of wetlands are the ones that do not hinder the normal ecological functions of wetlands. The Ethiopian Water Sector Strategy, which intends to produce more food by draining all wetlands, represents an extreme example of a reductionist approach which separates nature from food production.

F) Wildlife Development and Conservation Authority Establishment Proclamation No. 575/2008

As the nomenclature of this legal instrument indicates, it is enacted to establish a wildlife authority which is responsible for wildlife conservation. The proclamation, in its preamble, plainly stipulates its anthropocentric rationale for wildlife protection.¹⁶⁶ In addition to these preambular statements, Article 5 provides for the need of wildlife conservation for its sustainable utilization. Sustainable utilization of ‘resources’ like sustainable development does not escape anthropocentricity. As Adler and Wilkinson clearly noted, to slaughter fish for our own consumption up to the limits of maximum sustainable yield so as to keep the fish “stock” replenished is anthropocentric.¹⁶⁷ Such a utilitarian approach for wildlife conservation may focus only on some selected and few species which can provide material and nonmaterial (such as enjoyment from bird watching) benefits by ignoring those which do not provide these services to

¹⁶⁶ The first three preambular statements of the proclamation state that: “WHEREAS, Ethiopia possesses diverse, rare and endemic species of wildlife which are of great value to tourism, education and science; WHEREAS, it is necessary to undertake appropriate conservation and development of wildlife for its sustainable use; WHEREAS, by halting the ever growing wildlife threatening conditions and enable the country to obtain economic and social benefits from its wildlife resources ...”

¹⁶⁷ See John Alder & David Wilkinson (1998), *Environmental Law & Ethics*, MACMILLAN, p. 54.

humans. As far as the functions for the whole life support system are concerned, the ones which may not attract humans for utilitarian purposes may play key roles.¹⁶⁸ While the reality of the biodiversity's role in the Earth's life support system is telling us that all organisms play their own part, having laws which promote the conservation of only those which have utilitarian value for humans is deeply anthropocentric and reductionist. Another wildlife law, the Development Conservation and Utilization of Wildlife Proclamation No. 541/2007 has similar objectives. The latter proclamation is a bit mild in its anthropocentric approach in that it provides for a proper utilization of wildlife 'resources'.¹⁶⁹ However, both proclamations do not mention anything about the right of wildlife to exist and conserving wildlife for its own sake.

The other issue that should be addressed is that Ethiopia does not have any law on threatened species even if this is required by the CBD.¹⁷⁰ According to the IUCN Red List of 2009, 101 species of animals and plants are registered as endangered in Ethiopia.¹⁷¹

G) Forest Development, Conservation and Utilization Proclamation No. 542/2007

The very first preambular paragraph of this Proclamation provides that:

“Whereas, the development, conservation and sustainable utilization of forests plays a decisive role in satisfying the needs of the society for forest products and plays a significant role in the enhancement of national economy in general.”¹⁷²

Though this Proclamation deals with the ecological functions of forests, the overall goal of protecting forests is primarily to satisfy human interest and enhancing the country's economic

¹⁶⁸ Edward O. Wilson, a scientist who specializes in ants, claims that small soil organisms are “The Little Things that Run the World.” He argues that soil organisms give life to the soil. See Ellen W. Chu and James R. Karr, ‘Environmental Impact, Concept and Measurement Of’ in Levin, *supra* note 53, p. 562. See also Edward O. Wilson, ‘The Little Things That Run the World (The Importance and Conservation of Invertebrates)’, *Conservation Biology*, Vol. 1, No. 4 (Dec., 1987), pp.344-346.

¹⁶⁹ See 3(1) of the proclamation. This work promotes a proper utilization of biodiversity, a utilization that does not compromise the normal functioning of the Earth's systems.

¹⁷⁰ Article 8(k) of the CBD provides that: “Each Contracting Party shall, as far as possible and as appropriate, develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations.”

¹⁷¹ See The Guardian newspaper of 23 October 2009, ‘Red list 2009: Endangered species for every country in the world’. <http://www.theguardian.com/environment/datablog/2009/oct/23/endangered-species-red-list-data-review>, accessed on 05 August 2013.

¹⁷² Forest Development, Conservation and Utilization Proclamation No. 542/2007, preamble.

development. Forests, as the major places for biodiversity on Earth, need special attention.¹⁷³ In Ethiopia the remnants of tropical rain forests are found in the southwestern and southern parts of the country. Although there is no reliable information on the actual cover of these types of forests in the country, Reusing estimates that only 0.20% of the country is covered with wet montane forests.¹⁷⁴ The Sheka forests are among these remnants of high forests.¹⁷⁵ If only anthropocentric rationale is applied for the protection of forests, it seems that it is less likely to maintain such dwindling high forests together with the biodiversity they harbor for long.

H) Access to Genetic Resources and Community Knowledge and Community Rights Proclamation No. 482/2006

The first preambular statement of this Proclamation that states, “[w]hereas, the immense biodiversity wealth Ethiopia is endowed with must be conserved and sustainably utilized for the benefit and development of its peoples” boldly tells its anthropocentric nature. The objective of this Proclamation also shows its anthropocentric inclination. It is meant to ensure the country and its communities obtain fair and equitable share from the benefits arising out of the use of genetic resources so as to promote the conservation and sustainable utilization of the country’s biodiversity resources.¹⁷⁶ Genetic diversity is a component of biodiversity which is given less importance by laws and policies, though it plays decisive roles in maintaining life on Earth. Nowhere has this point been considered in the Proclamation. Irrespective of its anthropocentric tendencies, the Proclamation emphasizes on the importance of recognition of the contribution of communities for the conservation, development and sustainable utilization of biodiversity ‘resources’; protection of the community knowledge for the customary management of genetic ‘resources’; and involving communities in decision making on the use of community knowledge and genetic ‘resources’.¹⁷⁷ As is discussed in Chapter 2, traditional knowledge of indigenous/local communities contributes immensely to the protection of biodiversity. The

¹⁷³ For instance, tropical moist forests which cover around only 7% of the world’s surface area may contain over 90% all species. (See Ian R. Swingland, ‘Biodiversity, Definition Of’, in in Levin, *supra* note 53, Vol. 1, p.384.)

¹⁷⁴ Matthias Reusing, ‘Change Detection of Natural High Forests in Ethiopia Using Remote Sensing and GIS Techniques’, *International Archives of Photogrammetry and Remote Sensing*, Vol. XXXIII, Part B7, (2000), pp.1253-1258.

¹⁷⁵ See Chapter 7.

¹⁷⁶ See Article 3 of the Proclamation.

¹⁷⁷ See preambular paragraphs 2, 3, 5 & 6.

knowledge systems of these people tend to be ecocentric rather than the modern scientific knowledge. When access is made to genetic ‘resources’ and community knowledge, it is important to focus on knowledge systems of these people who have made them live harmoniously with their natural environment.

As a concluding remark, it can be argued that the international and national environmental instruments have demonstrated an anthropocentric rationale for protection of biodiversity/nature. Even if it is not possible to deny the limited successes that these instruments have exhibited, the general tendency of biodiversity is towards an increased rate of loss. That loss, especially in the past few decades, was faster than any time in human history.¹⁷⁸ If this trend continues, by 2100 most of the biodiversity will be lost to the extent that the life support system can no longer function normally.¹⁷⁹

The instruments examined in this Chapter viewed the human-nature relationship with a reductionist lens. They were not crafted in a way where humans are integrally related to the whole range of nature. They do not perceive humans as an inherent part of nature and responsible to protect it so that it functions for the mutual benefits of humans and nonhuman nature. In other words, these instruments are designed to protect the environment from the perspective that ensures the continual supply of materials and services from nature. In the words of Bosselmann, “modern legislation to protect the natural environment has developed in a compartmentalized, fragmented, economist and anthropocentric manner.”¹⁸⁰

These instruments focus on the material benefits and economic developments which could be obtained from what they call ‘resources’. This conclusion is drawn from the fact that the instruments reinforce the concept that only certain organisms are beneficial to humans either directly or indirectly and the others which are not considered to be beneficial will be sacrificed for the ‘beneficial’ ones.¹⁸¹ Legal instruments usually do not see all parts of the environment as a whole. From the universal set of nature, these instruments focus only on a subset based on the

¹⁷⁸ See generally on this point *Millennium Ecosystem Assessment*, *supra* note 91.

¹⁷⁹ See *Ibid.*

¹⁸⁰ Klaus Bosselmann, ‘From Reductionist Environmental Law to Sustainability Law’ in Burdon, *supra* note 39, p. 204.

¹⁸¹ Monocultures such as eucalyptus plantations by replacing the native species can be taken as example for such an act.

criteria of benefits provided for humanity. On this issue, Bosselmann argues, “[m]ost laws have natural resources as their subject, not the natural world. As a result of this fragmented view, environmental security is only partially noticed and only in competition with economic objectives. This is ecological nonsense of course.”¹⁸²

Conclusion

This chapter argues that the perceptions of human separation from, and human dominion over, the rest of nonhuman nature have resulted in the ignorance of the integrated wholeness of the Earth’s systems, of which humans are part. It firstly examined the influence of anthropocentrism, which has been considered as a paradigm in advancing these notions since the time of ancient Greek philosophers. Anthropocentrism has been discussed as a concept that firmly believes in the centrality and superiority of humans and the instrumentality of the rest of nonhuman nature. The chapter also demonstrated that religious teachings have further strengthened the separation and dominion concepts which have influenced human-nature relationships to be governed in a manner that encourages humans to wantonly exploit nature without assuming appropriate responsibility.

On the notions of separation and dominion, the chapter further argued that the Scientific Revolution and modern knowledge contributed their roles in the proliferation of these notions. The chapter demonstrated that since the Scientific Revolution, the assault on the natural environment has been aggravated for two reasons. Firstly, the Scientific Revolution strengthened the notions of separation and dominion by inventing the scientific method. Secondly, it was followed by the industrial revolution which resulted in technological advancements and economic growth. These latter situations caused unprecedented impact on the natural environment in human history. The chapter finally dealt with the influence of the notions of separation and dominion inserted into international and national biodiversity protection policy and legal instruments. These instruments, though they have some elements of recognition of the intrinsic values of biodiversity, are designed to protect biodiversity for anthropocentric reasons which are argued ineffective to halt the loss of biodiversity.

¹⁸² Bosselmann, in Burdon, *supra* note 39, p. 205.

Based on these factors, the chapter contends that humans have failed to occupy their correct place of responsibility, the place of respecting and caring for nature, with the view to governing their relations with the nonhuman nature. Assuming this position can initiate the adoption of legal and policy instruments which scientifically and culturally define the roles of humans in their relations with the nonhuman nature. For achieving this, a shift in our thinking is needed to save biodiversity for the good of all.¹⁸³ A deep transformation of consciousness and policy is needed to avoid human dictatorial governance over the nonhuman nature. Our investigation into the issue of separation and dominion continues in the next chapter by focusing on two major aspects, namely; the socioeconomic and cultural aspects of the Ethiopian people and the developmental mindset as drivers of loss of biodiversity.

¹⁸³ Examples of how legal and policy instruments may be improved to better govern human-nonhuman relations by bringing a shift in human thinking are discussed in Chapter 5 and 6.

CHAPTER 4

ANALYSIS OF CAUSES OF LOSS OF BIODIVERSITY IN ETHIOPIA

Introduction

Biodiversity loss occurs in nature without any human intervention. It is an evolutionary fact that species have limited lifespan,¹ though there are various estimates on species lifespan. For instance, Sacha Spector reports that: “before human civilization, species were on the scene, on average, for between 1 and 10 million years before going extinct.”² According to the data collected by Robert Barbault’s indicate, the average lifespan of species is 5 to 10 million years.³ That is, extinction is a natural phenomenon and a species cannot escape it as its inevitable destiny.⁴ This means that even without human intervention, species go extinct. In addition to the normal natural extinction, the Earth had entertained five major extinctions due to various natural reasons. According to Edward O. Wilson, there are scientific estimates that “over 90% of all species that have ever lived are extinct.”⁵ This is all about naturally induced extinction and it is outside the scope of this work, as this work’s main focus is on human induced causes of loss of biodiversity, especially as it is relevant to Ethiopia.

Scientists now predict that the Earth is going to have a sixth mass extinction. For instance, Edward O. Wilson expresses this as: “[w]e are currently in the middle of the sixth wave of extinction – for the first time caused by humans.”⁶ There are a number of studies that indicate that the present day extinction rate is up to 10,000 times greater than the natural extinction rate.⁷ What is peculiar to the sixth mass extinction is that it is in the power of humans to reverse the situation, if they (we) are willing to do so.

¹ Species are one of the components of biodiversity.

² Sacha Spector, ‘Stemming the Tide of the Sixth Global Extinction Event: What We Can Do’, Niles Eldredge (ed.) (2002), *Life on Earth: An Encyclopedia of Biodiversity, Ecology, and Evolution*, Volume 1, ABC-CLIO, Inc., p.73.

³ See Robert Barbault, ‘Loss of Biodiversity, Overview’, in Simon Asher Levin (Editor-in-Chief) *Encyclopedia of Biodiversity*, Vol. 3, p.762.

⁴ *Ibid*, p.761.

⁵ Edward O. Wilson, ‘Biodiversity and its Loss: What Does It Really Mean?’

<http://www.eco-action.org/dod/no8/biodiversity.html>, Accessed on 06 January 2010

⁶ *Ibid*.

⁷ *Ibid*. See also Krishna Dronamraju (2008) *Emerging Consequences of Biotechnology: Biodiversity Loss and IPR Issues*, World Scientific Publishing Co. Pte. Ltd., p.64.

Different studies give various reasons for the human induced extinctions and this chapter demonstrates the analysis focusing on two human induced causes of loss of biodiversity in Ethiopia. The first cause is related to the socioeconomic and cultural aspects of the Ethiopian people. Here efforts are made to show how people's settlement patterns, their day-to-day activities in fulfilling their livelihood, the activities they conduct to gain a heroic position and respect within the society, through hunting, have all led to loss of biodiversity in many parts of the country. Although it is difficult for this work to explain all these societal activities and behaviors in terms of anthropocentrism and the sentiment of dominion over nature, there are some indications that these causes can be related to anthropocentrism and the consequent conception of human separation and human mastery over nature. Even if the socioeconomic and cultural aspects of the Ethiopian people reflect some elements of anthropocentrism, this work does not argue that anthropocentrism alone is responsible in shaping these socioeconomic and cultural conditions which contributed to the loss of biodiversity in Ethiopia. The factors that have shaped societal behavior in the way they acted to the detriment of biodiversity in many parts of Ethiopia are complex and cannot be attributed to any one single reason.

The second cause is related with the developmental mindset which is a relatively recent phenomenon in the country. This cause is considered to have added fuel to the fire as it is intensifying loss of biodiversity in an unprecedented pace in the long history of the country. This cause of loss of biodiversity fits well the notions of anthropocentrism and human dominion over nature.

4.1 Socioeconomic and Cultural Aspects

A) Expansion of Agriculture

Ethiopia, being one of the oldest countries in the world, has been inhabited by people for millennia. Especially its highlands have been highly influenced by various human activities; of these the major ones are agricultural activities. As evidence indicates, the northern highlands, the central plateau and the eastern highland areas experienced degradation and deforestation since

the medieval period.⁸ Richard Pankhurst argues that large population size and the consequent expansion of farmlands, continuous wars among the people of the land and external aggressions have continuously denuded the country's highlands.⁹

It is discussed in Chapter 2 that habitat loss is the leading cause of loss of biodiversity in the world and this seems true in Ethiopia also. Expansion of agriculture is one of the major causes of habitat loss in Ethiopia.¹⁰ Habitat loss may be seen as the (permanent) conversion of land to other uses. Habitat fragmentation is a consequence of habitat loss.¹¹ Habitat fragmentation is defined as when “a large expanse of habitat is transformed into a number of smaller patches of smaller total area, isolated from each other by a matrix of habitats unlike the original.”¹² The creation of patches of smaller areas has many negative impacts on the survival of many of the organisms which were comfortably living before the fragmentation. For example, there are a number of negative impacts on interior diversity. One of these is the edge effect. Edge effect is impact on biodiversity which is resulted due to the creation of smaller areas. The edge of fragmented areas becomes very long as compared to the original habitat. In the words of Primack, this will result in “increased light level, higher daytime temperatures, higher wind speeds, and lower humidity... make fire more likely, expose some species to predators.”¹³ Other effects of habitat loss and fragmentation include, the negative effect on population growth rate, reduction of trophic chain length thereby altering species interaction, the negative effect on breeding success.¹⁴

⁸ For details, see Richard Pankhurst, ‘The History of Deforestation and Afforestation in Ethiopia Prior to World War I’, *Northern African Studies*, Vol. 2 No. 2, 1995 (New Series), pp. 119-133.

⁹ See *Ibid.*

¹⁰ Habitat is a difficult concept to define, especially from the view point of its scale. Encyclopedia of Biodiversity defines it as “a place where an organism spends part of its time.” (Kenneth Petren, ‘Habitat and Niche, Concept of’ in Levin, *supra* note 3, p.304.) However, habitat must be seen in a wider sense in that it incorporates a certain minimum level of comfort for the organism that spends part of its time in an area. When such areas where organisms spend part of their life are lost or fragmented, survival becomes difficult or even impossible for the organisms.

¹¹ See Melina F. Laverty and Eleanor J. Sterling, ‘Threats to Biodiversity’ in Eldredge, *supra* note 2, p.53.

¹² Wilcove et al (1986) *Habitat fragmentation in the temperate zone*, cited in Lonore Fahring, *Effects of Habitat Fragmentation on Biodiversity*, Annual Review of Ecology, Evolution, and Systematics, Vol. 34 (2003), p.490.

¹³ Richard B. Primack, Extinction, Causes of, in Simon Asher Levin (Editor-in-Chief) *Encyclopedia of Biodiversity*, Vol. 2, *supra* note 3, pp.704-705.

¹⁴ Wilcove et al, *supra* note 12, p.499.

As Daniel S. Simberloff notes, “[h]abitat loss and fragmentation have been termed the greatest worldwide threats to wildlife and the primary causes of species extinction.”¹⁵ Although there are no comprehensive data that show which factor contributes most in causing loss of biodiversity in Ethiopia, from various studies and observations it can be safely argued that habitat loss and fragmentation are number one causes.¹⁶

As has been witnessed in developing countries like Ethiopia, there is no need to be industrialized to cause habitat loss and fragmentation and consequently to cause loss of biodiversity. It appears that the most significant cause of habitat loss and habitat degradation in Ethiopia is converting land for traditional farming practices. This can be witnessed by simply looking at the highland areas of the country which cover about 40% of the total landmass of the country but inhabit around 80% of its population.¹⁷ This is the main reason for the fall of the average farmland per household in the highlands to less than a quarter of a hectare.¹⁸ The insufficient landholding to produce enough food for the household in the highlands of the country combined with the lack of alternative livelihood opportunities and already high level and still increasing proportion of the young population in the countryside have pushed the people to inaccessible terrains where the remaining biodiversity of the highlands have taken refuge.¹⁹

¹⁵ Daniel Simberloff (1986) ‘Are We on the Verge of a Mass Extinction in Tropical Rainforests?’ cited in Lavery and Sterling in Eldredge, *supra* note 2, p.51.

¹⁶ For instance, the highly endangered Ethiopian wolves are threatened mainly by habitat loss. See Cynthia O’Neil, ‘The Habitat of the Ethiopian Wolves’ Demand Media, <http://animals.pawnation.com/habitat-ethiopian-wolves-1720.html>, accessed on 05 August 2013, and ‘Ethiopian Wolf Conservation Program, http://www.wildcru.org/research/research-detail/?project_id=41, accessed on 05 August 2013.

¹⁷ On this account, Daniel Gamachu writes: “Africa’s highlands—those areas above 1500 meters elevation—constitute only 4 percent of the total landmass but contain the highest population density of any agro-climatic zone, with a livestock density four times the continent’s average. In all, Africa’s highland zones contain almost 20 percent of the continent’s rural human and ruminant livestock population. The Ethiopian region has 490,000 square kilometers of highlands, 42 percent of its total landmass and almost half the continent’s highland area. Moreover, Ethiopia’s highlands account for over 80 percent of its human and livestock population and 90 percent of its arable land. (Daniel Gamachu, *Environment and Development in Ethiopia* (Geneva, 1988), 5, cited in James C. McCann (1995), *People of the Plow: An Agricultural History of Ethiopia, 1800-1990*, The University of Wisconsin Press, p.23)

¹⁸ See the PASDEP document §7.11.4.

¹⁹ According to the report of a survey conducted in 2000 jointly by the Disaster Prevention and Preparedness Commission (the Ethiopian Government authority responsible for relief works) and the USAID, indicates that in Lome woreda (woreda is one of the lowest administrative structures in Ethiopia) of the Hadiya zone (one of the zones in the SNNPRS), “the proportion of households with less than or equal to 0.25 hectare of land are 22.0% for lowlands, 22.1% for midlands and 25.0% for highlands.” (See Vulnerability Profile: SUMMARY, p.13, www.dppc.gov.et/gsd/collect/dppalibr/archives/HASH536b.dir/doc.pdf, accessed on 27/01/10)

Such density of population and land scarcity, as indicated above, combined with lower levels of agricultural productivity have forced people to clear the remaining patches of forests for farming activities, transforming the already fragile environment into a complete degradation and loss of biodiversity.²⁰ As it can be observed in much of the highland Ethiopia, the farming system has created agricultural fields which are dispersed throughout the landscape. In addition to the threats of survival for wild species, habitat loss and fragmentation also causes of genetic degradation of small populations by blocking their free movement. Especially, large animals need wider areas and are susceptible to extinction due to intensive human-caused disturbances such as agricultural activities. This is one of the reasons for the local extinction of lions, elephants, rhinoceroses and buffaloes in many parts of Ethiopia today.²¹

As one of the least industrially developed countries in the world, the country heavily and directly depends on its land and natural endowments for its economy and the livelihood of its people. The population growth rate of the country remained high for many decades while the farming systems remained the same. The farming system was based on expansion of farming land from year to year by clearing virgin forests, causing an ever increasing loss of biodiversity. In the Ethiopian agricultural system, generations repeated the same practice as their ancestors, which resulted in the expansion of farmlands into nearly the whole of the highland ecosystem.

The impact of small-scale farming activities on degrading the environment is not limited to the northern and eastern highlands and the central plateaus of Ethiopia. They are also affecting the last remaining patches of tropical rainforests of the southwest. The following table details the extent of deforestation in four *kebeles*²² (in Sheka area) between 1973 and 2005 and gives a clear picture on the contribution of small-scale farming for deforestation.

²⁰ Even at global scale, today, agricultural activities are the major causes of habitat loss and fragmentation. (See, for instance, Lavery and Sterling, *supra* note 11, p.51).

²¹ See discussion below.

²² Kebele is a lowest level of administration in Ethiopia.

	1973–1987	1987–2001	2001–2005
Deforestation for small-scale agriculture	753 ha	891 ha	1059 ha
Deforestation for large-scale agricultural investment	0 ha	549 ha	550 ha

Table 4.1 Land use changes in four *kebeles* of Sheka area.

Source: Bedru Sherefa²³

As can be seen from the table, (2001-2005) forested land cleared in the four *kebeles* was 550 ha for large-scale agricultural investment. During the same time, small-scale agriculture claimed 1059 ha forest land. Sherefa identifies that this is largely caused by increasing population size.²⁴

Small-scale agriculture in Ethiopia has been practiced in a conflicting manner with the ecosystem in two ways. Firstly, the increasing demand for food was addressed by area expansion with less effort to increase productivity of a piece of land. With increasing population, this practice has converted the Ethiopian highlands into a massive degraded landscape, causing the destruction of biodiversity. Secondly, enough returns to the land have not been made which could have maintained the soil fertility. This type of agricultural activity was based on a unidirectional exploitative relation between humans and the natural environment. The highland agriculture is neither slash and burn, nor of a sort that maintains the productivity of existing fields. All animal dung and farm residue go as biomass fuel, making the agricultural system exploitative. Human activities, to go harmoniously with nature, should not be only extractive and the relation has to be a *quid pro quo* type.

²³ Bedru Sherefa, Land-use/land-cover Changes in Andracha and Masha *woredas* of Sheka Zone, SNNP Regional State, in Masresha Fetene (ed.) (2007) *Forests of Sheka: Multidisciplinary Case Studies on Impacts of Land Use/Land Cover Changes, Southwest Ethiopia*, p. 37. (Sherefa made this analysis based on satellite image obtained from the Ethiopian Mapping Agency.)

²⁴ *Ibid*, p.36. However, it is important to note here that large-scale agricultural investments have been increasing in recent years.

Absence of such a relationship with the ecosystem resulted in decreased productivity of farmlands under cultivation and consequently expansion of agriculture in the whole of the landscape of the highlands.²⁵ It can be predicted that it is not possible to continue maintaining such types agricultural practices for much longer into the future. It appears from this that it is high time, if not too late to reverse this situation. Postponing any action in this regard may be costly in terms of loss of biodiversity, livelihood of the people,²⁶ and the country's economy. However, the most concerned organ in this respect, that is, the Ethiopian government does not seem to move in the direction of reversing the situation. It is also important to briefly examine the directions of the government in this respect.²⁷

As indicated above, smallholder agriculture in Ethiopia has occupied much of the country's northern and eastern highland areas, the central plateaus, and the northern part of the SNNPRS. This kind of expansion of agriculture in the whole of the landscape without setting aside any meaningful portion of such landscape for the flourishing of biodiversity is the major cause of loss of biodiversity in the country linked with the expansion of small-scale agriculture. This is the result of a long term dependence on subsistence agriculture coupled with rising population as well as high population growth rate and lower level of agricultural productivity.

The purpose of this chapter is not to argue against small-scale agriculture *per se*. If small-scale agriculture is made efficient with the help of appropriate technology and if it is stabilized²⁸ within reasonable period of time, it is believed that it will sustain livelihoods. For example, a report, '*Agroecology and the Right to Food*' presented at the 16th Session of the United Nations

²⁵ If someone travels throughout the highlands and central plateaus of the country, he/she will observe that the extent of the degradation of these vast areas, which are caused by expansion of small-scale agriculture.

²⁶ Agricultural practices are conducted in such a conflicting manner with nature would seriously affect the livelihoods of the people in a number of ways. For instance: (1) they focus more on area expansion than increasing productivity of the soil working together with nature. This, as discussed above, has resulted in severe land scarcity for farming. Land scarcity in Ethiopia now is creating big socioeconomic and environmental problems. (2) they cause severe loss of biodiversity they reduce the ecosystem's resilience capacity, (see Chapter 2 for details) which is one of the most important functions of biodiversity. It is because of the diminished capacity of the ecosystem's resilience that even shorter drought periods led to reduction in agricultural production and recurrent famine in the country. (For details, see MOFED (2002), *Ethiopia: Sustainable Development and Poverty Reduction Program*; Food Security Strategy of 1996; and the PASDEP document)

²⁷ The government policies and strategies are discussed in detail in §4.3.1 below.

²⁸ The word 'stabilized' is used in a sense that there has to be a maximum limit of agricultural fields within a certain landscape. If the whole of or most of a given landscape is converted into farmland, as the case in the Ethiopian highlands, that is not only dangerous for the biodiversity of the country, but also it will affect the livelihood of the people significantly.

Human Rights Council [A/HRC/16/49], 8 March 2011, based on an extensive review of recent scientific literature, demonstrates that agroecology, if sufficiently supported, can double food production in the world within 10 years while mitigating climate change and alleviating rural poverty. The report duly emphasized the roles played by small-scale farmers in doubling food production in the coming decade.²⁹ In this case small-scale farming does not mean expanding agriculture throughout the landscape to the level of degrading the biodiversity for the sake of short-term benefits which could cause long-term costs for the people as well as the environment.

The main concern here is; why do people act in such a manner while they are aware of the deterioration of the ecosystem. A number of studies have been conducted to answer this question and most of them concluded that it was poverty that was pushing people to such actions.³⁰ This however gives a superficial perception of the problem. As evidence indicates, the Ethiopian highlands became denuded centuries ago and most of the wildlife has been eradicated immediately after the introduction of firearms.³¹ That is, it could be hasty to attribute loss of biodiversity on poverty alone although poverty also contributes its part. The reasons for the loss of biodiversity in Ethiopia are complex and cannot be attributed to any single reason.

Based on this understanding, it is assumed that anthropocentric views of the society have contributed in part to the loss of biodiversity in the Ethiopian highlands. This assumption has been drawn from three facts. Firstly, the Ethiopian highlanders have developed the culture of cutting trees almost on a daily basis without the corresponding practice of reforestation. The Portuguese Jesuit Manoel de Almeida noted in the early 17th century that it was not the fault of the Ethiopian land to be degraded to such an extent, but it was the fault of Ethiopians who clear forests but “none of them had either the energy or the will to replant a single one.”³² The

²⁹ ‘Eco-farming could double food output of poor countries, says UN’

<http://www.guardian.co.uk/environment/2011/mar/08/eco-farming-double-food-output>, accessed on 13 May 2011
The full report submitted by the Special Rapporteur on the right to food, Olivier De Schutter is available at:
http://www.srfood.org/images/stories/pdf/officialreports/20110308_a-hrc-16-49_agroecology_en.pdf, accessed on 13 May 2011

³⁰ See for example: (1) Sisay Asefa, ‘Rural Poverty, Food Insecurity and Environmental Degradation in Ethiopia: A Case Study from South Central Ethiopia’, *International Journal of Ethiopia Studies*, Vol. 1 No. 1 (Summer/Fall 2003) pp.59-89. (2) Arlid Angelsen and Matti Vainio (eds.) (1998), *Poverty and the Environment*, CROP Publication.

³¹ See discussion below in B) ‘Hunting’ subsection.

³² C. F. Beckingham and G. W B. Huntingford, *Some Record of Ethiopie*, 1593-1646 (London, 1954), 48, 188, cited in Pankhurst, *supra* note 8, p.120. It is outside the realm of this work to discover the real reasons why people

tendency of the highland people in continuously denuding the landscape has also been proved by archaeological studies. As one archaeological study reveals, agricultural activities represent the leading cause of environmental degradation in northern Ethiopia.³³

Secondly, it has been shown that the highlanders use the natural endowments of the land wastefully and sometimes even needlessly kill wildlife for reasons not associated with subsistence or economic gain.³⁴ Regarding the wasteful utilization of forests in the 1870s, L. Louis-Lande estimated that “wild olive trees from the Finfine (the present day Addis Ababa) area were cut down, 1,000 kilos of wood yielded little more than 10 kilos of charcoal.”³⁵ Regarding the reckless utilization and treatment of nature, Richard Pankhurst observed:

“The natives have a terrible lack of foresight and with the object of enlarging the grazing land for their herds or simply to improve the pasture they periodically burn the dry grass. Each time the fire gains new ground and the forests are invaded, and in this way the country is gradually deforested. Under the influence of torrential rains the land is washed away and rains and barren land replace the soil-laden slopes. How terrible is this problem of deforestation in the mountains and what dangers menace Ethiopia if effective legislation does not check this recklessness!”³⁶

Rosen also noted how Ethiopians have been wasteful in their utilization of forest products. He claimed that people set fire to the base of the tree trunks in many instances when they found the trees were too big to cut easily.³⁷

The third element is the absence or very low level of traditional birth control methods among the Ethiopian highlanders. There is evidence of the existence of traditional birth spacing methods in

adopted a culture of cutting trees since long ago in the Ethiopian highlands. However, this work assumes that loss of traditional cultures due to spread of the dominant religions and the consequent notions of human separation from nature and human dominance over nature contributed to the development of the culture of cutting trees. (See Kelbessa's notes on the Oromo cosmology in §2.2.2 above.)

³³ Kathryn A. Bard, *et al*, ‘The Environmental History of Tigray (Northern Ethiopia) in the Middle and Late Holocene: A Preliminary Outline’, *The African Archaeological Review*, Vol. 17, No. 2 (June, 2000), p.80.

³⁴ See discussion below in B) ‘Hunting’ subsection.

³⁵ L. Louis-Lande, “Un voyageur français dans l’Abyssinie méridionale,” *Revue des Deux Mondes* (1879), XLIX, 387, cited in Pankhurst, *supra* note 8, p.122.

³⁶ Pankhurst, *supra* note 8, p.123.

³⁷ See F. Rosen, *Eine deutsche Gesandtschaft in Abessinien* (Leipzig, 1907), 87, cited in *Ibid*, p.122.

different communities in Ethiopia, outside these areas, who use various methods including herbal medicines as a means of birth control.³⁸

When compared with the practices of many of the indigenous and local communities which were discussed in Chapter 2, the Ethiopian highland societies, including the northern highlands, the central plateau areas and the eastern highlands, have developed a careless approach in their relation with the natural environment, which is not based on respect, love and caring for the natural environment. This behavior can be explained in terms of anthropocentric tendencies in which humans are regarded as the pinnacle of creation who can utilize nonhuman nature as per their wishes. If people have not developed the culture of living harmoniously with nature, which is an ecocentric way of life, their relationship with nature could better be explained in terms of anthropocentrism.³⁹ This could also challenge those writers who stick to the argument that anthropocentrism is the characteristic of only Western industrialized societies.

B) Hunting

In Ethiopia, hunting has been widely practiced for various reasons. Hunter gatherer communities conduct hunting mainly for food. It is also commonly made in many societies for the purpose of initiation/rites of passage. Hunting was perceived as a heroic act as it was believed that only strong men could kill large and ‘dangerous’ wild animals.⁴⁰ A man’s social status can be determined by the type and number of wild animals he killed. Women also play a significant role in hunting. That is, they encourage their men to go out for hunting, thus as killers’ wives, they also assume a special social status. When hunters return home, women were gathered and sang songs in praise of those who came with trophies and in condemnation of those who did not kill

³⁸ For instance, see the following materials. (1) Yetmgeta Eyayou *et al*, ‘Socio-Cultural factors in Decisions Related to Fertility in Remotely Located Communities: The Case of the Suri Ethnic Groups’, *Ethiop.J.Health Dev.* 2004; 18(3); (2) Amare Dejene, ‘Traditional Family Planning Methods in Ethiopia: The Case of the Surma People’, www.ossrea.net/index.php?option=com_content&view=article&id=253, accessed on 28 September 2012; and (3) UNFPA (2008), *Levels, Trends and Determinants of Lifetime and Desired Fertility in Ethiopia: Findings from Ethiopian Demographic and Health Survey (2005)*, Ethiopian Society of Population Studies. It is important to note here that no evidence has been obtained whether the contraceptive methods are used to protect nature or not.

³⁹ In highland Ethiopia the traditional world outlook of the people is almost lost and replaced by religious beliefs of Christianity and Islam. The relations of humans with the nonhuman nature, according to the teachings of these religions are discussed in Chapter 3.

⁴⁰ Mahteme Selassie Woldemeskel (1970), *Zikre Neger*, Berhanena Selam Haile Selassie I Printing Press, p.341. (Book in Amharic)

any animal.⁴¹ These hunting traditions have caused the total elimination of big animals in many areas of the country.⁴² The introduction of firearms has exacerbated the problem. On the impact of firearms on wildlife, Pankhurst comments that:

“The advent of firearms in Ethiopia, mainly in the 18th, 19th, and early 20th centuries led to a dramatic destruction of wildlife, first in the northern and later in the southern part of the country. This can be illustrated not only from travelers’ accounts, but also by the well-documented sharp increase, and later no less rapid decrease, in ivory exports.”⁴³

Although in many parts of the country there has been a rampant killing of wild animals, in some societies, there was a restriction on animal hunting. According to Workineh Kelbessa, the Borena people in southern Ethiopia had a culture of avoiding total annihilation of wild animals. One of their reasons to do so was the belief that wild animals have their own spirits which could attack people if they conduct unjustifiable hunting.⁴⁴ The other reason was the belief of totemism, in which they associate themselves in a kinship relation with these animals and hence recognize the rights of wild animals to survive. Workineh also argues that the Borena people are not only considerate to big animals but also to tiny creatures like ants.⁴⁵ These people are examples of exceptionally considerate societies for wildlife in the country.⁴⁶

Workineh associates such kind of rampant hunting behavior in the people of the Oromo ethnic group with the expansion of modern religions (Christianity and Islam). He argues that anthropocentric attitudes have developed in the people with the modern religions though the

⁴¹ See *Ibid*, p.346.

⁴² See *Ibid*, p.346. (This is without forgetting the other threats to wildlife such as expansion of farmlands, illegal logging and wild fire.)

⁴³ Pankhurst, *supra* note 8, p.119.

⁴⁴ Workineh Kelbessa (2011) *The Indigenous and Modern Environmental Ethics: A Study of the Indigenous Oromo Environmental Ethic and Modern Issues of Environment and Development*, Ethiopian Philosophical Studies, I, p.72

⁴⁵ See *Ibid*, p.73-76.

⁴⁶ To protect wild animals from unchecked killing, some efforts have been made by the Ethiopian government. The government established a number of protected areas, enacted laws (e.g. Development, Conservation and Utilization of Wildlife Proclamation No. 541/2007 and Wildlife Development, Conservation and Utilization Council of Ministers Regulation No. 163/2008) and established a semiautonomous organ (the Ethiopian Wildlife Development and Conservation Authority established by Proclamation No. 575/2008). This Authority is responsible for protection of wildlife in Ethiopia. However, it does not appear that these efforts have been successful as the killing has continued unabated till now. By this time large animals are restricted to only a few small-sized protected areas. Even these protected areas are not a safe place for these species.

extent of their influence varies from place to place.⁴⁷ The merciless eradication of wildlife in Ethiopia, especially in areas where traditional belief systems have weakened and dominated by modern religions can be explained in terms of anthropocentric arrogance towards wildlife.

C) Biomass Fuel Consumption

The rural people of Ethiopia, which comprise 85% of the total population, depend exclusively on biomass fuel as energy source. Even a considerable portion of the 15% urban dwellers use biomass as a source of energy.⁴⁸ The main source of energy for the Ethiopian people is therefore biomass fuel. The aggravation of electric power interruption in the past few years in the country is also pushing urban dwellers to resort to biomass fuel, further increasing its consumption.

A 1984 estimate indicates that 94.8% of the total energy consumption in Ethiopia was made up of biomass fuels consisting of fuel wood, animal dung and crop residue. Fuel wood use makes up 81.8% of these traditional sources,⁴⁹ causing massive deforestation in the country, the rest being covered by animal dung and crop residue. Most of the firewood is obtained from the natural forests. It is based on this fact that Teketay argues that “there is big wood deficit in Ethiopia, as the plantation forestry is very far from meeting the demand for wood.” He calls this situation a ‘wood famine’ and it is this wood famine which is the main cause for the ‘mining’ (the volume of wood harvested in a given period exceeding the sustainable rate/increment yield) of the forest resource base of the country.⁵⁰ This wood famine has forced the rural (and also the urban) people to use animal dung (which should have been returned to the soil to maintain the recycling of nutrients which help in enhancing agricultural products) as fuel. The costs of using dung in

⁴⁷ See Kelbessa, *supra* note 44, p.53. Kelbessa argues that the modern religions, especially Islam and Pentecostal Christianity are intolerant to the traditional Oromo belief systems and take the responsibility (partial) for the weakening and the total eradication of the belief systems in different parts of the Oromo land. (See, *Ibid*, p.71)

⁴⁸ See Zenebe Gebreegziabher (2007), *Household Fuel Consumption and Resource Use in Rural-Urban Ethiopia*, PhD thesis at the University of Wageningen, the Netherlands, pp.115-134.

⁴⁹ Shibus Tedla and Kifle Lemma (1998), *Environmental Management in Ethiopia: Have the National Conservation Plans Worked?*, OSSREA, p.7.

⁵⁰ Demel Teketay, ‘Deforestation, Wood Famine, and Environmental Degradation in Ethiopia’s Highland Ecosystems: Urgent Need for Action’, *North African Studies*, Vol. 8, No. 1 (New Series), p.60. The fuel wood demand and supply projection made by EFAP (1994) indicated that the then demand for fuel wood was 58 million m³ whereas the supply was 11 million m³. The same projection for fuel wood for the year 2008 indicated a supply of 9.8 million m³ against a demand of 74.9 million m³ showing a deficit of 65 million m³ of wood. The projection made for the year 2020 indicated that the demand will reach to 100 million m³ against a supply projection of 7.7 million m³ envisaging a deficit of 92.3 million m³. See Country Report – Ethiopia, <http://www.fao.org/docrep/004/ab582e/AB582E02.htm>, accessed on 27 April 2011.

Ethiopia are multifaceted, ranging from reduction in crop production to ecosystem disturbance.⁵¹ Returning farm residues and animal dung to the farm is a farming method that could maintain the natural balance in the farming system and is considered to be one aspect of ecological farming.⁵²

The fact that the country depends heavily on biomass fuel for energy source contributes significantly for the loss of the country's biodiversity in two major ways. Firstly, it causes destruction of forests which are the main concentration areas for biological diversity. Secondly, it denies the return of organic matter from farm residues and animal dung to the soil thereby aggravating soil degradation by pushing farmers to resort to artificial fertilizers and HYVs, which act as threats to soil and agricultural biodiversity.⁵³

Biomass fuel consumption, especially utilizing farm residuals and animal dung as fuel is one of the most exploitative relations that humans established with nature. This is an example of conflicting relations with nature. Although using these materials as fuel gives people provisional solution in resolving fuel problems, it always leaves behind crises which will cost them heavily. Societies which establish ethical relations with nature are not expected to treat land in such an exploitative manner.

The impact of such conflicting relations with nature would not be limited to nature alone; it also affects people's livelihoods. For instance, one of the reasons for the chronic hunger conditions on the Ethiopian highlands is severe degradation of the ecosystem. Things could have been averted otherwise if people have developed harmonious relations with nature.⁵⁴ If things continue with

⁵¹ See for instance, Mahmud Yesuf, *et al* (2005), *Cost of Land Degradation in Ethiopia: A Critical Review of Past Studies*, Environmental Economics Policy Forum for Ethiopia and Alemu Mekonnen and Gunnar Köhlin (2008), *Biomass Fuel Consumption and Dung Use as Manure: Evidence from Rural Households in the Amhara Region of Ethiopia*, Environment for Development Discussion Paper Series.

⁵² For details of discussion on this issue see Chapter 6.

⁵³ The Energy Policy of Ethiopia of 1994 provides for the gradual shift from the traditional energy sources use to modern energy sources, which is electricity generated from hydropower. The Policy clearly states that the country's major priority is developing hydroelectricity. (See §3.2 and 5.1 of the Energy Policy of 1994) The Policy further emphasizes on the development of mini hydropower projects. (§4.1) In practice this has been reversed as the country is now engaged in the construction of mega hydropower plants. As any 'development' project, the hydropower generation activities, especially the mega projects, will have their own impacts on biodiversity.

⁵⁴ Some communities in Ethiopia have indigenous practices of developing agroforestry instead of clearing the whole of the landscape for farming. Such practices have supported even large population densities. For instance, the Gedeo people in SNNPRS are known for their agroforestry practices. This zone is one of the highly populated areas in Ethiopia with an average of 1000 persons/km². The agroforestry practice of the Gedeo is said to have protected the area from a complete degradation. (See Mogues Worku 'Ethiopia's HPE Spotlight: the Environment and Development Society of Ethiopia', *BALANCED*, Vol. 1, Issue 3, June 2011, pp.8-10; and Solomon Tamrat (2011),

business as usual without taking appropriate measures it is likely that the life support systems of those vast ecosystems may fail to perform their functions.⁵⁵

Although these people have caused degradation of the highland ecosystems since centuries ago, they have not acted similarly against church forests which are now serving as refuges for biodiversity in these vast degraded highland ecosystems.⁵⁶ People considered these forests as sacred and refrained from clearing them even during harsh times such as famine. From this it can be said that people could have lived harmoniously with nature, without affecting it much, had they been guided by a non-anthropocentric worldview. It can also be seen that there is still great potential in religious institutions to act as protectors of biodiversity if they incorporate environmental concerns in their teachings.

D) Wild Fire

Fire is another problem threatening forests and the biodiversity of the country by destructing habitats. In recent years accidents of fire are increasing in occurrence and in their coverage. For instance, fires started at the end of January 2000 continued for about three months until the rains came and extinguished them. Although there are a number of factors that cause fire, most of them are the result of human interference exacerbated by a prolonged dry season and severe drought. Previously fires center principally in woodland and grassland areas of relatively lower altitudes. The 2000 fires were, however, concentrated in the high forests of the highlands areas. Among the places Bale, Borena, Jimma, Ilubabor, East Wellega, East and West Hararge and Arsi

Study of Useful Plants in Kochere Wereda of Gedeo Zone, Ethiopia: an Ethnobotanical Approach, (Master's Thesis), AAU. Here it is not argued that the Gedeo agroforestry is a sustainable practice with the present population level which is still growing.)

⁵⁵ Human civilizations collapsed a number of times due to human activities which were conducted in a conflicting manner with the natural environment. For instance, the Sumerians were unable to produce food due to salt accumulation in the soil as a result of an environmental flaw in the design of their otherwise extraordinary irrigation system. For the Mayans, deforestation and soil erosion undermined the productivity of their tropical soils. Both civilizations collapsed for environmental reasons. (See Lester R. Brown (2011) *World on the Edge: How to Prevent Environmental and Economic Collapse*, Earth Policy Institute, W. W. Norton & Company, pp.9-10; and Lester R. Brown (2009), *Plan B4.0: Mobilizing to Save Civilization*, Earth Policy Institute, W. W. Norton & Company, p. 4.)

⁵⁶ For details on this point, see (1) Alemayehu Wassie (2007), *Ethiopian Church Forests: Opportunities And Challenges For Restoration*, PhD Thesis, Wageningen Univeristy; (2) 'Biodiversity Conservation in Ancient Church and Monastery Yards in Ethiopia', Final Report of Darwin Initiative for the Survival of Species, 2004; and (3) Alan Hamilton and Patrick Hamilton (2006), *Plant Conservation: An Ecosystem Approach*, EARTHSCAN, pp.186-188. (Note that the Hamiltons have included a short story about the Ethiopian Orthodox Church's role in preserving forests in a case study under the title of "CASE STUDY: CHURCH FORESTS IN ETHIOPIA").

zones of Oromia, Benishangul Gumuz, Gambella and SNNPR regions were the major ones. It is estimated that over 100,000 ha was affected in Bale and Borena zones alone.⁵⁷ Eight years later, i.e., in 2008, a large-scale wildfire consumed over 5,268 ha of forests just in areas of Shakiso, Adola, Bore and Wadera *woredas* in Oromia region.⁵⁸

According to the reports prepared by the Ministry of Agriculture and published in the International Forest Fire News No. 25, no comprehensive studies have been conducted on the causes of fire in Ethiopia. The report indicates that fires started by people account for 100 percent of the total forest fires in Ethiopia. Of the human-caused fires, 20 percent are classified as arson and negligence and carelessness account 80 percent. The report further points out that these observations are based on personal experience in the field for the last 20 years.⁵⁹

It is not a new phenomenon in Ethiopia that people carelessly and wantonly set fire to the forests. For instance, Wylde observed in Harar (eastern Ethiopia) area that very valuable trees, which consist chiefly of the Natal pine, giant juniper and other coniferae, were set on fire ruthlessly to make clearings for the growing of dhurra and other grains.⁶⁰ He further commented that, “what had taken perhaps centuries to grow was reduced to a charred stump in a few hours.”⁶¹ As Bompiani also observes, “[b]urning, [forests] according to 19th and early 20th century accounts, also took place for other reasons, notably to flush out rebels, to kill or drive off wild animals and mosquitoes, and to clear up decaying matter considered the cause of illnesses.”⁶² Mercha Workie,⁶³ Emperor Yohannes IV’s envoy to Britain, regarding this behavior of the Ethiopian people stated “the people of Abyssinia were making strenuous efforts to clear the country of lions and other wild beasts.”⁶⁴

⁵⁷ George C.W. & Mutch R. W. (2001) *Ethiopia: Strengthening Forest Fire Management*, FAO Project Document (TCP/ETH/0065), April, Rome, cited in Jonathan Mckee (2007), *Ethiopia: Country Environmental Profile*, p.33.

⁵⁸ FfE (2009), ‘Tackling the Frequent Forest Fire Incidence in Ethiopia’, Occasional Report, No. 2, p.4.

⁵⁹ **Fire Situation in Ethiopia, International Forest Fire News No. 25, July 2001, p.7-12**, www.fire.uni-freiburg.de/iffn/country/et/et_3.htm, accessed on 03 May 2011. Even if it is clear that most of forest fire incidents are caused by humans, it is difficult for this author to make human causes are fully responsible, as fire also could be caused by natural events.

⁶⁰ From this behavior of these people, it can be predicted that they did not have the practice of agroforestry.

⁶¹ A. B. Wylde, *Modern Abyssinia* (1901), p.88, cited in Pankhurst, *supra* note 8, p.125.

⁶² S. Bompiani, *Italian Explorers in Africa* (1891), 120, cited in *Ibid*, p.123.

⁶³ Mercha Workie had studied at the Free Church of Scotland School in Bombay. (Embassy History, <http://ukinethiopia.fco.gov.uk/en/about-us/our-embassy/embassy-history>, accessed on 03 October 2012)

⁶⁴ *The Globe*, 27 August 1884, cited in Pankhurst, *supra* note 8, p.132, (note 17).

Though there have been a number of reasons for setting fire to the forests, it is also logical to argue that it is weak and unethical relationship that people established between themselves and nature that made them to burn down forests at the mentioned extents. To get small advantage or not to exert much effort to get some results, they usually tried to achieve what they needed through forest fires. This behavior can well be explained by the anthropocentric attitude of the people, especially when it is compared with the traditional ecological practices of the indigenous and local communities in various countries including Ethiopia.⁶⁵

E) Resorting to Exotic Species

As has been seen above, the country's highlands started to be degraded centuries ago. The indigenous trees which have evolved in the ecosystems of the country were unable to endure the ruthless destruction by the people. Due to the severe deforestation and degradation, Ethiopian emperors had to move their capitals frequently in search for firewood until when Emperor Menelik introduced eucalyptus trees at the dawn of the 20th century. Some writers presumed that Addis Ababa would not have been the capital of Ethiopia, had it not been for the introduction of the fast growing eucalyptus trees.⁶⁶ Though the exotic eucalyptus trees have good features such as fast and straight growing qualities, they are not without their ecological costs.

At the international level, there is a major concern regarding the negative impacts of exotic species on native biological diversity.⁶⁷ The concern is not simply regarding the introduction of a certain species into a new ecosystem. Rather, it is on the negative impacts they cause on biodiversity and the ecosystem of the host environment. Not all exotic species are harmful to the indigenous species of the new area. Many populations of exotic species do not even survive for long in their new environment. Others become established but do not substantially disrupt their new host environment.⁶⁸ For instance, some of the food crops we eat are not indigenous to this country and yet have not seriously affected the environment for the mere fact that they are

⁶⁵ See Chapter 7 for details.

⁶⁶ See for instance, Pankhurst, *supra* note 8, pp.119-133.

⁶⁷ See Judith H. Myers and Dawn R. Bazely (2003), *Ecology and Control of Introduced Plants: Evaluating and Responding to Invasive Plants*, Cambridge University Press, pp. iii & 1; and Ross A. Virginia & Diana H. Wall, 'Ecosystem Functions, Principle of, Levin, Vol. 2, *supra* note 3, p.351.

⁶⁸ Laverty and Sterling, *supra* note 11, p.56.

exotic.⁶⁹ As Lavery and Sterling contend, some exotic or alien species “expand dramatically and outcompete, displace, or extirpate native species, potentially threatening the structure and function of intact ecosystems.”⁷⁰ These are usually referred to as ‘invasive alien species’ (IAS).

The international concern is mainly about the invasive alien species as they adversely affect the new environment by, sometimes, replacing the native populations completely. These species can spread and occupy wide range of ecosystems by their own, in the new ecosystem, without any action for their dispersal by humans.⁷¹

Invasions by various IAS of plants and animals into non-native environments pose one of the most significant, but least addressed international threats to biodiversity and scientists pinpoint the impacts of IAS on terrestrial and aquatic systems as second only to habitat destruction in harm to biodiversity.⁷² A notable example of IAS is *Prosopis juliflora*.⁷³ There are some species which have no capacity to spread and occupy additional ecosystems by their own, however, once introduced by humans, establish themselves quickly and interfere with the survival of native species and finally extirpate them. These can fall in the alien or exotic species categories. *Eucalyptus spp.* can be grouped into these. Even if eucalyptus trees are not grouped under the IAS, it appears to be a big concern in Ethiopia owing to their large economic benefits on the one hand and their ecological costs on the other.

A fast growing eucalyptus tree is important not only for fuel wood but also for construction purposes as material for construction of small houses and as scaffolding in the construction of

⁶⁹ Wheat, for instance, is an introduced cereal crop. If farmlands are expanded for more harvest of wheat, wheat crop should not take the blame for being exotic.

⁷⁰ Lavery and Sterling, *supra* note 11, p.56.

⁷¹ IUCN Guidelines for the Prevention of Biodiversity Loss caused by Alien Invasive Species as approved by 51st Meeting of Council, February 2000, Section 3, Paragraph 1 define invasive alien species as “an alien species which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity.”

⁷² CIEL, ‘Turning off the Tap: Addressing International Invasive Alien Species Issues’, <http://www.ciel.org>, accessed on 23 September 2010.

⁷³ *Prosopis juliflora* is a tree/shrub that has been intentionally introduced into Ethiopia for its drought and salinity resisting qualities. It is now devastating the biological diversity of the lowlands of the Afar, Somali and Dire Dawa areas in Ethiopia. (For brief description about the impacts of *Prosopis juliflora*, in Ethiopia, see Abiyot Berhanu and Getachew Tesfaye, ‘The Prosopis Dilemma, Impacts on Dry-land Biodiversity and Some Controlling Methods’ www.ibc-et.org/ibc/pubn/files/Prosopis_juliflora_Biodiversity.pdf) The most devastating effect of *Prosopis juliflora* in the Afar region is its colonization of the pasturelands on which pastoral communities heavily depended for their animals.

multi-storey buildings, bridges and statues. Its fast growing nature and economic importance attracted many farmers to convert their cereal croplands into eucalyptus plantations. There is a general consensus that there is awareness of the negative ecological impacts of eucalyptus among Ethiopian farmers.⁷⁴ However, the economic return from eucalyptus plantation is too tempting to ignore.⁷⁵ Moreover, severe shortage of fuel and construction wood left farmers with no better option than resorting to eucalyptus plantation, irrespective of its ecological costs.

Presently there are deep rooted arguments in favour and against eucalyptus plantation in Ethiopia. A three day international conference on eucalyptus was conducted in Addis Ababa in September 2010 and scientists and experts critically argued on the threats of eucalyptus on biodiversity and the ecosystem and its economic benefits.

Mulugeta Lemenih, a forestry scientist, argues that “despite the alleged ecological demerits, which farmers are also well aware of, expansion is on-going and justified until the current wood and income shortage of smallholder farmers will subside.”⁷⁶ He further states that “from farmers’ perspective benefits from growing eucalypt far outweigh ecological costs from its impacts... eucalypt growing provides far better return than any alternative land use.”⁷⁷ He also contends that “eucalypt is a great asset in contributing to rural development and poverty reduction in Ethiopia.”⁷⁸ Moreover, Pamela Jagger and John Pender argue that eucalyptus trees are one of the best choices for rural poverty reduction and ensuring food security in Ethiopia.⁷⁹ According to Lemenih, Jagger and Pender, farmers can obtain greater economic benefits from eucalyptus ‘crops’ and will have the economic power to buy food from the market in case their food crops fail due to drought. These arguments are in a complete contradiction with Prof. Legesse Negash’s, a scientist in plant physiology, arguments who firmly believes that “eucalyptus

⁷⁴ See Lemenih below.

⁷⁵ Two major reasons attract Ethiopian farmers to plant eucalyptus. The first reason is its high economic value that no other crop could bring to them. (See discussion below). The second one is that farmers can harvest eucalyptus throughout the year if they have relatively large number of plants in their fields.

⁷⁶ Mulugeta Lemenih, *Eucalyptus Growing by Smallholder Farmers in Ethiopia*, Conference on Eucalyptus Species: Management, History, Status and Trends in Ethiopia, 15th-17th September, 2010, Addis Ababa, Ethiopia, abstract.

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

⁷⁹ See Pamela Jagger and John Pender, ‘The Role of Trees for Sustainable Management of Less-Favored Lands: The Case of Eucalyptus in Ethiopia’, Environment and Production Technology Division Discussion Paper No. 65, June 2000.

plantation, except its immediate benefits, poses big hurdle for the poverty alleviation and food security efforts of the country in the long run and we will pay the costs of eucalyptus heavily in the future.”⁸⁰ His main concerns are two. Firstly, if things continue in the present pace, in the near future, most crop fields would be turned into eucalyptus plantation fields. At that time, though farmers may have cash in their hands, they may not get sufficient food in the market.⁸¹ Secondly, eucalyptus has heavy ecological costs and it is difficult to ensure food security on unhealthy ecosystem.⁸²

It is true that eucalyptus has tempted many farmers to convert their croplands into eucalyptus plantations as its price has been soaring in recent years. As one study indicates, “yields of eucalyptus grown on lands normally used for arable crops give economic benefits that are many folds at the ratio of 121 to 1 that of crop and livestock production.”⁸³ Another study on eucalyptus also reveals the same result.⁸⁴ It is this income generating power of this tree species that has encouraged farmers to develop their own individual nurseries for developing eucalyptus seedlings since the government has completely abandoned eucalyptus seedling nurseries and distributing the same for farmers recently. Two foresters, Desalegn and Tadesse, probably after having seen this great interest of farmers on eucalyptus plantation and the tree’s features

⁸⁰ Personal communication with Prof. Legesse Negash, plant physiologist at AAU, on 08 December 2010. Negash firmly underlines that there has to be very serious control on the eucalyptus plantations in Ethiopia. He even wishes that Ethiopia has to eradicate this plant step by step. In support of this idea Tilashwork Chanie argues that eucalyptus trees can be a threat for food security in Ethiopia, as there is now a fierce competition for land between food crops and eucalyptus plantations and also due to the tree’s behavior in reducing productivity of the land. (See Tilashwork Chanie (2009), *The Effect of Eucalyptus on Crop Productivity, and Soil Properties in the Koga Watershed, Western Amhara Region, Ethiopia*, Master’s Thesis at the Faculty of the Graduate School of Cornell University.)

⁸¹ This view of Negash is compatible with the concept of food sovereignty discussed in Chapter 6.

⁸² Negash, *Ibid.*

⁸³ Amare Getahun, Eucalyptus Farming in Ethiopia: The Case of Eucalyptus Farm and Village Woodlots in the Amhara Region, Conference on Eucalyptus, *supra* note 76, abstract.

⁸⁴ Zerihun Kebebew and Gazheng Ayele, ‘Profitability and Household Contribution of Growing *Eucalyptus globulus* (Labill.) to Smallholder Farmers: The Case of Central Highland of Oromia, Ethiopia’, *European Journal of Applied Sciences* 2(1): 25-29, 2010. These authors argue that: “Allocating 12% of available land to eucalyptus increases the return from the same unit of land by 90%. Taking out eucalyptus from the land use for *teff* and barley reduces the return from the land by 127% and 34% respectively. Therefore, it can be concluded that growing eucalyptus is an attractive land use option.”

concluded that, "... eucalyptus species could also be used as a partial or *complete*⁸⁵ substitute of the endangered indigenous ... species of Ethiopia..."⁸⁶

The debates around eucalyptus plantations in Ethiopia clearly show the concerns around short term economic benefits and long term ecological costs. Unless there is a policy guidance that determines the locations and the maximum proportion of these locations to be covered by eucalyptus trees, it is feared that most of the landscapes of the country can be covered by these exotic species. If the country allows this to happen, it will be a symptom of its conflicting relations with nature as this activity disrupts the systemic functions of the ecosystem by impairing biodiversity and causing soil desiccation.⁸⁷ It is also a sign of lack of respect and caring for nature. Little efforts have been made by the concerned organs of the government,⁸⁸ regarding issuing policy crafting on exotic species. That is, except conducting some workshops and publishing a few documents, no policy initiatives and legal frameworks have been made by the concerned government organs. As it has been indicated above, exotic species have a sweeping consequence, next to habitat loss and fragmentation, on the wild as well as cultivated biological diversity.

F) Migrations and Resettlements in New Areas

In Ethiopia government sponsored resettlement programs have been conducted for some decades with the view to transfer people from areas which were degraded and unable to support human

⁸⁵ Emphasis added.

⁸⁶ Getachew Desalegn and Wubalem Tadesse, Major Characteristics and Potential Uses of 17 Eucalyptus Timber Species Grown in Ethiopia, Conference on Eucalyptus, *supra* note 76, abstract.

⁸⁷ Simberloff, for instance, notes that "[e]ucalyptus trees have been deliberately used to drain swamps and bogs, thus eliminating the original vegetation and animals dependent on it" indicating their ecological impacts. (See Daniel Simberloff, 'Introduced Species, Effects and Distribution Of' in Levin *supra* note 3, p.521.) Other writers also claimed that eucalypts trees produce dead plant material that is not readily consumed by stream invertebrates, thereby causing them to starve, showing its impacts on ecological functions. (See Margaret A. Palmer and P. Sam Lake, 'Invertebrates, Freshwater, Overview' in Levin, *supra* note 3, p.542). In his foreword message to FAO Forestry Paper 59, J.P. Lanly, Director of Forest Resources Division, FAO, stated that "there has been a growing body of opinion that claims that eucalypts cause a variety of short to long-term ills, impoverishing the environment in respect of the soils, water availability and wildlife even where plantations have been planted on waste lands devoid of tree cover." (See M.E.D. Poore and C. Fries (1985), *The Ecological Effects of Eucalyptus*, FAO Forestry Paper 59, p.i.) Although Poore and Fries expressed their concerns in making any valid generalization on eucalyptus which covers so many different species and local circumstances, they presented the ecological effects of the tree in terms of reducing water availability, aggravation of erosion, depletion of nutrients, and its capacity to displace natural vegetation. (See *Ibid.*)

⁸⁸ Such as the IBC, EPA, FRI and MOA.

settlement. Transfer of people from one part of the country to another in order to permanently settle in the new areas is a norm rather than an exception in Ethiopia. This is particularly true for the people of the northern part of the country where ecological degradation has been severe.⁸⁹

There have been a number of reasons (push factors) for the transfer of people from one part of the country to another. These include: recurrent drought, land scarcity, land and soil degradation, food insecurity, and decline in soil fertility.⁹⁰ From this it can be seen that the main causes of migration and/or resettlement in Ethiopia are problems related with environmental degradation and the resultant poverty which serve as push factors. Sadly, such migration and/or resettlement tend to lead to further environmental degradation and conflict in the host areas.

In his case study, Tafesse writes that the migration of the Amhara migrant-settlers in the Oromia Regional State (Wollega zone) has caused a conflict between the migrant settlers and the local communities. Although Tafesse has identified several reasons for the irruption of the conflict, the main reason was the merciless and indiscriminate clearance of forests by the migrant-settlers for the purpose of converting the forested lands into agricultural fields,⁹¹ which is one of the major causes of loss of biodiversity in the host areas.

There have been three waves of migration and/or resettlement during the last six decades in Ethiopia. It was in the 1940s that the first settlers were migrated to Wollega province from the nearby Gojjam province. That wave of migration was self-initiated and was not included in the government program. It was the second wave of settlement which was conducted by the government following the 1984/85 drought and famine in Ethiopia. The government's plan by then was to move people even against their will, from drought prone areas to relatively wetter and fertile parts of the country.⁹²

The third wave of resettlement has taken place in the post 1991 period and is the largest as far as the number of people migrated and the areas converted into farmlands are concerned. The

⁸⁹ Adrian Wood (1977), Resettlement in Illubabor Province, Ethiopia, Unpublished PhD Dissertation, University of Liverpool, Cited in Tesfaye Tafesse (2007), *The Migration, Environment and Conflict Nexus in Ethiopia: A Case Study of Amhara Migrant-settlers in East Wollega Zone*, OSSREA, p.37.

⁹⁰ Tafesse, *Ibid*, p.58.

⁹¹ See *Ibid*, pp.37-83.

⁹² See *Ibid*, p.12.

number of people resettled in the third wave reveals that the push factors have become harder in the sending areas as people continued migrating regardless of the ethnic based federalism which has created a hostile situation in the receiving areas. That is, in post 1991, the country has been following a federal structure based on ethno-linguistic boundaries and migration of people across ethnic boundaries, with the purpose of settling permanently is considered to be a politically wrong activity and is highly discouraged by the current Ethiopian government.⁹³

Another author who worked on the effects of government initiated resettlement programs in one of the Regional States, Gambella, contends that “most of resettlement projects were designed with only short-sighted political gains in mind.”⁹⁴ Woube further argues that such kinds of resettlement programs have led to “ethnic conflicts, deforestation, land degradation, damaging floods, food shortages and outbreaks of various diseases.”⁹⁵ It can be seen from this that improper resettlement programs not only contribute to loss of biodiversity but also become sources of socioeconomic problems. The track records of planned resettlement schemes in many countries revealed that they were more of a failure than a success leading to increased human suffering and environmental degradation.⁹⁶

Most of the resettlement programs have moved people from the highly degraded highland areas to the lowland areas of the country. As Woldemariam contends, the lowland areas of the country are more vulnerable to land-use change than are the highlands.⁹⁷ There is research that shows that vast areas of the lowlands of the country are not suitable for animal and machine traction

⁹³ The Food Security Strategy of Ethiopia of 1996 provides in Paragraph 36 that: “The resettlement program will be carried out intra-regionally and voluntarily. Regional Governments will identify suitable under-utilized lands fit within their own regions.” It is based on this rule, for instance, that thousands of Amhara migrant-settlers have been displaced from SNNPRS and ‘deported’ to their home region by the SNNPRS government in 2009 and in 2012. In the latter case, though government official did not accept the forceful eviction of the Amhara migrant settlers, there has been much condemnation of the eviction by opposition parties, especially from Gura Farda woreda of same regional state. (See The Ethiopian Reporter, Amharic version of 29 February, 25 March and 02 April 2012. The ERTA also gave coverage on the eviction of settlers from Gura Farda woreda in its April 11, 2012 broadcast.)

⁹⁴ Mengistu Woube (2005), *Effects of Resettlement Schemes on the Biophysical and Human Environments: The Case of Gambela Region*, Ethiopia, Universal Publishers, p.10. (During the 1984-85 famine, massive resettlements were conducted and the sites for the resettlement were selected by political officers including the Chairman of the PMAC, Mengistu Haile Mariam, based on short visits to the areas and without a scientific appraisal of the sites for conducting such level of resettlement. See, for instance, The Ethiopian Herald, November 3, 1984.)

⁹⁵ *Ibid*, p.10.

⁹⁶ See *Ibid*, p.14.

⁹⁷ See Mesfin Woldemariam, ‘An Assessment of Stress and Strain on the Ethiopian Highlands’, *Mountain Research and Development*, Vol. 8 (4), Nov. 1988, pp.259-264. Woldemariam here even argues that there is a false hope in what he calls ‘bureaucratic planners’ regarding the potentials of the lowlands.

agriculture and they are suitable for the slash and burn and shifting cultivation by using the hoe ‘technology’.⁹⁸ From this it can be deduced that neither large-scale farming nor mass transfer of people to these areas may be feasible environmentally as well as economically.

The Ethiopian lowlands, which account for 60 per cent of the country’s total area, are home to many species of fauna and flora. For instance, the Gambela region is known for its herds of wildlife.⁹⁹ Resettlement removes or fragments habitats of the wildlife causing the migration of these wildlife species in a wrong season as well as to a wrong direction by forcing them to move in a time where they should remain there and by blocking their migratory corridors. The vulnerability of the lowland of the country calls for the introduction of appropriate technologies and mode of utilization if they are continue to serve their ecological services for the life support system. In addition to their devastating impact on the biodiversity of these lowland areas, the resettlement activities are known to severely affect the traditional way of life of the indigenous people of these areas. Massive resettlements deny local people of their traditional access rights to the natural resources and destroy their traditional and appropriate farming technology that well suits the vulnerable environment by introducing alien farming technologies.¹⁰⁰

As the stress and strain in the Ethiopian highlands become more extensive, the Ethiopian government continues in resettling people mainly in the lowland areas of the country. According to its 5-years resettlement program (2005/06–2009/10) the government had planned to resettle 1,679,725 households in four Regional States, namely; Amhara, Oromia, SNNPRS, and Tigray.¹⁰¹ It has been argued by the government that Ethiopia has vast underutilized land that is suitable for agriculture and hence resettlement is a crucial and reliable alternative for ensuring

⁹⁸ For detailed discussion on this issue, see for instance, Getachew Woldemeskel, ‘The Consequences of Resettlement in Ethiopia’, *African Affairs*, Vol. 88, No. 352 (Jul., 1989), pp.359-374.

⁹⁹ Ethiopia (Gambela Region) and South Sudan share the second largest mammal migration on the African continent (next to Serengeti). Around one million White-eared Kob (*Kobus kob leucotis*) migrate between the two countries to take advantage of the vast grassland areas and floodplains. (See “The Values of the Ethiopian Protected Area System: Message to Policy Makers” a booklet published by Ethiopian Wildlife Conservation Authority - No year of publication, no page number) The booklet is also available at:

www.germanyandafrika.diplo.de/.../Ethiopia_protected_areas.property=Daten.pdf

¹⁰⁰ See Woube, *supra* note 94 pp. 80-86; 99-123 and Woldemeskel, *supra* note 98, pp.359-374. These writers argue that the local people who lived with their ecosystems for centuries or even millennia have developed the knowledge how to produce without affecting the environment much. They also claim that the re-settlers implement their own practices in the new areas. For instance, they introduce the plough traction by clearing all the vegetation.

¹⁰¹ PASDEP, Table 7.12. One can imagine how far these households, with the average Ethiopia household of 7 to 8 persons, affect the biodiversity of the newly resettled areas.

food security.¹⁰² The basis for resettling people in these areas is based on the constitutional principle that land ownership is under the government.¹⁰³ The government, without giving much consideration to the local people's strong attachment to land and their dependence on such lands for their livelihood, engages in mass transfers of people even from distant areas. It is not difficult to imagine the impacts of hasty and unplanned resettlement programs on the biological diversity, without mentioning other societal problems.

Although the government has prepared a Program Implementation Manual for Resettlements, the loss of biodiversity due to resettlement remains immense.¹⁰⁴ Moreover, the arguments of the government that the areas which are selected for resettlement were unoccupied and unutilized have been disproved by recent case studies. For instance, according to the studies of FSS;

“Most of the lands selected for resettlement were either used by local groups as fallow areas, for grazing and forest resources, or by earlier settlers or self-organized settlers. In other cases settlements have been established at the expense of rapidly dwindling forest reserves, which are often used by local communities for coffee and honey production.”¹⁰⁵

As can be seen from the available studies, it appears incontrovertible that resettlement in Ethiopia is one of the causes for the loss of biodiversity and, that it should not be the immediate option for food insecurity problems of degraded areas of the country. Its unabated continuance may have the capacity of converting the whole of the country into a vast degraded landmass.

Migration and resettling is not limited to a north-south direction in the country. People move on their own initiative in the direction of east-south and south-south. For instance, in the aftermath of the 2001/02 drought seasons in east and west Hararghe and Arsi zones of the Oromia Regional

¹⁰² PASDEP, §7.1.10(c). The Food Security Strategy of 1996 (Paragraphs 35, 36 & 37) also uses the term “under-utilized lands” to refer forestlands and biodiversity rich areas.

¹⁰³ Land ownership is constitutionally regulated in Ethiopia. Article 40(3) of the Ethiopian Constitution provides that land ownership is under the people and the state. Despite this constitutional provision, realities on the ground show that land is under the exclusive ownership of the government.

¹⁰⁴ The author visited some of the resettlement sites in Oromia and SNNPRS and observed that the areas occupied by re-settlers have been noticeably deforested and de-vegetated as compared to the areas which have been inhabited by local or indigenous communities.

¹⁰⁵ See FSS (2006), Policy Briefings No. 4.

State, residents migrated in mass to Bale zone of the same Regional State. The officially registered migrants who settled in Bale zone during that time alone were 20,093.¹⁰⁶

According to the migrants, the reasons for their migration were:

“Firstly; the gradual and consistent natural resource degradation in their home areas and secondly; triggered and initiated by current drought conditions that led to livelihood conditions below subsistence that in the longer term did not allow neither survival nor livelihood improvement. In other words: for most of the people who decided to leave their homes in Hararghe and Arsi lowlands, the natural conditions did not leave them with any other alternative or option.”¹⁰⁷

When farmers face such difficulties, it is normal in Ethiopia that they flee from their areas either to towns in search for jobs or for begging or to settle in ecologically better areas of the country.

Before concluding this section, the following points may be highlighted. Firstly, because of the inappropriate relationship that humans established with the natural environments, most of the areas which are generally grouped under the Ethiopian highlands have been severely degraded since centuries ago. This situation has dictated the present day peasants to focus on securing their daily bread at whatever environmental cost. For these people loss of biodiversity or environmental degradation is at the bottom of their concern in their struggle for survival. From this it follows that, so long as they are made to pursue such lifestyle, it goes without saying that they continue in their activities that contribute in further loss of the remaining biodiversity of the country. This calls for transforming the livelihoods of the highland people in ways that allow for the proliferation of biodiversity.

Secondly, Ethiopia is currently not suffering from the inherent lack of biodiversity. However, the type of relationship that has been established by her people with nature,¹⁰⁸ has led to overexploitation of the existing biological diversity beyond its regenerative capacity. From this it can be concluded that if the necessary measures are taken there is a possibility of saving the

¹⁰⁶ Dechassa Lemessa, Migrants Cause Potential Social and Environmental Crisis in Bale: A joint mission by the UN-Emergencies Unit for Ethiopia with the Ethiopian Evangelical Church Mekane Yesus and the Oromiya Regional Government, Report of a field assessment mission, 2002. <http://www.ocha-eth.org/Archive/DownloadableReports/migrantsBale1002.pdf>.

¹⁰⁷ Ibid.

¹⁰⁸ This is to indicate the existence of ruthless wildlife killing and forest clearance.

country's biodiversity from a complete loss. Finally, even if it has been said that the people's activities are responsible for the loss of the country's biodiversity, the government is also responsible for the myriad of loss of biodiversity of the country. The main responsibility of the government is on its reluctance to make and effectively implement policies, laws and strategies to halt the loss of biodiversity in the country. The following section deals with the problems related with government's developmental mindset in relation to loss of biodiversity.

4.2 Developmental Mindset

It is discussed above that loss of Ethiopian biodiversity has been mainly caused by the expansion of small-scale peasant farming. It is also seen that – significant portion of the country's landscapes have been converted into small-scale farms to the extent of destroying the wild biodiversity in severely cultivated areas. This situation is widely observed in the highlands of the country where people have settled and farmed the land for millennia. The lowland areas which are not densely populated with little farming activities are the places where biodiversity occurs in relatively better conditions. However, these areas are now locations of destructive agricultural activities, following the prevailing developmental directions of the Ethiopian government, without giving much emphasis for the local livelihoods and the environment.

The word 'development' is a catchy word which can easily win people's attention in a positive sense. There seems to be an agreement among writers that development is much more than economic growth.¹⁰⁹ Development may be related to quality of human life which can be expressed in terms of parameters such as access to education, health care, employment opportunities, availability of clean air and safe drinking water.¹¹⁰ This meaning of development is not comprehensive enough as it does not incorporate the wellbeing of nonhuman nature, in addition to human welfare. When development is an issue, humans always come at its center. For instance, the 1996 UNDP Human Development Report states that human development is an end

¹⁰⁹ See, for instance, (1) Tatyana P. Soubbotina (2004), *Beyond Economic Growth: An Introduction to Sustainable Development* (2nd edn.), The World Bank Washington, D.C., p.1; and (2) Jennifer A. Elliott (2006), *An Introduction to Sustainable Development*, (3rd edn.), ROUTLEDGE.

¹¹⁰ Tatyana, *Ibid*, p.7.

through the means of economic growth,¹¹¹ showing the anthropocentric nature of the notion of development. Commenting on the relationship between anthropocentrism and development, Shiva states that; “since the Enlightenment the pursuit of ‘development’ and the quest for modernity, imbued with ideals of anthropocentrism.”¹¹²

The idea of development reflects not only focusing on humans by giving less recognition for the rest of nature, it also embodies the impression that all human societies should follow same path as the West did.¹¹³ Modern science and the attitudes of the West are highly interlinked, and this has been reflected in the idea of development. Claude Alvares states that development is legitimized by modern science and has meant for the outright displacement of one set of ideas, people, realities, cultures and processes and their substitution with another set designed by modern science.¹¹⁴ Alvares here tries to express the features of development which are highly linked with modern science,¹¹⁵ and designed to displace one form of knowledge and experience with another one. That is, according to Alvares, development is an ideology of the West with a mission of civilizing the South.¹¹⁶

Being ignited by the combined effects of modern knowledge, Scientific Revolution and industrial revolution, the concept of development spread all over the Western world and consequently to the rest of the world. It was highly promoted by colonial and capitalist powers. It is based on this notion that Vandana Shiva considers the developmental mindset as not a universal category of progress, but the special project of modern Western patriarchy.¹¹⁷ According to Shiva, the wrong in the idea of development is its violence against nature and

¹¹¹ See the UNDP 1996 Human Development Report. The Report recognizes the fact that human development is and end as its motto.

¹¹² Vandana Shiva, ‘Recovering the Real Meaning of Sustainability’, cited in Alexander Gillespie (2001), *The Illusion of Progress: Unsustainable Development in International Law and Policy*, Earthscan, p.1.

¹¹³ In support of this idea, President Truman, in his inaugural speech before the Congress in 1949 considered underdevelopment as one of the largest world problems and advised countries of the South to follow the development path through greater production [in the model of the West] which he said the key to prosperity and peace. (See W. Sachs (1992) ‘Development: A Guide to the Ruins’, *New Internationalist* 232, 4, cited in Gillespie, *Ibid*, p.1.)

¹¹⁴ Claude Alvares (1992), *Science, Development and Violence: The Revolt against Modernity*, Oxford University Press, pp.66 & 69.

¹¹⁵ Alvares considers that modern science is reductionist and led to a heartless destruction of nature. (See Chapter 3 for details.)

¹¹⁶ See Alvares, *supra* note 114, p.90.

¹¹⁷ Vandana Shiva (1988), *Staying Alive: Women, Ecology and Survival in India*, Zed Books, p. xii.

human survival.¹¹⁸ She also states that “modern science and development are the latest and most brutal expression of a patriarchal ideology which is threatening to annihilate nature and the entire human species.”¹¹⁹

Development, which exclusively focuses on humans, is conceptualized in terms of the reduction or elimination of poverty, inequality and unemployment.¹²⁰ To achieve these aspects of development, the Ethiopian government chose a development model that it calls the ‘developmental state’ model, a model adopted from East Asian countries. The core idea of the theory of the developmental state is that the state should make development its top priority and intervene in the economy to facilitate growth and industrial transformation.¹²¹ Regarding the issue of loss of biodiversity, there will not be any difference whether the development programs are run by a government or by private companies so long as both are motivated by anthropocentric and reductionist views. Any development plan is anthropocentric if it perceives nature together with its complex processes as a mere resource for human use and if it brings humans at the center of development. It is reductionist if it imposes its plans without giving much significance for the cultures, values and knowledge systems of the local people.

To continue as a developmental state for longer time, the Ethiopian government believes that the convenient method is having a dominant party which leads the ‘development’ activities and fights against rent-seeking. The ruling party grips power since 1991 and preaches the importance of a developmental state to achieve rapid economic growth in the countries of the South, especially in Africa.¹²² The government of Ethiopia has declared that it is committing itself to

¹¹⁸ *Ibid*, p. xiv.

¹¹⁹ *Ibid*, p. xiv. In another account Shiva contends: “Dams, mines, energy plants, military bases – these are the temples of the new religion called ‘development’, a religion that provides the rationale for the modernizing state, its bureaucracies and technocracies. What is sacrificed at the alter of this religion is nature’s life and people’s life. The sacraments of development are made of the ruins and desecration of other sacred, especially sacred soils. They are based on the dismantling of society and community, on the uprooting of people and cultures.” (See Maria Mies and Vandana Shiva, *Ecofeminism*, Zed Books, p.99)

¹²⁰ D. Seers, ‘The meaning of development’, presented at the 11th World Conference of the Society for International Development, (1969), New Delhi, p. 3, cited in Asnake Kefale, ‘Narratives of Developmentalism and Development in Ethiopia: Some preliminary explorations’, www.nai.uu.se/ecas-4/panels/41-60/...Asnake-Kefale-Full-paper.pdf, accessed on 09 August 2012.

¹²¹ A. Bolesta, (2007) *China as a Developmental State*, p.105, cited in Kefale, *Ibid*.

¹²² The late Prime Minister Meles Zenawi repeatedly expressed his commitment to the developmental state. For instance, he spoke on a meeting at the Columbia University in 2007 and presented a 50 page extract from the monograph being prepared by him. The monograph was entitled “*African Development: Dead Ends and New Beginnings*.” The main argument in the monograph was – “the neoliberal paradigm is a dead end, is incapable of

bring about economic development of the country through agricultural development led industrialization (ADLI). To implement its ADLI program, it has adopted a number of strategic documents. Of these, the main one is “Policies and Strategies on Rural Development” which was published in November 2001 by the Ministry of Information.¹²³

The Ethiopian government believes that in Ethiopia, “capital formation is possible *only* from agricultural sector by making agricultural products export oriented.”¹²⁴ This is one of the reasons to make ADLI the main strategy for the country’s economic development. This strategy was chosen by the Ethiopian government because “Ethiopia is a country with insufficient capital but with abundant land resources.”¹²⁵ This seems to be the reason for the declaration of the Ministry of Agriculture and Rural Development (MOARD)¹²⁶ that the country has 66.6% of its total area (i.e. 74.3 million ha from the total area of 111.5 million ha) suitable for crop production. By this declaration the Ministry of Agriculture invited foreign investors to come and engage in large-scale commercial agriculture.¹²⁷

Even if it can be argued that this invitation is for large-scale commercial farming which will take place in the lowlands and do not affect the highland areas, there appeared no plan in the strategic document to slowly stabilize/reduce the area of farmlands in the highlands. To make the situation

bringing about the African renaissance, and that a fundamental shift in paradigm is required to bring about the African renaissance...developmental state should be single-mindedly focused on doing what is needed to accelerate growth. If it also has to deal with democratic legitimization of its rule, not only will it be forced to spend a lot of time in doing so, but it may be forced to engage in patronage and socially wasteful rent-seeking activities.” Though Zenawi did not throw away democracy altogether in his writing, he clearly inclined towards growth than democracy. The price that should be paid for democracy in terms of growth, according to Zenawi’s writing, has to be minimal. This may appear contradictory, to some extent, with the notions of Amartya Sen, who believes that freedom (which could be taken as a synonym of democracy) as a basis for development in that it enables people to make choices. (See Amartya Sen (1999), *Development as Freedom*, Alfred A. Knopf, Inc.)

¹²³ Now the Ministry of Information has been replaced by the State Communication Affairs Office. (There are also other policy and strategic instruments such as PASDEP the GTP.)

¹²⁴ Policies and Strategies on Rural Development, Press and Audiovisual Department, Ministry of Information (2001), pp.v-vii. (Emphasis added on the word ‘only’. This document in many pages repeats the word ‘only’ to show that the country has no other alternatives, at least for some time, than depending on agriculture for the purpose of getting foreign currency.)

¹²⁵ Policies and Strategies on Rural Development, pp.6-7. It is important to note here that the Ethiopian government believes that lands which are outside of peasants’ holding (E.g. grazing lands and forest lands) are government property, without giving much attention to the livelihood of the local communities that depended on such lands outside of their actual holdings.

¹²⁶ By Proclamation No. 691/2010, the Proclamation that Redefined the Powers and Duties of the Executive has changed the nomenclature MOARD to Ministry of Agriculture (MOA).

¹²⁷ Agricultural Investment Potential of Ethiopia, MOARD, March 2009, p.4 available at www.moard.gov.et, accessed on 02 January 2010.

worse, the strategic document even intends to deploy at least 70% of the rural young as future farmers.¹²⁸ One of the concerns with this issue is that – the youth were not consulted when such strategies were made, though this has great ramifications on the fate of the youth as well as the shrinking biodiversity of the country.¹²⁹

The ADLI strategy for the highland areas is small-scale peasant farming and for the lowlands is large-scale commercial agriculture.¹³⁰ 85% of Ethiopia's people depend on agricultural activities for their livelihood and it is one of the poorest countries in the world, with one of the lowest per capita income.¹³¹ The Ethiopian government repeatedly promises its people that it will alleviate poverty and make the country a middle income country as of 2020-2023.¹³² To achieve this goal the government believes that the engine economic sector is agriculture.¹³³ As indicated above, the government claims that it chose agriculture because of scarcity of capital and abundance of land and human labor in the country.

The government's assertion that the country is capital scarce is correct and the government's effort to secure capital by exploring the possible means is appropriate. It is also true that the country has abundant human labor and following a policy direction to utilize this labor force in appropriate ways is acceptable. The concern here is on the statement of the government that 'unutilized' land is abundant in the country. The Ethiopian government repeatedly declared in its strategic documents and all official means of communication that the country's lowlands are 'unutilized' or 'unoccupied'.

¹²⁸ Policies and Strategies for Rural Development, p.41.

¹²⁹ Public participation during the making of documents like ADLI or PASDEP was low irrespective of their significant impacts on biodiversity and the local livelihood. The PASDEP document, for instance, was designed in haste, without sufficient time for reflection or internal review; as a result, the program has been implemented in areas such as dense tropical montane forests and arid areas where cereal production is not viable, causing negative impacts on the environment and local communities. (See USAID (2008), *Ethiopia Biodiversity and Tropical Forests*, p. 34)

¹³⁰ Policies and Strategies on Rural Development, Press and Audiovisual Department, Ministry of Information (2001), Addis Ababa, pp. 70-71.

¹³¹ Poverty is a highly debated word as far as its meaning is concerned. For more details, see for instance, Paul Spicker *et al* (eds.) (2007), *Poverty: An International Glossary*, (2nd edn), Zed Books. According to the UNDP Human Development Index of 2010 Ethiopia ranked 157th out of 169 countries entered in the 2010 index and 74th out of 187 countries in 2011.

¹³² See the GTP document §2.1.

¹³³ See Ministry of Agriculture (2011) Ethiopia's Agricultural Sector Policy and Investment Framework (PIF) 2010-2020.

Three major concerns can be raised here. Firstly, are the lands which are being converted into large-scale agriculture really unoccupied as stated by the government? Secondly, the government strategies do not show how the totally devastated highland ecosystems of the country are going to be relieved, even step by step, by reducing the farm size they have carried now so as to give some room for biodiversity to proliferate in the highlands. While the highland areas are still being farmed to such extent, continuing to expand farming to the lowlands could seriously risk biodiversity of the country. Thirdly, even if the country has relatively sparsely populated areas in its lowlands, from the strategic statements it appears that land availability in the country seems to have no limit at all; which could lead to hasty allocation of vast tracts of lands without considering its ecological as well as socioeconomic impacts.¹³⁴

Regarding the role of the government in allocating vast tracts of lands from the mentioned lowland areas to inland as well as overseas investors, the PASDEP document provides that: “the government shall facilitate the commercialization of agriculture, support the development of large-scale commercial agriculture and integrate farmers with markets – both locally and globally.”¹³⁵ However, the policies and strategies do not clearly and sufficiently provide mechanisms for the protection of the ever dwindling biodiversity of the country. The policies and strategies seem to perceive the ecosystem, which is the functional unit for the life support system and that provides all the necessary services, as a mere means of production alone, while in reality the ecosystem is by far greater than that.

The current land allocation for large-scale commercial agriculture can be divided into two: for non-food items, mainly for biofuel plantation; and for food crop farming. Regarding land allocation for non-food items, the most significant candidate is biofuel plantation. The Ethiopian government issued the Biofuel Development and Utilization Strategy in 2007 with a major goal of producing adequate biofuel energy from domestic resources for substituting imported petroleum products and exporting excess products.¹³⁶ The strategic document specifically

¹³⁴ For instance, on 30 June 2006 the Benishangul-Gumuz Regional State had concluded a contract of allocating 390,851 ha of land to a company called “Land and Sea Development Ethiopia PLC” for the purpose of conducting large-scale commercial farming and bamboo processing free of charge for 25 years. However, because of the ‘internal’ problems of the company, it was unable to ‘use’ the land for the intended purpose. (For further information, see www.eabp.org.et/.../Market_based_development_with_bamboo.pdf, accessed on 06 August 2013).

¹³⁵ PASDEP §5(2)(a)

¹³⁶ See the Biofuel Development and Utilization Strategy of 2007 § 4.1.

mentions three plant species, namely; jatropha, castor bean and palm trees as the major plant sources for producing biofuel.¹³⁷ The document also lists down the amount of land that is to be allocated for biofuel plantation in 7 regional states.¹³⁸ The following table shows these data.

Region	Land allocated in million
Oromia	17.2
Benishangul-Gumuz	3.1
Gambella	2.8
Somali	1.5
Amhara	1.0
SNNP	0.05
Tigray	0.007
Total	25.66

Table 4.2

Source: Biofuel Development and Utilization Strategy of 2007, §3.2

In 2010 the Ethiopian government officially declared that it has prepared 23.3 million hectares of land for the purpose of biofuel plantation, an area of land that roughly exceeds 20% of the total area of the country.¹³⁹ In response to this invitation, many companies have shown interest and applied for licenses. As of November 2010, 60 companies have received licenses, of which 10 have started biofuel cultivation.¹⁴⁰ It can be assumed that the loss of biodiversity will be more aggravated with the further land use change due to biofuel plantations. The demand for biofuels is a new phenomenon and the plantations' expansion poses a new threat to biodiversity, since the

¹³⁷ See *Ibid*, §1. As the later Capital News report indicates, a number of independent studies have been conducted on the biofuel status of the country and according to one of the studies conducted by Aklilu Amsalu, which focused on jatropha revealed that the biofuel plantation has fueled conflicts between investment projects and the local people. The study also revealed that biofuel investment has not brought about desired results. (See Capital News, 12 September 2012, www.capitalethiopia.com, accessed on 14 September 2012)

¹³⁸ No data have been provided for Afar and Hareri regional states.

¹³⁹ It is not clear whether the MOA's declaration that the country has 66.6% of its total area (i.e. 74.3 million ha from the total area of 111.5 million ha) suitable for crop production (see above) includes the area that is allocated for biofuel production. If there are no overlaps, the summation of the two will make 97.6 million hectares, which constitutes 87.5% of the total area of the country. If the Ethiopian government allows this to happen, it is equivalent to waging war against nature.

¹⁴⁰ Capital newspaper, 15 November 2010.

country is already suffering from great losses of biodiversity. This can be witnessed by the plantation's encroachment of one of the rarest protected areas in the eastern part of the country.¹⁴¹

Another serious problem with biofuel cultivation is its creeping into densely populated *enset*¹⁴² growing highland areas of the country.¹⁴³ Biofuel cultivation in such areas could bring about erosion of agricultural biodiversity which is a means of livelihood for millions of people. This can be illustrated by the practice that farmers are used as out-growers of jatropha plant by entering into agreement *not to grow other crops*¹⁴⁴ together with the biofuel plant. Following this activity, it is feared that it may lead to serious loss of agro-biodiversity by further increasing food insecurity of these areas which are already food insecure.¹⁴⁵ Biofuel plantations involve the introduction of exotic species which are number two causes of loss of biodiversity, next to habitat loss.¹⁴⁶

Regarding allocation of vast lands for producing food crops, a rush has been observed since 2009 though policies and strategies for commercial food crop production go back to the year 2001 with the adoption of the ADLI program. From this it can be argued that the massive land allocation activity is triggered by the 2008 worldwide food crisis. Countries like Saudi Arabia,¹⁴⁷ which do not produce their own food crops, have realized that money alone is not sufficient to have food security and marched to poorer countries like Ethiopia to get their own vast agricultural lands overseas. Following this event, the Ethiopian government has allocated more

¹⁴¹ Part of the Babile Elephant Sanctuary (BES), which harbors the unique African elephant was allocated for the biofuel plantation and caused outcry of national as well as international environmental groups. For more detailed Reuters' news visit <http://www.reuters.com/article/idUSL3163571720070531>.

¹⁴² *Enset* is the Amharic name for false banana (*Musa ensete*) crop from which staple food items are prepared in many parts of the SNNPRS and Oromia. *Enset* growing areas are known for their high population density and land scarcity in Ethiopia. These areas are known to grow up to 20 crop varieties in a single farm by way of intercropping. *Enset* is a perennial, drought resistant and ecologically friendly crop. One research work reported that the carrying capacity of land planted with *enset* is around 0.2 ha for a household of seven people as opposed to 1.5 ha of land with annual grain. (See 'Enset: The Crop That Can Feed the World?' <http://foodtank.org/news/2013/07/the-crop-that-can-feed-the-world>, accessed on 02 August 2013).

¹⁴³ FfE (2009), *Agrofuel Development in Ethiopia: Findings of an Assessment*, Occasional Report No. 3, p. 4.

¹⁴⁴ Emphasis added.

¹⁴⁵ *Ibid*, p.4. Even with diversified farming activities, 39.31% of the population of the Wolayita zone (one of the zones in SNNPRS) is food insecure. See *Ibid*.

¹⁴⁶ See Chapter 2 for details.

¹⁴⁷ Saudi Arabia has only about 1.8% of its total area as arable land. For World Bank data, see <http://www.tradingeconomics.com/saudi-arabia/arable-land-percent-of-land-area-wb-data.html>, accessed on 03 June 2011. Saudi Star Agri-business is currently running large-scale rice farming in Gambella Regional State.

than 3.6 million hectares of land. The following table shows lands which are allocated for this purpose as of December 2010.

Region	Land identified and prepared for allocation
Gambella	1,221,893 hectares
Benishangul-Gumuz	1,149,052 hectares
Oromia	1,057,866 hectares
SNNP	180,604 hectares
TOTAL	3,609,415 hectares

Table 4.3

Source: Ministry of Agriculture

The government's decision to engage in large-scale agricultural investments is accelerated by influences from outside. There are growing reports which indicate that companies and governments from various countries have shown interest in producing food overseas to ensure their own food security.¹⁴⁸ According to The Independent on Sunday newspaper, governments of countries like India even went to the extent of lending money to their companies to buy tracts of lands in Africa.¹⁴⁹

It should be noted that India is one of the countries which banned food export in 2008. One of the reasons for the ban was the fall of domestic food stock.¹⁵⁰ The ban by India and other major food exporting countries was a wakeup call for countries like Saudi Arabia to recognize that the fact that they are owners of piles of money does not mean that they are food secure. Advised by Dr. Robert Zeigler, the Director General of the International Food Policy Research Institute

¹⁴⁸ See, for instance, Saturnino M. Borras Jr. *et al*, 'Towards a better understanding of global land grabbing: an editorial introduction', *The Journal of Peasant Studies*, Vol. 38, No. 2, March 2011, pp.209-216.

¹⁴⁹ The Independent on Sunday 9 August 2009.

<http://www.independent.co.uk/environment/nature/wish-you-werent-here-the-devastating-effects-of-the-new-colonialists-1767725.html>, accessed on 17 May 2011. Note that companies only receive land on lease in Ethiopia as the Ethiopian constitution prohibits sale of land or any other form of exchange.

¹⁵⁰ See for instance, <http://news.bbc.co.uk/1/hi/7323713.stm>, accessed on 04 June 2011. India was even forced to import food crop some years before it imposed the ban.

(IRRI), to outsource their food production, the Saudi officials marched to many African countries, including Ethiopia.¹⁵¹

What might the possible effects be of the land lease contracts to foreign companies? On the side of benefits, the following could be mentioned. 1) Payment of fee for the land lease. This is a token amount or land could even be handed over to the companies free of charge.¹⁵² Regarding the land rent, Imeru Tamrat observes that: “the land rents are nominal and seem quite low and do not actually reflect the market price for land.”¹⁵³ Therefore, the revenue collected from land rental is very little and can be hardly considered as a benefit. 2) The amount of food which will be produced could increase and that may bring about food availability and lower food prices for some years to come, but as evidence shows, the door for this benefit seems to be closed.¹⁵⁴ 3) Creation of job opportunities for some people. Even if this is one of the very strong reasons for the Ethiopian government to allocate land to large companies, it should always be seen in relation to the number of people who have been earning their livelihoods from the cleared forest and biodiversity rich areas. In no instance in Ethiopia the land allocation has been evaluated from this perspective. In one study it has been revealed that 43.49% of the income of the local communities of the Sheka forest area obtained from non-timber forest products.¹⁵⁵ From this it can be seen that serious considerations need to be given to the possible negative impacts on the livelihoods of local people when creation of job opportunities are envisaged. 4) The foreign currency that the country may gain by exporting the food crops. It is true that the country needs

¹⁵¹ <http://www.oromoindex.com/opinion/ethiopian-virgin-land-for-sale.html>, accessed on 22 May 2011.

¹⁵² For instance, the land lease for Karutury company is 30 Birr/ha/year (around 1.7 USD/ha/year) and for Verdanta Harvesta 111/ha/year (around 6.5 USD/ha/year according to first half of 2011 estimate.) See *supra* note 134 for an example of the large tracts of land given to Land and Sea Development PLC in Benishangul Gumuz Regional State.

¹⁵³ Imeru Tamrat, ‘Governance of Large Scale Agricultural Investments in Africa: the Case of Ethiopia’, paper presented at the World Bank Conference on Land Policy and Administration, Washington DC, April 26-27, 2010, p.25.

¹⁵⁴ It is not clear what proportion of food produced by the foreign companies would be available for local markets. For instance, the agreements signed between the Ethiopian government and Karuturi India and Saudi Star agricultural companies on 25 October 2010 state nothing about the availability of crops for domestic market. However, on an interview to the VOA, Amharic program on 18 September 2012, the State Minister for Disaster Prevention and Food Security of the MOA, Mr. Mitiku Kassa stated that the Ethiopian government has lifted the export restriction on food items and he further stated the measure will not create any food shortage in the country. He added that most of the food for consumption comes from small-scale farmers, not from large-scale commercial farms. The government, in line with the investment laws of the country encourages export oriented production in the country. One of the objectives of Investment Proclamation No. 769/2012 is encouraging expansion in volume, variety and quality of the country’s export products and services. (Article 5(4)).

¹⁵⁵ Aseffa Seyoum, ‘Economic Value of Afromontane Natural Forest in Sheka Zone, Southwestern Ethiopia,’ in Fetene, *supra* note 23, p.210.

foreign currency as it is a capital scarce country. It is appropriate that the country endeavors to earn foreign currencies. However, it is inappropriate to take decisions with pervasive impacts on the biological diversity and the whole of the ecosystem without exploring all possible means for the earning of foreign currency. Absence of a considerate approach to biodiversity and local livelihood can be observed, for instance, from the total lack of concern for environmental impact assessment during the land allocation in Gambella Regional State for large-scale commercial farming.¹⁵⁶ 5) Transfer of technology. This is one of the reasons for conducting land deals with foreign companies. As writers like Rahmato contend, there is little room for transfer of technology for the rural poor.¹⁵⁷

Further allocation of land for large-scale agriculture seems to be inevitable according to the invitation of the late Ethiopian Prime Minister to the Indian Prime Minister Dr. Manmohan Singh to “come and farm Ethiopia’s virgin lands” during the latter’s visit to Ethiopia in May 2011.¹⁵⁸ The late Ethiopian Prime Minister also stated that: “...we want to see more Indian companies in every field, from textiles and food processing to IT and agriculture.”¹⁵⁹ He criticized the advocacy of environmental activists against land-grabbing by the Indian companies in the country as “ill-informed and even ill-intentioned loose talk.”¹⁶⁰ Regarding the environment or biodiversity protection the Prime Minister’s concern seemed to be minimal as he concluded his speech as: “...we want to develop our land to feed ourselves rather than admire the beauty of fallow fields while we starve... I want to reassure Indian companies that they are welcome here. We want them to come and farm what is virgin land.”¹⁶¹ Moreover, on a joint press conference on 25 May 2011 with the Indian Prime Minister, Manmohan Singh the late Ethiopian Prime

¹⁵⁶ Halilemariam Behailu, ‘Land Use and Environmental Governance in Gambella Regional State’, paper presented at a workshop in Gambella town on 17 December 2010. (Mr. Behailu is the Gambella Regional State Land Administration and Use Process Owner.) It has to be noted here that all the agreements with agricultural or otherwise investors state that “The investor has to respect the environmental laws of the country.” Except the insertion of such expressions, the application of the environmental laws is not seen on the ground.

¹⁵⁷ Rahmato argues that: “The projects are operated with high technology which is not transferrable or affordable to smallholders. Large-scale agriculture is managed quite differently from family farms, and there is no meeting ground between the two under the present policy environment.” Dessalegn Rahmato (2011), *Land to Investors: Large-Scale Land Transfers in Ethiopia*, Forum for Social Studies, pp.26-27.

¹⁵⁸ The Hindu News National 26 May 2011, <http://www.thehindu.com/news/national/article2048964.ece>, accessed on 29 May 2011

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*

Minister stated that: "...the land which we have leased until now is a very small portion of what we intend to allocate for the large-scale commercial farming."¹⁶²

Whilst the intention of the Ethiopian government to get the country out of poverty and eliminate hunger is laudable. It is also important to remember the wilderness areas of the country have more than aesthetic value. Moreover, the government should not forget the intimate relations which the local people have established with their natural environment for their livelihood and spiritual reasons.¹⁶³ Unless decisions are made in a way that due respect is given to natural processes and local cultures, it is difficult to sustain agricultural activities for long. In addition to the concerns of the increasingly dwindling biodiversity of the country the process of transferring land to large-scale agricultural investors must be made with the maximum caution not to affect the livelihoods and cultural practices of the local people. The following short case shows how far the decisions of the government to transfer land to such investors may not be welcomed by the local people.¹⁶⁴

On an unknown date (but midway in 2010) three people (Tamiru Ambelo, Chairman of Gumare *kebele*, Ameya Kesito; secretary of Gumare *kebele* and Kasahun Kekilo; an elder from Bako *kebele*) lodged an appeal to President of the country Girma Woldegiorgis claiming that the forests they have protected, managed and utilized sustainably for generations are now being transferred to an Indian company Verdanta Harvests (VH) which has a plan of conducting tea plantation over 5000 hectares of forest land. They also claimed that in addition to its ecological functions the Gedere forest is the basis of their livelihoods as they depend on the forest for food and cash items like honey and spices.

¹⁶² Deutsche Welle Radio, Amharic program, transmitted on 25 May 2011.

¹⁶³ Majority of the local people of the western lowlands are followers of the traditional belief systems and they have lots of sacred sites in the areas which are considered by the government as 'unoccupied'. (See the case study in Chapter 7 for details on this point.)

¹⁶⁴ This case study is based on the summary of letters written by various organs regarding the land lease of Godere woreda to the Indian company, Verdanta Harvests PLC. The letters were written in Amharic and translated by the author.

After receiving their letter, President Woldegiorgis wrote a letter¹⁶⁵ to the federal EPA demanding the EPA should intervene and stop the leasing of the forested lands to the Indian company. Based on this letter of President Woldegiorgis, EPA wrote a letter dated May 6, 2010 to the Ministry of Agriculture. EPA, in its letter to the MOA, indicated that it would be better if these forests are preserved for the environment and the socioeconomic factors as there is a plan which is going to be materialized in the future through the REDD¹⁶⁶ mechanisms.

In the meantime, the Gambella Regional State President Mr. Oumod Oubong wrote a letter to the Godere *Woreda* Council that the Indian company Verdanta Harvests PLC has been given 3012 hectares of land by lease for 50 years on the basis of payment of 111 ETB/ha/year (around 6.53 USD/ha/year). The regional president ordered the Godere *woreda* to collect ETB 334,332 which is the land rent fee for one year.

At this time the administrator of the Mezengir Zone (the zone where Godere *woreda* is located) summoned a public meeting¹⁶⁷ to discuss on the transfer of the forest land to the Indian company. Some elders opposed the transfer of their forests to a foreign company. They claimed that now the said forests are being managed for their sustainable use by Pact Ethiopia,¹⁶⁸ the people and other stakeholders. But the chairperson of the meeting (administrator of the zone) tried to convince the people to go for the lease. Some other people, especially the youth supported the transfer of the forest lands to the company. The youth argued that they (the Godere people) got nothing by preserving forests. If the company starts operation they (the youth) would get employment opportunity, roads will be constructed and we (the Gumare people) can even get electricity services. The meeting was concluded by deciding the forest lands should be given by lease to the Indian company.

¹⁶⁵ This letter is not found. Its existence is known by making reference to other letters.

¹⁶⁶ Reduced emissions from deforestation and degradation.

¹⁶⁷ 230 people attended the meeting.

¹⁶⁸ An international NGO operating in Ethiopia.

Aggrieved with this decision, the Chairman of the Gumare *kebele*, Tamiru Ambelo, wrote a second letter to the office of the president of the country on December 9, 2010. In this letter he alleged that the administrator of the zone unduly excited the people to pass a wrong decision on the virgin forests. Based on this second letter of Tamiru, President Woldegiorgis wrote a letter directly to the Ministry of Agriculture mentioning that the REDD alternative is better than clearing such pristine forests for tea plantation.

All these efforts of those who opposed the leasing of forest lands to the Indian company seemed to have not borne fruits. The Mezengir Zone administration sacked Tamiru from his position as chairperson of the Gumare *kebele* on January 24, 2011. And the Verdanta Chief Executive Manojet Barkatakya said “It’s replacing green with green. Not green with concrete.”¹⁶⁹

From this short story it can be seen that there are different actors which have interests on the last remaining rainforests of the country. The government officials seem to attract foreign investors at whatever cost it may be as they are always promising that they will create job opportunities for the youth and bring about rapid economic growth for the country. The elders consider themselves as the protectors and trustees of the forests and they want to transfer the forests to the coming generations. The youth consider protecting forests and living within the forests as being ‘backward and uncivilized’. Environmental organs, NGOs and activists advocate for the introduction of ways of economic benefits for the society without seriously affecting the forests. The foreign company wants to receive the land and start farming as soon as possible.¹⁷⁰ Government organs at federal level are divided into two on the issue. EPA and the President of

¹⁶⁹ Ethiopian President Concerned by Lease of Forest to Indian, <http://www.ethiopianreview.com/forum/viewtopic.php?f=2&t=25418>, accessed on 08 February 2011.

¹⁷⁰ According to the report of the Ethiopian Reporter Newspaper (Amharic version of 27 June 2012), the Verdanta Harvests PLC started to produce timber by logging big trees from the land it received for tea plantation. As the administrator of the Mezengir zone (the zone where Godere woreda is located) Mr. Muse Gejat stated to the Ethiopian Reporter, the company was illegally producing timber as it was not licensed to do so. Mr. Gejat also stated that the company illegally bought more than 2000 ha of land from the local people (even if land is not subject of sale in Ethiopia). The Ethiopian Reporter also remembered the public discontent of 2010 due to the transfer of forest lands to Verdanta Harvests and their application to the office of the president of the country and to EPA. According to the reports made by the Ethiopian Reporter, the Ministry of Agriculture and the president of the Gmbella Regional State announced that the land given to Verdanta Harvests had no forests at all. The Reporter also stated that the company had transported lots of timber even from the neighboring SNNPRS illegally.

the country went for the protection of the forested areas while the Ministry of Agriculture, the Gambella Regional State and the Mezengir zone administrator favored the clearing of forests for tea plantation.

The difference in interests of the elders and youth was particularly worth mentioning. The fact that the youth perceived living within the forests as being ‘backward’ shows the intergenerational gap in the traditional wisdom of harmoniously living with nature. The loss of this wisdom has been seen in the readiness of the youth to trade the precious biodiversity with tea plantation.¹⁷¹

The fact that the company’s Chief Executive said that his company was replacing green with green had no scientific, socioeconomic and cultural support. Scientifically the original green represents biodiversity which evolved with the ecosystem and playing incalculable roles in the life support system. The replaced green is an alien monoculture plantation that has no ability to perform the functions of the original green. In terms of socioeconomic and cultural conditions, the local communities depend on the original forest for their livelihood by hunting, gathering and harvesting honey, medicines and spices. Moreover, the forest contains sacred sites where the local communities use for spiritual purposes. These socioeconomic and cultural services of the original green are totally absent in the replaced green.

As compared to the total area of the country which is 111 million hectares, the amount of land allocated for the large-scale agriculture may not be seen as significant by the government. That is why the then Deputy Prime Minister and Minister for Foreign Affairs,¹⁷² Hailemariam Dessalegn told the BBC that:

“Only 3% of the arable land that is going to be allocated for agriculture is now being given to investors. This is small when it is seen from Ethiopia’s geographical size. The rest which comprises 97% and is used by no one else shall be given to large-scale agriculture which is a new

¹⁷¹ In Chapter 3 it has been seen that modern education systems are detaching the youth from the ancestral cultural practices.

¹⁷² Hailemariam Dessalegn is currently the Prime Minister of Ethiopia.

and additional investment opportunity for the country. The lowland areas are not suitable for smallholder farmers due to malaria infestation and harsh climate.”¹⁷³

Hailemariam Dessalegn was telling the BBC about his government’s plan of converting the lowland areas into large-scale agricultural fields by leasing them out to foreign investors. This is a direct reflection of the policy and strategic documents of the country. That is, as repeatedly indicated above, these documents give less attention to biodiversity of the country. Before embarking on such massive agricultural activities, it is essential to be guided by ethical principles which should allow the prosperity of biodiversity side by side with the agricultural activities. The lowland areas should not be seen as places where only human interests shall be fulfilled in the form of agriculture at the total elimination of biodiversity. Without giving due attention for biodiversity to flourish, the agricultural activities themselves cannot be sustainable as agriculture needs the services provided by biodiversity.¹⁷⁴ It seems that the government tries to fight poverty and hunger by expanding agricultural fields in the lowlands of the country, which researchers have claimed to be more fragile than the highlands.¹⁷⁵

From the above discussions it can be seen that the developmental policies and strategies: (1) promoted the conversion of wider lowland areas of wilderness into large-scale commercial farming by applying the idea that these territories are unoccupied by ignoring the local livelihoods; (2) gave little recognition for the biodiversity, the cultural, knowledge, and spiritual values of the local people which are seriously affected by the commercial farming activities; and (3) became silent on the rights of people to decide on the fate of their ecosystem using their sovereign capacity of ecological self-determination.¹⁷⁶ By doing so, the policy and strategic documents have shown their alliance to the dominant anthropocentric and reductionist approaches which tend to destroy alternative forms of knowledge and values and replace them by their Western counterparts.

¹⁷³ BBC World Service radio program, 09 June 2011 transmission.

¹⁷⁴ M.J. Swift, et al, for instance argue that, biodiversity conservation at a landscape level enhances the ecosystem services which help in sustaining agricultural productivity. See M. J. Swift et al, ‘Biodiversity and ecosystem services in agricultural landscapes—are we asking the right questions?’ *Agriculture, Ecosystems and Environment* 104 (2004) 113–134. See also note 93 in Chapter 6 of this work that shows that mixed cropping increases yields of *teff*.

¹⁷⁵ See Chapter 3 for more details on this point.

¹⁷⁶ See Chapter 6 for discussions on ecological self-determination.

To achieve its developmental goals, the Ethiopian government uses two major methods which have strengthened its powers in fulfilling the intended goals and weakened the clouts of people in defending their lands. These are: (1) bringing all lands in the country under the exclusive ownership of the government; and (2) forceful relocation of the lowland people under the villagization program.

1) Government's exclusive land ownership¹⁷⁷

During the feudal regime, majority of the Ethiopian peasants had suffered from lack of access to land and this was one of the main causes of the onset of the 1974 Ethiopian Revolution. It was the Revolution that made all rural lands a 'public' property through the 1975 Rural Land Proclamation. Although the 1975 Rural Land Proclamation was issued in the name of the collective property of the Ethiopian people, in effect, only the government or its agents could grant land to peasants in exchange of political support.¹⁷⁸ In the history of Ethiopia, it can be safely argued that, in all the regimes land has been an important instrument of the ruling class. That is, for all regimes in Ethiopia, land was not only of economic value and means of production but also it had a political value. That was and is the main reason for the government ownership of land in the country.¹⁷⁹ Moreover, the longstanding ruling party's ideology, which the party calls as a 'revolutionary democracy', and the consequent idea of developmental state seem to be strong reasons to keep land ownership in the hands of the government.

Olika argues that – ...“like its predecessors, EPRDF uses land as a political weapon since cadres in many parts of Ethiopia take away land from ordinary peasants and giving it to supporters or members of their own party.”¹⁸⁰ Land ownership by the government has facilitated easy removal

¹⁷⁷ See also discussion in Chapter 6, subsection entitled 'Control over land'.

¹⁷⁸ Tefesse Olika (2006), 'Ethiopia: Politics of Land Tenure Policies under Three Regimes: A Carrot-and-Stick Ruling Strategy', in Alexander Attilo, *et al.*, (Eds) *Ethiopia: Politics, Policy Making and Rural Development*, Department of Political Science and International Relations, Addis Ababa University, p.1.

¹⁷⁹ During the debates of political parties for both 2005 and 2010 elections, most of the opposition parties underlined that the government ownership of land is not for economic or social purposes but for the government to ensure its powers for long by intimidating the electorates by eviction from their holdings. The party that is leading the government, on the other hand, was arguing that peasants have constitutionally guaranteed right not to be evicted from their lands.

¹⁸⁰ Tefesse Olika (2006), *supra* note 178, p. 5. The present constitution of Ethiopia, regarding land, provides that “The right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the State and in the peoples of Ethiopia. Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and

of communal as well as individual land possessors for ‘development’ activities. This kind of land tenure system dictates peasants to focus on short term gains at the expense of long term benefits from the land. Mr. Abebe Olana, a peasant farmer from West Shoa zone of the Oromia regional state, in a meeting of elders stated that:¹⁸¹

“I got my land from my distant ancestors. I also need to transfer it to my distant descendants. However, I do not think I could do that. Flower farms or other investment projects could take away my land at any time. I have a fear that my land could not be with me or my descendants. The other thing which has aggravated my fear was the title deed certificate. We all were happy when we were issued with the certificate. But, when we were paying the tax for the government, the voucher is stating that ‘tax payment for land rental’. I could not believe that. Does that mean that I am using my ancestral land by way of rent? If that is the case, I have been more convinced that my land could be taken at any time. So I have devised a mechanism of planting eucalyptus trees, though these trees are not good for my land. I do this for two reasons. (1) I can get the maximum monetary return from my land than performing any other activity on it. For instance, in 3 to 5 years’ time, the tree crops will be harvested and at the present price, it is estimated up to one million birr per hectare from a single harvest. This kind of economic benefit is not expected from any other crop. (2) If in case my land, with eucalyptus trees, is taken away by the government I will get a greater sum of money by way of compensation.”

Lack of secure use rights, including the right to exclude, or ownership over land gives people little incentive to manage the land sustainably, and indeed motivates them to get as much benefit as they can until the opportunity lasts. Even if the land laws of the country ensure inheritance, it has a limitation. That is, only those relatives of the holder who have no other income and want to earn their livelihood from farming activity can inherit land.¹⁸²

The recently started land certification is limited to individually held croplands. That is, it does not include communal grazing as well as forest lands. This situation aggravates deforestation and loss of biodiversity since people clear forests in order to be issued the certificate of landholding

shall not be subject to sale or to other means of exchange.” This gives the upper hand to the government in controlling land, leading to a situation of land tenure insecurity in the country.

¹⁸¹ The meeting was organized by MELCA-Ethiopia on the theme of “Protecting Sacred Natural Sites for a Better Livelihood”, Addis Ababa, August 20-22/2009.

¹⁸² For instance, see Rural Land Administration and Use Proclamation No. 456/2005. This Proclamation, in its several Articles provides that the right of any person to get rural land emanates from his/her willingness to engage in agriculture. Therefore, to get land by way of inheritance one must directly engage in agricultural activity.

on the deforested and communally held lands.¹⁸³ Even if there is no sufficient data on how far the land certification has resolved the problem of land tenure in Ethiopia, it can be seen from practices of agricultural investments that are being conducted on the peasant's lands with certificates of landholding.¹⁸⁴ This situation diminishes further the land tenure security of Ethiopian farmers.

The other problem is the amount of compensation paid for the peasants. Peasants are complaining about the amount of money they receive by way of compensation when they are evicted from their lands.¹⁸⁵ The situation is worse when communal lands such as communal grazing lands and forest lands are given to investors. Since all lands in Ethiopia belong to the government, all communal grazing lands as well as forest lands are considered to be under government ownership. That is why no compensation is given on such lands when they are allocated for private investors. This situation effectively ignores the roles of such lands in the livelihoods of communities in the country. When such lands are given to investors, they pay no compensation for the lost land, but make informal promises that they will contribute to communities by building schools or clinics, and providing employment.¹⁸⁶

Absence of secured land tenure aggravates loss of biodiversity in two obvious ways. First, it does not encourage landholders to work hard for the preservation of biodiversity, as they know one day their land will be taken away by the government. Second, peasants who did not get enough

¹⁸³ In Sheka and Kefa areas this is very common. (Information from focus group discussion, July 2010). See also USAID (2008), *Ethiopia Biodiversity and Tropical Forests*, p. 34 and Jonathan McKee (2007), *Ethiopia: Country Environmental Profile*, p. 20.

¹⁸⁴ It is common to see floricultural investments, if one goes out of the city of Addis Ababa, especially in the western and southwestern directions. These floricultural investments are being conducted on the lands taken away from peasants irrespective of the issuance of landholding certificates.

¹⁸⁵ For instance, in Oromia Regional State four hundred people have signed a petition saying that they received no compensation after being evicted from land taken over by Karuturi, an Indian company. They said that their families have farmed and grazed their animals there for generations. One of the farmers spoke to VOA on 22 February 2010, on condition of anonymity. He said "We are for development of our country, but we cannot develop our country when land is in the hands of the government. You can work on your land, and all of a sudden, they push you out of your land." (VOA Amharic broadcast, 22 February 2010). This story is also available at:

<http://farmlandgrab.org/post/view/11299>, accessed on 28 April 2011. In the same regional state, farmers in Legetafo-Legedadi areas (interviewed by VOA Amharic program on 11 October 2012), in the outskirts of Addis Ababa in the northeastern side, also complained that they were being compelled by government officials to receive unfair amount of compensation following their eviction from their land possessions. If they refuse to receive the compensation, they would be detained by the police. The complaint of the people was admitted by Mr. Sisay Lemma, the Legal and Land Administration Affairs Standing Committee Chairperson of the new township.

¹⁸⁶ See Tom Lavers (2011), *The Role of Foreign Investment in Ethiopia's Smallholder-Focused Agricultural Development Strategy*, LDPI Working Paper 2, LDPI, p. 15.

compensation while they are evicted, especially the ones who do not get in kind, most likely find their ways into the remaining forests in search of land to till or charcoal burning activities or illegal logging.

Government ownership of land has contributed to the promotion of developmental mindset. This has been done by augmenting the powers of the government to take away any land, communally or privately held, with the view to allocating for large-scale agriculture with the minimum or no payment of compensation. It also led to relocation of people, sometimes accompanied with forceful eviction from their lands.¹⁸⁷

2) Relocation of Lowland People through Villagization Program

Mass transfer of people through government resettlement programs and migration through individuals' initiative has been discussed in Section 4.2 of this Chapter as one of the causes of loss of biodiversity. In both cases, people have been transferred from degraded and drought stricken highland and midland areas to relatively better areas. In this sub-section, discussion will be made on the villagization program of the government in the lowlands of the country, with the view to transferring indigenous/local communities from their traditionally occupied lands to new areas. Studies indicate that the purpose of massive villagization program is to allocate vast tracts of land for large-scale commercial farming.

Resettlement in the villagization program is different from the one discussed in Section 4.2 at least on the following issues. (1) The people who are being relocated through the villagization program have been living in relatively undisturbed ecosystems and sparsely populated areas. (2) Those people who are being relocated from the environmentally degraded areas show willingness to be relocated, though there are some resistances. On the other hand, the government is forcibly moving the lowland people from their lands with no meaningful consultation or compensation.¹⁸⁸ (3) The major purpose of relocating the lowland people from their ancestral lands is to make way for large-scale commercial farming.¹⁸⁹

¹⁸⁷ See notes 188, *infra*.

¹⁸⁸ See, (1) Dessalegn Rahmato (2011), *Land to Investors: Large-Scale Land Transfers in Ethiopia*, Forum for Social Studies; (2) Felix Horne (2011), *Understanding Land Investment Deals in Africa, Country Report: Ethiopia*, Oakland Institute; (3) Anuradha Mittal (ed.) (2013), *Omo: Local Tribes Under Threat: A Field Report from the Omo*

The other major purpose of the villagization program is modernizing the lowland people. The government continuously claims that it is impossible to provide the basic services to the lowland people whose settlement patterns are sparse.¹⁹⁰ It is true that it is difficult to provide the basic services to these sparsely populated lowland societies. The intention of the government to make these services accessible to the lowland communities is also good. But there are a number of facts which make these contentions of the government under a question mark. First, at the time of the relocation or immediately after people moved from their lands, such lands have been transferred to the companies which conduct large-scale commercial farming or allocated for government run sugar plantation projects.¹⁹¹ Second, the pace of relocating these people is very quick and not evolutionary. For instance, in Gambella, the relocation which was started in 2010 transferred around 70,000 people by 2011, which comprise 30.6% of the total population of Gambella Regional State.¹⁹² In South Omo also there has been the same trend.¹⁹³ From these it can be observed that the rush to relocate local people is directly related with preparation of the land for large-scale commercial farming. Third, in many areas the promised services are not present and the villagers often go without them altogether.¹⁹⁴

An overall assessment of the villagization programs in Ethiopia show that the government is fulfilling its goals as a ‘developmental state’ by following a modernization path. This path is intended to end traditional way of living.¹⁹⁵ This thesis does not argue that societies’ way of life should not change and remain the same all along the way. It rather argues that any change that impacts the way of living of the society should not come from top by way of imposition

Valley, Ethiopia, Oakland Institute; (4) Wendy Liu *et al*, (2013), *Unheard Voices: The Human Rights Impact of Land Investments on Indigenous Communities in Gambella*, Oakland Institute; and (5) Human Rights Watch (2012), “Waiting Here for Death” Forced Displacement and “Villagization” in Ethiopia’s Gambella Region, Human Rights Watch; (6) Ethiopia: Land, Water Grabs Devastate Communities, available at: <http://www.hrw.org/news/2014/02/18/ethiopia-land-water-grabs-devastate-communities>, accessed on 20 February 2014

¹⁸⁹ See *Ibid*. The Ethiopian government claims that it is conducting the villagization program for the purpose of providing the people with basic services like schooling, health services and infrastructure provision.

¹⁹⁰ This has been repeatedly stated by all government owned media over long period of time.

¹⁹¹ See Waiting Here for Death; and HRW South Omo, *supra* note 188.

¹⁹² See Waiting, *Ibid*. See also www.csa.gov.et/.

¹⁹³ See Mittal, *Omo: Local Tribes*, *supra* note 188.

¹⁹⁴ See HRW, Waiting, *supra* note 188 p.2.

¹⁹⁵ Regarding this, State Minister to the Ministry of Agriculture Abera Deressa stated that: “...at the end of the day, we [do] not really appreciate pastoralists remaining in the forest like this....pastoralism is not sustainable...we must bring commercial farming, mechanized agriculture, to create job opportunities to change the environment.” Understanding, p.6.

accompanied with the use of force. If possible, changes need to come from the societies themselves. Even if it has to be initiated by the government, there has to be a prior informed consent of the people and it needs to be evolutionary.

Large-scale commercial farming to be conducted on the lands which are taken away from the local people combined with a strategy that confines them in new villages are considered to be processes of modernization and development. The arguments made by Alvares and Shiva fit to the conditions happening in Ethiopia. That is, Alvares and Shiva connect modernity and development with violence against local livelihoods and the environment.¹⁹⁶ The violence on the local people and their livelihoods manifests itself through plights faced by the local people by denying them access to their traditional way of flood farming on the banks of rivers, taking away their grazing and farmlands without compensation and without prior informed consents.¹⁹⁷ The violence on the environment is marked by the rapid move to allocate massive territories without environmental controls through EIA or any other viable means. According to the report of the Oakland Institute, “[d]espite assurances that EIAs are performed, no government official could produce a completed EIA, no investor had evidence of a completed one, and no community had ever seen one.”¹⁹⁸

4.3 The Future Plans of the Government

In 2010, the Ethiopian government launched a new 5 years plan known as Growth and Transformation Plan (GTP) which is expected to move the country forward as far as poverty reduction and fulfilling the MDGs are concerned.¹⁹⁹ Towards this end, the plan underlines on furthering intensive and extensive agricultural practices. Moreover, the GTP underlines the furtherance of large-scale agricultural practices in more aggravated ways in the lowlands of the country.²⁰⁰

¹⁹⁶ As reports indicate, relocations have been marked by threats, assaults, beatings, intimidations and arbitrary arrests and detentions against those who resist the move.

¹⁹⁷ See all the 6 materials i.e. *supra*, note 188.

¹⁹⁸ Horne, Understanding, *supra* note 188, p.1.

¹⁹⁹ This idea has been repeatedly stated in many sections of the GTP document.

²⁰⁰ Intensive agriculture shall be applied for small scale farmers and extensive agriculture is for private investors who are encouraged to engage in export oriented large scale agriculture in the vast forest and woodland areas of the country. For more details, see § 4.1 and 5.1 of the Amharic and English versions respectively of the GTP.

The GTP also focuses on ‘new’, ‘improved’ and ‘modern’ technologies for the purpose of enhancing agricultural productivity. However, the document does not clearly specify whether these technologies focus only on HYVs or also on agro-biodiversity of the landraces. However, we can safely conclude that it is inclined more to the HYVs from statements made by the government owned television and radio programs.²⁰¹

Even if Ethiopia is rich in agricultural biodiversity, this aspect of biodiversity, like the wild and aquatic biodiversity is under great pressure. The main threat for agricultural biodiversity comes from the country’s policy that is geared towards large-scale agricultural investment for export oriented agricultural production, which is mainly based on monoculture activities.²⁰² Even if HYVs have increased agricultural productivity they are not without challenges. The merits of modern farming are being challenged from the viewpoints of environmental and social considerations, and in meeting the challenge of sustaining food and livelihood security in Ethiopia.²⁰³

The main source of the challenge against the HYVs in Ethiopia is the fact that these crop varieties, which are genetically uniform, are quickly replacing the traditional varieties which have evolved through millennia by the Ethiopian farmers. Even if the productivity of the improved varieties is tempting to many farmers in Ethiopia, they require special management, especially with respect to chemical fertilizers, pesticides and herbicides. The improved varieties of food crops have in most cases failed to yield significantly more per unit area than traditional varieties when managed under the common conditions of marginal farms.²⁰⁴ It is also known that agriculture which is mainly based on uniformity of genetic varieties is more susceptible to diseases than the more genetically diverse varieties of landraces or commonly known as farmers’ varieties. For instance, UG99 wheat stem rust disease has caused significant reduction in wheat

²⁰¹ The ERTA repeatedly broadcasts the success stories of farmers who have obtained higher harvest because of HYVs. On the other hand, its programs on the success stories of the landraces are very rare.

²⁰² The Ethiopian government repeatedly declared that it has been committed to end poverty in Ethiopia. To this end, the government firmly believes that agriculture shall be the main source of hard currency for the country and this will be attained by shifting from subsistence farming to cash-crop at individual peasant farmer level and by large scale farming by private investors.

²⁰³ Melaku Worede, ‘Agro-Biodiversity and Food Security in Ethiopia’, in Zenebework Tadesse (ed.) *Environment and Development in Ethiopia*, Proceedings of the Symposium of Forum for Social Studies, 15-16 September, 2004, p.8.

²⁰⁴ Worede, *Ibid*, p.11.

production mainly in the genetically uniform wheat farms around the world. In addition to this, the landraces were found to be more resistant to this stem rust disease than genetically uniform varieties of wheat.²⁰⁵ Moreover, it has to be remembered that agriculture that is based on diverse varieties has a number of advantages over monoculture of HYVs such as less risk of people's health from reduced or no pesticide and/or herbicide usage, availability of crop residue for animal feed, and maintaining of soil organic matter.

In addition to causing the destruction of the biological diversity in developing countries as the result of the allocation of vast lands for large scale agriculture, it is feared that it may “end up compelling them to hand over their only assets to international investors (through international contractual agreements).”²⁰⁶

Conclusion

This chapter highlighted two scenarios as causes of loss of biodiversity in Ethiopia. Both of the causes are human activities, the former being a result of direct human actions on the surrounding environment and the latter being a driving force implanted in the mindset of humans. The first one is related to the practices of societies, especially the highland societies of the country. It examined how societies even outside the industrial communities can cause loss of biodiversity if they are guided by anthropocentric and human dominion thoughts. The only difference between such societies and industrialized societies is that, in the former case the loss is slower than in the latter case. That is, in industrialized societies, loss of biodiversity is assisted by modern science and technology. Same level of loss of biodiversity could also occur in agrarian communities if their activities are guided by anthropocentric notions over long period of time. This is what has happened in highland Ethiopia for centuries. Even if it is difficult to attribute the whole of responsibility to anthropocentric thinking and the notion of human dominion over the rest of nature for the loss of biodiversity in highland Ethiopia, there is credible evidence that such

²⁰⁵ See for instance, Borlaug Global Rust Initiative 2010 Technical Workshop Poster Abstracts, available at http://www.globalrust.org/db/attachments/bgriwc/2/2/Posters%20abstracts_5-19-10%20FINAL.doc, accessed on 08/12/10. This disease resistance is about the landrace varieties of wheat but the logic also applies to other crops. For instance, according to *Nature* International weekly journal of science 406, 718-722 (17 August 2000), “Crop heterogeneity is a possible solution to the vulnerability of monocultured crops to disease.” The journal gives example from Yunnan Province, China that diversified varieties of rice were found to be highly disease resistant than monoculture rice cultivation, without a need of spraying chemicals.

²⁰⁶ <http://af.reuters.com/article/topNews/idAFJOE55303O20090604>, accessed on 22 May 2011

conceptions have contributed in the loss of biodiversity. Anthropocentric worldviews, wherever their sources might be and in whatever society they may prevail, they have the power to be a threat to the natural world and can cause a serious loss of biodiversity.

Developmental mindset is one of the extreme positions as far as anthropocentrism and a threat towards loss of biodiversity is concerned. It can even be argued that developmental mindset even goes beyond anthropocentrism, as it may favor some people against the interests of others.²⁰⁷ In this regard, developmental mindset is like a double bladed sword in that it assaults both the environment and some sections of human societies. Human sufferings during the forced relocations in Gambella and South Omo regions of Ethiopia show the violent nature of the notion of development.²⁰⁸

Unlike the traditional Ethiopian highland practices, which took centuries to devastate biodiversity, ‘development’ activities now are highly supported by the methods and instruments of the scientific and technological advancements in addition to the notions of anthropocentrism and human dominion. As the result of this, developmental mindset causes greater assault on biodiversity and human livelihoods within short period of time.

The way people think and their acts determine the fate of both humans and the whole of nature. In both aspects of causes of loss of biodiversity discussed in this Chapter, working in coordination with nature has been progressively declined. Systems thinking²⁰⁹ can be

²⁰⁷ This is to mean that – while developmental mindset is practiced it could favor the perpetrators of the mindset at the cost of the livelihoods of the local people. It can be said that developmental mindset is more of plutocentric (wealth-centered) than anthropocentric.

²⁰⁸ See Shiva, *supra* notes 117-119.

²⁰⁹ “The ideas set forth by organismic biologists during the first half of the century helped give birth to a new way of thinking—systems thinking—in terms of connectedness, relationships, context. According to the systems view, the essential properties of an organism, or living system, are properties of the whole which none of the parts have. They arise from the interactions and relationships among the parts. These properties are destroyed when the system is dissected, either physically or theoretically, into isolated elements. Although we can discern individual parts in a system, these parts are not isolated, and the nature of the whole system is always different from the mere sum of its parts ... The great shock of twentieth-century science has been that systems cannot be understood by analysis. The properties of the part are not intrinsic properties but can be understood only within the context of the larger whole. Thus the relationship between the parts and the whole has been reversed. In the systems approach the properties of the parts can be understood only from the organization of the whole. Accordingly, systems thinking concentrates not on basic building blocks, but on the basic principles of organization. Systems thinking is ‘contextual’ which is the opposite of analytical thinking. Analysis means taking something apart in order to understand it; systems thinking means putting it into the context of a larger whole.” (Fritjof Capra (1996), *The Web of Life: A New Scientific Understanding of Living Systems*, Anchor Books, pp.29–30.)

implemented by greening science, technology, religion, governance and law. A paradigm shift is required in the legal, policy and governance systems of humans which regulate the human-nonhuman nature relationship. The next chapter highlights a proposed paradigm shift, by taking specific issues, which are hoped to guide how humans are going to establish a harmonious relationship with nonhuman nature. It further suggests a new philosophy, Earth jurisprudence, that is believed to reconcile the hitherto disparities between the way people think and the way nature operates.

CHAPTER 5

RETHINKING THE PHILOSOPHY OF BIODIVERSITY

PROTECTION (I): Theoretical Dimensions

Introduction

In the preceding chapters it has been established that the notions of anthropocentrism and human dominion over nature have been dominant paradigms that have facilitated loss of biodiversity by influencing laws and modes of social relationships. We have also seen how these translate into the dominant ideology of development. The effects of such a paradigm of destruction we have seen are: 1) the commodification of nature as resources, 2) the relegation of non-commodified knowledge as irrelevant and 3) ignorance of the sustainable livelihoods of local people as backward.

Based on the discussions made in the preceding chapters, this chapter suggests a shift in paradigm, by considering specific issues which, according to this work, are believed to allow humans to think, act and live in accordance with the natural functions of the Earth. Based on this premise, the chapter suggests the new philosophy known as Earth jurisprudence for the purpose of reconciling the present legal, policy and governance regimes which have been dominated by anthropocentric perspectives, and also proved to be conflicting with the Earth's systems.¹

Earth jurisprudence has a number of proposed principles.² Of these the principle of subjectivity, the principle of communion, the principle of ecological governance and the principle of diversity,³ are the most profound ones as far as this work is concerned. Earth jurisprudence suggests a shift in our thinking about law, governance and nature.⁴ In this work, it is assumed

¹ Earth jurisprudence can be taken as a branch of environmental ethics for governing human-nature relationship.

² See for instance, Cormac Cullinan, 'A History of Wild Law', in Peter Burdon (2011), *Exploring Wild Law*, p. 13 and 'Earth Law Principles', <http://www.gaiafoundation.org/earth-law-principles>, accessed on 19 February 2013.

³ See Ian Masson, 'One in All: Principles and Characteristics of Earth jurisprudence', in Burdon, *Ibid*, pp.36-37.

⁴ Judith E. Koons, 'Earth jurisprudence: The Moral Value of Nature', *Pace Environmental Law Review*, Volume 25, Issue 2 (2008), p.264; and Judith E. Koons, 'What is Earth Jurisprudence? Key Principles to Transform Laws for the Health of the Planet', *An Introduction to Earth Jurisprudence*, Discussion Paper, Center for Earth Jurisprudence, available at: earthjuris.org/wp-content/.../Intro-to-Earth-Jurisprudence-7-28-111.pdf, accessed on 23 January 2013.

that the discontinuity between the way humans think and act and the way the Earth operates can be bridged by a shift in paradigm to the new philosophy of Earth jurisprudence. Earth jurisprudence is a philosophy that works for the creation of conditions that harmonize human thinking and action with the way the Earth functions. To bring about this harmony, it advocates for the moral extension to nonhuman nature and consequently the imposition of nonreciprocal responsibilities on humans.⁵

Earth jurisprudence goes with the land ethic proposed by Leopold which “changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it.”⁶ Leopold’s assertion should not be interpreted in a sense that human role must be the same as that of other nonhuman organisms. Instead, it has to be taken in a sense that we humans owe respect to the Earth community and we need to fulfill this responsibility. In conformity with this, this chapter also argues that – as the most rational and the most capable beings, human responsibility to the rest of nonhuman nature, needs to be applied in a nonreciprocal manner. The philosophy of Earth jurisprudence as it is highlighted in this chapter is also based on and synthesized from theories of James Lovelock and Thomas Berry, the ethics of Holmes Rolston III and the works of other thinkers.⁷

While rethinking the philosophy of biodiversity protection through Earth jurisprudence, the major consideration is ethical reexamination of the relationship between humans and nature. Through this ethical relationship, Earth jurisprudence imposes relational responsibility on the human for biodiversity protection. This relational responsibility takes a form of stewardship responsibility in lieu of the dominant conception of human dominion over nature. We will see that this reorientation of the philosophy of biodiversity protection may be applied to key areas which then transform the understanding of human relationship with nature. Several specific areas of application where the philosophy of biodiversity protection could be rethought for the purpose

⁵ In §5.2 a shift from the notion of dominion of humans over the nonhuman nature to stewardship responsibilities is suggested. The moral extension is proposed here to attain two goals. 1) To enhance human responsibilities toward nonhuman nature. 2) To challenge the restriction of moral extension only to human beings, considered to be result of the dominant anthropocentric paradigm. (When it is argued that there must be an ethical extension (moral extension) to nonhuman nature, it does not mean that it is the extension of the set of rights as human rights that should be extended to nonhuman nature. See §5.1 for details.)

⁶ Aldo Leopold (1949), *A Sand County Almanac and Sketches Here and There*, Oxford University Press, p.204.

⁷ Such as Albert Schweitzer, Arne Naess, Christopher D. Stone, J. Baird Callicott, Paul W. Taylor, Peter Singer, Tom Regan, and Warwick Fox. Thomas Berry is considered to be father of Earth jurisprudence.

of transforming the understanding of human relationship with nature may be considered. Our focus in this chapter will be on the consideration of intrinsic value of biodiversity and the shift from dominion to stewardship.⁸ These specific issues are considered to be areas of policy and legal intervention transformed from principles of Earth jurisprudence; subjectivity and communion.

5.1 Consideration of Intrinsic Values of Biodiversity

Consideration of intrinsic values of biodiversity is derived from subjectivity, one of the core principles of Earth jurisprudence. This principle is developed from the expression of Thomas Berry and Brian Swimme, which states: “Earth is a communion of subjects, not a collection of objects.”⁹ This work argues for conferring of intrinsic value on biodiversity on the ground that biodiversity is not a mere commodity for human exploitation, but rather constitute a dynamic entity decisively contributes for the wellbeing of the Earth’s functioning systems.

Intrinsic value is an idea that exists at the center of environmental ethics which considers that the environment has a value in itself independently of human beings, although arguments on the concept have continued until now.¹⁰ Environmental ethicists such as Norton, Callicott and O’Neill consider that the intrinsic value of an entity refers to the value that it has in and for its own right, independent of its use, function, or value to any other object.¹¹ Intrinsic value is generally defined as “the inherent worth of something, independent of its value to anyone or anything else.”¹² From these meanings of intrinsic value it can be seen that a ‘thing’ or an ‘entity’ which intrinsically valuable has that value, which is not derived from its utility for ‘anything’. Therefore, a ‘thing’ has value independent of its use or its functions in relation to

⁸ Other options could include: shift from the idea of sustainable development to sustainability or sustainable livelihood; shift from a human rights approach to human responsibility approach for environmental protection; and recognition of diversity of knowledge instead of uniformity of knowledge.

⁹ Thomas Berry and Brian Swimme (1994), *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era*, HarperOne, p.243. Berry and Swimme perceived the subject-object relationship operating as a hierarchy, supports the exploitation and degradation of nature by relegating it as a mere ‘resource’. The Earth’s systems are not functioning in a hierarchical manner.

¹⁰ Some thinkers such as John Alder, David Wilkinson and Arne Naess use the word ‘nature’ instead of environment. See John Alder & David Wilkinson (1998) *Environmental Law & Ethics*, MACMILLAN, p.4.

¹¹ Julia Koricheva and Helena Siipi, ‘The Phenomenon of Biodiversity’ in Markku Oksanen & Juhani Pietarinen (eds.), (2004) *Philosophy and Biodiversity*, Cambridge University Press, p.40.

¹² Niles Eldridge (2002) *Life on Earth: An Encyclopedia of Biodiversity, Ecology, and Evolution*, ABC-CLIO, Inc., p.40.

‘anything’ it may have. In a simple language a ‘thing’ with intrinsic value is an end in itself independently of its being a means to an end.¹³

On the other hand, instrumental value puts the interest of another being (mainly of human interest) at its center and it is the value that something has in virtue of being a means to an end.¹⁴ This means that the concept of instrumental value tilts towards an anthropocentric view whereas the concept of intrinsic value inclines towards biocentric (life centered) or ecocentric (ecosystem centered) outlook. A ‘thing’ of instrumental value is considered to have no inherent worth of itself but only has a use value for another ‘thing’. Unlike intrinsic value which does not need an external valuer for its existence, instrumental value needs such a valuer.

In Chapter 3 it has been seen that the contributions of ancient and medieval thinkers and philosophers for the development of anthropocentrism was immense. The same was true with the development of instrumental values of biodiversity and the whole of nature. Philosophers from Aristotle and Plato to Descartes and Galileo all taught and advocated for the centrality and mastery of humans over the nonhuman nature.

Development of instrumental value of nature is inseparable from the development of anthropocentrism and goes back to a pre-Socratic era. The claim of one of the pre-Socratic philosophers, Protagoras, “man is the measure of all things”¹⁵ shows that the question of whether a thing is right or wrong, good or bad, has traditionally considered in relation to human need.¹⁶ This is linked with the consideration of only instrumental values of all nonhuman creatures and their relevance only in terms of human needs.

¹³ It might be argued that the idea of intrinsic value is a human construction and other organisms do not have such a notion of their environment. However, organisms value themselves and, perhaps their species intrinsically. Based on this Rolston argues that “[e]very organism has a *good-of-its-kind*; it defends its own kind as a *good kind*.” (See Holmes Rolston III, ‘Challenges in Environmental Ethics’ in Michael Zimmermann, *et al* (eds.) (2001), *Environmental Philosophy: From Animal Rights to Radical Ecology*, (3rd ed.), Prentice Hall, p.128). Rolston further argues that: “*Instrumental value* uses something as a means to an end; *intrinsic value* is worthwhile in itself. No warbler eats insects to become food for a falcon; the warbler defends its own life as an end in itself and makes more warblers as it can.” (*Ibid*, p.143.) From this it can be argued that organisms value themselves (and may be their species) intrinsically. Organisms had done this before the advent of humans on Earth and have continued doing same now. However, they do not value others (all nature) around them in such a way.

¹⁴ Edward N. Zalta (Principal Editor) (2002), *Stanford Encyclopedia of Philosophy*, University of Stanford p.3165.

¹⁵ Protagoras, quoted in Alexander Gillespie, (1997), *International Environmental Law, Policy and Ethics*, Oxford University Press, p.4.

¹⁶ Peter Burdon (2011), *Earth Jurisprudence: Private Property and Earth Community*, PhD Thesis, The University of Adelaide, p.49.

As indicated in the previous chapters, philosophers' thoughts, religious teachings, the scientific method and consequent development of modern knowledge, all contributed to the development of notions of anthropocentrism and the dominion to the extent that these are dominant cosmologies in many parts of human societies. These worldviews have contributed to the biodiversity's consideration only for its instrumental values. The track records of the consideration of only instrumental values of biodiversity have been shown by its ever progressive loss as time gone by. If humanity continues with this business as usual trend, the threat could reach to a level of disrupting the whole of the Earth's systems. This is sufficient reason for humanity to consider biodiversity's intrinsic values and work for its materialization in addition to the instrumental values of biodiversity. Recognition of intrinsic values of biodiversity is also significant in enhancing human responsibility for its protection.¹⁷

Irrespective of philosophers', religious preachers' and the scientists' assertions of human's supremacy over the nonhuman beings and the rest of the natural world, some environmental philosophers and thinkers upheld alternative values. One of the early thinkers in this regard was the 13th century St. Francis of Assisi, who was considered to be the patron saint of the environment and animals. St. Francis of Assisi saw all God's creatures as equals and spiritual brothers and sisters.¹⁸ The philosophy of St. Francis of Assisi can be taken as the one that has laid the foundation for the ethical extension approaches of later thinkers.

Jeremy Bentham can also be cited as one of the relatively earlier philosophers for ethical extension beyond humans. His *utilitarian*¹⁹ theory challenges views that devalued animals because of their supposed lack of rationality and insists on emphasizing on things which humans shared with animals; as he puts it:

¹⁷ It may be argued that human responsibility for biodiversity could exist without considering its intrinsic value. This may have its own danger as it is explained towards the end of §5.1 (this section.)

¹⁸ See Gillespie, *supra* note 15, p.70 and Roderick Nash (1989), *Rights of Nature: A History of Environmental Ethics*, University of Wisconsin Press p.93.

¹⁹ Utilitarianism may be defined as: "the ethical doctrine that an action is right if, and only if, it promotes the greatest happiness for the greatest number of people." (ED. L. Miller (1987), *Questions that Matter: An Invitation to Philosophy*, (2nd edn.), McGraw-Hill, Inc., p.437). On this account, "utilitarianism regards pleasure (or, more broadly construed, the satisfaction of interest, desire, and/or preference) as the only intrinsic value in the world." See Zalta, *supra* note 14, p.3164).

“A full-grown horse or dog is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day, or a week, or even a month, old. But suppose the case were otherwise, what would it avail? The question is not, Can they reason? Nor Can they talk? but, Can they suffer?”²⁰

The ethical extensionism²¹ approach has contributed a lot in the incorporation of nonhuman beings to the realm of moral standing of these beings, at least in theory. Various philosophers have promoted ethical extensionism to cover various entities of nature based on criteria, such as sentience, life and systems. The latter appears to be more pervasive in its approach as it includes most of the interests of biodiversity being argued in this work. The basic argument for the ethical extension to nonhuman nature is that the existing Western ethics is inadequate to provide protection for nature.²²

The most prominent advocate of ethical extension to sentient beings is Peter Singer.²³ He contends that restricting the domain of morally considerable beings to human beings is arbitrary. According to him, any being capable of suffering has an interest in avoiding suffering and that any being with interests deserves to have those interests taken into account equally with all other similar interests.²⁴ Singer believes in the equality of all animals but not in the sense of an actual equality. According to Singer, the basic principle of equality is equality of consideration; the equal consideration for different beings which may lead to different treatment and different rights.²⁵ Singer meant here that rights are recognized when this recognition is meaningful for the subject of the right. For instance, he argues that the right to abortion is irrelevant for men and the right to vote is, likewise, irrelevant for a pig.²⁶ Singer’s utilitarian ethic, therefore, demands equal treatment where interests are the same. Singer has proposed sentience, the ability to have

²⁰ Jeremy Bentham (1789), *The Principles of Morals and Legislation*, Chapter XVII, §2.)

²¹ Ethical extensionism is an approach to environmental and animal ethics in which the scope of ethical theories is extended to cover beings traditionally thought to fall outside the purview of those theories. (See Mylan Engel Jr., ‘Ethical Extensionism’, in J. Baird Callicott and Robert Frodeman (Editors-in-Chief) (2009), *Encyclopedia of Environmental Ethics and Philosophy*, Vol. 1, Gale Cengage, p.396.)

²² Hugh P. McDonald (2004), *John Dewey and Environmental Philosophy*, State University of New York Press, pp.1-56.

²³ Sentient organisms are considered to be animals which can feel pain and pleasure and suffer from pain. It is important to note that “Singer and utilitarians in general attribute intrinsic value to the experience of pleasure or interest satisfaction.” (See Zalta, *supra* note 14, p.3164)

²⁴ Engel, *supra* note 21, p.397.

²⁵ Peter Singer, ‘All Animals are Equal’, in Zimmerman *et al*, *supra* note 13, p.28.

²⁶ See *Ibid*, pp.27-28.

conscious feelings of pleasure or pain, as the qualification for moral status.²⁷ When seen from the view point of moral extension to biodiversity, Singer's effort to widen it is a good progress. However, his suggestion does not cover the whole range of biodiversity as per the meaning proposed in Chapter 2 of this work. Singer recommends recognition of intrinsic values of only what are known as sentient animals, a very limited portion of biodiversity.

Paul Taylor expanded the ethical extension from Singer's sentient animals to the whole range of life. According to Taylor, it is arbitrary to restrict the class of morally considerable beings to sentient beings. Since all living organisms can be harmed or benefited and what benefits them promotes their good, Taylor insists that there is no non-arbitrary reason not to extend moral consideration to all living organisms.²⁸ Taylor rejected the criterion of sentience on the account that sentience is a means, not an end – a means to life. Hence, not sentience but “being alive” should be the criterion for moral considerability.²⁹ As Taylor correctly indicated, the feeling of pain or the fact that an organism suffers is to protect its life. According to Taylor, all living things are ‘teleological centers of life’. An organism's *telos*³⁰ is to reach a state of maturity and to reproduce. Our actions can interdict the fulfillment of an organism's *telos*, and to do just that is to harm it.³¹ Taylor's ethic is generally grouped under what is known as ‘biocentric egalitarianism’ the notion that expounds the belief that all living things have an equal right to live and blossom and hence conferring intrinsic value on them is the result of this equality.³² By this principle, Taylor proposed humans to develop “a sense of oneness with all other living things” as “all living things are integral elements in a system of interdependence.”³³

Taylor's biocentric egalitarianism can be understood as – like all the rest of life on Earth, humans are results of evolutionary process and part of the Earth communities and all members of the Earth are functionally interdependent. Each and every organism is a teleological center of life as an end in itself and as the result of this; humans are at par with other organisms. This leads to

²⁷ Peter Albert, ‘Stewardship, Concept Of’, in Simon Asher Levin, (Editor-in-Chief), (2001), *Encyclopedia of Biodiversity*, Vol. 5, p.484.

²⁸ Mylan Engel Jr., ‘Taylor, Paul’, in Callicott and Frodeman, Vol. 2, *supra* note 21, p.303

²⁹ Michael E. Zimmerman, ‘General Introduction’ in Zimmerman *et al*, *supra* note 13, p.11.

³⁰ Telos is a Greek word which means end, goal or purpose.

³¹ Zimmerman, in Zimmerman *et al*, *supra* note 13, p.11.

³² See Callicott and Frodeman, Vol. 2, *supra* note 21, p.423.

³³ See Paul Taylor (1986), *Respect for Nature: A Theory of Environmental Ethics*, Princeton University Press, pp.99-100 and 115.

a conclusion that all organisms deserve moral consideration irrespective of their level of organization and their potential use for humans.

Arne Naess, who was the crafter of the expression ‘deep ecology’, is also a supporter of the philosophy of biocentric egalitarianism. However, Naess, so as to avoid criticisms on the practical application of this ethical theory,³⁴ adds a qualifier, ‘in principle’ though he firmly argues that all living organisms have ‘equal right to live and blossom’.³⁵ Naess used the qualifier ‘in principle’ to justify necessities that lead to some killing, exploitation, and suppression.³⁶

In support of this philosophy, George Sessions also writes “all organisms and entities in the ecosphere, as parts of the interrelated whole, are equal in intrinsic worth.”³⁷ The biocentric egalitarianism ethic is criticized for putting all organisms, including humans, on the same footing for moral treatment. For instance, Bryan Norton writes “[t]he 120,000th elk cannot be treated equally with one of the last California condors—not, at least, on a reasonable environmental ethic.”³⁸ By this Norton meant that it is not reasonable to confer identical moral values over all living beings. He explains the need for differential treatments based on the availability of species, by giving an example of endangered species. This argument of Norton for differential treatment need not be understood as a suggestion for abusive treatments on abundant species. It is forwarded as a reminder for the need of special care to individual organisms of species which are on the verge of extinction.

³⁴ The theory of biocentric egalitarianism advocates for the equality of all life on Earth. However, questions usually arise as to how killing could be justified.

³⁵ Arne Naess, ‘The Shallow and the Deep, Long-Range Ecology Movement: A Summary.’ *Inquiry*, (1973) 16: p. 96.

³⁶ *Ibid*, p.95. It is important to note here that Naess “adopted the concepts of ‘identification’ and ‘self-realization’ from Hindu thought and used them as central ideas in Deep Ecology.” (Fikret Berkes, ‘Religious Traditions and Biodiversity’ in Levin, *supra* note 27, p.114) Another Asian religion, Jainism, has a philosophy of nonviolence or *Ahimsa* toward humans and all life on Earth. For the Jains, nonviolence is the greatest good, and on no account should life be taken. (*Ibid*.) McNeely also recognizes that, “Jains teach that no human quality is more subtle than nonviolence and no virtue greater than reverence for life. While biodiversity often is affected negatively by people, the intention to harm is what makes an action violent, and without violent thought no violent action is recognized.” (Jeffrey A. McNeely, ‘Social and Cultural Factors’ in *Ibid*, p.288) This Jain philosophy tells us that loss of biodiversity is facilitated by human thinking, which in turn guides human action.

³⁷ George Sessions (1985), *Western Process Metaphysics*, p.67, cited in Callicott and Frodeman, *supra* note 21, p.207.

³⁸ Bryan Norton (1991), *Toward Unity Among Environmentalists*, Oxford University Press, p.224, cited in Callicott and Frodeman, *supra* note 21, p.208.

J. Baird Callicott also contends that “environmental ethics must manifestly not accord equal moral worth to each and every member of the biotic community.”³⁹ In a similar vein, Warwick Fox claims that “[i]f all organisms are really of equal intrinsic worth, the deep-ecological doctrinaire might just as well eat veal as vegetables.”⁴⁰ These critiques have shown the practical difficulty of extending similar ethical treatment to all organisms, impliedly suggesting the inevitability, even necessity, for differential moral treatment of living beings. The purpose of this chapter is also not to argue for the equal treatment of all living beings as advocated by Paul Taylor’s biocentric egalitarianism. Rather it argues for the conferring of different moral treatments based on the need and the meaning of the right for the subject of the right. For instance, the right to freedom of speech is only relevant for humans. However, the right to life is relevant for all as all organisms value their lives more than anything else. Even so, the argument is not for the equal treatment of all life. For instance, Norton’s contention of the relative abundance of one form of life in comparison to other form of life is a justifiable ground for differential treatment.⁴¹

Albert Schweitzer’s philosophy of ‘reverence for life’ also pushed the ethical consideration to the whole spectrum of life. He developed this principle as a revolutionary answer to what he saw as a crisis of Western civilization.⁴² For Schweitzer, all organisms have the will-to-live that gives an organism the instincts and dispositions necessary for the expression of its potential. Therefore, helping all life reach its highest possible development of its will-to-live in light of the needs of others is the basic good in Schweitzer’s philosophy of reverence for life.⁴³ Schweitzer was well

³⁹ J. Baird Callicott (1980) ‘Animal Liberation: A Triangular Affair’, *Environmental Ethics* 2(4): 311-338, cited in *Ibid*, p.208.

⁴⁰ Warwick Fox (1984) ‘Deep Ecology: A New Philosophy of Our Time?’ *The Ecologist* 14(5, 6): 194-200, cited in *Ibid*, p.208.

⁴¹ ‘Pest’ control on a reasonable ground and on a reasonable scale is acceptable. However, same logic may not work on species with slow reproductive capacities. By the same token, it is not appropriate to think of humans to be part of the food chain and food web. Although it is argued here that humans are part of nature, it is not suggested that they should serve as food for other organisms for two major reasons. 1) Like other organisms, humans have right to defend themselves. The special capacity of humans, that is, rational thinking, tool making and language ability has enabled them to exercise this right more effectively. 2) This work suggests humans to occupy the place of stewardship responsibilities for biodiversity. If they are treated on equal footing with other organisms for the purpose of food chain and food web, they cannot accomplish their stewardship responsibilities. A species that does not protect itself from being food for others cannot assume a position of stewardship responsibility.

⁴² J. Claude Evans (2005), *With Respect for Nature: Living as Part of the Natural World*, State University of New York Press, p.ix.

⁴³ Peter G. Brown and David K. Goodin, ‘Life: Respect/Reverence’, in Callicott and Frodeman, *supra* note 21 p.44.

aware that some life survives at the expense of another life and his position was avoiding unnecessary suffering and harm.⁴⁴

Although Taylor's and Schweitzer's ethical extensions cover the whole range of living organisms, they remain insufficient for the purpose of protection of biodiversity. Protection of biodiversity goes beyond the protection of all life forms on Earth. It involves the recognition of ecosystems, where the living organisms proliferate and the evolutionary processes which are parts of the systemic functions of the Earth take place.

The moral considerability issue has been one of the major debates among environmental ethicists on its nature as well as its application. Aldo Leopold's 'land ethic' is probably the most significant contribution as far as ethical extension in the first half of the 20th century is concerned. He begins his essay by considering the ethical position of slave-girls, whom Odysseus hanged on a rope for their suspected misbehavior during his absence.⁴⁵ Those slave-girls were no more than mere chattels of their master and their hanging resulted in no liability of the hanger. By extending this analogy to land, in his 'land ethic', Leopold opposed the consideration of 'land'⁴⁶ as a mere property without a corresponding duty on humans. He writes:

“There is as yet no ethic dealing with man's relation to land and to the animals and plants which grow upon it. Land, like Odysseus' slave-girls, is still property. The land relation is still strictly economic, entailing privileges but not obligations.”⁴⁷

According to Leopold, human relation to the nonhuman nature must not be based on a unilateral exploitation but rather humans should extend ethical considerations to the nonhuman beings. He demanded the transformation of “*Homo sapiens* from conqueror of the land-community to plain member and citizen of it.”⁴⁸ Leopold concludes his essay with his famous saying: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is

⁴⁴ See J. Claude Evans, 'Schweitzer, Albert', in Callicott and Frodeman, *Ibid*, p.238.

⁴⁵ Leopold, *supra* note 6, p.201.

⁴⁶ Leopold did not define the term land in his article and it is unclear what he meant when he says land. For the sake of simplicity and expedience, it is considered here to mean the whole of nonhuman nature.

⁴⁷ Leopold, *supra* note 6, p.203. Leopold's 'no ethic' here was intended to show how far the Western culture has been detached from the land. The non-western indigenous cultures in various parts of the world still govern human relations with land on ethical grounds.

⁴⁸ Leopold, *Ibid*, p.204.

wrong when it tends otherwise.”⁴⁹ Consequently, human acts must focus on preserving the integrity, stability and beauty of the whole of nonhuman nature instead of actions contributing to the degradation of the environment, which actually fit with the major principles of Earth jurisprudence; subjectivity and communion. By referring to Darwinian evolution, Leopold tries to show that humans are not masters of the nonhuman nature but, “that men are only fellow-voyagers with other creatures in the odyssey of evolution.”⁵⁰ In this seminal work, Leopold laid the foundation for the holistic environmental thinking and the ethical extension to land and its communities.

Following on from such a view of ethical relationship, in his article ‘Should Trees Have Standing?’, Christopher D. Stone further argued for the conferring of rights on natural objects like trees through appointment of a guardian.⁵¹ Stone argues that a certain entity cannot be a bearer of legal rights unless, among other things, and until some public authoritative body is prepared to give such rights to that entity.⁵² In this light he gave the example of a Wisconsin woman who thought she might have a right to practice law. The response she got from the court was:

“The law of nature destines and qualifies the female sex for the bearing and nurture of the children of our race and for the custody of the homes of the world ... [A]ll life-long callings of women, inconsistent with these radical and sacred duties of their sex, as is the profession of the law, are departures from the order of nature; and when voluntary, treason against it . . .”⁵³

From this story of a Wisconsin woman, it can be realized that the recognition of right was not complete even to the human species. As Christine Jeryan contends, even as recently as the 19th century, “many white Americans believed that the extermination of native peoples and the

⁴⁹ *Ibid*, pp.224-225. This Leopold’s assertion can be interpreted as those human activities that lead to loss of biodiversity are wrong; and those which lead to its protection are right.

⁵⁰ *Ibid*, p.109.

⁵¹ Stone in his article limits himself on non-animal natural objects. He contends that: “I trust that the reader will be able to discern where the analysis is appropriate to advancing our understanding of what would be involved in giving “rights” to other objects not presently endowed with rights—for example, not only animals (some of which already have rights in some senses) but also humanoids, computers, and so forth.” (Christopher D. Stone (2010), *Should Trees Have Standing? Law, Morality, and the Environment*, (3rd ed.), Oxford University Press, p. 181 at footnote 26.)

⁵² Stone, *Ibid*, p.4.

⁵³ *Ibid*, p.3.

appropriation of their land was the right thing to do.”⁵⁴ Regarding the movement towards the ethical extension from time to time, Leopold writes, “the fact is that each time there is a movement to confer rights onto some new entity”⁵⁵ which ranged from children, to slaves to women and to inanimate entities such as corporations. It is not a new thing to make inanimate entities a right bearer. Means of transportation like ships and aircrafts are bearers of rights with far reaching consequences.

In his argument toward legal rights of natural objects, Leopold underlined that:

“... to say that the environment should have rights is not to say that it should have every right we can imagine, or even the same body of rights as human beings have. Nor is it to say that everything in the environment should have the same rights as every other thing in the environment.”⁵⁶

Therefore, the rights envisaged by Stone to natural objects are not identical to the ones which we refer to as human rights. Moreover, all natural objects will not have similar rights. Building on these arguments, Thomas Berry underlines on the need to conferring specific rights on specific entities.⁵⁷

Holmes Rolston III may be regarded as the thinker who has done most to extend ethical consideration and consequently intrinsic value to the whole of living and nonliving nature. Rolston systematically shows how these entities are holders of intrinsic value starting from higher animals to a systemic unit of ecosystem and the whole of the planet. This work is predominantly based on the arguments of Rolston for the ethical extension and intrinsic value of biodiversity.

Rolston’s ethic embraces nearly all components of biodiversity, from minutest organisms to ecosystems and evolutionary processes, in a way that incorporates the definition of biodiversity in Chapter 2 of this work. As the theory of ethical extension by Rolston is the basis for the

⁵⁴ Christine B. Jeryan, ‘Environmental Ethics’ in Marti Bortman *et al*, (2003) (eds.), *Environmental Encyclopedia*, Vol. 1, (3rd ed.), Gale, p.489.

⁵⁵ Stone, *supra* note 51. p.5.

⁵⁶ *Ibid*, p.4.

⁵⁷ See Thomas Berry (2004) *Every Being Has Rights*, E. F. Schumacher Society, p.15. See also Peter Singer’s arguments above.

argument of intrinsic value of biodiversity in this chapter, it appears appropriate to briefly examine Rolston's rationales for the ethical extension to nonhuman nature. For the purpose of ethical extension, Rolston examines nonhuman nature at four levels, namely, higher animals, organisms, species and ecosystems.

Regarding higher animals, Rolston writes:

“Wild animals defend their own lives, because they have a good of their own. Animals hunt and howl, seek shelter, build nests and sing, care for their young, flee from threats... seek out their habitats and mates. They suffer injury and lick their wounds. They can know security and fear, endurance and fatigue, comfort and pain. When they figure out their helps and hurts in the environment, they do not make man the measure of things at all...”⁵⁸

Although animals value themselves and may also value their species, they do not have any regard to other animals. They are not expected to behave in such a manner. They too depend on other forms of life to survive. However, unlike humans their acts do not disturb the normal functioning of the Earth's systems. They neither over-consume nor accumulate. They do not aspire for economic development. Their killing does not result in the destruction of others.

From behaviors of higher animals it can be clearly seen that they value themselves and there is no sign that they merely exist for the sake of humans. They proved that they can live independently of humans by surviving for millions of years before humans had evolved. However, this does not mean that humans and other animals should have equal and same rights in all circumstances. We could think of equal rights of animals and treat them in the same manner as humans, as Rolston says, “where they have equal interests.”⁵⁹

⁵⁸ Rolston, *supra* note 13, p.128.

⁵⁹ Rolston, *Ibid*. Therefore, even eating animals is not morally wrong. If we observe human anatomy and physiology, we are evolved as omnivores and it is correct to obey this natural phenomenon. There is sufficient anatomical and physiological evidence that shows that humans are naturally omnivores. The cranial (teeth) structure and the existence of animal protein digesting enzymes in the human digestive system can be mentioned as evidence that humans are evolved as omnivores. (See <http://www.biology-online.org/>, accessed on 11 April 2013) However, this does not mean that humans cannot develop a culture of being herbivores for religious, ethical, ecological or health reasons. This work does not argue for humans to be herbivores.

Rolston also focuses on the life of every organism for which it stands.⁶⁰ This holds true for all organisms, from the simplest unicellular organisms to the large ones. The struggle for survival is a sign of valuing one's life. A disease causing bacterium, for instance, struggles for survival through various mechanisms of defense so as to develop drug resistance. Each organism is doing this not for the sake of humans but for its own sake because it has a good of its kind and good in itself. Everything with a good of its kind is a good kind and thereby has intrinsic value.⁶¹ This calls for the extension of our ethic to the whole spectrum of life rather than restricting it to the pains of animals.

Rolston's ethic also extends to a species level: "[a] species is a coherent ongoing form of life expressed in organisms, encoded in gene flow, and shaped by the environment."⁶² Moreover, species have enough identity to be objects of direct moral consideration in their own right.⁶³ Species and *their variants* are the locus for diversity and viability of life on Earth; they even deserve greater moral considerability.⁶⁴

All organisms are contained within species and their genetic variants. Rolston is correct in attaching greater intrinsic value in them than individual organisms. The intrinsic value in species and their variants should place a duty on the moral agents, human beings, to ensure the perpetuation of these entities. As Rolston repeatedly warns, causing extinction is a kind of super-killing as it kills forms (*species*), beyond individuals and it kills "essences" beyond "existences,"

⁶⁰ With respect to organisms, Rolston says that: "An organism is a self-maintaining system, sustaining and reproducing itself, executing its program, making a way through the world ... The organism has something it is conserving, something for which it is standing: its life. Organisms have their own standards, fit into their niche though they must. They promote their own realization, at the same time that they track an environment. They have a technique, a know-how. Every organism has a *good-of-its-kind*; it defends its own kind as a *good kind*." (Rolston, *supra* note 13, pp.130-131.)

⁶¹ Rolston, *Ibid*, p.134.

⁶² Holmes Rolston III (1988), *Environmental Ethics: Duties to and Values in the Natural World*, Temple University Press, Philadelphia, p.136.

⁶³ See Christopher J. Preston and Wayne Ouderkirk, 'Introduction' in Christopher J. Preston and Wayne Ouderkirk (eds.) (2007), *Nature, Value, Duty Life on Earth with Holmes Rolston, III*, p.xv.

⁶⁴ Rolston on species writes: "The species line is the *vital* living system, the whole, of which individual organisms are the essential parts. The species too has its integrity, its individuality, its "right to life" (if we must use the rhetoric of rights); and it is more important to protect this vitality than to protect individual integrity. The right to life, biologically speaking, is an adaptive fit that is right for life, that survives over millennia, and this generates at least a presumption that species in niche are good right where they are, and therefore that it is right for humans to let them be, let them evolve." (Rolston, *supra* note 13, p.137.)

the “soul” as well as the “body.”⁶⁵ To refrain from this kind of super-killing, the moral agents need to be guided by super moral and super legal principles.

Rolston’s ethic also extends to the ecosystem level.⁶⁶ Ecosystems are functional units of the Earth’s life support system. They are where species and their variants evolve. They are the source and the actual place of diversity of life; they are the places “in which species live and move and have their being”⁶⁷ as Rolston correctly contends. On top of this, most ecologists think that an ecosystem is a real natural unit, a level of organization above its individual member organisms.⁶⁸ This characteristic of the ecosystem makes it possible to place value on it. However, Rolston argues that simply placing intrinsic value on ecosystem is inadequate. Instead he argues for what he calls ‘systemic value’ for the ecosystem level of organization.⁶⁹

To support his argument of natural systemic intrinsic value, Rolston refers to evolutionary history as this proves the accumulation of diversity of life on Earth through billions of years. He argues that, despite the five major extinctions, diversity has increased in the aftermath of each of the extinctions.⁷⁰ Rolston refers to the research works of D. W. Raup and J. J. Sepkoski⁷¹ which show the marine fossil records for his argument of increasing diversity on Earth over the evolutionary periods. It is in the ecosystems that these diversities have evolved and Rolston is right in asserting that “nature is organized in such a manner as to produce greater diversity and complexity of life forms.”⁷² It is this accumulated diversity of life in nature and the evolutionary processes that made this diversity possible, which Rolston calls systemic and worth moral extension.

⁶⁵ Rolston, *Ibid*, p.138.

⁶⁶ He argues that: “A comprehensive environmental ethic needs the best, naturalistic reasons, as well as the good, humanistic ones, for respecting ecosystems. The ecosystem is the community of life; in it the fauna and the flora, the species have entwined destinies. Ecosystems generate and support life, keep selection pressures high, enrich situated fitness, evolve congruent kinds in their places with sufficient containment.” (Rolston, *supra* note 13, p.139.)

⁶⁷ Rolston, *supra* note 62 p.160.

⁶⁸ *Ibid*, p.161.

⁶⁹ *Ibid*, p.188.

⁷⁰ *Ibid*, p.156. (See Fig. 4.1 on the same page.)

⁷¹ This work was published in *Science* 215 (1982): 1501-03.

⁷² See Jack Weir, Holmes Rolston III, in Joy A. Palmer (ed.) (2001) *Fifty Key Thinkers on the Environment*, Routledge, pp.264-65.

It has to be known here that Rolston does not argue as if ecosystems are as centralized as individual organisms. He says that: “ecosystems are not as coherent as organisms, but not randomly fortuitous either; they fit together with a characteristic structure.”⁷³

As Rolston explains:

“What is proposed here is a broadening of value, so that nature will cease to be merely “property”...If we now universalize “person” consider how slowly the circle has enlarged...to include aliens, strangers, infants, children, Negroes, Jews, slaves, women, Indians, prisoners, the elderly, the insane, the deformed and even now we ponder the status of fetuses. Ecological ethics queries whether we ought to again universalize, recognizing the intrinsic value of every ecobiotic component.”⁷⁴

This ethical extension by Rolston is directly relevant to the principle of subjectivity as it is explained in this study. The principles of subjectivity can be applied for the purpose of conferring intrinsic value on biodiversity. In contrast to the notion that maintains the instrumental valuation of biodiversity, the notion of intrinsic value allows humans to live in harmony with nature. When humans adopt the idea of intrinsic value, their behavior may be shaped so that they avoid an attitude of arrogance towards nature, and instead may be caretakers of nature.

The connection of intrinsic value to duty can also be derived from the Kantian view. According to Immanuel Kant, intrinsic value necessitates duties. Even if Kant does not recognize moral extension beyond humans, he clearly argues that treating someone as an end, that is, as a bearer of intrinsic value, involves moral considerability, and thus a duty toward such a bearer. Therefore, according to Kant, intrinsic value entails duties or there exists a rational relation between intrinsic value and duties. Something’s possession of intrinsic value generates a prima

⁷³ Holmes Rolston III, Duties to Ecosystems in J. Baird Callicott (ed.), (1981), *Companion to A Sand County Almanac: Interpretive and Critical Essays*, University of Wisconsin Press, Madison, p.254. Even if ecosystems are not as organized and as coherent as individual organisms, they are organized in such a way that the coherent and centralized organisms prosper and flourish. It is like a womb where the embryo develops. Like their component parts, such as species and organisms, ecosystems are the results of billions of years of evolutionary processes. The meaning given to biodiversity in this work also incorporates this wider perspective and it is relevant to argue for the intrinsic value of ecosystems and evolutionary processes.

⁷⁴ Holmes Rolston (1986), *Philosophy Gone Wild: Essays in Environmental Ethics*, Buffalo, p.118, quoted in Peter Burdon, ‘The Jurisprudence of Thomas Berry’, *Worldviews* 15 (2011) 151-167.

facie direct moral duty on the part of moral agents to protect it or at least refrain from damaging it.⁷⁵

It is worth noting that there have been some developments in this regard. In 1982 the UNGA issued the World Charter for Nature in the form of a resolution (UNGA Resolution 37/7), which set forth “principles of conservation by which all human conduct affecting nature is to be guided and judged.”⁷⁶ Although it is a nonbinding instrument, it sets out ecocentric principles, which are compatible with Earth jurisprudence, the theoretical vehicle for this work. The Charter provides that humans are part of nature and need to live in harmony with it to maintain the interconnectedness and the holistic functions of the Earth’s systems.⁷⁷ The ecocentric theme of the Charter is stated in its preambular paragraph 3, “[e]very form of life is unique, warranting respect regardless of its worth to man, and, to accord other organisms such recognition, man must be guided by a moral code of action.” This statement reflects the intrinsic value of biodiversity and the corresponding human responsibility to realize this valuation. In addition to its characterization as an important symbolic expression of an intent among nations to achieve a more harmonious and sustainable relationship between humanity and the rest of the biosphere, it also serves as a standard of ethical conduct as many of its provisions are now being reflected in binding international environmental instruments.⁷⁸

Another document which can be taken as a code of ethics for biodiversity protection is the Earth Charter. As Steven Rockefeller, who coordinated the drafting of the Earth Charter states, “[t]he Earth Charter initiative reflects the conviction that a radical change in humanity’s attitudes and values is essential to achieve social, economic, and ecological wellbeing in the twenty-first century.”⁷⁹ He further explains:

⁷⁵ See Immanuel Kant 1785 (1783), *Groundwork of the Metaphysics of Morals*, Abbott trans, Green and Co., cited in Hugh McDonald (2004), *John Dewey and Environmental Philosophy*, State University of New York Press, p.28; and Zalta, *supra* note 14, p.3155.

⁷⁶ See Preambular paragraph 10.

⁷⁷ Preambular paragraphs 1, 2 and Principle 1.

⁷⁸ See Philippe Sands (2003), *Principles of International Environmental Law*, (2nd edn.) Cambridge University Press, p.45. In its Principle 14, the Charter provides that: “The principles set forth in the present Charter shall be reflected in the law and practice of each State, as well as at the international level.”

⁷⁹ Steven C. Rockefeller, ‘Earth Charter’, in Bortman *et al*, *supra* note 54, p.397.

“The Earth Charter is a people’s declaration on global interdependence and universal responsibility that sets forth fundamental principles for building a just, sustainable, and peaceful world. It endeavors to identify the critical challenges and choices facing humanity in the twenty-first century. Its principles are designed to serve ‘as a common standard by which the conduct of all individuals, organizations, businesses, governments, and transnational institutions is to be guided and assessed’.”⁸⁰

Although the Charter was officially launched in 2000 and endorsed by many organizations like the UNESCO and IUCN, civil society organizations and associations, it has not been formally endorsed by the United Nations. Even so, its principles are being incorporated into some international and national legal instruments.⁸¹

The Charter recognizes that humans form a community on Earth with other life forms with a common destiny. It calls for human responsibility to care for the Earth, which is alive and which possesses a unique community of life. It also declares that the protection of the Earth’s vitality, diversity, and beauty is a sacred trust.⁸²

Like the World Charter for Nature, it also recognizes that all beings are interdependent and every form of life has value regardless of its worth to human beings.⁸³ It provides for the protection and restoration of the integrity of Earth’s ecological systems, with special concern for biological diversity and the natural processes that sustain life.

Both Charters incorporate ecocentric principles which reflect interconnectedness and interdependence in nature, the wholeness of the Earth’s systems and the roles humans must play to maintain the resilience of ecosystems for the good of humans themselves and for the good of

⁸⁰ Steven C. Rockefeller, ‘Earth Charter’, in Callicott and Frodeman, *supra* note 21, p.219.

⁸¹ The following are examples of such incorporations. (1) The IUCN, in November 2004, approved a resolution recognizing the Earth Charter as an ethical guide for IUCN policy and encouraging its member states to determine the role the Earth Charter can play as a policy guide within their own spheres of responsibility. (2) The UN Millennium Declaration, the section that states its values and principles, considers respect for nature as one of the fundamental values. (3) The representatives of the world, in paragraph 6 of the 2002 Johannesburg Declaration, stated their responsibility to the greater community of life. (4) Convention on the Protection and Promotion of the Diversity of Cultural Expressions of 2005 protecting and promoting the diversity of cultural expressions is stated as one of the objectives of the Convention. Moreover, Article 3 Principle 3 of same Convention states that: “The protection and promotion of the diversity of cultural expressions presuppose the recognition of equal dignity of and respect for all cultures, including the cultures of persons belonging to minorities and indigenous peoples.”

⁸² See Preamble of the Charter.

⁸³ Principle 1, first statement.

all life on Earth. The Charters include codes of ethics which are being translated into legal rules to be incorporated in international and national legal instruments in the future.⁸⁴

With respect to domestic instruments, there are instances that show a move towards shaping human behavior through the adoption of constitutions and other laws. For instance, the 2008 Ecuadorian constitution recognizes the rights of nature.⁸⁵ This constitutional rule changed the old thinking that nature is simply a collection of resources to serve only human interest. It does not recognize only the physical form of nature but also it considers the processes that ensure interconnectedness and recycling in nature as part of nature. Moreover, it extends the recognition of right to evolution which brought nature to its present status through billions of years of complex processes. It also underlines the responsibility of humans, especially those of public organs.⁸⁶ This right of nature is related to the right to be restored to its previous position after human activities. The constitution requires the state to establish the most effective mechanisms for the purpose of eliminating or reducing negative impacts on the environment and for the restoration of nature if harm is caused to it.

This is the first constitution to recognize rights of nature and it has to be seen as a good initial step in the move towards the moral or ethical extension to nonhuman nature. The constitution did not define the word ‘nature’ and it also used the word ‘ecosystem’ interchangeably with nature. As an active part of nature, the ecosystem also deserves recognition of rights. Following the constitutional recognition of rights of nature, a case appeared before an Ecuadorian court.

⁸⁴ Both instruments also reflect some anthropocentric views in the use of their language, such as ‘sustainable development’ and ‘natural resources’. However, both Charters are more of ecocentric than anthropocentric.

⁸⁵ Article 71 of the Ecuador constitution provides that: “Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes. All persons, communities, peoples and nations can call upon public authorities to enforce the rights of nature. To enforce and interpret these rights, the principles set forth in the Constitution shall be observed, as appropriate. The State shall give incentives to natural persons and legal entities and to communities to protect nature and to promote respect for all the elements comprising an ecosystem.”

⁸⁶ In relation to the duty of state, the Ecuadorian constitution in its Article 72 provides that: “Nature has the right to be restored. This restoration shall be apart from the obligation of the State and natural persons or legal entities to compensate individuals and communities that depend on affected natural systems. In those cases of severe or permanent environmental impact, including those caused by the exploitation of nonrenewable natural resources, the State shall establish the most effective mechanisms to achieve the restoration and shall adopt adequate measures to eliminate or mitigate harmful environmental consequences.”

The ‘Sala de la Corte Provincial’ – a provincial court in Ecuador – became the first court ever to vindicate rights of nature. Recognizing the indisputable importance of the rights of nature for present and future generations, the court held the provincial government liable for flooding damages caused by dumping of construction debris. The court pronounced that the rights of nature would prevail over other constitutional rights if they were in conflict with each other, setting an important precedent. It was also noted that the burden of proof to show there is no damage lies with the defendant.⁸⁷

In Germany, in 2002 animals got constitutional recognition through a constitutional amendment.⁸⁸ A decade earlier, Switzerland recognized the inherent worth of animals.⁸⁹ Similar example comes from the New Zealand Environment Act No. 127 of 1986, which states in its preamble that the purpose of the Act is to: “ensure that, in the management of natural and physical resources, full and balanced account is taken of, (1) the intrinsic values of ecosystems; and, (2) all values that are placed by individuals and groups on the quality of the environment; ...” Likewise, the 1987 New Zealand Conservation Act No. 65 in its Article 2 defines nature conservation as “the preservation and protection of the natural resources of New Zealand, having regard to their intrinsic values and having special regard to indigenous flora and fauna, natural ecosystems, and landscape.”

Recently Bolivia enacted Law of Mother Earth. The law is said to establish 11 new rights for Mother Earth, which include; the right to life and to exist; the right to continue vital cycles and processes free from human alteration; the right to balance; the right not to be polluted; and the right to not have cellular structure modified or genetically altered.⁹⁰ The Environmental Policy of Ethiopia also recognizes the right to continued existence of [all] species and their variants.⁹¹

⁸⁷ See Case Note, ‘The Ecuadorian Exemplar: The First Ever Vindications of Constitutional Rights of Nature’, *Review of European Community and International Environmental Law*, RECIEL 21 (1) 2012, ISSN 0962 8797.

⁸⁸ See Kate M. Nattress, ‘Constitutional Protection for Germany’s Animals’, *Animal Law*, Vol. 10:283.

⁸⁹ BV 1992 §24, cited in *ibid*.

⁹⁰ See John Vidal, ‘Bolivia’s Law of Mother Earth Establishes 11 New Rights for Nature’, <http://www.infiniteunknown.net/2011/04/12/bolivias-law-of-mother-earth-establishes-11-new-rights-for-nature/>, accessed on 28 April 2013.

⁹¹ Environmental Policy of Ethiopia of 1997, §2.3 (q).

These examples demonstrate the practical impact and possible effects of the emergence of the principles of Earth jurisprudence in legal or policy instruments and in court cases. They can point to possible actions, perhaps activist engagement that might challenge the developmental thrust of governments in various countries. The experiences acquired from these practices may shed light over the ways that assist the further development of the principles of Earth jurisprudence.

In addition to these examples, important principles have been emerging from time to time in environmental law field at both international and national levels which are compatible with the notion of recognition of intrinsic value of biodiversity. The precautionary principle can be mentioned here as an example. If the precautionary principle is properly defined,⁹² it could be implemented in a manner that promotes the intrinsic value of biodiversity by challenging the thinking that biodiversity has only instrumental value. After having observed its relevance for environmental protection, some ethicists and environmentalists named the precautionary principle as the ‘humility principle’.⁹³ Jordan and O’Riordan also contend that:

“[t]he precautionary principle lends strength to the notion that natural systems have intrinsic rights and a non-instrumental value that should be accounted for in decision making. The stronger formulations of precaution are certainly compatible with an ecocentric (‘deep green’) worldview.”⁹⁴

If the precautionary principle is strongly formulated by policy and legal instruments, as pointed out by Jordan and O’Riordan and if it is properly enforced, it would open the door for application of intrinsic values of biodiversity. A proper formulation and application of the precautionary principle could impose proper responsibility on humans in extending respect and care for biodiversity.

To conclude the discussion in this section, the following points may be emphasized. 1) The instrumental perception of biodiversity by the dominant anthropocentric paradigm has facilitated its loss and if human relations with nonhuman nature continue to be governed through this

⁹² Various meanings are given to the concept of the precautionary principle and there are still disagreements on its application. For details, see for instance, Andrew Jordan and Timothy O’Riordan, ‘The Precautionary Principle in UK Environmental Law and Policy’, CSERGE Working Paper GEC 94-11.

⁹³ Ian Attridge (1996), *Biodiversity Law and Policy in Canada: Review and Recommendations*, Canadian Institute for Environmental Law and Policy, p.8.

⁹⁴ Jordan and O’Riordan, *supra* note 92, p.11.

dominant paradigm, loss of biodiversity will continue even in an aggravated manner. Earth jurisprudence is a theory that is proposed to challenge the anthropocentric notion of perceiving nature only through instrumental lens. It considers humans as part of nature and hence rejects the conferring of intrinsic values only on humans. Instead it suggests extension of moral considerability on the whole of biodiversity for the purpose of intrinsically valuing it. 2) Conferring intrinsic value on biodiversity is not an end in itself; the end is protection of biodiversity through nonreciprocal human responsibility towards nonhuman nature. A question may arise here as to why it is necessary to argue for moral considerability of nonhuman nature when it could be legally possible to directly provide for human responsibility for nonhuman nature. Suggesting human responsibility towards nonhuman nature in the absence of intrinsic value may have a danger of relegating such responsibility to a little more than benevolence. Genuine human responsibility is based on respect and care for nature. Valuing nature intrinsically is the source of such respect and care towards nature. In other words, the level of human responsibility that biodiversity deserves for its protection may not be obtained if humans value it merely instrumentally. Therefore, consideration of intrinsic value of biodiversity is seen by this work as a basis for humans to assume the stewardship responsibility.⁹⁵ 3) Moral extension to nonhuman nature does not suggest similar treatment of all by putting them on equal footing for all intents and purposes, as suggested by the biocentric egalitarianism of Paul Taylor. 4) Humans assume a special position in ensuring the normal functioning of the Earth's systems. This special position of humans emanates from their special capacity to either destroy or maintain the Earth's systems. No other organism exists on Earth with such a considerable capacity.

From the ongoing discussion it can be seen that one of the core principles of Earth jurisprudence, the principle of subjectivity can be translated into intrinsic value of biodiversity. The recognition of the intrinsic value of biodiversity in turn would enable the argument to be made that humans should assume their special stewardship position for the protection of biodiversity, which arises from another key principle of Earth jurisprudence, the principle of communion. This principle emanates from the features of the Earth's systems which are expressed in terms of wholeness, interconnectedness and interrelatedness. Within the interrelated whole, humans are part and

⁹⁵ See §5.2 below.

parcel of the whole rather than discrete observers. Humanity is endowed with special capabilities to ensure these communion features of the Earth's systems by assuming a stewardship position. The following section deals with the need to shift from a position of dominion to stewardship for the protection of biodiversity.

5.2 Shift from Dominion to Stewardship

Earth jurisprudence, which is the main theoretical vehicle in this work suggests the reconnection and reconciliation of human culture with that of the Earth's systems for the purpose of protecting biodiversity from impending large-scale loss. This approach is consistent with both science and religion. Science is more consistent to ecocentrism than anthropocentrism. Evolutionary history tells that *Homo sapiens* are co-voyagers with other species on Earth and they are also the results of evolutionary processes. All existing organisms are related to each other by a common ancestry in evolution and functionally interlinked in ecosystems. There is no evidence in evolution as well as in biological science that makes humans special and separated from the rest of nonhuman organisms. Evolution does not give a special position for humans. Rather we know that humans have co-evolved with other species. Just like any other species, humans are indeed unique. However, the uniqueness of humans has sweeping consequences as compared to other species for this reason human activity must be restrained by ethical rules.

The unique features of humans would allow us to work and contribute positively towards biodiversity and the rest of nonhuman nature if we are guided by the ethics of ecocentrism. The contrary is also true. That is, our unique features as humans may lead us to completely devastate biodiversity if we are guided by anthropocentric norms. This is the ethical choice that confronts us presently. Earth jurisprudence as derived from ecocentrism would specifically define the roles of humans in their relations with the rest of nonhuman nature. The basis for such definition of roles is the unique capacity of humans to determine the fate of biodiversity. The argument here, therefore, is that – it is right if human uniqueness works for the betterment of all and it is wrong if this uniqueness works only for humans at the expense of others.

In the following paragraphs, discussion will be made by focusing on specific issues which answer questions which may arise in opposition of stewardship responsibility of humans.

1) Stewardship and 'Natural Selection'

It may be questioned whether such a responsibility of human beings is compatible with Darwin's theory of 'natural selection'. We might note that it is common to use the expression 'survival of the fittest' as a synonym of natural selection. Survival of the fittest denotes that, in nature, organisms compete to survive.⁹⁶ In the course of this competition, weaker organisms, which are unable to adapt to the prevailing environment would be eliminated and those which adapt to the prevailing environment will survive. In relation to this theory, questions like – what is the problem if humans also freely compete with other organisms instead of proposing responsibility to others, while others do not care for their environment – may be asked.

It is worth remembering that Darwin himself viewed nature as a web of complex relations in which no individual organism or species can survive independently of that web.⁹⁷ In connection with Darwin's theory, Arne Naess in one of his principles, the principle of diversity and of symbiosis, explains:

“[T]he so-called struggle of life, and survival of the fittest, should be interpreted in the sense of ability to coexist and cooperate in complex relationships, rather than ability to kill, exploit, and suppress. ‘Live and let live’ is a more powerful ecological principle than ‘Either you or me’.”⁹⁸

If the theory of survival of the fittest is viewed superficially, it may lead to a conclusion that nature is a battlefield instead of a place for cooperation or interrelationship. Darwin's theory of natural selection does not simply signify a battlefield where organisms fight with each other to make their own species dominant and destroy others from nature. Though there is competition in nature, nature can better be explained as a place of cooperation, coordination and interconnectedness than a warfront. In the words of Shaler, “natural selection could not solely

⁹⁶ Natural selection does not simply refer to competition. “Natural selection is treated as the primary—and by some scientists the sole—mechanism producing evolutionary change. In essence it involves the process whereby some aspect of an organism's environment (either climate, competition, predation, or parasitism) interacts with one or more traits of the organism, such that the survival or reproduction of that organism is enhanced (or diminished) relative to organisms that lack those traits.” (Bruce S. Lieberman, ‘Natural Selection’, in Eldredge, *supra* note 12, p.519)

⁹⁷ See Donald Worster (1977), *Nature's Economy: The Roots of Ecology*, Sierra Club Books, p.156.

⁹⁸ Naess, *supra* note 35, p.96.

explain all natural processes.”⁹⁹ That is, nature is more complex than ‘natural selection’ and multitudes of other functions and processes take place in it.

Darwinian natural selection works in natural conditions and cannot be applied to human societies. Humans, being assisted by technological advancements, can easily avoid the impacts of natural selection. The theory of survival of the fittest should not be perceived as a process that should allow competition between humans on the one side and other organisms on the other. Humans can easily outcompete other organisms due to their rational thinking and tool making abilities. These abilities appeal for stewardship responsibility of humans for the nonhuman nature than competing with other organisms on the guise of the fittest shall survive.¹⁰⁰ If human abilities are not used for stewardship but used to compete on equal grounds with others, the result is not difficult to imagine. Because human abilities greatly outstrip other organisms’ abilities, humans can misuse their abilities to the detriment of all others including the Earth’s systems, which eventually lead to the demise of humans themselves. The long evolutionary journey of life on Earth has been “an intricate web of cooperative mutual dependency, the evolution of one scheme after another that harmonizes conflicting interests,”¹⁰¹ rather than elimination of one form of life by another. This may lead us to the conclusion that if no life form, except humans, has the ability to destroy the Earth’s systems, and if the evolutionary journey is in support of an interconnected and interlinked whole, humans should not use their power to destroy this whole. To utilize their power in conformity with the natural processes, humans must apply their intellect for stewardship responsibility. The philosophy of Earth jurisprudence requires humans to be guided in this line.

Thomas Berry also comments on the Darwinian natural selection and explains: “[n]atural selection can no longer function as it has functioned in the past. Cultural selection is now a

⁹⁹ See Nathaniel Southgate Shaler, ‘Faith in Nature’, *International Quarterly* 6 (1902): 287-8, cited in Aviva R. Horrow (2007), *When Nature Holds the Mastery: The Development of Biocentric Thought in Industrial America*, (Senior Honors Theses), University of Pennsylvania, p.95.

¹⁰⁰ Survival of the fittest appears to be one of the unsafe theories in the systems governing human relations. For instance, the concept of social Darwinism got its roots in the survival of the fittest and even “colonialists used Social Darwinism to justify the domination of Anglos and Europeans over non-White or non-Western cultures.” (Aviva R. Horrow, *Ibid*, p.85) Some even claimed it as a scientific proof for racial hierarchy. (See *Ibid*, p. 100)

¹⁰¹ Elisabet Sahtouris (1999), *EARTHDANCE: Living Systems in Evolution*, iUniverse, p.6

decisive force in determining the future of the biosystems of the Earth.”¹⁰² Berry meant here that the human culture, that is, the way humans think and act determines the fate of biodiversity more than the Darwinian natural selection at this age of scientific ‘advancement’. This could further be extended to mean, we humans should develop a culture of stewardship for the protection of biodiversity by abandoning the dominion position we have created for ourselves.

2) Stewardship and the Holy Scriptures

In Chapter 3, it has been discussed that religious teachings have contributed to the development of anthropocentrism. It is important, however, to distinguish between the teachings of the clergy and the actual texts of the Holy Scriptures. The clergy teachings emphasize on the responsibility of humans to their colleague humans by completely ignoring human stewardship responsibility as proclaimed by the Holy Scriptures.¹⁰³

In the Ethiopian context, it appears that Lynn White’s proposition that Christianity is the “most anthropocentric religion the world has ever seen”¹⁰⁴ must be related to the teachings of the clergy instead of the contents of the Bible. Because the close examination of the Bible reveals that anthropocentrism is not the necessary conclusion from the Bible. Many of the versions of the Bible provide for the stewardship of humanity. The very first stewardship responsibility is expressed as: “[a]nd the Lord God proceeded to take the man and settle him in the Garden to cultivate it and take care of it.”¹⁰⁵ For the present purpose, the whole Earth can be taken as the Garden of Eden and hence the responsibility is not limited to a specific place of the Earth since it symbolically represents the planet. Even if man is given dominion over nature that does not mean that he can administer nature in a despotic way.

Moreover, the Bible states, “the heavens are God’s and the Earth and everything that fills it belong to God”¹⁰⁶ and not to humans. Humanity is given only a usufruct right but without forgetting the aspects of protection and preservation. Further, the scriptures remind us, “[f]or to

¹⁰² Thomas Berry (1999), *The Great Work: Our Way into the Future*, Bell Tower, p.4.

¹⁰³ See Solomon Tilahun, *Infra*, note 113.

¹⁰⁴ See Lynn White, ‘The Historic Roots of Our Ecologic Crisis’, *SCIENCE*, 10 March 1967, Volume 155 No. 3767, p.1203.

¹⁰⁵ Genesis 2:15.

¹⁰⁶ See Psalms 89:11 and 24:1.

me belongs every wild animal of the forest, the beasts upon a thousand mountains, and the animal throngs of the open field are with me.”¹⁰⁷ If nature belongs to God, humanity’s dominion cannot be in the sense of owning nature. Humanity has only a usufruct right, leaving the ownership with God. The usufruct right of man is even clearer in the book of Leviticus which read as: “[s]o the land should not be sold in perpetuity, because the land is mine. For you are alien residents and settlers from my standpoint.”¹⁰⁸

We see that in the Christian tradition, God’s ownership of nature is not only restricted to the teachings of the Old Testament, we find this in the New Testament. For instance, Apostle Paul proclaims: “...all things were created by him, and for him.”¹⁰⁹ He continues saying; “for to God belong the Earth and that which fills it.”¹¹⁰ If nature belongs to God, but not to man, man is required to administer and use it according to the rules of the owner. That is why plundering nature as per man’s whim is not allowed in the Bible.¹¹¹

Although it is believed in the Christian faith that man was created in the image of God, there are some features man shares with other animals.¹¹² From this biblical message it can be understood

¹⁰⁷ Psalms 50: 10-11. [‘Me’ stands for God].

¹⁰⁸ Leviticus 25: 23.

¹⁰⁹ Colossians 1: 16.

¹¹⁰ 1 Corinthians 10: 26.

¹¹¹ According to the teachings of the Bible, nature has its own intrinsic value, in addition to the instrumental value to humans. In the story of creation, God was happy not only with humans, but also with all of the creation. (See Genesis 1: 12, 21, 25, and 31.) Before man was created, God saw that everything He created was good. From this it can be seen that creation was not just there only to meet the needs of man but also for its own good. God also blessed his creation before creating man. He said “[b]e fruitful and become many and fill the waters in the sea basins, and let the flying creatures become many in the Earth.” [Genesis 1: 22.] Before man existed on Earth, creation was good and had values. Note here also that under Gen. 1: 31, the expression ‘*very good*’ was used after completion of the works of God. At this point in time, man also joined the creation of God. Therefore, all creations including man made the work of God *very good*. (Emphasis mine) The Bible even says that: “[t]he fullness of all the Earth is his glory.” (Isaiah 6: 3) Without any distinction between animate and inanimate, human and non-human, all creatures are there to praise God. (See Psalms 148) God’s concern to man and the rest of nature has been manifested in many places in the Bible. In the book of Job we read: “[w]ho sent forth the zebra free, and who loosened the very bands of the wild ass, whose house I have appointed the desert plain and whose dwelling places the salt country?” (Job 39: 5-6.) The wilderness is given to the wild animals as abode to them. So man’s excessive intrusion to this place may be seen as a trespass. The concern of God is also seen in the story of the ark. In addition to the covenant God established with Noah and his descendants, he also established same covenant with all creatures on Earth. (See Genesis 9) In the New Testament, Jesus was taken to the wilderness by the spirit, “[s]o he continued in the wilderness forty days, being tempted by Satan, and he was with the wild beasts, but the angels were ministering to him.” [Mark 1: 13.]

¹¹² On this point the Bible proclaims: “I, even I, have said in my heart with regard to the sons of mankind that the [true] God is going to select them, that they may see that they themselves are beasts. For there is an eventuality as respects the sons of mankind and an eventuality as respects the beast, and they have the same eventuality. As the one

that humans are not separated from the rest of nature in an absolute manner. This can also be taken as the example of interconnections between all life forms on Earth.

In the Ethiopian context, Lynn White's argument may have significance only if we see the teachings of the Christian churches separately from what the Bible proclaims. In nearly all sects of Christianity in Ethiopia, church teachings emphasize on humanity's special features, man's being made in God's image and the righteous activities being limited to what we do to other humans.¹¹³

Turning to the teachings of Islam, we find little difference to the position within Christianity as argued above. As in the case of the Christian churches, there is disparity between the Islamic tenets in the Qur'an and the mosque teachings. Regarding the Islamic tenets, we find similar principles in relation to the responsibility of man toward nature, as in Christianity. According to the Qur'an, "[t]he three most important principles of the Prophet's philosophy of nature are the concepts of *tawhid* (unity), *khalifa* (stewardship) and *amana* (trust)."¹¹⁴

The human role of *khalifa* is clearly indicated in 2:30 and 6:165 of the Qur'an. Moreover, the Qur'an declares that "the seven heavens, the earth and all beings therein declare His glory."¹¹⁵ The Qur'an perceives animals that walk and birds that fly as forming 'communities' together with humans. The Qur'an, in this regard, declares that: "[i]f you really want to see the signs of Allah, just look at any animal that walks upon the earth and any bird that flies in the air; *they too are the communities like you*."¹¹⁶ This view of 'communities' is strengthened in another part of the Qur'an which proclaims: "He laid out the earth for His creatures,"¹¹⁷ showing that the Earth

dies, so the other dies; and they all have one spirit, so that there is no superiority of man over the beast, for everything is vanity. All are going to one place. They have all come to be from the dust, and they all are returning to the dust." (Ecclesiastes 3: 18-20.)

¹¹³ See generally Solomon Tilahun (1997 E.C.), *Nature and the Responsibility of Humans*, Brana Printing Enterprise, Addis Ababa. Solomon Tilahun, the author of this book has made observation of the teachings of the Protestant churches in Addis Ababa. [Note that this book is in Amharic and the title and its contents are the author's translations.] It is also important to note that there are different, perhaps opposing interpretations of the Bible. This writer favors the interpretation that upholds the integrity of the Earth's system through deeper human responsibility.

¹¹⁴ Francesca De Chatel, 'Prophet Mohammed: A Pioneer of the Environment', <http://www.islamonline.org>, accessed on 25 July 2009.

¹¹⁵ Abdullah Yusuf Ali, *The Meaning of Glorious Qur'an: Text, Translation and Commentary*, www.islamicbulletin.org, accessed on 07 February 2011, 17:44. Note the word '*beings*'. It is better to use this word instead of '*things*' to show the interrelatedness of creatures.

¹¹⁶ The Qur'an, *Ibid*, 6:38. (Emphasis added)

¹¹⁷ *Ibid*, 55:10.

is not there exclusively for humans but also for all the creatures of God. According to the Qur'an, all of creation has intrinsic value, as everything was created to fulfill a certain natural function. It states that, "We have not created the heaven and the earth and all that lies between them in vain"¹¹⁸ indicating that all nature has a purpose beyond its being instrument for humans.

The ideas of these Holy Scriptures can thus be summarized as follows:

1. Human beings are not separated from the rest of the creatures of God in absolute manner as they share commonalities with other creatures. This manifests the interconnectedness in nature and the fitting of all nature into the Earth's systems.
2. Intrinsic value is not only restricted to humans but also extended to the rest of nonhuman nature.
3. Humans are not empowered to plunder and conquer the rest of nonhuman nature but they are appointed as trustees to protect nature.

These points are ecocentric in essence and are important yardsticks to regulate human relation with nature. They also align with the theory of Earth jurisprudence, which considers humans as part of nature but not superior to it. Thomas Berry,¹¹⁹ is considered to be father of Earth jurisprudence, contends that the human is a subsystem of a broader and primary Earth system. The interconnectedness in nature and the ecological functions of biodiversity can be understood from these old religious scriptures, even if science has acknowledged these facts relatively recently.

3) Stewardship and Indigenous Cosmologies

The cosmologies of non-Western indigenous peoples also reflect a stewardship ethic towards their land and natural environments. Indigenous peoples view themselves as guardians and stewards of nature. Examples of indigenous cosmologies can be cited from various parts of the world. The philosophy of nature conservation by the indigenous people all over the world is

¹¹⁸ *Ibid*, 38:27.

¹¹⁹ For details of the contributions of Thomas Berry to Earth jurisprudence, see Cullinan, *supra* note 2 and Mike Bell 'Thomas Berry and an Earth jurisprudence: An Exploratory Essay', *The Trumpeter*, Volume 19, Number 1 (2003).

different from that of the Western world that facilitates exploitation. As Slikkerveer observes in general:

“While Western ecological theories have tended towards ‘stewardship of the earth’, and control over and exploitation of natural resources, most indigenous ecological principles are largely concerned with experience, sustainment and prediction in relation to human subsistence and survival. These principles include values, norms and beliefs regarding the maintenance of the ‘balance of nature’ which have evolved over generations, and which encapsulate specific conservation methods and practices.”¹²⁰

The essence of stewardship itself takes different perceptions in the Western and the non-Western indigenous cosmologies. For Western traditions, stewardship may be perceived as “the olive grove, the cultivated field, the orchard ... Mountains and wildernesses were crude, unformed, inhuman, unperfected, not worth the attention of a cultivated man.”¹²¹ Even if there is a concept of stewardship, it is more tilted towards anthropocentric notions than ecocentric.

As in other parts of the world, the ‘traditional’ peoples in Ethiopia also consider themselves as caretakers of nature. For instance, for the Oromo people, “land is not simply a property that is there to be exploited by humans without due respect and care. It is intrinsically valuable and requires respect and protection on the part of its inhabitants.”¹²² Non-Western indigenous traditions are compatible with the tenets of Earth jurisprudence due to their beliefs and practices that intrinsically value and assume stewardship responsibility to nature. Building on the already rich practices and making efforts to strengthen where such practices are weakening is one of the strategies to overcome ethical problems that lead to loss of biodiversity.¹²³

The two specific issues treated above, namely; consideration of intrinsic value of biodiversity and shift from dominion to stewardship are seen as results of the transformation of the understanding of human relationship with nonhuman nature through the philosophy of Earth jurisprudence. This understanding calls for mechanisms through which they might be implemented so that they could influence policy and legal initiatives. The following two sections

¹²⁰ L. Jan Slikkerveer, ‘Ethnoscience, ‘TEK’ and its Application to Conservation’ in Posey, *Ibid*, p.174.

¹²¹ See Passmore, *supra* note 15, p.107. These Passmore’s words clearly show the basic perception of developmental mindset on nature.

¹²² Workineh Kelbessa, ‘The Utility of Ethical Dialogue for Marginalized Voices in Africa’, *iiid*, 2005, p.10.

¹²³ See Chapter 7 for an elaboration of this point.

are intended to show the possible ways by which Earth jurisprudence can be implemented and influence the legal and policy regime more directly on the ground.

Conclusion

This chapter demonstrated how it is possible to bridge, at theoretical level, the deep cleavage that has been created between the Earth's systemic and holistic functions and human thinking which are based on anthropocentric worldviews. The emerging philosophy of Earth jurisprudence, which is used as a theoretical vehicle in this work, facilitates the bridging of the said cleavage by suggesting a paradigm shift in selected specific areas. The new philosophy seeks to heal or correct the hitherto harsh governance that humans have inflicted on nonhuman nature. The paradigm shifts suggested in the chapter are also hoped to be applied through specific modes of operations that would guide human thinking and actions to be consistent with the Earth's systems.

The main conceptual paradigm shift has been suggested – a shift from instrumental valuation of nonhuman nature to intrinsic valuation – may be difficult for some to accept. This is not surprising as many human societies have come to believe that all nonhuman nature is there for the satisfaction of human needs. As the track record of human history indicates, the moral consideration has continuously widened its circumference as time went by. As Philippe Sands Q.C. remarked when commenting on Earth jurisprudence, “experience teaches us that what may seem as overreaching at one time soon becomes conventional wisdom.”¹²⁴ A paradigm shift from instrumental to intrinsic value of biodiversity is suggested for, at least, two reasons. (1) Limiting intrinsic value to small segment of biodiversity, human beings, is not only inadequate and arbitrary but also poses difficulties for the protection of biodiversity by recognizing human rights over their environment without necessarily imposing proportional responsibilities on humans to protect their environment. (2) Recognition of intrinsic value of biodiversity is believed to shape human behavior towards better protection of biodiversity by imposing the necessary notion of responsibility on humanity.

¹²⁴ See Masson, in Burdon, *supra* note 2, p.44.

The other area of theoretical paradigm shift suggested in the chapter is a shift from dominion to stewardship. This paradigm shift can be considered as a desirable effect of intrinsic valuation of biodiversity. It is also expected to contribute to human responsibility for nature. This shift orients humans to focus on cultural selection as to how humans behave towards the nonhuman nature instead of the Darwinian natural selection, which diminishes human responsibility for nature.

CHAPTER 6

RETHINKING THE PHILOSOPHY OF BIODIVERSITY PROTECTION (II): Practical Issues

Introduction

In Chapter 5 rethinking the philosophy of biodiversity protection has been considered by taking two issues which are expected to reorient human relationship with the nonhuman nature for the purpose of enhanced biodiversity protection. The two paradigm shifts suggested discussed, namely; the shift from instrumental valuation to intrinsic valuation of biodiversity and the shift from dominion to stewardship dwell on theoretical perspectives of protection of biodiversity. The purpose of Chapter 5 is shaping human thought towards a mutually enhancing relationship with the natural world, the final goal of which is guiding human action in the direction of biodiversity protection for the benefit the whole of life on Earth, including human wellbeing and the healthy functions of the Earth's systems. It has also been indicated in Chapter 5 that the suggested paradigm shifts can be translated into the language of law and policy in the form of consideration of intrinsic value of biodiversity and imposition of stewardship responsibility on humans.

Building on the discussions made in Chapter 5, this chapter continues on suggesting further paradigm shifts which are tilted towards practical aspects of biodiversity protection. Two issues have been selected to show how these issues can be translated into legal rules and policy statements for the purpose of converting the legal rules into practices that are hoped to contribute to a better protection of biodiversity. The two shifts suggested are: the shift from exclusive state sovereignty to a joint state-community sovereign power over ecological governance and the shift from the strategy of food security to food sovereignty. Both issues are derived from the principles of Earth jurisprudence – ecological governance and diversity, respectively.

6.1 Shift from Exclusive State Sovereignty to a Joint State-Community Sovereign Power over Ecological Governance

This shift is suggested based on the principle of Earth jurisprudence, ecological governance, a governance system derived from understanding the laws of nature and recognizing that human wellbeing requires our compliance with these laws. This work argues that ecological governance based on understanding of laws of nature is being practiced by local/indigenous communities in many countries including Ethiopia. Local/indigenous communities, so as to perform their ecological governance activities, need the power and freedom of governance within their ecosystems. Exclusive state sovereignty is one of the hurdles in practicing ecological governance by the local/indigenous communities through their TEG. With the view to empower these communities this section suggests a shift from an exclusive state sovereignty to a joint, state-community sovereignty.

Sovereignty is a difficult concept with different meanings in different applications. It may be understood from international and national perspectives. The word sovereignty is used to describe not only the relationship of a superior to his/its inferiors within a state (internal sovereignty), but also the relationship of the ruler or of the state itself towards other states (external sovereignty).¹ The major point of discussion in this section is the internal sovereignty of states over their biodiversity ‘resources’ should be interpreted restrictively so that it could give room for the local people to exercise their right to govern their ecosystems using their knowledge which they have developed through traditional practices.²

With respect to the idea of sovereignty as the right of exploitation of natural ‘resources’, Philippe Sands contends that “[t]he principle of state sovereignty allows states within limits established by international law to conduct or authorize such activities as they choose within their territories,

¹ Peter Malanczuk (1997), *Akehurst's Modern Introduction to International Law* (7th edition), ROUTLEDGE, p.17. By mentioning the historic roots of the concept of sovereignty, Malanczuk argues “the word still carried its emotive overtones of unlimited power above the law, and this gave a totally misleading picture.” (Peter Malanczuk (1997)) p.17) By this Malanczuk meant that states are not above the law and their sovereign powers are not absolute in both international and national senses of the term. But the word carried with it a sense that states could be above everything, especially in their internal affairs. Regarding the international sense of the term, Malanczuk even suggested that the term should be replaced by a word ‘independence’ as the actual meaning of sovereignty in the international sense is that a state is not a dependency of other states. (See *Ibid.*)

² See case study in Chapter 7.

including activities which may have adverse effects on their own environment.”³ Sands’ argument, perhaps, is based on the Permanent Sovereignty over Natural Resources, General Assembly Resolution 1803 (XVII) of 14 December 1962, which gives states wider rights to possess, use and dispose freely their ‘natural resources’ in the interest of their national development and of the wellbeing of their people without much restrictions it would seem.⁴

In this connection we note that Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration also recognize the sovereign rights of states over their ‘natural resources’. According to these principles, states have the sovereign right to exploit their ‘natural resources’ pursuant to their own environmental *and developmental*⁵ policies. The addition of the words ‘and developmental’ may give even more encouragement to states to further exploit the ‘natural resources’ within their territories.⁶ This is particularly relevant in the context of developing countries which place overwhelming priority on ‘development’ activities as compared to environmental protection activities.

Even if these rights are not without limitations, the limitations seem to relate only with the responsibility not to cause damage to the environment of other states or of areas beyond national jurisdiction. This is why Philippe Sands argues that by using this sovereign right, states may cause damage to their own natural environment.⁷ However, this does not mean that states have unfettered rights to exploit ‘natural resources’ within their territories to the extent of causing loss of biological diversity and affecting rights of their own subjects. Although there are no direct restrictions in the international instruments that are designed to make states responsible for any damage they cause to biodiversity within their territories, there have been indirect limitations on states in this regard, especially by later international instruments.

The limitations imposed on the sovereignty of states may be double pronged. First, the sovereign right of a state to exploit biological diversity within its territories shall be limited by international

³ Philippe Sands (2003), *Principles of International Environmental Law*, (2nd edn.), Cambridge University Press, p.236.

⁴ See preambular paragraphs 2 & 3 of UNGA Resolution 1803 (XVII).

⁵ The words ‘and developmental’ did not exist in Principle 21 of the Stockholm Declaration. They are new additions in Principle 2 of the Rio Declaration.

⁶ The idea of development, even with a prefix ‘sustainable’ is anthropocentric. See Chapter 3 for more details.

⁷ Sands, *supra* note 3, p.236.

law responsibilities which oblige it to rationally utilize the ‘natural resources’. One of these international instruments is the CBD. The CBD urges state parties to adopt a sustainable use⁸ of biological diversity by developing national strategies, plans or programs or by adapting existing strategies, plans or programs which shall reflect, *inter alia*, the measures set out in the Convention relevant to the contracting parties concerned.⁹ Even if the rationales of the CBD for the protection of biodiversity are anthropocentric in their nature,¹⁰ they are meant to restrict the sovereign powers of states over their biological diversity.

Second, the rights of people, especially whose livelihoods depend directly on the existence of biological diversity impose limitations on the sovereign powers of the state. Regarding the rights of the local people, there are some commentators who argue that indigenous peoples should have permanent sovereignty over ‘natural resources’. In this regard, the UNGA Resolution of 1962 provides that: “[t]he right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the wellbeing of the people of the State concerned.”¹¹ Based on this Resolution, Professor Dr. Erica Irene Daes argues that:

“[t]he term “*sovereignty*” may be used in reference to indigenous peoples without in the least diminishing or contradicting the “*sovereignty*” of the State. The well-established use of the term in many areas of the world, rules out any such implication. With an understanding of how the concept of *sovereignty* is applied to indigenous peoples, it becomes further apparent that, when examining their right of self-determination, the principle of permanent sovereignty over natural resources should also apply to indigenous peoples.”¹²

⁸ Article 2, paragraph 16 of the CBD defines ‘sustainable use’ as: “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.”

⁹ See Article 6(1) of the CBD.

¹⁰ It is also important to note that many of the provisions of the CBD are weakened by a language, ‘as far as possible and as appropriate.’ See Articles 5, 6(b), 7, 8, 9, 10, 11 and 14.

¹¹ UNGA Resolution 1803 (XVII) of 1962, Paragraph 1.

¹² Lecture by Professor Dr. Erica Irene Daes at the National Native Title Conference, Adelaide, 03 June 2004. The title of her lecture was “Indigenous Peoples’ Permanent Sovereignty over Natural Resources,” http://www.hreoc.gov.au/about/media/speeches/social_justice/natural_resources.html, accessed on 21 Jan 2012. (Emphases original) It is important to note here that there are no indigenous peoples in Ethiopia or all people are indigenous. However, the rights protected for indigenous peoples can also be applicable to other communities, usually referred to as local people in the Ethiopian context.

Moreover, Paragraph 7 of same Resolution declares that:

“Violation of the rights of peoples and nations to sovereignty over their natural wealth and resources is contrary to the spirit and principles of the Charter of the United Nations and hinders the development of international cooperation and the maintenance of peace.”

According to this Resolution, sovereign rights are not only applicable to states but also to the people within their territories. That is, while exercising their sovereign rights over ‘natural resources’ in general and biodiversity in particular, states are required to act in a responsible manner, not to violate the equally important sovereign rights of the people. This further suggests the need to establish a partnership between states and their peoples for the purpose of protection and rational utilization of biodiversity within their territories. In this regard, Article 47 of the international Covenant on Civil and Political Rights (ICCPR) and Article 25 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) in a similar manner state: “[n]othing in the present Covenant shall be interpreted as impairing the inherent right of all peoples to enjoy and utilize fully and freely their natural wealth and resources,” showing the responsibility of the national states to respect the rights of their people to enjoy their natural ‘resources’ (including biodiversity) in their sovereign capacity.

Moreover, the ICCPR protects the rights of ethnic, religious or linguistic minorities, and persons belonging to such minorities to enjoy their own culture, to profess and practice their own religion, or to use their own language.¹³ This situation can be applicable to the Ethiopian condition as there are such groups in the country.

The United Nations Human Rights Committee, in its General Recommendation No. 23 of 1997 on indigenous peoples stated that:

“In many regions of the world indigenous peoples have been, and are still being, discriminated against and deprived of their human rights and fundamental freedoms and in particular that they have lost their land and resources to colonists, commercial companies and state enterprises.

¹³ Article 27 of the ICCPR.

Consequently, the preservation of their culture and their historical identity has been and still is jeopardized.¹⁴

The Committee passed the recommendation in the context of urging states to recognize and respect these and also other rights of the local people. Although the recommendation in relation to the people who were under colonial rule does not apply at present, the loss of land to commercial companies and state enterprises is highly relevant.¹⁵

The respect of the sovereign rights of the local people over their biodiversity goes beyond simply imposing limitations on the sovereign powers of the state. Instead, it recognizes the rights of local communities to decide on equal footing with the government on matters relating to the biodiversity in their ecosystems. This means that, the people are equally, if not more, bestowed with sovereign powers and have the right to decide on any action that affects their livelihoods and their environment. This has the implication that, a state, under the guise of exercising its sovereign rights over natural resources and biodiversity, is not entitled to violate the rights of local people as these people are also holders of sovereignty over their lands and other natural endowments.¹⁶

The recognition of sovereign rights of the people is not only limited to international instruments but is also a feature of the national laws of Ethiopia. Sovereignty resides in the Ethiopian people according to the Ethiopian constitution. It is important to note here that one of the manifestations of sovereignty of the people is direct participation at the local level. Such participation involves passing decisions on any project, public or private, that affects livelihoods and the

¹⁴ The United Nations Human Rights Committee, in its General Recommendation No. 23 of 1997 on indigenous peoples, Paragraph 3.

¹⁵ For instance, the *kobo* system of the Sheka people (see case study in Chapter 7 for more details) is being threatened due to various activities in relation to land loss to commercial companies. The *kobo* system of the Sheka will fail in the absence of the traditional forest protection mechanisms. Any activity that leads to the loss of the *kobo* system shall lead to loss of biodiversity and the livelihood of the people. The loss of lands and territories to commercial farming activities is now a commonplace practice in Ethiopia at this time. Loss of traditionally occupied lands by these people for 'development' can be attributed to the sovereign powers of the states over 'resources' within its territories. That is, the Ethiopian government may argue that it is providing vast tracts of land to commercial companies by using its rights of administering the natural resources, including biodiversity of the country. The most important issue to be questioned here is whether the people had the chance to exercise their sovereign powers and how.

¹⁶ According to the Ethiopian constitution all sovereign power resides in the people and their sovereignty is expressed through their direct democratic participation. (See Article 8(1) & (3)) Moreover, the people have a wide range right to self-determination, even up to secession. This can include the right to govern their ecosystems according to their traditional ecological knowledge. (See Article 39 of the constitution).

environment.¹⁷ The sovereign rights of the people, as per the Ethiopian constitution, allows them to enjoy their biological diversity, but without affecting the rights of the state in making decisions on the same ‘resources’.¹⁸

The constitution maintains the balance between the two sovereignties through the recognition of joint ownership of land and natural resources by the people and the state.¹⁹ Joint ownership of property is governed by the provisions of the 1960 Civil Code and it is clear that the joint ownership of land and natural resources, including biodiversity, under the constitution shall also be governed by these provisions, *mutatis mutandis*. One of the rules under the Civil Code is the presumption of equality between the parties that own the property jointly.²⁰ Without affecting the equal rights of ownership of the people and the state on land and natural ‘resources’, the government is empowered to administer land²¹ and also other natural ‘resources’. The equality of rights of joint owners of a property calls for equal decision making powers over that property.

Another right recognized by the Ethiopian constitution that further strengthens sovereignty of the people is the right to self-determination. The constitution provides that “[e]very Nation, Nationality and People in Ethiopia has an unconditional right to self-determination, including the right to secession.”²² The expression “*the right to unconditional self-determination, including secession*” of the constitution signifies that the right to self-determination is a bunch of rights that incorporates a number of rights of the people such as cultural rights. People may demand to administer their landscapes by employing their cultural knowledge and skills for the purpose of environmental governance. This right of the people may be termed as environmental or

¹⁷ See Articles 43(2); 89(6), (7); 92(3) of the constitution.

¹⁸ As can be observed from the practice on the ground, the government in Ethiopia tries to make all the decisions without engaging people much. (See Chapter 4 for details).

¹⁹ Article 40(3) of the FDRE Constitution provides that “[t]he right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the State and in the people of Ethiopia. Land is a common property of the Nations, Nationalities and Peoples of Ethiopia and shall not be subject to sale or to other means of exchange.”

²⁰ Civil Code of Ethiopia of 1960, Article 1259.

²¹ See FDRE Constitution, Article 40(6).

²² FDRE Constitution, Article 39(1). The terms, nation, nationality and people have exactly the same meaning. The constitution defines them as: “A ‘Nation, Nationality or People’ for the purpose of this Constitution, is a group of people who have or share large measure of a common culture or similar customs, mutual intelligibility of language, belief in a common or related identities, a common psychological make-up, and who inhabit an identifiable, predominantly contiguous territory.” Although the demarcation of regional states’ boundaries are made on the ethno-linguistic basis, no regional state in Ethiopia exists which is inhabited by a single nation, nationality or people. It seems that each nation, nationality or people may secede from the regional state where it is situated to become an independent country or to establish a separate regional state.

ecological self-determination that enables the people to decide how to enjoy their biological ‘resources’ within their ecosystems. The right to self-determination, as envisaged by the constitution, is a bunch of rights, the extreme of which is secession.

The right to self-determination of indigenous peoples (or local communities) has also been prescribed in a number of international instruments. For instance, self-determination of peoples is one of the purposes of the UN Charter, where stability and wellbeing of such peoples are realized.²³ From the view point of the countries of the global south, self-determination may be defined as the “struggle against all manifestations of neocolonialism and in particular the exploitation by alien powers of the natural resources of developing countries.”²⁴ The collaboration between states and multinational corporations (MNCs) with the effect of depriving the right to freely pursue peoples’ economic, social and cultural development and their means of subsistence violates Article 1(2) of the ICCPR and ICESCR.²⁵ That is, the alliance between states and MNCs may result in deprivation of the local people of their ecosystems under the name of ‘economic development’ which will affect the sovereign right of these people. The large-scale agricultural investment discussed in various chapters in this work, demonstrates this harmful alliance. It has been repeatedly declared by the Ethiopian officials that the vast tracts of land which are being transferred to the large-scale agricultural investments are unoccupied and it is under the guise of this allegation that lands are being taken away from local people and transferred to large-scale agribusiness companies.

The interest of MNCs to get vast tracts of land for large-scale agricultural investment coupled with the similar level of interests in the states of developing countries for ‘development’ activities may cause serious damage to the biodiversity and local livelihoods, if sovereignty over biodiversity has to be exercised exclusively by the states. Regarding corporate-state relations, especially on the light of globalization, Shiva contends that states of the developing world are being “more committed to the protection of foreign investments and less to the protection of

²³ See Articles 1(2) and 55 of the Charter.

²⁴ Cassese, A. (1995) *Self-Determination of Peoples*, Cambridge, Cambridge University Press, cited in Laura Westra (2008), *Environmental Justice and the Rights of Indigenous Peoples: International and Domestic Legal Perspectives*, EARTHSCAN, p.13.

²⁵ *Ibid.*

citizens and communities that make the country.”²⁶ If states behave in such a manner, they will not hesitate to transfer communal holding to corporate holding,²⁷ even to the detriment of biodiversity and local livelihoods. This situation suggests imposition of limitations on the traditional sovereign rights of governments so as to develop a new type of shared sovereignty between the people and the government.

The government’s exercise of its sovereign power over the ‘natural resources’ within its territories needs to be practiced by maintaining the balance between its own powers on the one hand and the powers/rights of the local people in administering their lands and territories with equal sovereign capacity on the other. The fate of biodiversity protection in Ethiopia faces, *inter alia*, these apparently conflicting scenarios. If the Ethiopian constitution, which recognizes the sovereign rights of the local people and the joint ownership of land and other ‘natural resources’ between the government and the people, is fairly implemented, maintaining this balance could be a possibility. Striking this balance is in the hands of the Ethiopian government. Unless the government is ready to do this, the people will have less means to exercise their sovereign as well as joint ownership rights over the land and other ‘natural resources’. To achieve the balance, the government is required to abandon the traditional meaning of sovereignty which approximates sovereignty to almost absolute powers in the exploitation of the ‘natural resources’. Recognition of sovereignty of the people necessitates the acknowledgement by the government of the collective rights of local people to their traditional territories and heritage. It does not necessarily infer a desire for a separate state.²⁸ However, the Ethiopian government appears to be obsessively jealous of its sovereignty and is not usually ready to share this power with the people.²⁹ The concentration of exclusive sovereign powers in the hands of state on local

²⁶ Vandana Shiva, ‘A New Partnership for National Sovereignty: IPRs, Collective Rights and Biodiversity’, in Solomon Tilahun and Sue Edwards (eds.), (1996) *The Movement for Intellectual Rights*, Institute for Sustainable Development, p.53.

²⁷ *Ibid.*

²⁸ See Theodore E. Downing et al, ‘Indigenous Peoples and Mining Encounters: Strategies and Tactics’, *Mining, Minerals and Sustainable Development*, April 2002 No. 57, p.14.

²⁹ See the discussion on the tension between government and clan leaders in Chapter 7.

ecological issues may lead to an unfettered exercise of these powers by the government with the collaboration of MNCs.³⁰

In the face of such ongoing practices by the government of Ethiopia, local people need to have some strategies to resist such conditions on their own and/or need assistance from others for such resistance. The following strategies may be helpful in developing resistance against exclusive sovereign powers of the government in the move towards recognition of people's sovereignty.

1. The people can strengthen the existing cultural institutions to challenge and regain their autonomy. For example, in Ethiopia, the Sheka clan leaders have established a clan leader's association with the view to protect biodiversity, recuperate their diminishing cultural practices and regain their autonomy.³¹
2. Groups such as NGOs and professional associations and individuals can play important roles. They can assist the local resistance through various mechanisms, such as:
 - a) Instituting court cases to enforce existing laws. For example, the Environmental Policy of Ethiopia and the impact assessment law promote the precautionary principle as a basis for protection of the environment. Public participation and respect for shrines or sacred sites can also be a point of intervention to take cases to the attention of courts of law. There are a number of success stories from around the globe where decisions are made in favor of local people.³²

³⁰ MNCs and other 'development' project owners are expected to have easy access to government organs than the local people and may influence decisions on local biodiversity.

³¹ See Chapter 7 for details.

³² (See (1) Case Note – 'The Ecuadorian Exemplar: The First Ever Vindications of Constitutional Rights of Nature', Review of European Community & International Environmental Law, *RECIEL* 21 (1) 2012. ISSN 0962 8797; (2) Colombian Constitutional Court decision **Case file D-6837 – Decision C-030/08** where the claimants requested the Constitutional Court to declare Law 1021 of 2006 null and void taking into account that in its process of issuance, previous consultation to indigenous communities and afro-descendant communities was not carried out, which is a breach to articles 1, 2, 3, 7, 9, 13, 93 and 330 of the Colombian Constitution; (3) PRESS RELEASE 8th July 2010, 'Court grants interdict to stop tourist development of sacred site in Venda, South Africa' <http://vimeo.com/channels/gaia>, accessed on 19 July 2010; (4) **Claim No. 171 of 2007 Maya village of Santa Cruz (et al.) v. The Attorney General of Belize and the Minister of Natural Resources and Environment** and **Claim No. 172 of 2007 Maya village of Conejo (et al.) v. The Attorney General of Belize and the Minister of Natural**

- b) Advocacy and lobbying. This can be done with the view to effective enforcement of existing policies and laws and/or adoption of new ones.
- c) Establishing centers which promote local causes. These could be learning and/or research centers which focus on local agenda such as people's rights over their land and ecosystem, promotion of cultural practices and biodiversity protection activities and promotion of organic movements. An example is Navdanya (Bija Vidyapeeth - Earth University) in India. Research institutions such as Navdanya are conducting researches and teaching on organic farming and demonstrate how small-scale farming is more productive than the industrial large-scale farming. The activities of such institutions can be presented as a challenge against the notion that food problem can be solved only through large-scale industrial farming.³³
- d) Organizing public demonstrations. This could be done in opposition to corporate takeover of land or demand for recognition of people's sovereignty.
- e) Networking with people of same problems within the country and/or outside the country. This helps to exchange experiences.
- f) Soliciting assistance from various persons (individuals or entities) from industrialized and developing countries which support the cause.

3. Using national and international media to disseminate the people's causes.

From the ongoing discussion it can be concluded that joint sovereignty of state and people over the natural environment is more suitable for the application of the principles of Earth jurisprudence than the traditional exclusive sovereignty of state. Two major reasons can be given for this. 1) The knowledge systems and the traditional practices such as the taboo systems allow the people to implement the principles of Earth jurisprudence if they can govern their

Resources and Environment, where the Supreme Court of Belize affirmed the rights of indigenous Maya communities of Belize to their traditional lands and 'resources' according to their traditional customs, as protected under the Constitution and international law.

³³ This author attended three-week training on '*Ecological Thinking*' at Navdanya in November-December, 2005.

ecosystems. They have more comprehensive knowledge than the state on their ecosystem and biodiversity. State may have remote information on day-to-day events of the ecosystem and such information could be more of fragmented which do not show the coherent whole.³⁴ 2) The local people are emotionally attached to their ecosystems and are ready to assume the stewardship responsibility for the protection of biodiversity than any state organ. The natural ecosystems are more than mere 'resource' for the local people as they value them also spiritually. As the result of these reasons, the local people are more suited and better placed to take decisions which may be beneficial to biodiversity as well as their own livelihoods. The application of Earth jurisprudence requires respect, love and the attitude of caring towards the natural environment. To express these features towards nature, the local people are best placed. The state can positively utilize local capacities by joining hands with the people in a mutually reinforcing manner for the betterment of the ecosystem, local livelihood and the national economy.

The next section deals with a need to bring about a shift from a strategy of food security to food sovereignty. It argues that food security strategy focuses on few food crops and leads to loss of agricultural biodiversity. It also highlights why and how one of the principles of Earth jurisprudence, the principle of diversity, is addressed through the strategy of food sovereignty than through food security strategy.

6.2 Shift from Idea of Food Security to Food Sovereignty

This shift is suggested on the basis of another key principle of Earth jurisprudence, the principle of diversity with the view to transforming the principle into policy and legal action. The principle springs from the features of the Earth that tends to increase and maintain diversity. Maintaining diversity is the heart of this work as it directly deals with biological diversity. As it has been discussed in Chapter 3, the major cause of loss of biodiversity is habitat loss mostly caused by agricultural activities. However, different types of farming systems have different impacts on the

³⁴ The state may get information based on scientific data on a certain ecosystem. However, the information acquired by the state could be more of mechanical and for the purpose of exploiting the 'resources' from a given ecosystem.

loss of biodiversity.³⁵ Therefore, the farming system people choose will have direct consequences over agricultural as well as wild biological diversity.

The concepts of food security and food sovereignty may appear as simple semantics at first sight. However, they have differences in their meanings, which usually find their roots in the ideological differences among various interest groups in the politics of agriculture and food. The examination of food security and food sovereignty in this section focuses on these connections and the application of the principles of Earth jurisprudence.

6.2.1 Food Security

Since the 1974 World Food Conference, the concept of food security has “evolved, developed, multiplied and diversified” and there are now many definitions of the term.³⁶ Of these definitions, the following is selected for its comprehensiveness and relevance for the discussion in this chapter.

“Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.”³⁷

The definition focuses on the availability of food for all people at all times. Moreover, it focuses on the nutritious value of the food that has to be available for all people and their choices for food. The idea of food security seems to have found its legal basis in the UDHR and the ICESCR which provide for the right to food. The UDHR provides “[e]veryone has the right to a standard of living adequate for the health and wellbeing of himself and of his family, including food.”³⁸ The ICESCR on its part, after recognizing the right to adequate food, imposes duties on states to take appropriate steps to realize the right. Moreover, the Covenant urges state parties,

³⁵ Although agriculture is one of the causes of loss of general biodiversity, it can contribute to the increased diversity of agricultural biodiversity. (See the case of wheat in Ethiopia in Chapter 2).

³⁶ Maxwell, S. (1996b) ‘Food Security: A Post-Modern Perspective’, Food Policy, vol. 21, no. 2 in D. John Shaw (2007) *World Food Security: A History since 1945*, Palgrave Macmillan, p.404.

³⁷ FAO (2002), *The State of Food Insecurity in the World 2001*.

³⁸ Article 25(1) of the UDHR of 1948.

individually and through international cooperation, to take measures that improve methods of production, conservation and distribution of food.³⁹

Although food security is considered as one of the basic rights of people, its application in practice results in a number of problems with regard to protection of biodiversity and livelihoods of smallholder farmers in developing countries. Some of the major problems are highlighted below.

A) No clarity where and how the food is produced

The concept of food security does not show whether the production and distribution of the food system is compatible from environmental protection perspective, especially in relation to its contribution to the loss or protection of biodiversity on which the food production depends. According to the above meaning of ‘food security’ it is enough to have available food at the global level, so long as a nation or a certain community has the money to purchase food from the international market. Its aim is ensuring food production at the global level which is sufficient for inhabitants of all countries. That is, irrespective of the socioeconomic level of a country (whether a country belongs to the developed or developing country or it has suitable geographical conditions to grow food or not) it is sufficient for the people of the country if they earn income from any source to purchase food from the international market.

This may result in a shift of policy direction of countries,⁴⁰ from focusing on growing their own food crops to producing cash crops, mainly for the international market. This in turn may be attained by converting the fields that have been growing food crops into cash crop fields, pushing people who have been growing their own food to depend on food which is grown elsewhere. Reduced dependency on locally grown food and increased dependency on international food

³⁹ See Article 11 of the ICESCR of 1966.

⁴⁰ The Ethiopian government seems to believe in this shift. The point raised by the then Minister of Information and a high ranking official, Mr. Bereket Simon of EPRDF during the 2005 election debate is worth mentioning. At the debate, Prof. Merera Gudina, Chairperson of the ONC criticized the governing party’s decision to convert fertile agricultural lands of *teff* and wheat into greenhouses for floriculture investments. Mr. Simon responded that: “Farmers need not produce food crops to ensure food security. It is enough if they earn income from other sources like working on flower fields [as laborers]. What is the problem if they have the money to purchase food instead of directly producing food crops?” Similarly, in 2010 Abera Deressa, State Minister to the Ministry of Agriculture stated that: “If we get money we can buy food anywhere, then we can solve the food problem.” <http://www.bloomberg.com/news/2010-10-26/ethiopia-plans-to-rent-out-belgium-sized-land-area-to-produce-cash-crops.html>, accessed on 21 January 2011

markets, will negatively impact on the protection of biodiversity and livelihood of the people as it will be seen below.

There are instances now that small farmers in Ethiopia are encouraged to grow commercial crops like tea, cotton and biofuel plants such as jatropha and castor bean for international markets.⁴¹ Such diversion in agricultural production directly results in the loss of agricultural biodiversity,⁴² as people continue to replace diverse varieties of crops and animals in their hands by homogenized, and perhaps, exotic species. The concept and more importantly perhaps the practice of food security is, therefore, directly linked with the international marketing of food, opening the door for multinational corporations to play dominant roles in the agricultural and food systems of the world.⁴³ As the result of this, the policies of food security have a tendency of ignoring local agricultural systems despite their role in and future potential for meeting human needs and sustaining diverse ecologies.⁴⁴ Therefore, food security strategies are not interested to focus on whether the food production system is ecologically tenable or not, whether the livelihoods of smallholder farmers are being affected or not, or whether the agricultural diversity is maintained or not. The important point from food security perspective is whether there is enough tonnage of food production, at the global level, that satisfies the FAO daily calorie intake of all inhabitants. In short, it focuses on the consumption aspect of food by ignoring where and

⁴¹ See Chapter 4 for more details.

⁴² According to FAO, agricultural biodiversity (or agrobiodiversity) is “[t]he variety and variability of animals, plants and microorganisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. It comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fiber, fuel and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil microorganisms, predators, pollinators), and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest and aquatic) as well as the diversity of the agro-ecosystems.” (See FAO, ‘What is Agrobiodiversity?’ [ftp://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf](http://ftp.fao.org/docrep/fao/007/y5609e/y5609e00.pdf), accessed on 25 June 2012)

⁴³ For details on this issue, see (1) Melaku Worede, ‘Agro-Biodiversity and Food Security in Ethiopia’, in Zenebework Tadesse (ed.) *Environment and Development in Ethiopia*, Proceedings of the Symposium of Forum for Social Studies, September, 2004, pp.7-16; (2) *Food Sovereignty: Reclaiming on global food system*, www.waronwant.org/attachments/Food%20sovereignty%20report.pdf, accessed on 27 June 2012; (3) Michael Windfuhr and Jennie Jonsén (2005), *Food Sovereignty: Towards democracy in localized food systems*, ITDG Publishing; (4) Richard Lee, ‘Food Security and Food Sovereignty’ Centre for Rural Economy Discussion Paper Series No. 11, March 2007; (5) Hannah Wittman et al, (eds.) (2012) *Food Sovereignty: Reconnecting Food, Nature and Community*, Springer; (6) William D. Schanbacher (2010), *The Politics of Food: The Global Conflict between Food Security and Food Sovereignty*, PRAEGER; (7) Farha Dmazhar (2007), *Food Sovereignty and Uncultivated Biodiversity in South Asia: Essays on the Poverty of Food Policy and the Wealth of the Social Landscape*, Academic Foundation; and (8) *Food Sovereignty Systems: Feeding the World, Regenerating Ecosystems, Rebuilding Local Economies, and Cooling the Planet – all at the same time*, http://www.africanbiodiversity.org/content/alliance_food_sovereignty_afsa, accessed on 12 March 2012.

⁴⁴ Michel Pimbert (2010), *Towards Food Sovereignty: Reclaiming autonomous food systems*, iied, p.5.

how the food is produced. This in turn results in the neglect of the ecological costs of food production and distribution.

B) Emphasis on international food marketing

As stated above, the idea of food security focuses on enough food production worldwide for every inhabitant of the Earth. It assumes that everybody would be food secure so long as they have enough means to buy their food from the international food market. One of the problems with international food markets is that they are unable to solve food problems irrespective of their increasing magnitude from time to time. In 2009, the number of the hungry surpassed 1 billion for the first time in the history of mankind. FAO estimated that a total of 925 million people were undernourished in 2010. Even if the number of the hungry declined from the 2009 level, still it is higher than it was before the food and economic crises of 2008-2009. This situation seemed to have shown that the promise of the world leaders to reduce the number of hungry by half (by 2015) at the World Food Summit in 1996 is far from being achieved.⁴⁵ As D. John Shaw recognized, guided by the idea of food security, “FAO has focused on increasing food production, especially in developing countries, stabilizing food supplies, stimulating world agricultural trade, negotiating international commodity agreements.”⁴⁶ Irrespective of the efforts of FAO however, we witness that the number of the hungry in the world remains large, the reports from around the globe, almost on daily basis, not hopeful for any significant price drop of food items nor the number of the hungry in the near future. Quite simply, the world has not yet recovered from the global food crisis.⁴⁷

⁴⁵ Global hunger declining, but still unacceptably high: International hunger targets difficult to reach, <http://www.fao.org/docrep/012/al390e/al390e00.pdf>, accessed on 10 Feb 2012.

⁴⁶ D. John Shaw (2007) *World Food Security: A History since 1945*, Palgrave Macmillan, p.404.

⁴⁷ There are a number of factors that could cause food crisis such as bad weather and natural disasters like drought, high oil prices, diversion of food crops to biofuels and inappropriate policy and legal environment. Food crisis could also be caused by market manipulation by large companies such as Monsanto. (These issues were considered in an Al Jazeera Television debate entitled: “The Seed Emergency-The threat to food and democracy-opinion-Al Jazeera English_090212.flv.” Participants of the debate were: Vandana Shiva, environmental activist, India; Joachim Von Braun, The International Food Policy Research Institute, USA; and Max Keiser, financial analyst, France. Available at YOUTUBE video site, accessed on 25 October, 2011.)

International food markets create problems in the global food systems which directly impinge on biodiversity. Firstly, even if the concept of food security appears appealing, it may not be appropriate for all countries for various cultural, economic and environmental reasons. Culturally appropriate types of food items may not be available at the global market which can fulfill the needs of all people in the world. For instance, *teff* is not available at the international market.⁴⁸ If farmers are forced to grow cash crops instead of food crops, people may be forced to shift their food culture as well, aggravating loss of biodiversity, especially agricultural biodiversity which has evolved to suit local conditions. Regarding the impact of international food markets on biodiversity, FAO reported that “the globalization of livestock markets is the biggest single factor affecting farm animal diversity. Traditional production systems require multi-purpose animals, which provide a range of goods and services” recognizing that the globalization of agricultural products has a dwindling effect on the agricultural biodiversity.⁴⁹

Secondly, international food prices are not dependable as the prices of food are tied up with the price of oil in the international market.⁵⁰ The earnings of farmers who are made to produce cash crops may not be sufficient for purchasing food. Sometimes the international markets may be affected by other factors such as price drops or transport problems.⁵¹ The skyrocketing food prices may drive people to a deeper poverty which forces them to clear more forests and/or drain wetlands or overexploit ecosystems around them with the view to increasing their income, contributing to a further loss of biodiversity. As practices show, the availability of food at the international market alone does not guarantee food security at the household level.⁵² Moreover,

⁴⁸ Mrs. Sue Edwards, director of Institute for Sustainable Development, biologist and a social worker argues that *injera* (a pancake made of *teff*) is not just food for many Ethiopians but also is source of satisfaction. Replacing *injera* with other food is not acceptable. She even argues that housewives may prefer 75 kg of *teff* to 100 kg of wheat. Because they know that their families are more satisfied by *teff* than wheat, according to Mrs. Edwards. (Personal communication on November 23, 2010.)

⁴⁹ Geoff Tansey and Tasmin Rajotte (2008) *The Future Control of Food: A Guide to International Negotiations and Rules on Intellectual Property, Biodiversity and Food Security*, EARTHSCAN, p. 138.

⁵⁰ For details on this and related issues, see Dale Allen Pfeiffer (2006), *Eating Fossil Fuels: Oil, Food and the Coming Crisis in Agriculture*, New Society Publishers.

⁵¹ Ethiopian coffee growers bitterly experienced price falls at the international markets several times. They have been saved from total collapse of their livelihood because of their intercropping practice and animal raising. In the 2010 ash cloud of Europe, flights were cancelled and flower growers were unable to sell their produces. Flowers have no market in Ethiopia.

⁵² See for instance, The New York Times’ report by Manpreet Romana entitled ‘As Grain Piles Up, India’s Poor Still Go Hungry’, http://www.nytimes.com/2012/06/08/business/global/a-failed-food-system-in-india-prompts-an-intense-review.html?_r=2&pagewanted=all, accessed on 13 June 2012.

the international food market is exposed to price manipulations of food crops and agricultural inputs. Such manipulations, which are done by multinational corporations, are also another reason for further loss of biodiversity and livelihoods of people in countries like Ethiopia.

Thirdly and perhaps most damagingly, there is no guarantee about the availability of food at the international market. Reports now indicate the declining tendency of agricultural productivity in many countries. Globally the rate of growth in yields of the major cereal crops has been steadily declining, dropping from 3.2 percent per year in 1960 to 1.5 percent in 2000. The challenge for technology is to reverse this decline, since a continuous linear increase in yields at a global level following the pattern established over the past five decades will not be sufficient to meet food needs.⁵³ Even the increase of food productivity by using all the possible means of technology has not been sufficient to satisfy the food needs of humanity, irrespective of its great negative impact on biodiversity.⁵⁴ A worrying condition here is the expectation that, in the first half of this century, global demand for food, feed and fiber is to grow by 70 percent while, increasingly, crops may also be used for bio-energy and other industrial purposes.⁵⁵

These conditions could create stresses over the biodiversity of the Earth, which may lead to the general ecological collapse. The recent food crisis is estimated to continue with high food price. Indeed, many countries are still in food crisis in different parts of the world, particularly the Horn of Africa. These crises are challenging the efforts to achieve the Millennium Development Goal (MDG) of reducing the proportion of people who suffer from hunger by half by 2015.⁵⁶

⁵³ 'How to Feed the World in 2050', www.fao.org, accessed on 09 Feb 2012.

⁵⁴ High-yield agriculture, which is a 20th century invention, has been capable of tripling crop yields since the hybrid maize revolution of the United States in the late 1930s. (Robert D. Havener *et al*, p. 41) This Green Revolution has also spread to other parts of the world with great success in increasing crop yields. But this increase does not seem to continue steadily. There is now sufficient evidence that shows the dropping off of the level of productivity. As Mackintosh recognizes, "[t]he world grain yield per acre has tripled since 1950. But now that era is coming to an end in some of the more agriculturally advanced countries, where farmers are already using all available technologies to raise yields. After climbing for a century, rice yield per acre in Japan has not risen at all for 16 years. In China, yields may level off soon. Just those two countries alone account for one-third of the world's rice harvest. Meanwhile, wheat yields have plateaued in Britain, France, and Germany – Western Europe's three largest wheat producers. In this era of tightening world food supplies, the ability to grow food is fast becoming a new form of geopolitical leverage, and countries are scrambling to secure their own parochial interests at the expense of the common good." (See Craig Mackintosh 'Orchestrating Famine', in Marcin Gerwin (ed.) (2011), *Introduction to Food Sovereignty: Food and Democracy*, Polish Green Network)

⁵⁵ FAO, *supra* note 53.

⁵⁶ The State of Food Insecurity in the World 2011: How does international price volatility affect domestic economies and food security? <http://www.fao.org/docrep/014/i2330e/i2330e.pdf>, accessed on 10 Feb 2012.

Developing countries account for 98 percent of the world's undernourished people. Two-thirds live in just seven countries (Bangladesh, China, the Democratic Republic of the Congo, Ethiopia, India, Indonesia and Pakistan) and over 40 percent of these live in China and India alone.⁵⁷

While developing countries are in such food-stress conditions, the world financial institutions impose requirements which may aggravate the conditions. One of the main requirements imposed on developing countries is that they must plug into the global market by transforming themselves into export-oriented economies. The push comes from international institutions such as WTO, IMF and the WB.⁵⁸ The attempts of the IMF, WB and the WTO to ensure food security through economic policies such as trade liberalization, privatization and the deregulation of national industries, have not only failed to achieve their goals but also have failed to create a just global food system.⁵⁹ This is a failure even without taking into account the cultural significance of food in various communities. Pushing farmers to such export-oriented economy is also one of the main policy issues in Ethiopia now.⁶⁰

The internationalization of food systems is also supported by a number of thinkers. For instance, Amartya Sen argues that increasing the incomes of the people of developing countries, through international trade, especially by encouraging exports from poor countries to rich countries can eliminate poverty. If this is achieved, the people in poor countries will have the means to purchase food from the international market. He condemned the idea of food self-sufficiency as a peculiarly obtuse way of thinking. He then advised poor African countries to focus on income and the ability to command food rather than on any fetishist concern about food self-sufficiency.⁶¹

Vandana Shiva in her article entitled 'The Real Reasons for Hunger' responded to Sen's argument. In her response, she criticized Sen's recommendation for further trade liberalization

⁵⁷ Global hunger declining, but still unacceptably high: International hunger targets difficult to reach available at: <http://www.fao.org/docrep/012/al390e/al390e00.pdf>, accessed on 10 Feb 2012. It is important to note here, with the exception of the Congo Democratic Republic, other countries are under population pressure.

⁵⁸ Mackintosh, *supra* note 54, pp.16-17.

⁵⁹ Schanbacher, *supra* note 43, p.viii.

⁶⁰ See Chapter 4 for more details.

⁶¹ *Published on Sunday, June 16, 2002 in the Observer of London*. Sen also argues that "if democracy prevails, then there will not be any hunger in the world." He gave India as example and said "famines disappeared immediately in 1947, with independence and multiparty elections." 'Why Half the Planet is Hungry' <http://www.commondreams.org/views02/0616-01.htm>, Accessed on 01 march 2012

and increased exports as solution to hunger in the Third World. According to Shiva, trade liberalization and globalization incapacitate the decision making power of the people at local levels.⁶²

Amartya Sen's argument that democracy is a solution for hunger is appropriate if a correct form of democracy is implanted and also exercised. Policies that compel people to shift to an export oriented type of farming cannot be taken as genuine democracy.⁶³ Genuine democracy gives the largest room for the people's decision through their active participation at the local level on matters that affect them directly.

C) Impact on biodiversity protection

The problems associated with the idea of food security, discussed above, directly contribute to the loss of biodiversity. Though these impacts contribute to the loss of general biodiversity, their contribution to the loss of agricultural biodiversity is immense as they may lead to a complete replacement of local or farmers' varieties with other varieties, mainly referred to as HYVs.⁶⁴ It is true that farmers need to produce as much as they can from their pieces of land and they can be easily tempted to replace the landraces with HYVs for higher yields. The big question which needs to be answered is – how can the landraces be protected? Regarding the need for the protection of the landraces, Franziska Wolff argues that:

“The protection of landraces and indigenous livestock breeds is worthwhile despite their lower yields because they often possess valuable traits such as disease and pest resistance and are better adapted to harsh conditions and poor quality feed, which are qualities desirable for low-input, sustainable agriculture. On the other hand, agrobiodiversity also protects against vulnerability to

⁶² ‘The real reasons for hunger’ <http://www.guardian.co.uk/world/2002/jun/23/1>, accessed on 07 Feb 2012. This author does not think Sen would write this article had it been in the post 2008 food crisis era. The article was written in 2002 when the prices of the principal staple food crops (such as rice and wheat) fell by more than half in ‘real’ terms, in the preceding 25 years.

⁶³ Compelling people may be manifested in many forms. For instance, threatening people with eviction from their land or not allowing them to get access to credit if they do not plant certain types of cash crops is compulsion.

⁶⁴ This work does not argue against research work that is intended to enhance crop productivity.

climate stress, insect pests and diseases that can devastate a uniform crop, especially on large plantations.”⁶⁵

Landraces and local varieties of domestic animals well suit the prevailing conditions of small farmers in developing countries and their loss will put at risk not only the livelihoods of these smallholder farmers but also the HYVs because the former are the sources for the latter.

The issue of loss of agrobiodiversity becomes more complex as it is directly linked with the interests of multinational seed companies and food traders. As one study indicates, the corporate takeover of the seed industry is one of the largest contributors to the loss of seed biodiversity. The study further reveals that in less than three decades, a handful of multinational corporations have engineered their way to link in the food chain with the consequence of ‘owning’ seeds which were in the hands of farmers and public sector breeders.⁶⁶

Such proprietary ‘ownership’ of seeds and the skyrocketing of food prices puts billions of people in conditions of stress whilst windfall profits are made by these seed companies, grain and food traders.⁶⁷ These profits are no freak windfalls. Over the last 30 years, the IMF and the World Bank have pushed developing countries to dismantle all forms of protection for their local farmers and to open up their markets to global agribusiness, speculators and subsidized food from rich countries. This has transformed most developing countries from being exporters of food into importers. Today about 70 per cent of developing countries are net importers of food.⁶⁸ Ethiopia, one of such food shortage countries in the world, has had to depend on food aid for more than three decades and will continue as a food importer country even if it exhibits economic ‘growth’, sticking to its present policy direction, which encourages export-oriented agriculture, even at a small-scale and household level farming.

⁶⁵ Franziska Wolff, ‘Legal Factors Driving Agrobiodiversity Loss’, *Environmental Law Network Review*, 1/2004, www.agrobiodiversitaet.net/site/page/downloads/.../ABD.Elni.pdf, accessed on 23 Feb 2011

⁶⁶ ETC Group, *Who Owns Nature? Corporate Power and the Final Frontier in the Commodification of Life*, November 2008, pp.11-12. The world’s top 3 seed companies (Monsanto, DuPont, Syngenta) together account for 47% of the worldwide proprietary seed market. ETC Group conservatively estimates that the top 3 seed companies control 65% of the proprietary maize seed market worldwide, and over half of the proprietary soybean seed market. See *Ibid*, p.12.

⁶⁷ Mackintosh, *supra* note 54, pp.15-16.

⁶⁸ *Ibid*, p.16. It is important to note here that the option of the companies of homogenous traits is not only the issue of increased productivity but also the suitability of these traits for industrial processes. (See Wolff, *supra* note 65, p.3)

To summarize, the pursuit of food security based policies may lead to loss of biodiversity for, at least, three reasons. Firstly, it could lead to the replacement of farmers' varieties with HYVs; the latter being known for their homogeneity. Secondly, farmers could be advised or could even be compelled to shift from food crop growers to cash crop growers with the impact of loss of crop varieties. Thirdly, the money they get from the sale of the cash crops may not be sufficient for their livelihood⁶⁹ and this could lead them to clear additional forest and drain wetland areas to increase their income.

D) Problems of rural livelihoods

As pointed out above, activities associated with the idea of food security may influence the policy direction of a country with respect to its food production. That is, while there may exist all the necessary resources for effective food production systems, governments may formulate policies which may not necessarily be ecologically sustainable. It is true that all countries of the world may not be in a position to produce their own food due to their geographical conditions suggesting that international food markets cannot be avoided. However, should this be the case for countries like Ethiopia which have better ecosystems for food production and can produce sufficient food by applying ecologically sustainable agriculture?

An example might be appropriate here. One study in SNNPRS indicates that farmers have been approached to sign contracts to be out-growers of castor bean for biofuel purpose. Global Energy Ethiopia Private Limited Company (GEE) introduced castor bean plantation to the area in 2007. The company convinced 20,000 smallholder farmers to plant castor bean. The company told the farmers that the average yield of castor bean would be 5000 kg/ha. Farmers expected to gain greater benefits from the sale of castor bean seed to the company and started planting castor bean seeds. Contrary to the promises of the company, the average production of the biofuel plant was 1218.5 kg/ha and the price was dictated by the company to be 0.08 USD/kg. Many of the farmers found that the price was too low to sustain their livelihood. Farmers subsequently complained on two grounds. (1) Castor bean is not a food crop and cannot contribute to the diet of their families; (2) There is no other buyer for the produce except the GEE company which set the price to the detriment of their livelihoods. Most of the smallholder farmers indicated that they regretted

⁶⁹ See subsection D) below for details on the story of castor bean out growers in SNNPRS.

concluding the contract with the company; the money they earned was not sufficient even to buy food from market. This situation worsened their already precarious condition,⁷⁰ as far as their food security is concerned.⁷¹

Similar stories can be cited from various parts of the world which show the nature of problems relating to the livelihoods of people when shifts are introduced to their farming systems that transform them to export oriented cash crop producers from food crop producers. The situation is more worrisome when people are pushed to such activities by government policies and strategies. It is based on these facts that this author argues that the strategy of food security does not strike the right balance between the three concerns of the local people—producing adequate, culturally and nutritionally acceptable food, protecting biodiversity and ensuring local livelihoods.⁷²

As a concluding remark to this section, it can be argued that the implementation of the idea of food security has paved the way for the alliance between multilateral corporations and national governments which has led to the taking of the upper hand by these corporations in the food system.⁷³ This obviously has led to the undermining of local control over the food system and the

⁷⁰ The study revealed that the areas were already food insecure ones.

⁷¹ For details, see Kassaye Tekola (2010) *Smallholder Farmers and Biofuel: Farmers' Perspectives in Growing Castor Beans in Ethiopia*, (Masters Thesis) Swedish University of Agricultural Sciences, Department of Urban and Rural Development. www.stud.epsilon.slu.se/2327/1/moges_k_t_110303.pdf, accessed on 18 June 2012.

⁷² For instance, Kenya has depended on imported food, since the 1980s whilst agriculture in Kenya has increasingly been devoted to cash crops such as fruits, vegetables and mainly flowers for export to Europe, putting the livelihood of people in difficult conditions, particularly around Lake Naivasha. (Tony Iltis, 'Kenya: Flower cash crops reap hunger, destruction', <http://www.greenleft.org.au/node/49188>, accessed on 20 June 2012.)

⁷³ Countries of the South including Ethiopia are under pressure not only from MNCs and world financial institutions but also from alliance of industrialized countries, G8. The G8 countries, by cooperating with companies like Monsanto, Bayer and Yara work on the expansion of large-scale commercial farms in Ethiopia. To facilitate commercial farming, they pressure the Ethiopian government to commit itself to: (1) increase private sector participation in seed development, multiplication, and distribution; (2) increase the ability of the private sector to access markets by reducing barriers to competitiveness and increasing transparency of requirements; (3) strengthen land use rights to stimulate investment in agriculture; and (4) increase the availability of credit to the agricultural sector. To achieve these objectives, they insist that the Ethiopian government, among other things, incentivize international seed companies to operate in Ethiopian seed markets; allow cooperatives and individual farmers to source seed from any supplier; and establish one-window service that assists agriculture investors to secure land and identify livestock industry and commercial ranching opportunities. (See G8 Cooperation Framework to Support the "New Alliance for Food Security and Nutrition in Ethiopia" available at www.state.gov/documents/organization/190625.pdf, accessed on 18 April 2013). The Ethiopian government started to act accordingly. For instance, it enacted a new Seed Proclamation No. 782 of 2013 "designed to address and overcome policy bottlenecks and changes in the national seed system..." The law was made with the technical and institutional support by *major partners*, (emphasis added) such as the Bill and Melinda Gates Foundation, USAID, and the Dutch Embassy. (For more details visit <http://www.ata.gov.et>, accessed on 24 April 2013). These moves will

loss of agricultural as well as general biodiversity. The industrial mode of agriculture is known to disrupt the holistic functions of the Earth systems,⁷⁴ thus affecting the livelihoods of smallholder farmers.

It is argued here that food security approach is incompatible with the principles of Earth jurisprudence for the following reasons: (1) it is a strategy that promotes industrial large-scale farming which depends on genetically homogenized seeds and the high utilization of agricultural inputs which entail threats to agricultural and soil biodiversity.⁷⁵ Heavy reliance on agricultural inputs destroys soil biodiversity and other forms of biological diversity that assist agricultural activities, such as those of pollinators. This violates one of the basic principles of Earth jurisprudence, interconnectedness. Disruption of interconnectedness affects the normal functioning of the Earth's systems;⁷⁶ (2) it interferes with the climate system of the Earth by contributing large amount of greenhouse gas emission;⁷⁷ (3) it causes eviction of smallholder farmers and/or local communities from their lands. These communities are more responsible for and more conversant with their environment. Eviction of peasant farmers and/or local communities and replacing the land with large-scale commercial farming changes the relationship that existed between humans and their environment. It leaves the ecosystem in the

most likely lead to eviction of smallholder farmers and/or local communities from their land and would deepen their reliance on seed and agrochemicals controlled by few, but powerful corporations.

⁷⁴ Industrial agriculture exploits the Earth and its system in an inefficient way. For instance, each calorie of food energy produced by the agro-food system of the United States mobilizes the use of more than seven calories of energy – mostly from fossil fuel, and 20% of it on farm, the rest in other stages like transportation and transformation. This means that agriculture consumes significantly more calories than it generates. (Heinberg, R. and M. Bomford (2009), *The food and farming transition: toward a post carbon food system*, Sebastopol, CA, Post Carbon Institute: 41, cited in HLPE (2011), *Price volatility and food security: A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*, Rome, p. 35.)

⁷⁵ Soil provides habitat for a diverse array of organisms—microbes (fungi, bacteria and actinomycetes) and animals such as nematodes, mites, collembola, diplopoda, earthworms and arthropods which contribute to the maintenance and productivity of agroecosystems. The soil biodiversity plays significant role in maintaining the normal functions the soil. (See Miguel Altieri and Paul Rogé, 'The ecological role and enhancement of biodiversity in agroecosystems', in Stewart Lockie and David Carpenter (eds.) (2010), *Agriculture, Biodiversity and Markets: Livelihoods and Agroecology in Comparative Perspective*, p.25.)

⁷⁶ An example here could be a symbiotic relationship between fig wasp and fig tree. These two species depend on each other and each cannot exist without the other. See 'Pollinators of Fig Trees' (http://www.figweb.org/Interaction/Who_pollinates_fig_trees/, accessed on 23 April 2013). Excessive usage of agricultural inputs, as the case in the food security strategy affects many of even the untargeted species. (See Rachel Carson (1962), *Silent Spring*, Penguin Books).

⁷⁷ The industrial food system, both in crop production and animal ranching, is estimated to contribute a third of all anthropogenic greenhouse gas emissions. (See Gordana Kranjac-Berisavljevic *et al*, 'Climate Change' in Beverly D. McIntyre *et al* (eds.) (2009), *Agriculture at a Crossroads: International Assessment of Agricultural Knowledge, Science and Technology for Development*, pp.46-52.)

hands of those who provide less care by violating the principles of care and maintaining diversity. It also leads to further loss of biodiversity by pushing the evicted people to marginal areas. Moreover, it weakens the control of the people over food production by shifting it to corporations. This in turn reduces the ability of local people to exercise their sovereign rights over their ecosystems.

In opposition to the policies of food security, movements are on the rise from the global south aiming to challenge the corporate takeover of the food system and to regain farmers' control over the food system. These movements have been mobilized under the name of food sovereignty and they attract peasants from around the globe under this emerging principle. The following section deals with the new concept and strategy of food sovereignty and its relevance for Earth jurisprudence.

6.2.2 Food Sovereignty

The alternative competing idea to food security emerged relatively recently in response to increasing problems faced by smallholder food producers, mainly in developing countries. The idea of food sovereignty was first raised by members of La Via Campesina⁷⁸ in 1996 to refer to a policy framework advocated by a number of farmers, peasants, pastoralists, fisher-folk, indigenous peoples, women, rural youth and environmental organizations, namely the claimed “right” of peoples to define their own food, agriculture, livestock and fisheries systems, in contrast to having food largely subject to international market forces.⁷⁹

The definitions given to the idea of food sovereignty have developed from time to time and the definition that was delivered by the Nyeleni Declaration of 2007 in Mali is selected for the discussion at hand:

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and

⁷⁸ La Via Campesina is a Spanish expression and means the peasants' way. It was founded in 1993 by farmers' organizations from different continents.

⁷⁹ ‘La Via Campesina: International Peasant Movement’ <http://www.viacampesina.org>, accessed on 29 Jan 2012.

corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers and users. Food sovereignty prioritizes local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal-fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations.”⁸⁰

The fact that the Declaration was made by the people who are producing most of the food for the world consumers makes it significant from the view point of its relevance for the producers and consumers of food.

The Nyeleni meeting formulated six pillar principles of food sovereignty which are derived from its definition. These are: (1) food for people; (2) valuing food providers; (3) localizing food systems; (4) control over land; (5) building on the traditional knowledge and skills; and (6) working with nature.⁸¹ The principles are derived from the Via Campesina definition of food sovereignty.

The first principle tells us about the primary purpose of producing food. That is, food must be produced for human consumption. The principle rejects the conception of a vulgar commoditization of food. For instance, food crops should not be treated as an ordinary commodity to be a component of an international agribusiness to be fuel for machines. Food production even for human consumption is one of the worst enemies of biodiversity. If machines are allowed to share food with humans, that will put additional pressure on the Earth's

⁸⁰ See 'Declaration of Nyéléni' http://www.world-governance.org/IMG/pdf_0072_Declaration_of_Nyeleni_-_ENG.pdf, accessed on 18 Feb 2012. The Declaration was named after a legendary Malian peasant woman, Nyeleni, who farmed and fed her people well as she embodied food sovereignty through hard work, innovation, and caring for her people.

⁸¹ See 'The 6 Food Sovereignty Principles', <http://www.nyeleni2007.org/spip.php?article334>, accessed on 02 Feb 2012. The phrases have been slightly modified to suit this work.

ecosystem. Such a pressure on the Earth's ecosystem may cause serious damage to the life support system in an irreversible manner.

The second principle is related to valuing the contributions made by the small-scale food producers and rejecting policies that threaten their livelihoods. Valuing such contributions opens the door for a consideration of local knowledge and skills in the food system which in turn leads to local control over the farming system.

Localizing food systems is the third principle. This principle is desirable, at least on three grounds. Firstly, when food is primarily produced for local consumption, it reduces the distance between the production site and the table, thereby reducing the carbon footprint which contributes to global warming.⁸² Secondly, depending on locally produced food items enhances agricultural biodiversity, unlike monoculture activity as encouraged by the international agribusiness. Thirdly, it focuses on the prioritization of food crop growing over cash crop growing, which is a key element in the debate on food security and food sovereignty.

The fourth principle constitutes the most decisive principle as it ensures the control over land by food producers. Control over land means a real control over livelihood for material, cultural, and spiritual purposes. Land is more than a mere property for these food producers. It is a symbol of their identity, their culture and spirituality. The knowledge the local people accumulated through long term practice cannot be separated from their relationship to the land and the whole of their ecosystem. This clearly signifies the dangers of the eviction of people from their lands where strong relations have been established.

The fifth principle relates to the building of knowledge and skills of the local food producers. Food sovereignty is largely based on the local knowledge and skills in the entire food system. This is a key point in the discussion of food sovereignty which favors local food production by using traditional ecological methods, which are based on local knowledge and skills. However, depending on local knowledge does not mean avoiding 'modern' or scientific methods and knowledge. Knowledge and skills of local food producers can be further developed through exchange of local experiences and appropriate scientific knowledge.

⁸² In the United States, for example, on average food travels 1,300 miles (2092 km) from production to processing to the dinner plates. (Schanbacher, *supra* note 43, p.75.)

The sixth principle is about working with nature. Food sovereignty uses the contributions of nature in diverse, low external input agro-ecological production and harvesting methods that maximize the contribution of ecosystems and improve resilience and adaptation, especially in the face of climate change; it seeks to heal the planet so that the planet may heal us. As Charles Perrings *et al* contend, the whole purpose of biodiversity is connected to enhancing the resilience of the ecosystem and the whole of the planet.⁸³

These principles of food sovereignty conform to the principles of Earth jurisprudence in that they are geared towards maintaining agricultural systems without seriously affecting the proper functioning of the Earth's systems. According to the principles of food sovereignty, agricultural systems should work with nature not replace it. Working with nature by enhancing its processes in a considerate manner is an acceptable practice within Earth jurisprudence as it does not significantly affect the interconnectedness in nature and it does not disrupt the wholeness of the Earth's systems. If humans do this in the agricultural systems, it would contribute its part in the protection of biodiversity.

Even if the concepts of food sovereignty and the methods suggested to implement it are beneficial to food producers and also to consumers, they are not welcomed by all. Arguments against food sovereignty come from various critics, not so much a direct attack against food sovereignty as such, but against the methods that are employed by food sovereignty advocates. For instance, food sovereignty encourages ecological agriculture that is based on conserving agricultural as well as general biodiversity through smaller application of chemical inputs. However, Dennis Greenland for example, argues against the idea that chemical fertilizers affect the land such that agricultural productivity is reduced in the long run. His evidence for this argument is that those lands which were cultivated for a long time by using chemical fertilizers are still in use by applying the said chemicals.⁸⁴ On the other hand, Robert D. Havener *et al* argue that “[n]ever in the history of the human race have so many people been so well off. Our

⁸³ See Charles Perrings *et al* (eds.) (1995) *Biodiversity Loss: Economic and Economic Issues*, (Foreword and Introduction), Cambridge University Press.

⁸⁴ Dennis J. Greenland, ‘World Food Security: Perspectives Past, Present, and Future’ in Rattan Lal *et al.*, (eds.) (2005), *Climate Change and Global Food Security*, Taylor & Francis Group, pp.29-30.

capacity for rapid and inexpensive transportation and communications is expanding dramatically and for much of the world's population, food has never been more abundant and more affordable.”⁸⁵ The US Secretary of Agriculture John Block stated that: “[t]he idea that developing countries should feed themselves is an anachronism from a bygone era. They could better ensure their food security by relying on U.S. agricultural products, which are available, in most cases at lower cost.”⁸⁶

On a different point, Bob Goldberg of the University of California argues in his article entitled: ‘The Hypocrisy of Organic Farmers’ that the assertions of environmental activist groups such as Greenpeace that organic food is healthier is not actually the issue of health or environment but rather it is one of the economy. He contends that grocery stores that sell organic food for higher prices are the main contributors of Greenpeace so any activism in favor of organic food is about market share and economics.⁸⁷ Goldberg continues his argument against the organic food movement by asserting that, because organic farmers use manure which can contain deadly strains of *E. coli* and salmonella, there is a higher chance of picking up a bacterial infection from organically grown crops. Moreover, organic agriculture cannot adequately feed the growing population of the world as there is insufficient land to grow food organically and also due to the lack of sufficient manure.⁸⁸

Despite these arguments, however, FAO Report indicates “organic farming fights hunger, tackles climate change, good for farmers, consumers and the environment.”⁸⁹ In its report entitled ‘Organic Agriculture and Food Security’ FAO explicitly states that “organic agriculture can address local and global food security challenges.”⁹⁰ The strongest benefits of organic agriculture are its reliance on fossil fuel independent, locally available resources that incur minimal agro-ecological stresses and are cost effective. FAO praised organic farming for it combines modern

⁸⁵ Robert D. Havener *et al*, ‘Changing Times and Directions’, in Rattan, *Ibid*, p.40. (It is difficult to imagine that these writers would say this if they made their writings in the aftermath of the 2008/9 food crisis.)

⁸⁶ ‘Roots of the Current World Food Crisis’ <http://thedeliberateagrarian.blogspot.com/2008/05/roots-of-current-world-food-crisis.html>, accessed on 07 February 2012

⁸⁷ Bob Goldberg, ‘The Hypocrisy of Organic Farmers’ <http://www.agbioworld.org/biotech-info/articles/biotech-art/hypocrisy.html>, accessed on 09 Feb 2012

⁸⁸ *Ibid*.

⁸⁹ Sam Burcher, ‘FAO Promotes Organic Agriculture’ <http://www.i-sis.org.uk/FAOPromotesOrganicAgriculture.php>, accessed on 14 Feb 2012

⁹⁰ *Ibid*.

science and indigenous knowledge and expressed its concern about the increasing use of chemical agricultural inputs and its inability to stop the dwindling grain productivity. The current FAO Report presents evidence that organic management systems have doubled yields in arid and degraded soils in Tigray, Ethiopia.⁹¹ In another study conducted in Tigray region between 2000 and 2006, there has been a steady decrease in the use of chemical fertilizer and a corresponding increase in the compost usage. Crop productivity has almost doubled during the time of the study.⁹² Another example comes from *teff* crop which demonstrated dramatic results with the introduction of new approaches.⁹³

By adopting the strategy of food security it may be possible to produce the amount of food that is sufficient for the people of the world for years to come. The arguments here are: (1) the fact that sufficient food is produced at global level does not mean that all people access this food; (2) it involves methods of production and distribution of food which are costly in terms of ecosystems and thereby leads humans to conflicting relations with nature. This makes the strategy unsustainable;⁹⁴ (3) it makes smallholder food producers more dependent on few and powerful corporations for seed and chemical inputs which have the effect of taking away the control of food and farming systems from real food producers to corporations; and (4) it causes material, physical, moral and spiritual damage to local people by depriving them of their lands and territories.

⁹¹ *Ibid.*

⁹² See Sue Edwards, *et al The Impact of Compost Use on Crop Yields in Tigray, Ethiopia, 2000-2006 inclusive*, Third World Network, Penang, www.twinside.org.sg/title/end/pdf/end10.pdf, accessed on 21 February 2012. See also, Sue Edwards, 'Greening Ethiopia for Self-Sufficiency' *Science in Society* Issue 23, autumn 2004, p.6.

⁹³ See Tareke Berhe & Zewdie Gebretsadik, 'Increasing Productivity of *Teff*: New Approaches with Dramatic Results' in Abenet Girma (ed.), *Teff: The Story of Ethiopia's Biodiversity*, Forum for Environment, Occasional Report No. 5, 2010, pp.39-45. Here the researchers claim that the national *teff* yield for the past three decades stabilized between 800-1000 kg/ha and total production increased during this time from cultivation of more and more areas. According to their new approach of spaced transplanting has increased *teff* productivity to 4142 kg/ha without application of fertilizers. In another study, Getachew Agegnehu *et al*, found that "mixed cropping of faba bean with *teff* increased land use efficiency and gave higher total yields compared to growing either species in sole culture." (Getachew Agegnehu *et al*, 'Crop Productivity and Land-Use Efficiency of a *Teff*/Faba Bean Mixed Cropping System in a Tropical Highland Environment', *Expl Agric* (2006), volume 42, p. 495.)

⁹⁴ Daniele Giovannucci *et al*, claim that "[f]or the first time at a global level, food production faces multiple limiting factors for key resources such as land, water, energy and inputs. We must use this challenge to stimulate creative innovation." (Daniele Giovannucci *et al*, (2012) *Food and Agriculture: The future of sustainability, A strategic input to the Sustainable Development in the 21st Century* (SD21) project, UN Department of Economic and Social Affairs, Division for Sustainable Development, p. iv.)

By applying the principles of food sovereignty it is possible to conduct agricultural activities that produce sufficient, healthy and ecologically sustainable food for all people.⁹⁵ The principles of food sovereignty can effectively be enforced by empowering the local people and by working with nature. These two points will be briefly discussed below.

A) Empowering the Local People

The empowerment of the local communities is possible by allowing the people to exercise their rights, mainly the rights of participation which are recognized by the constitution. In the Ethiopian case, the constitution recognizes the direct participation of the people as one of their sovereign rights. Empowering people through their direct participation does not negate representative democracy. Representative democracy can work fine, but it is not doing well in all circumstances. If we wish to deal with the root causes of poverty and the food crisis, then ordinary people must get involved.⁹⁶ That is, some issues may better be handled with direct democracy. Sometimes direct democracy may be needed to pass decisions on activities that are to be conducted in the areas of local communities which directly affect their lives, such as deciding on the type of the agricultural system they should adopt. The main issue here is restriction or even avoidance of the interventions by the MNCs from deciding on the lives of millions of people, usually conniving with those in the saddle against the interests of these food producers. As practices and studies show, people are not happy with the decision of the government in transferring their lands which include forest lands, wetlands, riversides and wildlife areas to investors for the purpose of large-scale agricultural activities.⁹⁷ Large-scale agriculture has less room to entertain the empowerment of the people at the local level.

⁹⁵ There are a number of studies that show increased productivity by adopting the principles of food sovereignty in the agricultural system. (For details, see 'Food Sovereignty: Reclaiming global food system' www.waronwant.org/overseas-work/17394-food-sovereignty-report, accessed on 21 April 2013)

⁹⁶ Marcin Gerwin, 'Introduction' in Gerwin, *supra* note 54, p.10.

⁹⁷ See for instance: (1) Felix Horne (2011), *Understanding Land Investment Deals in Africa, Country Report: Ethiopia*, Oakland Institute; (2) Anuradha Mittal (ed.) (2013), *Omo: Local Tribes Under Threat: A Field Report from the Omo Valley, Ethiopia*, Oakland Institute; (3) Wendy Liu *et al*, (2013), *Unheard Voices: The Human Rights Impact of Land Investments on Indigenous Communities in Gambella*, Oakland Institute; and (4) Human Rights Watch (2012), *"Waiting Here for Death" Forced Displacement and "Villagization" in Ethiopia's Gambella Region*, Human Rights Watch.

Empowering the people can be seen in more details on three heads, namely; control over the farming system, control over seed and control over land.

i) Control over the farming system

Food sovereignty is built on the idea of giving better opportunities for food producers to choose the types of food items they produce and also the right to consumers to choose the type of food they want to consume. The power of deciding the type of food items to produce at the same time is related with the type of the agricultural system that can be adopted at the local level. Ecologically sound and sustainable agricultural methods are the ones which are conducted by small-scale food producers which are suitable for using no or minimal industrially processed agricultural inputs and the local varieties of seeds (or agricultural biodiversity). A total reliance on industrially produced seeds and varieties of animals leads to genetic erosion. In contradistinction to the idea of food security, food sovereignty promotes the development of agricultural biodiversity, which sustains the majority of people in the developing world. By doing so it protects more, the right to choose the type of food people need to consume. This can immensely contribute for the enhancement of agricultural biodiversity.

The empowerment of the local people who directly engage in food production, through decision-making power, has the advantages of enabling people to decide on the type of the agricultural system, the type of food they want to feed on, to save money on chemical inputs, to satisfy consumers as they provide them with products that are primarily produced for the local market, with less harm to the environment. This empowerment directly and positively impacts on the control of loss of biodiversity. When people are empowered to decide on issues that they are most concerned about, they will take the responsibility to care for the land and the rest of the natural environment around them. This contributes a lot in controlling the loss of biodiversity. The contrary is also true. If people are denied of these powers and when others decide on such issues, they even tend to compete with others for the ‘resources’ and this will enhance the loss of already dwindling biodiversity.⁹⁸ The ones who produce food are the ones who are closer to much of the biodiversity and also they are more concerned to protect it. If they have access to

⁹⁸ See case study in Chapter 7 where the Sheka people have stated that they also compete with investors, by using the Amharic proverb: “While your father’s house is looted, you must also take part in the looting.”

land and if they decide how to produce and what to produce, they will have the courage and interest to protect biodiversity by assuming stewardship responsibility.⁹⁹

If the right to self-determination of the people is not exercised over the very basic need of the people, such as deciding the type of food to consume and the methods of its production, the existence of such rights in the constitution cannot serve any useful purpose. As Schanbacher contends, in a neoliberal capitalist structure, people who do not produce their own food (or a great part of it), are people who can be easily subjugated by pressure, extortion or domination imposed by the transnational empire and will end up losing their sovereignty.¹⁰⁰ The fact that, during the 2001 drought in Zambia, when the Zambian government refused the USA GMO food aid, the USAID spokesperson told the media that “[b]eggars can’t be choosers”, clearly tells of the importance of food sovereignty.¹⁰¹

The developmental mindset which prevails in Ethiopia may have the danger of weakening the control of people over the farming system in two ways. (1) It highly promotes export oriented agriculture even at smallholder farmer level, which could divert people from producing food crops to items like castor bean, tea, or flowers for export markets. (2) It also encourages large-scale commercial farming with the effect of pushing people to less fertile areas and deprive them from pursuing their livelihood activities.¹⁰²

⁹⁹ Local empowerment of the people on the agricultural system is not only relevant for third world countries. For instance, in March 2011 in the United States, residents of the small coastal town of Sedgwick, Maine, voted unanimously to adopt the Local Food and Self-Governance Ordinance in order to preserve small-scale farming and food processing. (See Gerwin, in Gerwin, *supra* note 54, pp.8-9 for details.)

¹⁰⁰ Schanbacher, *supra* note 43, p.59.

¹⁰¹ See Robert Vint, Force-Feeding the World: America’s ‘GM or Death’ ultimatum to Africa reveals the depravity of its GM marketing policy, http://www.saynotogmos.org/global_south2.htm, accessed on 24 Feb 2012.

¹⁰² For instance, due to allocation of vast tracts of land for commercial farming, the Anuak people of Gambella Regional State “were denied access to the Baro River for fishing activities—a crucial part of Anuak livelihoods and identity.” (Human Rights Watch (2012), *supra* note 97, pp.13-14.) As discussion with one of the officials of the Gambella Regional State reveals, there were instances of forceful eviction of people from their lands. (Personal communication with Mr. Muluberhan Seifu, Deputy Head of Justice and Security Bureau on 19 February 2012.) Mr. Seifu further stated that forceful eviction of people is not supported by the Ethiopian government but cadres sometimes evict people forcefully to be honored by their bosses. That is, the higher the number of people relocated by a certain cadre, the higher the cadre is credited.

ii) Control over seed

One aspect of the argument of the activists of ecological farming and a core point in the issue of food sovereignty, is maintaining the diversity of seeds. Vandana Shiva notes, “seeds are an exhaustless means of perpetuation of life and are renewable resources. Seeds are a gift of nature, past generations, and diverse cultures; the first link in the food chain, and the repository of life’s future evolution.”¹⁰³ However, the diversity of seeds is threatened by a number of factors, of which one is the wider application of HYVs. According to the FAO estimates, crop genetic resources are currently decreasing at a rate of 1–2 percent annually, “which is due in large part to the acceleration of intensive agriculture and the replacement of genetic diversity by fewer high-yield crops, all trends facilitated by current neoliberal and developmental policies for food security.”¹⁰⁴ Melaku Worede, a geneticist and seed scientist, observes that: “...landraces or farmers’ varieties are the saviors of the present day industrial agriculture as they are composed of diverse genetic materials which enable them resist various calamities.”¹⁰⁵ He compared these seeds to the ‘Ark of Noah’ and continued stating that “assisted by nature, farmers have given us all the present seed varieties. If we wish to replace them by new varieties unwisely, we must also be prepared to bear the consequences.”¹⁰⁶

There are now pressures from various fronts that farmers must use seeds which are produced by seed companies or other breeders for high crop production. In many instances, these industrial seeds are designed to perform under heavy utilization of chemical inputs, and/or are sometimes themselves with terminator genes.¹⁰⁷ That is why Shiva calls them “high responsive varieties” instead of HYVs.¹⁰⁸ This is a strange situation for many farmers of the developing countries. In

¹⁰³ Vandana Shiva, ‘Seeds of suicide and slavery versus seeds of life and freedom’ <http://www.aljazeera.com/indepth/opinion/2013/03/201332813553729250.html>, accessed on 02 February 2013. See also the accompanied video.

¹⁰⁴ Schanbacher, *supra* note 43, pp.58-59.

¹⁰⁵ The Ethiopian Reporter, Amharic version, 10 September 2010. Worede gave his views to the paper under the title of “Our bigger problem is – we do not appreciate our resources.” (Author’s translation)

¹⁰⁶ Worede does not reject technology altogether. He advises to apply technology very prudently and without losing what we have in our hands.

¹⁰⁷ Terminator genes are the ones that prevent germination of F2 generation if seeds from the harvest of the farmer are sown.

¹⁰⁸ Vandana Shiva, ‘The Green Revolution in the Punjab, *The Ecologist*, Vol. 21, No. 2, March-April 1991, <http://livingheritage.org/green-revolution.htm>, accessed on 07 March 2012. Although it is claimed that large-scale farming, which is suitable for monoculture, is high yielding its total output from the total acreage of land is by far lesser than small-scale ecological farming activities from diverse crops. (See for details on this issue, Vandana

Ethiopia, farmers save seeds for the next season, barter amongst themselves and select using traditional knowledge. They do not want to lose control over the seeds. If corporations are allowed to control the seeds, this means they also control the lives and livelihoods of billions of farmers in the global south.

In response to the corporate control over seeds, community seed banks are being established in Ethiopia in various parts of the country.¹⁰⁹ These seed banks are assisting farmers achieve farmer-selected seeds of different varieties. Although there are pressures from government organs to use HYVs, farmers do not need to cover the whole of their fields with these homogeneous varieties for fear of crop failure due to disease and/or drought.¹¹⁰ Farmers even try to reduce the risk of crop failure by allocating their fields to different varieties of the same crop.¹¹¹ The community seed banking system, in addition to its importance in providing options for smallholder farmers, also plays significant roles in giving farmers power of control over their seeds and in preserving farmers' varieties.

iii) Control over land

The control over land expounded by food sovereignty is related to the right of people to use and manage their lands, territories, waters, seeds, livestock and biodiversity. If communities have real control over their land, it means that they can exercise their sovereign powers more effectively. Constitutionally speaking, using and managing lands and territories in Ethiopia are mainly under the powers of the local communities who have the sovereign rights to decide how to use and manage lands and territories.¹¹² People are owners of lands and territories and they

Shiva, 'Organic Solutions to Hunger', *BIJA*, Volume 58, Summer 2011, pp.1-5. In this article Shiva argues that biodiversity and ecologically intensive food production systems are solutions for hunger than chemical and capital intensive large-scale commercial farming system.) Large-scale commercial farming is designed for profit than maintaining the livelihoods of people, biodiversity and the country's economy. These all can be maintained in a balanced way if we apply the principles of Earth jurisprudence to our farming systems. It is argued in this work that small-scale agro-ecological farming systems are more suitable to comply with the principles of Earth jurisprudence and food sovereignty.

¹⁰⁹ See <http://www.newbusinessethiopia.com/>; Dawit Alemu 'Farmer-Based Seed Multiplication in the Ethiopian Seed System: Approaches, Priorities and Performance' Future Agricultures Working Paper of December 2011, www.future-agricultures.org, accessed on 02 May 2013.

¹¹⁰ See *ibid* and Mulualem Demise (2012), *The Conformity of Ethiopian Seed Policies and Laws to the African Model Law and their Implications on Farmers' Rights: The Case of North Gondar*, Master's Thesis, ECSU.

¹¹¹ For instance, in Telecho, an area of small farming community with 546 households farmers plant at least four farmers' varieties of wheat. (See <http://www.newbusinessethiopia.com/>, accessed on 02 May 2013)

¹¹² See discussion in §6.1, above.

have the right to ecological self-determination on such lands and territories. It should be noted however that even if these rights and powers of the people are recognized in the Ethiopian constitution, the people do not enjoy these rights in reality.

The Ethiopian constitution provides for the ownership of land by the people and the state. However, land is fully under the control of the government in practice.¹¹³ Irrespective of this constitutional provision on people's and government joint ownership of land, the Rural Land Administration and Land Use Proclamation No. 456/2005 in its Article 5(3) states that: "Government being the owner of rural land, communal rural landholdings can be changed to private holdings as may be necessary." This statement is repeated verbatim in the land laws of the regional states. According to the FDRE Constitution, Article 40(6), government is empowered to administer land. It reads as: "Without prejudice to the right of Ethiopian Nations, Nationalities, and Peoples to the ownership of land, government shall ensure the right of private investors to the use of land on the basis of payment arrangements established by law. Particulars shall be determined by law." The federal and regional land laws can be taken as the laws that have determined the particulars. It is important to note that the land laws which have been enacted to implement the FDRE Constitution have given total ownership of land to the state by ignoring the joint ownership of land between the state and people. They seem to have forgotten the role of the government that is ruled by the Constitution in its Article 89(5) which states that: "Government has the duty to hold, on behalf of the People, land and other natural resources and to deploy them for their common benefit and development." Here the argument is that—this is unconstitutional and should be corrected to align with the provisions of the constitution. When laws made by the House of People's Representatives appear to be inconsistent with the constitution, it is the House of the Federation (the Upper House) that is empowered to nullify such a law. The HF can see the case only when a case is brought before its attention. No case has been brought to the HF till now in this regard. This can be taken as a window of opportunity for grassroots movements such as the Sheka Clan Leaders' Association and local environmental NGOs to institute a case before the HF. This can be an entry point for further actions to ignite broad-based social movements.

¹¹³ For the contents of the constitution on the land rights of people see *supra* note 19.

The constitutional provision of ownership of land by the people and the state is interpreted and expressed by lower laws only in favor of the government and the constitutional idea of joint ownership of land in Ethiopia has become a forgotten agenda. It is now a commonplace practice in Ethiopia to evict people off their lands without fulfilling the legal requirements.¹¹⁴ This situation, which is aggravated by the global food crisis since 2008, has implications on the livelihoods of people, besides its negative impacts on the biodiversity of the country.¹¹⁵

Empowering people to ensure their control over the farming system, seed and land are not easy to achieve and require strong struggles, especially at the grassroots level. There are many examples of such movements in various countries of the South in opposition to the industrial model of agriculture and in pursuance of agrarian reform.¹¹⁶ As discussed in Chapter 7, there are signs of such movements, also in Ethiopia though they are in their infant stage.¹¹⁷ The principles of food sovereignty contribute to the empowerment of people to effectively practice the tenets of Earth jurisprudence.

B) Working with nature

Working with nature represents a central principle of Earth jurisprudence. The whole essence of Earth jurisprudence may be reduced to the idea of working with nature instead of replacing its

¹¹⁴ Even the issuance of title deeds to peasant farmers has not stopped the Ethiopian government from evicting people for commercial farming. Olivier De Schutter, the UN Special Rapporteur on the Right to Food expressed his concerns that, although titling of land has advantages in ensuring land tenure security, it may not be the most appropriate means to achieve this protection for the local people. He instead suggested that states should encourage communal ownership systems and strengthen customary land tenure systems. (See ‘Summary of the Report of the Special Rapporteur on the Right to Food’ <http://www2.ohchr.org/english/issues/food/annual.htm>, accessed on 28 December 2010.)

¹¹⁵ See subsection D) *supra* for more details on this point.

¹¹⁶ See for instance, Ivette Perfecto *et al* (2009), *Nature’s Matrix: Linking Agriculture, Conservation and Food Sovereignty*, EARTHSCAN, pp.127-134.

¹¹⁷ In Sheka, clan leaders are organized and formed a ‘Clan Leader’s Association’ with the view to regaining their powers on land and their traditional ecological governance over the ecosystem. (See Chapter 7 for details.) The roles played by organizations like NGOs and professional associations in assisting such grassroots movements are immense. However, in Ethiopia, since recently, situations have become increasingly difficult for NGOs and other organizations in playing this important role. The main sources of the problem are the recently enacted laws for the purpose of registration and regulation of charities and societies in Ethiopia. (These are Charities and Societies Proclamation No. 621/2009, Charities and Societies Council of Ministers Regulation No. 168/2009 and a number of guidelines to implement these laws.) For details of pressures that are exerted on NGOs and other organizations, see _____ (2012) *Stifling Human Rights Work: The Impact of Civil Society Legislation in Ethiopia*, Amnesty International and ‘Sounding the Horn: Ethiopia’s Civil Society Law Threatens Human Rights Defenders’, Report of Center for International Human Rights Northwestern University School of Law, November 2009.

functions. Working with nature entails making human thinking and actions compatible with Earth's systems. In food sovereignty strategy, most of the activities of agriculture are allowed to be done by nature. Humans simply undertake adjustments to complement what is not done by nature or augment natural processes. It can be argued that the reverse is true in the food security strategy where humans seek to replace those functions which should have been done by nature. That is, food security strategy involves activities that negate natural processes. The following examples illustrate this argument.

1. Nature always opts for diversity not uniformity. A food sovereignty strategy opts for diversity, unlike food security strategy which is based on genetic uniformity. Smallholder farmers are best suited to practice food sovereignty strategy since their way of farming and breeding encourages crop and animal diversity. The time-tested varieties they use are in tandem with the genetic evolution of seeds. In the food sovereignty strategy not only agricultural biodiversity maintained but also its impact on the general biodiversity is minimized when compared to the industrial mode of agriculture.
2. Food sovereignty goes for the application of less external input in the farming system and that will reduce cost and pollution. Less input means much of the agricultural activities are assisted by natural processes. In the food security strategy external inputs are highly encouraged with seeds even engineered to respond to these inputs.¹¹⁸
3. The adoption of agroecology in farming systems is now a growing concern worldwide.¹¹⁹ From this report, submitted to the UNGA by the Special Rapporteur on the right to food, Olivier De Schutter, it is evident that agroecology approach is nearer to

¹¹⁸ See Shiva's argument at §6.4.2 (ii) *supra*.

¹¹⁹ In his report of December 2010, the Special Rapporteur on the Right to Food, Oliver De Schutter stated that: "Agroecology is both a science and a set of practices. It was created by the convergence of two scientific disciplines: agronomy and ecology. As a science, agroecology is the application of ecological science to the study, design and management of sustainable agroecosystems. As a set of agricultural practices, agroecology seeks ways to enhance agricultural systems by mimicking natural processes, thus creating beneficial biological interactions and synergies among the components of the agroecosystem. It provides the most favorable soil conditions for plant growth, particularly by managing organic matter and by raising soil biotic activity. The core principles of agroecology include recycling nutrients and energy on the farm, rather than introducing external inputs; integrating crops and livestock; diversifying species and genetic resources in agroecosystems over time and space; and focusing on interactions and productivity across the agricultural system, rather than focusing on individual species. Agroecology is highly knowledge-intensive, based on techniques that are not delivered top-down but developed on the basis of farmers' knowledge and experimentation." (See Report submitted by the Special Rapporteur on the Right to Food, Olivier De Schutter, UN document A/HRC/16/49, §III.12).

natural processes and hence it is an example of agriculture devised to enhance working with nature.

It is the contention of this author that the idea of food sovereignty be favored over food security as the former contributes to the protection of biodiversity and better suits local livelihood in developing countries such as Ethiopia. Food sovereignty advocates for decentralized food production and consumption systems, which can well fit into the livelihood of the local people. It gives less room for corporate maneuvers and restricts the possibilities for the alliance between foreign companies and corrupt leaders of developing countries to thrive.¹²⁰

Food sovereignty strategy which advocates for working with nature allows people to live a life of dignity as they rely mainly on natural processes rather than depending on industrially manufactured inputs. The evidence shows that people who live a life of dignity show greater concern for biodiversity. That is, unless their dignity is ensured, humans will not have the moral readiness to act against loss of biodiversity. Such life of dignity is enhanced within stable communities living in harmony with their ecosystems. Such communities, as Shiva argues, always protect biodiversity.¹²¹ Based on the close connection between nature and humans, this work argues that the food sovereignty strategy is more ecocentric and obeys the principles of Earth jurisprudence as compared to the food security strategy.

Conclusion

In Chapter 5 it has been stated that the emerging philosophy of Earth jurisprudence facilitates the bridging of the gap between the natural processes of the Earth's systems and the human thinking and actions by suggesting paradigm shifts in two selected areas. The paradigm shifts suggested in this chapter are oriented towards practical aspects of protection of biodiversity. They are formulated to demonstrate the conversion of the principles of Earth jurisprudence into practical

¹²⁰ The late Prime Minister Meles Zenawi at the World Economic Forum that was held in Addis Ababa from 9 to 11 May 2012 blamed greedy foreign corporations for corrupting Africa's leaders. For details see, report by Peter Heinlein, 'Ethiopia's Meles Blames African Corruption on Foreign Investors' <http://www.voanews.com/content/ethiopia-meles-blames-african-corruption-on-foreign-investors/566069.html>, accessed on 21 June 2012. Moreover, Peter Eigen, chairman and founder of Transparency International told the Deutsche Welle radio (21 May 2012 broadcasting) that European multinational companies are corrupting dictatorial African leaders and hence they are destroying the livelihoods of African poor.

¹²¹ Vandana Shiva (1993), *Monocultures of the Mind: Perspectives of Biodiversity and Biotechnology*, Zed Books, p.73.

legal and policy rules. Two paradigm shifts which are believed to contribute to the protection of biodiversity are suggested in this chapter. The first shift suggested is a shift from the notion of exclusive state sovereignty to a state-people joint sovereignty. This shift is suggested as it gives necessary power to local communities who are the actual defenders of biodiversity. It is based on the premise that empowered communities are more considerate to their environment than communities who are deprived of their customary ways of survival. Sharing sovereign powers with the state allows people to exercise their self-determination rights to govern their ecosystem in accordance with their TEG.

The second shift in paradigm suggested is the shift from the idea of food security to food sovereignty. This can be effectively practiced if people are able to decide freely on the fate of their ecosystem and their livelihood through their sovereign capacity. These shifts in paradigm can also serve as a gateway for the operation of the philosophy of Earth jurisprudence to influence human legal regime to reflect and respect the biophysical laws of nature so that human activities do not adversely affect the essential processes of the planet Earth. That is, Earth jurisprudence suggests that the human law and governance systems embrace the reality that human beings are only a subsystem of the larger Earth's system and fit into this larger system.

The next chapter is devoted to a case study which is intended to closely parallel an ecological way of living by one of the local communities in Ethiopia, the Shekacho people. It explores how far the customary practices of the Shekacho align with the principles of Earth jurisprudence. Moreover, it examines the extent of exercise of the TEG of the people in light of the sovereign rights of the people suggested in this chapter.

CHAPTER 7

CASE STUDY

Introduction

In the previous chapters it has been demonstrated that loss of biodiversity is aggravating from time to time with increasing intensity. The way humans understand nature and the way we govern our relationship with nature is considered, in the chapters, as a major factor that contributes to the continued annihilation of biodiversity. It has also been seen that the existing human understanding of nature and the consequent human relationship with nature in turn is the result of anthropocentrism. It has been highlighted that anthropocentric worldviews were conceived in the philosophies of earlier thinkers, but further developed through religious teachings, the Scientific Revolution and ‘modern’ knowledge. It has also been observed that anthropocentric views influenced policies and laws which are intended to protect the natural environment. As a result of these, many of the policy and legal instruments legitimized plundering of nature under the guise of ‘development’. To bring about harmony between humans and the rest of nonhuman nature and to reverse loss of biodiversity, it is suggested that a paradigm shift in the human governance system. Thus it is proposed that anthropocentric worldviews be replaced by ecocentric worldviews through an emerging thought, Earth jurisprudence.

The present chapter is intended to demonstrate the practice of principles of Earth jurisprudence in one of the local communities in Ethiopia. It is devoted to a case study with the following purposes: (1) The strongest evidence of Earth jurisprudence in practice is found in the traditional way of living of indigenous/local communities. Thomas Berry explains that one of the sources of inspiration for Earth jurisprudence is the wisdom of indigenous peoples.¹ One of the places where such practices may exist in Ethiopia is in the Sheka zone in the Southwest of the country. The case study, in this regard, intends to confirm whether the said practices are present and also to evaluate the strength of such traditional practices in protection of biodiversity in the study area

¹ The Gaia Foundation, Earth Jurisprudence with Thomas Berry, audio recording.

through the application of the principles of Earth jurisprudence. (2) To assess the rights of local communities on the governance of their ecosystem and the extent of their decision making powers in practicing their TEG for the purpose of controlling loss of biodiversity. (3) To highlight the challenges that the traditional practices face confronted with the prevailing international and national pressures. (4) To identify the threats to biodiversity in the study area.

7.1 A Note on Methodology and its Problems

It was in 2005 that this author visited Sheka and other zones of Southwestern Ethiopia with a friend, under an assignment from MELCA-Ethiopia,² a local NGO, to write a multidisciplinary book on the forests of Sheka. Since then the author has traveled to Sheka three times for purposes not directly related with the case study in this chapter. All four trips were important in paving the way for the case study of this work especially in that they helped in developing confidence and trust with the key informants. It was these visits which made Sheka the most relevant candidate for the fieldwork of this study. The trust and confidence developed further with the key informants when the author made a pre-fieldwork visit in July-August 2009. It was during this time that the author made the proposal to various key informants that he was going to conduct an in-depth study on ethical and legal issues of biodiversity in Sheka zone.

The 2010 visit, which was the main visit for this work, was planned to be completed in three weeks. While dealing with the key informants for semi-structured interviews and for the opinions given during the focused group discussion, full compliance with ethical consideration for the qualitative research has been made. The author understands his responsibilities for the safety of his informants; their demand to remain anonymous for the fear that the information they provided for the research may put them at risk is respected. Moreover, informants, particularly clan leaders, were informed not to reveal any confidential community knowledge unless they were willing it to be documented in the research work.

² MELCA-Ethiopia was formerly known as MELCA Mahiber. MELCA-Ethiopia works on bio-cultural diversity conservation for healthy ecosystem and sustainable life. It also works for vibrant cultures and improved lives of communities in Ethiopia through developing and spreading innovative methods. (Vision and mission statements of MELCA-Ethiopia, <http://www.melca-ethiopia.org/>, accessed on 23 September 2011)

During the field visit of 3 weeks, unstructured and semi-structured interviews with key informants and focused group discussions with various groups of people were conducted. Moreover, observations were made by visiting selected sites. Focused group discussions were conducted on two levels. Firstly, separate focused group discussions with five different groups, namely: the justice administration organs (judges, prosecutors and the police); the executive organs (various government department offices); women's groups (these included representatives of women's associations and gender departments of various government offices); clan leaders; and the Menja³ group. Upon suggestion by some participants from all groups, with the exception of the Menja group,⁴ another round of a joint discussion forum took place by selecting some people from each group. The selection was made on a voluntary basis. Moreover, a few people were identified for their significant contribution in the discussion. The latter group discussion was important to particularly interrogate the roles and responsibilities of various government departments in fighting the loss of biodiversity in Sheka.

Opinions of participants during the focus group discussion were recorded and transcribed. However, participants refused to be recorded during the joint discussion for personal security reasons. In that session, only written notes were taken. As some of the participants, especially the clan leaders, do not understand the national language, Amharic, translators were employed to facilitate the discussions in both sessions.

In addition to the focused group discussion, unstructured and semi-structured interviews were conducted with key informants selected from all groups. The selection was made on the basis of the informants' proximity to the issue in question. The selection was facilitated by two colleagues,⁵ who better understand the author's points and who also speak the Shekacho language. Efforts were made to find documents (court cases and administrative decisions) from courts and government offices. However, obtaining written documents proved very difficult. Data was not kept in any of the offices systematically or the officers were not willing to provide the documents. For instance, even when the president of the high court ordered the record keepers to provide the author with access to the files requested, the record keepers were unable

³ The Menja are the social outcast in Sheka and they can be compared with untouchables in India.

⁴ The Shekacho people are still not comfortable to come together with the Menja group for meeting or for any social engagements.

⁵ Miss Keria Yassin and Mr. Adugna Adasho.

to find many of the requested files. Similarly, it was difficult to interview government officials, especially those at the top of zonal or *woreda* levels. In his three weeks stay the author was unable to set up an interview with the zone administrator. Even when the author was able to reach the *woreda* administrator, he was unable to meet with the author due to his busy and unpredictable schedule. Despite these difficulties, the case study provides useful insights into the problems, prospects and struggles for livelihoods of the Shekacho people, the alignment of their TEG with the principles of Earth jurisprudence, and biodiversity protection in Sheka.

7.2 Sheka Traditional Ecological Governance

In many communities in the African continent, forests are communally governed by a mixture of tenure systems involving individuals, family, subgroups and larger group, all with their own various rights and duties attached variously to the members of these communities.⁶ In many African countries, traditional ways of biodiversity/ecosystem conservation are common and communities demonstrate highly responsible traditional conservation practices.⁷ According to various scholars who have studied African cosmology, the traditional African ecological knowledge system is dynamic and innovative; for it stems from prolonged and profound experience.⁸ The traditional practices in the Sheka area are no different as African traditional societies share many commonalities in their cosmologies.

The Shekacho⁹ have developed traditional ways of living harmoniously with the natural environment through their customary practices. This way of living has developed by means of their social organization, traditional laws and the governance systems which have been passed on from generations before them. The Shekacho are organized along clan lines and each clan has its own clan leader.¹⁰ The clan leaders, who are called *gepitato* in Shekacho language, are both

⁶ Dereje Taddese and Taddese Woldemariam, 'Customary Forest Tenure in Southwest Ethiopia', *Forests, Trees and Livelihoods*, 2007, Vol. 17, p.325.

⁷ See Thierry Joffroy, 'Introduction' in Thierry Joffroy (ed.) (2005), *Traditional Conservation Practices in Africa*, ICCROM CONSERVATION STUDIES 2, pp.1-5.

⁸ For details, see Workineh Kelbessa (2011), *Indigenous and Modern Environmental Ethics: A Study of the Indigenous Oromo Environmental Ethic and Modern Issues of Environment and Development*, Ethiopian Philosophical Studies Vol. 1, pp.24-26.

⁹ The Sheka people are called Shekacho.

¹⁰ Each clan has a specifically demarcated territory.

administrative as well as spiritual leaders of their respective clans.¹¹ That is, the traditional ecological governance is led and implemented by clan leaders by applying the traditional laws.

Traditional laws in Sheka include the taboo systems, sanctions and curses imposed by the clan leaders and sometimes by other elders. Regarding the taboo, there is a widespread belief in Sheka that if someone does anything which is not allowed by the community culture, e.g. cutting down trees without getting permission from a clan leader for good cause, such as building a house and/or making tools for domestic use, they would suffer disease or loss of harvest.¹² The Shekacho traditional laws which are enforced by clan leaders are among the central tools for the protection of biodiversity. Abiding by these customary laws, the Shekacho demonstrated their respect and care for nature in their daily lives. The taboo, sanction and curse systems are among the Sheka traditional practices that have enabled them to develop a way of living which aligns with the principles of Earth jurisprudence. Moreover, these customary practices do not put humans at the center of nature for the purpose of dominating or destroying nature, as compared to the dominant anthropocentric worldview. The Shekacho respect nature/Earth as the center of their lives and the source of their laws, culture and livelihoods.

The Shekacho classify their ecosystem into different types of governance zones, within which the rules, governance knowledge and practices are passed and taught to the new generations.¹³ From discussions and interviews, it was revealed that such trainings start at an early age so that every member of the community takes responsibility to protect forests and forest biodiversity. As it is affirmed by Woldemariam and Fetene, the forests of Sheka are divided into two types: cultural forests and *kobo* forests.¹⁴ Cultural forests are found around villages and on hilly or mountainous areas while *kobo* forestlands are found relatively far from settlement areas. The governance for both types of forests is different. Cultural forests are predominantly governed by

¹¹ This fact was repeatedly mentioned during the focus group discussions and interviews. See also Taddese Woldemariam and Masresha Fetene, 'Forests of Sheka: Ecological, Social, Legal and Economic Dimensions of Recent Land-use/Land-cover Change – Overview and Synthesis', in Masresha Fetene (ed.) (2007), *Forests of Sheka: Multidisciplinary Case Studies on Impacts of Land-use/Land-cover Changes, Southwest Ethiopia*, MELCA Mahiber, p.12.

¹² This was mentioned in all of the discussion sessions, including those with the government authorities.

¹³ Million Belay, 'The Political Ecology of the Sheka Forest and the Shekacho Community: Ethiopia', in Hanna Matinpuro & Sirpa Rovaniemi (eds.) (2006), *Ecological Democracy: Rights of the Local Communities to Land, Forests and Water*, SI EMEN PUU Discussion papers, p.29.

¹⁴ Woldemariam and Fetene, *supra* note 11, p.12. *Kobo* is a land based or (especially now a tree based) inheritable individual possession of the forests for the purpose of hanging beehives and harvesting NTFP.

taboo systems.¹⁵ In addition to cultural forests, wetlands, riverine forests and waterfalls are also protected by taboo systems. In the cultural forests we find *gudo*¹⁶ and *dedo*¹⁷ forests both of which are protected by taboo systems.

Zewdie Jotte observes that *gudos* are specifically situated in areas that are relatively elevated, around big stones and trees in the middle of cultural forests and cutting is not permitted in these forests. He further indicates that people do not even point at *gudos* by way of respect for the spirit that dwells in the area and to avoid getting inflicted by evils associated with violating the *gudo* rules.¹⁸

Other types of forests, which constitute the largest part of the Sheka forest, are the *kobo* forests. According to the informants, all the Sheka forests outside the culturally respected areas of *gudos* and *dedos* are partitioned among the adult male members of a clan that occupy a particular territory. The governance of the *kobo* forests is conducted by a clan leader. The *kobo* holder has a number of rights and obligations and these are under the supervision of the respective clan leader.¹⁹

The holder of *kobo* forest, who received it by allocation or inheritance, is obliged to manage the *kobo* through traditionally accepted conservation methods. As a result of this, the *kobo* holders see themselves as custodians of the forest and the land. The *kobo* holder has an exclusive right to hang beehives and take NTFP from his forests. Culturally, trespassing into the *kobo* of other people is not allowed, unless the *kobo* holder allows someone to do so. *Kobo* holders can extract timber for good reason only after informing the clan leader and obtaining the latter's

¹⁵ *Ibid.*

¹⁶ According to informants, *gudo* forests can be explained as typical sacred sites. *Gudo* may not necessarily be related with forests or trees alone. It could be a big stone situated in the forests or even sometimes outside forests. If a *gudo* is related with a big stone, the stone and its surrounding areas are considered to be shrines where spirits of the forests rest and hence a sacred and worshipping site. The word *gudo* is interchangeably used to mean both a worshipping place at the center of a cultural forest and the whole of a cultural forest. (See also Jotte, *infra* note 18, p.109.)

¹⁷ *Dedo* could be a big tree. Only particular sacred species of trees are considered to be *dedo*. *Dedo* trees are highly respected in the Shekacho culture.

¹⁸ Zewdie Jotte, 'The Impact of Cultural Changes on the People of Sheka and their Traditional Resource Management Practices: The Case of Four Kebeles in Masha Woreda' in Fetene, *supra* note 11, pp.108-109.

¹⁹ The *kobo* holder is an individual. However, the holder is obliged to respect all the customary rules and hence under the control of a clan leader.

permission.²⁰ It is the responsibility of the clan leaders to enforce these customary rules of forest governance. Clan leaders discipline *kobo* holders who abuse their customary rights through culturally unacceptable activities, such as timber extraction. The clan leader has the authority to impose different penalties if the *kobo* holder abuses his rights.²¹

As it has been revealed from group discussions and individual interviews, the *kobo* landholding system in Sheka has contributed to plant biodiversity in the zone.²² The reasons why the *kobo* landholding system has contributed to plant biodiversity in Sheka may be summarized as follows:

- (1) The *kobo* forest blocks constitute the largest part of the Sheka forests. They form the whole of the Sheka forests minus the *gudo* and *dedo* areas.
- (2) The *kobo* forest blocks are under the exclusive holding of individuals; these individuals vigilantly protect such forest blocks from trespassers. Only the *kobo* holders have the right to use the forest blocks, with the exclusion of all others, except in the case of permission by the *kobo* holder.
- (3) The *kobo* forests are under supervision of the clan leaders for ensuring only culturally accepted forest utilizations are employed. The *kobo* holder has only the rights to use NTFP and to hunt within his forest block. If he abuses the traditionally accepted rules of utilization, others can inform the concerned clan leader. This is the sign of existence of collective responsibility for the forest. Any abuse of customary rules of forest governance may lead to penalties.
- (4) More importantly, it is because of the deep reverence for the clan leaders, the taboo and curse systems and the associated social ostracism and penalties that

²⁰ A good reason could be construction of house, making household furniture or making farming tools.

²¹ It has been indicated by almost all informants and participants of the focus group discussions that the penalties vary depending on the gravity of the offence. It ranges from advice by *gepitato* to social ostracism. In the majority of the cases, offenders are obliged to pay a black ox, a goat, a sheep or other payments in kind. The ox or the goat shall be killed in the forest for cleansing the offender through cultural rituals. If someone has committed a culturally prohibited offence without being seen by anyone else, the *gepitato* uses swearing or cursing mechanisms to expose the offender. Because people fear encountering some evil due to a curse of the *gopitato*, offenders usually reveal themselves in front of the crowd.

²² The reasons why plant biodiversity is emphasized will be explained in §3.3.8 below.

follow any violation of the rules that the *kobo* forests are being protected in the Sheka zone. The taboo system has also contributed to the protection of the *gudo*, *dedo* and all other sacred sites in Sheka.

The day-to-day life of the Shekacho people which abide by these strict traditional rules can be regarded as a manifestation of their deep understanding of the intrinsic value of biodiversity. A deep understanding of the intrinsic value of biodiversity is shared among indigenous/local peoples around the world.²³ It can be argued here that the individual and group responsibility owed by the Shekacho towards nature is the result of this understanding of intrinsic value of nature.²⁴ Earth jurisprudence requires humans to be considerate towards nonhuman nature by assuming nonreciprocal responsibility. The Shekacho seem to fulfill this responsibility, at least, partially by extending their stewardship responsibility to controlling the loss of plant biodiversity.

The TEG which is practiced by the people on a daily basis is a result of locally developed wisdom. This wisdom supports/strengthens the autonomy of the people in governing their ecosystem according to their TEG which can be interpreted to include the rights of self-determination recognized in the Ethiopian Constitution. Recognition of this broader right would enable communities to practice their autonomy in protecting their ecosystems.²⁵ Recognition of the right to ecological self-determination of the local people would in turn enable them to lead a life of autonomy and dignity. This autonomy is a key element in the exercise of their sovereignty, which ensures the continuation of their livelihoods and protection of biodiversity.

²³ In this regard, Chapeskie underlines the awareness of the intrinsic value of biodiversity by the Ojibway people in the US and how this awareness is inextricably linked to their lives. (See Andrew J. Chapeskie, 'Culture, Landscape and Diversity' in Darrel Posey (ed.) (1999), *Cultural and Spiritual Values of Biodiversity*, UNEP, p.77. Moreover, Maffi asserts that traditional people around the world conceptualize the connection between humans and nature as intrinsic. (See Luisa Maffi, 'Linguistic Diversity' in *ibid.* p.35.)

²⁴ This work does not claim that the Shekacho would intrinsically value all nature. For additional information, see §3.3.8 below.

²⁵ See FDRE Constitution Article 39(1). Here it can be argued that the right to self-determination up to secession is a bundle of rights that includes ecological self-determination such as the Sheka TEG. See discussion in Chapter 7.

According to the Shekacho, they have never experienced famine or shortage of food in their history.²⁶ However, the clan leaders now fear that they may be subjected to these disasters with the loss of the forests; as such loss would deprive them of everything in life.²⁷ From this it can be seen how the food security strategy discussed in the previous chapter is detrimental to the Shekacho lifestyle. Although the Shekacho are food self-sufficient, the food security strategy aims to make them out-growers of tea plants for cash. When the government gives priority to export oriented agricultural activity even at a household level, the forests would give way to cash crops, such as tea plantation activities. This means that forests will be replaced by tea plantation and peasants will be either rural ‘proletariats’ or out-growers of cash crops. This basically transforms their way of life from depending on their own natural wealth to a dependence on a cash income obtained from sale of the cash crop or from the wages they earn. By doing so, the food security strategy pushes them into the international food market which allows the corporate takeover of the food and agricultural systems. As indicated in the previous chapter, in this way the food security strategy is damaging to the livelihoods of the local people and contributes to the loss of biodiversity.

The food security strategy, which is geared towards fulfilling the developmental mindset, affects food self-sufficiency or food sovereignty of the Shekacho by destroying the traditionally adapted food sources of the people. These communities obtain food from wild fruits, honey, hunting activities and spices which are collected from forests. These food sources are crucial in supplementing food gained from agricultural activities.²⁸ The food security strategy, an aspect of developmental mindset, on top of destroying forests, it converts the agricultural fields from diversity to uniformity in two ways. First, it replaces the heterogeneous farmers’ varieties with homogeneous HYVs. Second, it pushes farmers to grow cash crops in their food growing plots in lieu of food crops. The cash crops are usually of a single and exotic species. It is with the intent to maintain diversity in the agricultural systems and diversity in the wild that the food

²⁶ This was stated during the discussion session with the clan leaders. They thanked their forests for protecting them from famine, shortage of food and malnutrition. They explained that the forests provide them with food, in addition to honey, spices, firewood, construction materials and vines.

²⁷ Mr. Dakito Atestata, Chairperson of the Clan Leaders’ Association, stated that they hear there are places in Ethiopia that live on food aid from donors. He further asked that if a certain community depends on food aid, how can it retain its dignity.

²⁸ See Zareen Bharucha and Jules Pretty, ‘The roles and values of wild foods in agricultural systems’, *Phil. Trans. R. Soc. B* (2010) 365, 2913–2926.

sovereignty strategy is recommended in Chapter 6 by representing one of the principles of Earth jurisprudence, the principle of diversity.

From the ongoing discussions it can be observed that the principles of Earth jurisprudence are being practiced in the context of Sheka communities through their TEG.²⁹ The existence of the taboo systems and sacred sites such as *gudo* and *dedo* areas show the practice of the principles of Earth jurisprudence in the daily life of the people. The taboo systems and the accompanied sanctions and curses restrain people from overexploiting and misusing biodiversity. In the Sheka TEG, utilization of biodiversity involves respect for nature, not with the consideration of biodiversity as a mere 'resource'. This perception is the result of conferring intrinsic value on biodiversity by the Sheka TEG. The roles of clan leaders in ensuring such kind of relationship with the natural world and willingness of members of the Sheka community individually and collectively demonstrates the stewardship responsibility that is innate in the Shekacho TEG.

The *kobo* holdings also contain elements of the principles of Earth jurisprudence in practice. The fact that *kobo* holders are under a strict supervision of the clan leaders and the existence of reporting mechanism by any individual, if *kobo* holders abuse their holding rights, exhibits the stewardship responsibility towards nature shared among members of the Sheka community.

The above practices which are part of the TEG systems of the Shekacho also demonstrate the other two principles of Earth jurisprudence, the principle of ecological governance and the principle of diversity. TEG is all about translating the key principle of Earth jurisprudence, the principle of ecological governance, into reality. Practices under the Sheka TEG systems are geared towards respect for nature, put intrinsic value on nature and are accompanied by individual and community level stewardship responsibility. These features of the Sheka TEG systems ensure diversity in the ecosystem.³⁰

Despite their contribution to the protection of the Sheka forest, the plant biodiversity in the forests and their importance in maintaining the people's livelihoods, the Shekacho TEG systems now face challenges from various directions. Some of the challenges are powerful enough to

²⁹ The realization of the principles of Earth jurisprudence into practice may follow different approaches in different communities.

³⁰ It is important to note that the Sheka TEG has weaknesses in maintain the diversity of animals which feed on their crops and domestic animals. See §3.3.8 for details.

totally dismantle these traditional systems and hence pose a threat to Sheka forests, the biodiversity they house and the livelihoods of the people. The following section considers these challenges.

7.3 Challenges to Traditional Ecological Governance

Presently the Sheka TEG is facing challenges from different fronts and its continuation, and contribution to the protection of plant biodiversity is weakening in many parts of the zone. Various reasons have been suggested by writers, interviewees and participants of focus group discussions. These include: change in lifestyle; expansion of new religions in the area; the arrival of large-scale industrial farming activities; illegal logging; resettlement activities; and expansion of coffee plantations.

7.3.1 Weakening of the TEG

Today, cultural practices may not necessarily be transmitted down generations as they were in the past due to various factors that affect their survival through the passage of time, irrespective of their importance for biodiversity protection. The Sheka TEG systems are also victims of such problems and there are clear signs which show the weakening of these cultural practices. Two major reasons have been identified during the focus group discussions and interviews; modernization and new religions.

Regarding modernization, Workineh Kelbessa argues that “[i]n Africa, the young people have been alienated from their culture through the influences of missionaries, modern schooling and the mass media.”³¹ The clan leaders’ group in the focused group discussion was highly concerned about the behavior and tendencies of the youth. They claimed that the youth have undermined their cultural practices because they (the youth) perceive the traditional practices as ‘backward’ activities. They also condemned the educational system for not teaching any aspects of the importance of their cultural practices in schools. Kelbessa further contends that because of the negative attitudes of educated persons towards indigenous knowledge, elders may pass away

³¹ Kelbessa (2011), *supra* note 8, p.105.

without transferring their knowledge.³² Clan leaders and other elders have expressed their concerns regarding the continuation of even the *kobo* system as members of the younger generation have lost the ability of climbing trees for hanging beehives. They condemned this attitude of the youth who have not alternatively invented a better or equally important mechanism for hanging beehives in the branches of trees.³³

The other major problem that contributes to the weakening of the Sheka TEG is the influence of new religions. Modern religions, especially Christianity and Islam have greatly influenced and affected indigenous cultural practices in Ethiopia.³⁴ Christianity is a dominant modern religion in Sheka. With respect to the various denominations present, according to the clan leaders and elders with deeper ecological knowledge, little difficulty has been encountered with Orthodox Christianity.³⁵ Rather, the major challenge comes from the Protestant churches. According to one of the key informants, Mr. Sisay Asfaw, people who belong to the Protestant faith consider sacred trees as Satanic.³⁶ Zewdie Jotte also states that “[t]he conversion of people into Protestant Christians has a serious impact on the traditional resource management practices. Cultural forests, wetlands, and riverine forests that were conserved through the traditional beliefs for centuries are endangered due to the new belief systems.”³⁷

There were Protestant faith followers in all of the focused group discussions except the Menja group. All of the participants responded similarly on the allegations of the negative impacts of Protestant Christianity on the cultural ecological governance of the Sheka people. They admitted the said allegations and realized that it was a mistake to destroy forests under the guise of

³² *Ibid.*

³³ Even if modern beehives are being introduced now, the clan leaders and the elders are not happy with this technology. Their reason for this is the modern beehives are not hung on tree branches. Instead, they are placed on any structure near to the ground around a homestead. Even if they accept some of the advantages of the modern beehives (e.g. larger productivity and time efficiency) they expressed their fear that these could be a threat to the forests as they contribute to the weakening of the *kobo* landholding. They explained that if there is no need to hang beehives on tree branches, the relevance of *kobo* will end. If there will be no *kobo*, there will be no forests.

³⁴ For details on this point see Kelbessa, *supra* note 8.

³⁵ Most of the participants in the discussions and interviewees have stated that Orthodox Christianity, to a certain degree, tolerates the traditional practices.

³⁶ Mr. Sisay Asfaw is an NTFP specialist who works for the NTFP project at Sheka site. He notes that “*Prunes africana* is a sacred tree which is one of the most endangered tree species in Ethiopia. Because the Sheka people consider this tree species as a sacred tree, the Protestant faith followers cut the tree with the purpose of totally eliminating it from the forests of Sheka.” He further contends that “these people consider this tree species as if it is the Satan itself and when they cut it, they feel like as if they have killed the Satan.”

³⁷ Jotte, *supra* note 18, p.125

religion. They also stated that they need to respect religions (the traditional belief system) of others as religious freedom is recognized by the Ethiopian Constitution.

It was highlighted in Chapter 3 that modern religions and modern science perpetrate the dualism of man and nature, and reductionism, respectively. This is not merely a fiction but can be seen in practice in Sheka. Those people who think that they are being ‘modernized’ and became members of modern religions are alienating themselves from their cultural traditions.

7.3.2 Expansion of Agriculture by Local People and Resettlement

A) Expansion of Agriculture by the Local People

As the population increases people have expanded farming activities to the cultural forests which are not occupied by *kobo* holders. This is accompanied by the weakening of the powers of clan leaders who are culturally empowered to allocate plots of land to the landless.³⁸ Now land allocation is predominantly made by *kebele* chairpersons.³⁹ According to data collected from satellite images (from 1973 to 2005), small-scale agricultural expansion activities are the main causes for clearing forests in Sheka.⁴⁰

With the weakening of the Sheka TEG, some people have begun to convert their *kobo* forest blocks into agricultural fields, mainly for coffee plantation. This is a new trend which is unprecedented in the history of the Shekacho. As the powers of clan leaders have diminished to a great extent, they are no longer able to fulfill their roles as protectors and custodians of the forests through customary means as they did before.⁴¹ According to Daniel Kassahun,⁴² the main cause of converting the *kobo* lands into agricultural fields is to obtain title deeds after clearing

³⁸ Traditionally, an application is made to a clan leader and the clan leader may seek advice of the other elders before allocating land to the applicant. As it has been emphatically indicated by participants of the clan leaders’ group discussion, the Sheka forest land is divided among clans. That is, each clan has its own boundaries in the Sheka forest. According to the customary rule, allocation of new land to the landless is made only to members of a clan. It is also important to note here that the Menja, though speakers of the Shekacho language, are not eligible to get land by this customary procedures. The Menja partly exercise a hunter-gatherer livelihood even now.

³⁹ *Kebele* is the lowest administrative structure in Ethiopia.

⁴⁰ See Chapter 4 for details on this point. There are no comprehensive data that show the proportion of forest lands claimed by small-scale or large-scale agriculture since 2005. But it can be assumed that the proportion of large-scale farming would be greater as agricultural investments have increased since recent years.

⁴¹ See discussion below in section 6.3.6.

⁴² Daniel Kassahun is the Head of the Sheka Zone High Court Registrar Office and has worked for 5 years in Sheka.

the *kobo* forests.⁴³ As some people have succeeded in getting the title deeds, others including town dwellers have overwhelmed the courts, seeking recognition of the *kobo* holding with a view to converting the *kobo* forest lands into coffee plantations.⁴⁴ Mr. Kassahun explains that getting court recognition of the *kobo* possession is akin to getting a license to clear forest for coffee plantation, especially when such recognition is made in favor of town dwellers.⁴⁵

During the focused group discussion with the justice administration authorities, it became apparent that courts have shown a willingness to genuinely recognize the *kobo* traditional system. The courts were aiming to protect the Sheka forests, although there is no law currently in the country that recognizes *kobo* landholding.⁴⁶ However, the courts' recognition of the *kobo* landholding is being abused, according to the majority of the participants of the justice group. Clan leaders are also concerned about the government's intrusion into their affairs claiming that *kobo* landholdings should always be administered through their customary means rather than through state institutions and procedures.⁴⁷

⁴³ Mr. Kassahun explains this as follows: Whenever someone trespasses the *kobo* of another person, the *kobo* holders have started to bring the case to the court. Even if there is no law that recognizes the *kobo* holding, courts sometimes (court decisions in this case are not consistent) decide in favor of *kobo* holding. Once a person gets a court decision that recognizes the *kobo* holding in his favor, he applies to the concerned government office to get a title deed over the *kobo* holding. As title deeds are not issued over forest lands, the people who gain court recognition of the *kobo* holding start clearing the forests for the purpose of getting the title deeds. The Agricultural Office of the woreda visits the site before issuing the title deeds and may issue the title deed if they find no forest on the land in question.

⁴⁴ Personal communication with Daniel Kassahun. Mr. Kassahun expressed his concerns on the inflow of the town people into the Sheka forests under the guise of 'reinstating their ancestral *kobo* lands'. These town dwellers, according to Mr. Kassahun, have no interest in hanging beehives in the forests, unlike the customary *kobo* users. Their interest is converting the forests into agricultural fields, mainly for coffee plantation. (See details on this point in section 6.3.5 below.)

⁴⁵ As it was revealed from the group discussions, court recognition of the *kobo* holding could be advantageous if it is made in favor of the actual *kobo* holders who strictly follow the customary utilization of the *kobo* holding, as it could help them in defending the taking away of their *kobo* possession. It is destructive environmentally, culturally and spiritually if it is made in favor of town dwellers who seek to convert forest lands into coffee plantation fields.

⁴⁶ Mr. Shimelis Shiferaw, President of the Sheka Zone High Court stressed this point during the focus group discussion. It is important to note here that Ethiopia is not a common law country where a body of law is derived from judicial decisions rather than statutes. Ethiopia's legal system belongs to the civil law legal system.

⁴⁷ Clan leaders argued that the government system is not efficient in administering the *kobo* holding. They even condemned it for confusing their people. They claimed that their people are not clear as to whose administration to respect - the clan leaders or the government organs on matters related to *kobo* forests.

B) Resettlement

As it has been discussed in Chapter 4, there are two ways by which resettlement occurs in Ethiopia; government sponsored and self-initiated. The Sheka zone has been one of the areas in the country in which both types of resettlements have taken place. Presently, the government sponsored resettlement program has been stopped in Sheka but the self-initiated migration of people has continued in an aggravated fashion.

According to the interviews with key informants and focused group discussions, especially with the executive organs, there are two ways by which resettlements are being conducted in Sheka zone presently. These are: (1) the influx of the relatives of government sponsored and self-initiated re-settlers who stayed in the area and managed to lead a better life in terms of economic benefits; (2) those who come to Sheka zone as daily laborers.⁴⁸

The re-settlers who have stayed in Sheka zone for a longer time have invited their relatives to come to live with them by making favorable conditions for the new comers.⁴⁹ According to Mr. Kahssay, the rural areas of Yeki *woreda* have become socially heterogeneous due to an influx of people from various parts of the country. As a result of this, the *woreda* is preferred by the Menja people due to reduced discrimination and now they are coming in large numbers from various zones of the SNNPRS, where Menja communities live.⁵⁰

In Yeki *woreda*, due to the pressure of the new settlers the cultural practices of the native Shekacho have weakened to the level of disappearance. For instance, in all focused group

⁴⁸ This is particularly true in Yeki *woreda* of Sheka zone, which is known for growing cash crops. People usually travel to Yeki *woreda* during the coffee harvest season to be hired as daily laborers. But a significant number of them do not return to the place where they came from. Instead, they buy 'standing coffee or mango trees' and settle there permanently.

⁴⁹ According to Abrahale Kahssay, a public prosecutor in Yeki *woreda*, those who have been in the area for a long time approach kebele chairpersons or clan leaders to 'buy' land for their relatives. Kebele chairpersons prepare and issue residential identity cards for the new comers even in absentia. Although it is constitutionally prohibited to sell land in Ethiopia, in Yeki *woreda* it is a commonplace practice. The sale is done under the guise of sale of standing coffee or mango trees. In reality, there are no coffee or mango trees or one may find few seedlings of the said plants on the piece of land to be sold. The sale is in actuality a sale of forest lands. (This author secured copies of several contracts of sale of standing 'coffee' or 'mango' trees from the Sheka Zone High Court and Yeki *Woreda* Public Prosecutor's Office.)

⁵⁰ The outcasts in Sheka, Bench Maji and Kefa zones are universally called as Menja. But the Menja in each zone speak the specific languages of the zone in which they live. These Menja groups prefer Yeki *woreda* due to minimal discrimination they face in heterogeneous communities.

discussions it was unanimously expressed that the *kobo* landholding is almost non-existent in that *woreda*. Many of the *gudo* and *dedo* areas have also been converted into agricultural fields. This is the result of the sociocultural differences between the host communities and the incoming people who come from all over the country. The local people have the TEG that has enabled them to live with the forests and plant biodiversity for a long time without seriously affecting the environment. The new settlers have little or no moral and cultural values to be considerate to the forests. Moreover, the re-settlers have succeeded in persuading some of the *kebele* administrators and elders to transfer plots of land to the re-settlers on purchase. Below is an example of a court case that demonstrates decisions which negatively affect the protection of biodiversity in the Sheka zone.

Court cases of ‘sale’ of forest lands

Sheka Zone High Court

Criminal File No.: 06075

Date: 11/02/2003 E.C.

Appellant: Public Prosecutor

Respondents: Adraro Angelo and others (13 people)

The case was brought to the Sheka Zone High Court after a decision was passed by the Yeki *woreda* court. The public prosecutor, who disagreed with the decision of the *woreda* court, in which the present respondents were acquitted, appealed to the Sheka Zone High Court. The case can be summarized as follows:

Mr. Adraro Angelo concluded a contract of land ‘sale’ with Mr. Seid Mohammed on a date not visible on the file (due to poor photocopying) for Birr 3500 in Kubito *kebele* of Yeki *woreda*.⁵¹ The area of the land is not indicated but it is stated that it is adjacent to rivers on two sides and a road on the third side. The boundary on the fourth side is not indicated. In the charge at the *woreda* court, the public prosecutor stated that Mr. Angelo has committed a number of forest crimes such as illegally entering into a protected state forest and causing

⁵¹ According to the 2013, 4th quarter estimate 1 USD ≈ 19 Ethiopian Birr.

others to do the same by ‘selling’ plots of forested land to them, setting fire to the forest, and conducting agriculture in protected forests.

Mr. Angelo responded that he ‘sold’ his own land and the forest boundary mark was posted within his territory. The file was closed after the Yeki *woreda* Justice and Security Office wrote a letter to the Sheka zone Justice and Security Office (Reference No. 574/06/2001, dated 01/04/2001 E.C.) stating that the forest boundary mark was posted in the private possession of Mr. Angelo. The Office concluded in its letter that Mr. Angelo had committed no fault at all. Following this letter the file was closed.

In 2002 the file was reopened after the Yeki *woreda* Rural Development Coordination Office who wrote a letter to Yeki *woreda* court (Reference No. 192/02/2002, dated 28/11/2002 E.C.), stating that Mr. Angelo cleared protected forests and caused people to settle there illegally. It also expressed that Mr. Angelo’s response that the forest boundary mark was posted in his own land was unsubstantiated. This office also indicated that Mr. Angelo was one of the elders who attended the forest boundary demarcation as the demarcation was made by participating the local people. It was never placed in someone’s possession and Mr. Angelo had committed forest crimes.

The Yeki *woreda* court passed a decision on 12/04/2002 acquitting the respondents. The court stated in its decision that peasants have already established their livelihoods in the alleged lands and it would be unconstitutional to uproot peasants from their land according to the FDRE Constitution Article 40(4). The public prosecutor appealed to the Sheka zone High Court. The Sheka zone High Court affirmed the Yeki *woreda* decision without further explanation on 06/03/2003 E.C.

From the summary of this court decision, the following could be inferred:

- 1) Though land is not a subject of sale under the Ethiopian Constitution; its sale is often being practiced under the guise of sale of standing cash crops.

- 2) Intervention of the Justice and Security Office may be abused and could lead to the ‘sale’ of pieces of land to people who misuse it leading to biodiversity loss.⁵²
- 3) The Yeki *woreda* court analysis of the case for the purpose of acquitting the respondents is difficult to accept.⁵³ The court reserved from explaining in what capacity the respondents had transferred the pieces of land to the land ‘buyers’.
- 4) The persons who were engaged in ‘selling’ forest blocks were elders of the Shekacho tribe. The fact that these people engaged in land ‘sale’ is a symptom of the weakening of the Shekacho culture.

With the weakening of the TEG of the Shekacho due to various interacting factors, the level of the people’s sense of care, respect and responsibility towards their natural environment is being eroded. This is accompanied by the diminishing of powers of clan leaders as the spiritual and administrative caretakers of the society, and unjustifiable allocation of farmlands by *kebele* administrators which do not fulfill the customary rules.⁵⁴ If this situation continues, it may result in severe deforestation of the Sheka forests which are the last remnants of the tropical rainforests in Ethiopia. The case of resettlement worsens the situation, as it brings an influx of people who are less acquainted with the Sheka TEG. Unless these activities are guided by the principles of care, respect and responsibility for nature, they may end up in a situation which is similar to that of the highlands of the country. The fact that elders like Mr. Angelo are ready to sell-out forested lands to people who do not respect the Shekacho TEG demonstrates the weakening of the cultural responsibilities of humans for the natural environment.

Notwithstanding these problems, there are still signs of hope that the Sheka TEG may still be maintained as the powers of the clan leaders and the people’s recognition of these powers have not yet died completely. Moreover, the social organizations are still strong and cohesive. There is

⁵² Abrahale Kahssay alleges that the interference by this office affects the independence of the courts.

⁵³ The court’s analysis which was based on the interpretation of Article 40(4) which states “Ethiopian peasants have right to obtain land without payment and the protection against eviction from their possession” appears to be a misinterpretation. The constitution does not refer to an illegal resettlement nor does it refer to a piece of land obtained through a ‘sale’ of land.

⁵⁴ According to the TEG of the Shkacho, it is not allowed, for instance, to cut sacred trees even a piece of land is allocated for farming. However, as it has been revealed during the group discussion sessions, some people have started cutting even the sacred trees.

also a strong feeling of societal responsibility to care for the natural ecosystem. What is needed is to find mechanisms for recuperating these societal knowledge systems and practices for the better protection of biodiversity and the livelihoods of the people. These can be attained through raising community/public awareness with the view to ensuring the exercise of the right to self-determination and participation of the people to govern their ecosystems through their TEG systems,⁵⁵ and assisting the people to strengthen their traditional organization to take part in decision making. This can support the people to further exercise their sovereign power which allows them to govern their ecosystem.

If lands are to be allocated for small-scale agriculture and for resettlement purposes, they should be chosen by engaging the people especially the clan leaders and the elders. These people have deep rooted knowledge on the issues of where and how to farm and settle in the forests while maintaining the health of their ecosystems. If communities are empowered in such a manner, it can be taken as a reflection of the recognition of the sovereign powers of the local people in governing their ecosystem. Recognizing the sovereign powers of the people would empower them to continue practicing their traditional governance systems which protect biodiversity. This in turn brings one the principles of Earth jurisprudence, the principle of ecological governance into reality.

7.3.3 Commercial Farming

It is in recent years that large-scale commercial farming has been started in the heart of the Sheka forests. Most of the large-scale commercial farming activities are intended for coffee or tea plantations. According to some of the key informants⁵⁶ and the Deputy President of the Sheka High Court, Mr. Tedla Cairo, the main concern is not only the arrival of investors who are interested in conducting cash crop farming but also the total absence of EIA procedures in the zone.⁵⁷ As a result of the absence of EIA procedures, it appears that the forests of Sheka are now

⁵⁵ National and international civil society organizations, concerned individuals and even state organs (e.g., courts) may engage in the necessary awareness creation activities.

⁵⁶ For instance, Daniel Kassahun and Abrahale Kayssay.

⁵⁷ As of December 2011 when the final information on this was obtained via a telephone conversation with Miss Keria Yasin, former Head of the Women's Affairs of the Sheka Zone and the present Project Coordinator of MELCA-Ethiopia in Shaka, there had been no EIA procedures conducted for commercial farming and other projects in Sheka forests. In a personal communication with Mr. Taddese Shubero, Sheka Zone Rural Land Administration,

being transferred to people who are not taking the required steps to protect the forest. Bedru Sherefa estimates a 12.2% rate of deforestation in Masha and Andracha *woredas* of the Sheka zone, between 2001 and 2005.⁵⁸ Sherefa here argues that neither the investors and other forest clearers nor the officials who allow the transfer of forest lands to the clearers have been found to show any regard to the integrity of the Sheka forest ecosystems.⁵⁹ He further contends that such behavior of the main actors have led to indiscriminate clearing of pristine forests by commercial cash crop farming activities and spontaneous and widely scattered pockets of deforestation in Masha and Andracha *woredas* of the Sheka zone.⁶⁰

In Ethiopia the developmental mindset seems to have reached its peak at this time and as a result the Ethiopian government repeatedly claims it is devoted to bring about rapid economic growth in the country.⁶¹ It is with the view to fulfill this government's ambition that the concerned officials and the investors rush to convert the forest into cash crop agricultural fields.

Apart from the late Prime Minister and the then Deputy Prime Minister, almost all of the Ethiopian government officials have consistently denied that commercial farming activities affect forests and biodiversity in the country.⁶² For instance, the Minister of Agriculture Mr. Tefera Deribew and the Gambella Regional State President Mr. Oumod Oubong denied that the

Use and Environmental Protection Process Owner and Mr. Alemayehu Awash, Forester at Masha Woreda Agricultural and Rural Development Office, the author was informed that no EIA has been conducted until the date of the interviews in Sheka zone but both of them stated that the EIA procedure would start in the near future.

⁵⁸ Bedru Sherefa, 'Land Use/Land Cover Changes in Andracha and Masha *woredas* of Sheka Zone, SNNP Regional State' in Fetene, *supra* note 11, p.22.

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

⁶¹ See Chapter 4 for more details. It is important to note that the Ethiopian government once announced that 66.6% of the total area of the country (i.e. 74.3 million ha from the total area of 111.5 million ha) is suitable for agricultural investment.

⁶² The late PM Zenawi told the Hindu News national that "...we want to develop our land to feed ourselves rather than admire the beauty of fallow fields while we starve... I want to reassure Indian companies that they are welcome here. We want them to come and farm what is virgin land" indicating the government's priority is investment but not biodiversity. In this statement, one cannot see any sign of balancing environmental protection with investment. (See, The Hindu News National 26 May 2011.) Similarly, the then Deputy PM (the incumbent PM) Hailemariam Dessalegn told the BBC that Ethiopia is a vast county and as compared to its geographical area, the land allocated to agricultural investors is small. (See Chapter 4 for details.) These senior officials of the country seemed to have believed that large-scale commercial farming would solve the country's food shortage and hunger thus it should be realized even at ecological costs.

land which was given to the Indian company, Verdanta Harvests, was forest land being instead, according to them, either open land or shrub land.⁶³

In terms of the Sheka forests, it is common now to see deforestation of even highly respected sacred sites. Deeply concerned by such large scale deforestation of the Sheka forests, clan leaders and the elders gathered to demand Haile Gebresellassie, who recently received 1,500 ha of pristine forest land from Masha *woreda* of Sheka zone for coffee plantation, not to clear the forests.⁶⁴

The focused group discussion with women revealed some issues which were not mentioned in other groups. For instance, they condemned the tea planting company, East African, for breaching its contractual obligations.⁶⁵ Participants of the women's group stated that the Shekacho have no culture of drinking tea and they have nowhere to sell their produce. They condemned the company for severely affecting their livelihoods by destroying the forests including all the spices and medicinal plants they use for domestic consumption as well as for selling out to earn money and giving them tea plants which they do not value at all.⁶⁶ The complaints of the women's group have been affirmed by one of the clan leaders, Mr. Serawit Gene'achoch, during interviews. Mr. Gene'achoch further explained that some people have tried to sue the company for breaching its contractual agreements, but without success.⁶⁷

7.3.4 Illegal Logging

This section focuses on logging only for the purpose of harvesting timber and biomass fuel. Regarding the timber extraction from the Sheka forests, three driving forces have been identified

⁶³ See, for instance, The Ethiopian Reporter (Amharic version) of Sunday, 09 September 2012. This newspaper revealed that Verdanta Harvests was caught red-handed while transporting timber from the forests it had acquired for tea plantation. The newspaper further revealed that the company, in addition to conducting illegal logging, had not yet even started its main target of developing a tea plantation. (See Chapter 4 for the contentions around the forest land allocated to Verdanta Harvests).

⁶⁴ As reported in the Ethiopian Reporter (Amharic version), Wednesday 18 July 2012. The newspaper also reported that Gebresellassie received the forested land for 45 years on ETB 63 or USD 3.45/ha/year. Gebresellassie was a renowned Ethiopian athlete and now a businessperson.

⁶⁵ East African Limited concluded contracts with local people so that the latter would grow tea plants in their homestead and the former would buy the produce. However, the company reneged on its contractual obligation to buy the tea.

⁶⁶ This situation is similar to the *jatropha* out-growers discussed in Chapter 4.

⁶⁷ The company representatives refused to respond to this and other questions raised by the author. However, they replied to the zonal authorities claiming that the tea products by the out-growers were substandard.

during the focused group discussion. These are: (1) the proliferation of woodworking workshops in Sheka zone; (2) the expansion of micro and small enterprises; and (3) the transport of timber to Addis Ababa and other bigger towns.

Participants of all focused group discussions agreed that the number of woodworking workshops has been increasing rapidly in recent years in Sheka, especially in Tepi town of Yeki *woreda*. As has been identified from the discussions, licenses are given to these workshops to utilize only materials like chip wood and plywood. However, the workshops use timber as raw materials for producing furniture.⁶⁸

Regarding the second problem, it is with the view to containing the problem of unemployment that the Ethiopian government organizes unemployed youth into micro and small enterprises so that the latter could create their own jobs. Some of these enterprises have been organized into woodworking workshops which utilize timber from the forests of Sheka. As some of the participants from the women's group indicated, it has proved challenging to question these enterprises on why they were using timber from endangered species. Since they have been organized by the government, the law enforcing organs fear to take legal actions against the enterprises.

Another problem regarding the extraction of timber is their transportation in large quantities from the forests of Sheka to Addis Ababa and other towns. It was recognized in all of the group discussions that this is particularly a critical problem in forests which are nearer to roads. Illegal loggers use simple motorized and non-motorized machines to fell large trees and harvest timber during the night. The trucks are loaded and travel all the way to Addis Ababa and other towns mainly during the night.⁶⁹

The other reason for illegal logging is biomass fuel on which the majority of the people depend for cooking purposes. Biomass fuel is extracted in two forms, firewood and charcoal. According

⁶⁸ During interview with the public prosecutor Abrahale Kahssay, he stated that the office of the public prosecutor has attempted several times to prosecute the woodworking workshops for their illegal use of the timber of endangered tree species, but because of the interventions made by the *woreda* administration office it was not possible to get the offenders convicted.

⁶⁹ The author visited eight woodworking workshops in Addis Ababa and saw timber stocks in their stores. All of them possessed timber from endangered tree species and two of them told the author that they get the timber from Sheka forests.

to the participants of the executive organs' and the women's groups, it was difficult to control the clearing of forests for firewood and charcoal.⁷⁰

It should be noted, as revealed by the focused group discussions, that most of the illegal logging activities are conducted not for the purpose of earning livelihoods by the rural poor. They are instead mainly carried out by groups wanting to make a profit, even if by illegal means. The pace of clearing forests by the latter exceeds the rate of clearing made by the poor to earn a livelihood.⁷¹

The following are considered to be the reasons for the inability to stop or significantly reduce illegal logging in Sheka.

1. Erosion of the Shekacho culture that intrinsically values forests, shrines and wetlands, and the growing tendency of only valuing such natural heritage for instrumental purposes and for profit. With the weakening of the culture which intrinsically values the ecosystem, the corresponding sense of responsibility to care for nature has weakened. Because of a weakened TEG the communities are not strong enough to defend their forests from external threats. Furthermore, the erosion of ecological values by external threats means that the local communities are themselves being drawn into small-scale illegal logging.
2. Unwillingness of government officials to empower the local people so that they can genuinely exercise their rights to ecological self-determination through their sovereign capacity. This can be illustrated by the government officials' decision to establish micro and small enterprises, which utilize timber as raw materials, without consulting the local communities in the decision making process. Had they engaged the people in decision-making concerning job creation for the youth, other ecologically friendly options could

⁷⁰ Participants of these groups indicated that sometime ago the zone and *woreda* officials banned the entry of any biomass fuel into the Masha town and that thus caused two major problems. The first was: the people had no alternative energy source for cooking and due to the ban the prices of biomass fuel soared beyond the reach of most of the town people. The other problem was that the poor, especially the Menja communities who are marginalized, whose livelihoods depended on the income from the sale of the biomass fuel, lost their earnings and were put in a difficult condition. Due to these problems the ban was lifted after a short trial period.

⁷¹ This does not, however, mean that clearing forests by the rural poor for earning their livelihood does not cause loss of biodiversity. The point raised here is to highlight that forest logging by those who intend to make a profit for themselves increases the loss of biodiversity.

have been identified and developed. Instead of the introduction of external and destructive activities, the youth could have developed activities which build on their existing traditional practices. For example, honey production and processing for domestic as well as international markets and production and processing of non-timber forest products through participatory forest management (PFM) schemes are ecologically friendly activities.

Local empowerment with a view to strengthening the TEG of the Sheka people is a key step in halting or significantly reducing illegal logging. Supporting the Shekacho to revive and practice their TEG would strengthen the application of Earth jurisprudence principles for the protection of the Sheka forests which harbor significant amount of biodiversity. It is very difficult to apply the principles of Earth jurisprudence through only government organs without effectively engaging the local people. The Shekacho way of living in accordance with their TEG approximates the respect for the principles of Earth jurisprudence and what is needed from government officials is to support the TEG of the people.

7.3.5 Cash Crop Plantations by the Local ‘Investors’

The point of discussion in this subsection is different from that under 7.3.3 above, in that 7.3.3 focused on large-scale commercial cash crop farming whereas this subsection focuses on the pockets of relatively small-scale cash crop farming activities, mainly by the local ‘investors’. As has been identified during the focused group discussions and interviews of key informants, there are two main reasons for these pseudo investment activities.⁷² These are conversion of the *kobo* lands into coffee plantation by the *kobo* holders and the allocation of forestlands for ‘local investors’ by the concerned government organs for coffee plantation purposes.

The *kobo* holders, especially the ones who are nearer to the towns or roads are changing their *kobo* holdings into coffee growing fields.⁷³ Such activity violates the customary rules of *kobo* use.⁷⁴ The other ‘investors’, motivated by the two factors of the migration of coffee plants to

⁷² As the information on this may put the informants in difficult conditions, some informants wished to remain anonymous. Only names of those who consented to their names appearing in the work are revealed here.

⁷³ Daniel Kassahun and Abrahale Kahssay, cited above, have contributed much of the information for this part.

⁷⁴ As the participants of focused group discussions and interviews of key informants agree, Masha *woreda* has started growing coffee recently. According to them, this is because of climate change. Coffee grows in midland

highland areas and the rise in coffee price, come to Sheka area from various parts of the country under the guise of reinstating the *kobo* lands of their ancestors. These people have lost the sense of respect for the customary use of the *kobo* forests as they have lived outside their culture for a long time. The other problem, in relation to the revival of the ancestral *kobo* lands, has been the partitioning of the forests among people who are close relatives of government authorities.⁷⁵ Clan leaders have further stated that their efforts to stop these people from clearing the forest have been unsuccessful due to the interventions by these local authorities. Even courts are unable to control such behavior of the said authorities.⁷⁶

The other cause of the conversion of the forests into cash crop agriculture is the issuance of investment licenses to those who intend to invest in Sheka zone.⁷⁷ The clan leaders' group strongly criticized the license issuing government organs and the investors for seriously affecting the forests and plant biodiversity in Sheka. The clan leaders stated that when they were told that investors were coming to their forests, they expected people with capital and sophisticated machineries. But they realized later that the so-called 'investors' were people with little or no capital at all. The clan leaders' group expressed its concerns that such kinds of pseudo investment activities are instilling a belief in the people that "it is easy for us also to become investors if these activities are conceived as investment."⁷⁸

From the foregoing discussion it can be seen that there is a tension between two groups. On the one side there are people who want to 'invest' in coffee farms and the government officials who are encouraging 'investment' in the zone. On the other side, there are clan leaders and other elders who want to maintain the traditional use of the Sheka forests. As it was revealed from the joint session discussion, the government officials used various means to convince the clan

altitudes not in highland areas like Masha woreda. This fact has attracted many *kobo* holders to grow coffee instead of extracting honey and other NTFP. The rise in coffee price is also mentioned as one of the reasons for the conversion of the forests into coffee plantation fields.

⁷⁵ According to the clan leaders' group and key informant interviews, these authorities started to partition the forests for coffee plantation purposes. But due to evaluation by the ruling party they have since abandoned taking portions of the forests in their own names and begun taking plots of forestlands in the name of their relatives. (Members of the ruling party in Ethiopia have a culture of conducting series of meetings to investigate the wrong deeds by members. They call this 'evaluation'.)

⁷⁶ This allegation of the clan leaders has been accepted by some of the judges and public prosecutors.

⁷⁷ In 2009/10 (or in 2002 E.C) 64 licenses were issued by the Sheka Zone Department of Trade and Industry and 63 (or 98.4%) of these licenses have been issued for coffee growers.

⁷⁸ A clan leader stated this.

leaders' group, ranging from advising them to make agreements with the 'investors' to accusing them of being criminals who are against the 'development' activities of the country.⁷⁹

The discussions clearly show that Sheka is swaying between maintaining its ecocentric beliefs and practices which have protected, and could continue protecting, its ecosystem and local livelihoods, and switching to a full scale anthropocentric approach which could devastate its biodiversity and the people's livelihoods. Although the choice of direction is in the hands of the Sheka people, particularly its clan leaders and the elders, various national and international organs and pressure groups need to assist them in maintaining and practicing their TEG. The assistance needs primarily to focus on the youth. It is important to show to the Sheka youth the possibility of maintaining culture and biodiversity whilst promoting economic development.⁸⁰ In one of the efforts to maintain biodiversity and traditional customs, the Sheka forest has been registered as one of the global biosphere reserves in 2012 by UNESCO.⁸¹ UNESCO claims that biosphere reserves have a number of advantages.⁸² For instance, it follows a holistic approach to conserve ecosystems rather than focusing on individual species.⁸³ This kind of ecosystem governance is expected to enhance community governance and planning development efforts in

⁷⁹ The government officials accuse the clan leaders as the ones who are negating the investment laws of the country. (The Ethiopian investment laws provide incentives for investors who export their products. For instance, according to the recent '*Investment Incentives and Investment Areas Reserved for Domestic Investors Council of Ministers Regulation No. 270/2012*', an investor who is growing beverage crops (coffee, tea and similar crops) is eligible for income tax exemption for 5 years. (See the Schedule attached to the Regulation). Moreover, "any investor who exports or supplies to an exporter as production or service input, at least 60% of his products or services shall be entitled to income tax exemption for two years in addition to the exemption provided for in the Schedule." (See Article 7 of the Regulation)

⁸⁰ NTFPs, for instance, can be a major source of income for the people and a viable means of job creation, in addition to their importance in supporting the household consumption. The country can also earn much revenue in the form of foreign currency. See for example, *D.D. Tewari and J.Y. Campbell*, 'Increased development of non-timber forest products in India: Some issues and concerns' FAO Corporate Document Repository, <http://www.fao.org/docrep/w2149e/w2149e06.htm>, accessed on 23 June 2012.

⁸¹ 'Biosphere Reserves in Ethiopia: Sheka Forest' <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/africa/ethiopia/sheka-forest/>, accessed on 13 December 2012. The role of civil society organizations was significant in assisting this recognition, the main organization being Melca-Ethiopia. Biosphere reserves are intended to fulfill 3 basic functions, which are complementary and mutually reinforcing. These are: conservation, development and logistic functions. Each biosphere reserve has three distinct zones, transition zone, buffer zone and core zone. The biosphere reserve concept can be used as a framework to guide and reinforce projects to enhance people's livelihoods and ensure environmental sustainability. (See <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/>, accessed on 14 March 2014.)

⁸² See for instance, Lutz Möller (ed.) (2011), *For life, for the future: Biosphere reserves and climate change, A collection of good practice case studies*, German Commission for UNESCO (DUK).

⁸³ Nigel Maxted, 'Ex-situ, In-situ Conservation' in Simon Asher Levin (Editor-in-Chief) (2009), *Encyclopedia of Biodiversity*, Academic Press, Volume 2, p.686.

the bigger context of the ecosystem. The biosphere reserve initiative may well complement the Sheka TEG if it is integrated with this traditional ecosystem governance method. Integrating both may be one of the ways by which the principles of Earth jurisprudence, such as the principles of ecological governance and stewardship responsibility, could be applied for the better protection of biodiversity, while supporting local livelihood and securing economic advantages within a healthy ecosystem implying that economics should be within the limits of ecosystems.

Existence of a striking similarity between the zonation of biosphere and of the Sheka ecosystem can build on already existing TEG systems.⁸⁴ Recognition of the Sheka forests as the UNESCO biosphere reserve may open a window of opportunity to recuperate the Sheka TEG. This can be done through exchange of experiences in ecological governance systems in both schemes.

7.3.6 Conflict of Governance between Clan Leaders and Local Government Officials

Regarding land and forest administration in Sheka, it appears that there are two organs that compete with each other to exert their own rules on forest governance without considering the other's rights. These are clan leaders and government officials, although it is often the government officials who do not recognize communities' rights. Each group argues vigorously that it is the only legitimate organ to administer land and forests,⁸⁵ citing laws of the country, customary governance systems and other sociocultural reasons.

The main basis of the argument of the clan leaders is the rules of the country's Constitution. They assert that the FDRE Constitution recognizes people, like the Shekacho people, to practice

⁸⁴ Like the biosphere reserve, the Sheka forests are divided into three distinct zones. The purposes of the zones are also similar. The core zones of the biosphere reserves can correspond with the sacred sites in the Sheka forests such as *gudos* and *dedos*. In both cases, human activities are highly restricted. The buffer zones of biosphere reserves can be compared with the *kobo* areas. In the *kobo* forests only low impact human activities are allowed. The same is nearly true for buffer zones. Transition zones can be compared with the normal settlement areas of communities where people use for farming and grazing.

⁸⁵ The clan leaders state that up until the onset of the 1974 Ethiopian Revolution, they enjoyed their cultural rights to the forests in the regimes that preceded the Revolution. They further contend that even during the socialist regime, when the then government strictly prohibited them from practicing their cultural rituals, their rights in governing forests were not affected much.

their own cultures.⁸⁶ The clan leaders argue that their main cultural practice is related to the forest governance and that the Constitution clearly recognizes this right. They further assert that if they are not allowed to practice their cultural rights for the purpose of governing their ecosystem, their right to self-determination would be undermined.⁸⁷ Their arguments can be summarized into two broad categories: exercising their legal rights freely and defending against any organ that may affect their rights.

Regarding the free exercise of their rights, the clan leaders list the activities which they believe contribute to the protection of their ecosystem. These are:

- (a) *Dispute settlement and punishing powers* – Here they argue that they apply cultural taboo, cursing and penalty systems to regulate their people's behavior. The dispute settlement and punishment are related mainly with forest and land utilization issues.
- (b) *Allocating land for the landless* – They claim that this is the most important power as clan leaders. That is, if they have no power of allocating land for the landless,⁸⁸ their clan leadership becomes meaningless.⁸⁹ This power also includes the power of giving permission for forest utilization for forest products other than NTFP.

Clan leaders firmly believe that these ancestral powers should always remain with them and that no other organ can or should take away these powers.

The second claim of the clan leaders to ecological governance is the right to defend their cultural rights from any violator. According to the clan leaders, presently they have significant problems in defending their cultural rights, governing their ecosystems and supporting their people's

⁸⁶ Article 39(2) of the Constitution provides that: "Every Nation, Nationality and People in Ethiopia has the right to speak, to write and to develop its own language; *to express, to develop and to promote its culture; and to preserve its history.*" (Emphasis mine)

⁸⁷ The clan leaders thanked MELCA-Ethiopia and other NGOs for giving them continuous trainings on their constitutional rights.

⁸⁸ This is true both for the *kobo* forest block allocation and for house building and farmland.

⁸⁹ They strictly believe that clan land belongs only to the concerned clan and others have no right to claim *kobo* forest blocks or farmlands. In a key informant interview with Bahru Woldegiorgis (a Wollo clan leader), he stated that the Menja persistently claim that they should be allocated *kobo* forest blocks. He believes this is a demand that he cannot consider at all. His main reason for this is that *kobo* forest blocks are inheritable and cannot be transferred to people who are not heirs of the *kobo* holder.

livelihoods in culturally acceptable ways. The following are among the main challenges which have been identified during focused group discussions and key informant interviews.

- (a) *The government's policy on development and investment* – The clan leaders repeatedly stressed that they do not necessarily oppose the government's development plans, so long as the development activities do not destroy their forests and TEG systems. However, they firmly stated their concern regarding the government's emphasis on economic and developmental activities and its disproportionately weak concern on environmental protection activities. One of the reasons for this claim of the clan leaders is that the government has left their forests in the hands of investors who do not understand or do not want to recognize their cultural values.⁹⁰ The clan leaders pose the question – 'how can the government transfer their pristine forests to these investors without devising mechanisms to control them'.⁹¹
- (b) *Investors' insatiable greed to convert forestlands into large-scale and small-scale commercial farming* – Here the clan leaders criticized investors for their greed in taking away the forests which the clan has preserved for centuries via their TEG systems. They also claimed that, though they have no conclusive evidence, they believed that the investors corrupt government officials.⁹² They also revealed that some investors had approached some of the clan leaders requesting them not to mobilize the people against investment projects. According to them, the investors have no sympathy to the forests and clear them indiscriminately.
- (c) *Unduly large powers of kebele administrators* – Here the clan leaders' arguments are essentially two-fold. The first is the age of the *kebele* administrators, that is the

⁹⁰ According to the clan leaders' categorization, those investors who do not understand their cultural values are large-scale commercial farming companies such as East African, and those who do not want to recognize their cultural values are local investors whom they refer to as pseudo investors. The latter are mostly the children of the Shekacho who are ready to violate the Shekacho culture because they no longer practice the culture and undermine the culture.

⁹¹ One of the clan leaders accused the state machineries for not cooperating with them when they expose illegal acts by the investors. Here the illegal act is the investor's invasion into the forests which are not allocated to them. Even if the clan leaders oppose the allocation of any forest land for investment purposes, they further claim that the investors do not stop at clearing the forestland allocated to them by the government but continue expanding into areas which are not allocated to them.

⁹² The Ethiopian government officially accepts that corruption and lack of good governance are among the biggest problems in Ethiopia.

appointment by the government of young people, who do not listen to the clan leaders and other elders. According to the clan leaders, the main task of *kebele* administrators has become belittling the roles of clan leaders. The second argument is that administrators are no longer loyal to their culture nor do they have respect for the clan leaders and other elders. They pass decisions without taking into account the values of the Shekacho culture and the roles of clan leaders. The clan leaders gave examples of many *kebeles* where *kebele* administrators have allocated not only cultural forests but also sacred sites to pseudo investors who clear the forests.⁹³

- (d) *The increasing number of unemployed youth* – With the increasing number of people who are fleeing from rural areas to the large and small towns of the country, it is now common to see unemployed young people in towns including Masha and other towns of the Sheka zone. The government officials organize these unemployed young people and allocate them forest covered lands for agricultural purposes.⁹⁴

As these problems are challenging the clan leaders in the continuation of their TEG systems they are now devising mechanisms for defending their constitutional rights. One of these is establishing an association that ensures the preservation of the Sheka forests. In Shekacho culture it is the responsibility of the existing generation to transfer forests to the coming generations.⁹⁵ It is the responsibility of clan leaders to maintain this central part of Shekacho culture and if a clan leader fails to do this important task, he would lose his credibility.⁹⁶

⁹³ For instance, a clan leader named Gabito Chagitato stated that he strongly fought against the allocation of cultural forests and sacred sites for investment purposes by inciting his people. However, finally the Masha woreda administrator intervened and stopped him. Yet, the woreda administrator did not stop the investors from encroaching into other *kebeles*.

⁹⁴ Mr. Serawit Gene'achoch, Uwa clan leader, complained that his clan's forestlands have significantly suffered, due to their proximity to the road. Supported by woreda administration, the *kebele* administrators in his clan's forests have allocated cultural as well as sacred sites to the youth for agriculture. He also stated that he mobilized his people against the allocation and succeeded, at least for the time being, in stopping the youth from taking away his clan's forests.

⁹⁵ This has been stated by Mr. Dakito Atestata, a chairperson of the Biodiversity Conservation Association and a clan leader during the key informant interview.

⁹⁶ Mr. Atestata's arguments affirms what the clan leaders have stated during their group discussion that 'it is shame upon them that they were not able to defend their clan forestlands from the ravaging government authorities and investors'.

On the other hand government officials claim that clan leaders are creating a number of problems against the government's development plans. The points mentioned by these officials are summarized as follows.

- (a) *Clan leaders' attempt to exercise powers they do not have* – Here the government officials, especially those who came from the executive branch have criticized the efforts of the clan leaders to govern forests and land according to their culture.⁹⁷ They base their arguments on the laws of the country, especially on the land and forest laws of the country which clearly put land and natural forests under the exclusive ownership of the state.⁹⁸ The officials posed the question – 'if the laws of the country put the ownership of land and forests under the ownership of the state and the corresponding powers of administering these 'resources' on the state, what is the source of the powers of clan leaders'?

The officials also criticize the *kobo* forest holding on the basis of the forest laws of the federal and regional governments. According to these officials, the *kobo* system is undemocratic and illegal. It is undemocratic as it maintains forest blocks in the hands of individuals who can transfer the forest blocks to their heirs through customary rules of inheritance. They claim that such rules deprive women and those people who do not possess *kobo* forest blocks.

The other major argument of the government officials is that the days of the devoted clan leaders have now passed; only few clan leaders are truly devoted to their culture and the forests. The majority are now 'rent seekers'.⁹⁹ In their arguments, the government officials even named some clan leaders who have partitioned forest lands, including those which are under the territories of sacred sites, to their own relatives for coffee plantation. They also mentioned names of some clan leaders whom they alleged for 'selling' forest

⁹⁷ Some members of the executive branch have boldly expressed their sympathy to the roles of the clan leaders in preserving the Sheka forests by enforcing the TEG through various mechanisms such as the taboo system.

⁹⁸ See discussion below on this issue. Some of the other participants of the focused group discussions stated their concerns about the existence of two governments in Sheka, that of the clan leaders and that of the formal government. They stated that the Shekacho still listen more to what their clan leaders order than they do to the government officials.

⁹⁹ Currently in Ethiopia the term 'rent seeking' has become a political cliché. From its context, it can be understood that it includes crimes related to corruption.

blocks under the guise of selling standing cash crops. The officials further indicated that though the clan leaders have established a legal association, they commit illegal acts in the name of this association.¹⁰⁰

The government officials also argue that the constitutionally guaranteed cultural rights of the people should not be interpreted in a way that contradicts the government's ownership of land and forests. They also expressed their concerns regarding the efforts of the clan leaders to maintain and/or recuperate culture. They stated that this is the era of globalization and Sheka zone cannot escape its influences. The youth, they claimed, do not appreciate old culture and perceive the exercise of cultural practices as backwardness.

- (b) *Lack of social services in Sheka* – The other major concern of the government officials is the complete absence of social services such as roads, schools and health centers in most of the *kebeles* of Sheka zone. They explained the seriousness of the problem by citing examples.¹⁰¹
- (c) *Increasing number of the unemployed* – This is another concern of the government officials. According to them, the number of unemployed youth is increasing and Sheka zone has no other feasible resources than its forests to develop employment for the youth. Although the town's unemployment is a serious problem for these officials to address, they are also concerned about the growing number of the rural youth who have no *kobo* holdings. They further contend that the youth now have started to complain that the *kobo* holding is illegal and undemocratic.¹⁰² The officials also raised the role of the government in ensuring the right to development and the economic rights of the people¹⁰³

¹⁰⁰ One participant listed the activities/intentions of the clan leaders which he stated as 'illegal' including: (1) the planting of enset (false banana) crops on 300 ha of lands in Shibo *kebele*, which involved clearing of the forests; (2) they try to forcefully evict investors from our woreda which we invited to invest here; (3) they even need to govern bamboo forests which the Shekacho do not occupy customarily; and (4) by doing these, they connive to cripple the government institutions. They are in a continuous clash with government. They do all these 'illegal' acts in the name of their association.

¹⁰¹ According to these officials, women are dying of minor problems related with pregnancy and childbirth due to lack of health services and children have to walk either long distances to school or should stay home without education.

¹⁰² The main reason for this assertion is that *kobo* are not recognized by the forest and land laws of the country and they are obtained through inheritance. The youth who come from a non-*kobo* holder family will not have a *kobo*.

¹⁰³ See Articles 43 and 41 of the FDRE Constitution.

by expanding employment opportunities for its people. To achieve these goals, investment is the only option, they insist.

- (d) *Insufficient budget allocation* – This is one of the serious issues that the government officials strongly argue. According to them, the most important criterion for budget allocation is population size. Sheka zone is one of the sparsely populated zones of the country. As a result of this it receives little annual budget. The zonal administration is expected to raise its finance through taxation.¹⁰⁴

When a joint session of selected participants of all groups came together, the arguments between government officials and the clan leaders were fierce. It was interesting to observe that participants from other groups, especially from the courts and the women's groups were sympathetic to the clan leaders.¹⁰⁵ Efforts were made to solicit opinions from neutral people on the arguments of the two groups. People who do not belong to Shekacho but know the area well are found appropriate for this purpose.¹⁰⁶ All the three interviewees selected are sympathetic to the Sheka TEG for its role in preserving the plant biodiversity of the area and also expressed their concerns on the continuity of the TEG. Their views on the arguments of the two groups are summarized as follows. (1) There appeared to be two governments in Sheka, that is, the formal government and that of the clan leaders.¹⁰⁷ (2) Though the government does not want to recognize the powers of clan leaders formally, during the election periods, it approaches the people through clan leaders.¹⁰⁸ It is, therefore, completely disingenuous to deny the powers of clan leaders when it came to the matter of ecosystem governance. (3) Although the roles of the clan leaders and the Sheka TEG in maintaining biodiversity cannot be denied, romanticizing the

¹⁰⁴ Officials of the Sheka zone finance department explained that the department has no alternative than planning to collect revenues from investment activities by further expanding investment in the forest areas.

¹⁰⁵ For instance, one of the judges expressed his hopes for the continuation of the *kobo* system. He boldly expressed in the session that he repeatedly made decisions in favor of the *kobo* holdings because he understood well the significance of the *kobo* holding, though he was well aware of legal problems in the recognition of the *kobo* system. Although government officials accused the *kobo* system as undemocratic on the ground that women are not allowed to possess *kobo* holding, women are in favor of it. They claimed that they harvest spices, medicines, vines, wild foods/fruits and other NTFPs from the *kobo* holdings of their men.

¹⁰⁶ Three persons, namely; Abrahale Kahssay, Daniel Kassahun (cited above) and Fiseha Eshetu, a public prosecutor at Yeki woreda, were selected and their views obtained through individual (separate) interviews.

¹⁰⁷ According to these interviewees, the clan leaders have pervasive influence on the people and the people have profound respect for the clan leaders.

¹⁰⁸ The government and the ruling party are almost synonymous in Ethiopia.

TEG seems to be unrealistic. For, in addition to the younger generation and government officials, even some clan leaders have begun weakening the Sheka TEG.¹⁰⁹

The competition over governance discussed above is a specific point of conflict that arises from the opposing worldviews of understanding the human relationship with nature. For clan leaders, nature is not something to be plundered without any restriction. According to their perception, ecosystems should be governed with a sense of care and responsibility for the sake of present and future generations and for the ecosystem itself. This understanding manifests itself through the TEG and traditional practices that people have developed over a long time, and passed over generations, which are enforced by their clan leaders. Based on this, the clan leaders have a responsibility and want to maintain their customary powers in the governance of land and forests. On the other side, government officials, as implementers of the law which results from dominant anthropocentric thinking, (based on the notions of human separation from nature and human dominion over nature) perceive ecosystems and the whole of nature as a means of production for economic development. Based on this perception, they promote a top-down type of ‘development’ model that perceives local culture and TEG as ‘backward’.

As previously indicated, the Sheka forests represent the last remnants of the tropical rainforests in Ethiopia. They harbor a number of unique plant and animal species.¹¹⁰ The protection of the Sheka forest biodiversity together with the cultural practices and the livelihoods it supports calls for efforts beyond the application of laws in their mechanical forms. The tensions regarding governance on land and forest need to be resolved urgently if biodiversity is to be protected, local livelihoods maintained, and if ecologically appropriate economic development is to be secured. The following actions could be taken to resolve the conflict of governance amicably for the better protection of biodiversity, maintenance of culture and livelihoods and economic development.

¹⁰⁹ These interviewees agree that some clan leaders have been bribed by the proliferating coffee investors.

¹¹⁰ They contain over 300 plant varieties and 200 species of birds, many of which are endemic to Ethiopia. Some of its plant and animal species are registered in the IUCN Red List.

(See,

http://www.africanbiodiversity.org/content/melca_ethiopia_celebrate_sheka_forest_becomes_man_biosphere_reserve, accessed 20 February 2013).

1. *Recognition of the intrinsic values of biodiversity.* Respecting biodiversity as an end in its own right (i.e., as a bearer of intrinsic value), involves moral consideration, and thus a duty toward it. It can be seen as the translation of the principle of subjectivity of Earth jurisprudence into policy or law. There are legal and policy instruments which have already considered intrinsic values of biodiversity both at international and national levels, although these are inadequate.¹¹¹ The Shekacho TEG also recognizes and respects the intrinsic values of nature and can create fertile ground for the application of laws which recognize the intrinsic value of nature. All the concerned stakeholders need to promote the recognition of the intrinsic values of biodiversity. Intrinsic value implies the recognition of the rights of nature – as has been recognized by other national laws such as Ecuadorian Constitution 2008, Bolivian law of Mother Earth, and the New Zealand Environmental and Conservation Acts.¹¹² Recognition of intrinsic value of biodiversity prompts humans to see themselves as part of nature to respect the ecological limits, processes of nature – that all our activities, especially economic, need to be within the limits of nature if biodiversity is to be protected. Recognition of intrinsic value of biodiversity can reduce the tensions between local communities and government officials by developing trust and confidence in the communities on government activities. In other words, communities may not perceive the government as an organ that snatches away their territories and transfers to ‘developers’.
2. *Exercising of the sovereign powers of the people.* The Ethiopian Constitution recognizes the sovereign powers of the people in Article 8. One of the ways to exercise this power is through their direct democratic participation. The problem is, this constitutional right of is not yet exercised on the ground. To bring this right into reality, it is important to note that people’s direct democratic participation should not be limited only to political and administrative issues. They should also extend to governing their ecosystems according to their TEG, which can be considered as their rights to ecological self-determination.¹¹³

¹¹¹ See Chapter 3.

¹¹² See discussions in Chapter 5. It is also important to note here that even local laws in the US recognize the Rights of Nature – see Community Environmental Legal Defense Fund (CELDF) website for more information, www.celdf.org/, accessed on 12 January 2013.

¹¹³ See Chapter 7.

The government needs to recognize and respect this right of people which preexisted written laws. Ecological governance, one of the key principles of Earth jurisprudence, can be translated into policy or law through the exercise of the right of ecological self-determination of communities. Community-state joint sovereignty suggested in Chapter 6 can help in materializing the ecological self-determination right of communities. This approach may play a central role in resolving the governance conflict as it enhances the partnership between the government and the communities.

3. *Economic valuation of local livelihoods derived from forests.* Forests and the biodiversity they contain contribute a lot to household livelihoods. However, the calculation of the national GDP does not consider local livelihoods.¹¹⁴ In addition to their contribution to the local livelihoods, the role of forests in supporting the national economy is great.¹¹⁵ According to one study conducted in the Southwest Ethiopia, the contribution of NTFP alone to the local livelihood constitutes around 50% of the total household income.¹¹⁶ As experiences from around the world show, there are many innovative and ecologically sound livelihood options for local communities who are living in and around forests. Local communities, in addition to earning their livelihoods from these options, can also greatly contribute to the national economy.¹¹⁷ If national GDPs consider the livelihoods derived from forests, decision makers may perceive maintaining forests as contributing to the national economy significantly. Understanding of this situation by government authorities could make them appreciate the significance of the Sheka TEG in the national

¹¹⁴ It is important to note that there are initiatives to remove GDP as an indicator of wealth and replace with the 'happiness' index with the view to combine material and spiritual development. For example, according to One World Education's report, Bhutan is the happiest country in the world. See 'Bhutan: The World's Happiest Country', <http://www.oneworldeducation.org/bhutan-worlds-happiest-country>, accessed 12 January 2013. In Bhutan, ecological diversity and resilience is one of the criteria to measure Gross National Happiness. See 'Amanda Briney', Gross National Happiness: Overview of the Gross National Happiness Index, <http://geography.about.com/od/culturalgeography/a/Gross-National-Happiness.htm>, accessed on 12 January 2013.

¹¹⁵ See Mulugeta Lemenih and Melaku Bekele (2008) *Participatory Forest Management Best Practices, Lesson Learnt and Challenges Encountered: The Ethiopian and Tanzanian Experiences*, FARM-Africa/SOS-Sahel.

¹¹⁶ See Mohammed Chilalo and Freerk Wiersum, 'The role of non-timber forest products for livelihood diversification in Southwest Ethiopia' *Ee-JRIF*, Volume 3, No. 1, 2011 – Agriculture and Forestry Issue: pp.44-59.

¹¹⁷ See Martin Khor and Lim Li Lin (eds.) (2001), *Good Practices and Innovative Experiences in the South: Economic Environmental and Sustainable Livelihood Initiative*, Volume 1, Zed Books.

economy. This in turn could help in reducing the conflict in ecosystem governance between the Sheka clan leaders and government officials.

To achieve these, all the concerned organs, particularly government officials and clan leaders need to negotiate and act for the benefit of all, including biodiversity and future generations. Government officials need to understand the economic development they strive for must be, and can be, achieved without seriously affecting the natural environment, local livelihoods and cultural values. Government needs to realize that the ‘development’ model it is pursuing has the capacity to devastate the Sheka forests together with the TEG that have maintained them. This model of ‘development’ compromises long-term ecological benefits with short-term economic growth. Further, the present model also risks allowing corporate control of local livelihoods by removing self-reliant economy and replacing it with unskilled laborer wages. However, economic development need not destroy the Sheka TEG; instead both can coexist.

Clan leaders also need to recognize the administrative powers of government officials. In addition to claiming for the exercise of powers on the administration of land and forests, clan leaders should be ready to work with government officials in partnership. Using their popular acceptance, clan leaders can influence government officials to come to a negotiation table for the joint governance of their ecosystems. Through these ways, communities can exercise their rights to ecological self-determination to prevent and control the loss of biodiversity, to maintain their livelihoods and to contribute to local as well as national economy while working with government.

Legal and policy recognition as well as the practical application of the principles of Earth jurisprudence may serve as a means to solve problems around governance competition and other problems discussed in this chapter. The legal/policy recognition of the principles of Earth jurisprudence could affirm the importance of TEG and support the recuperation of the currently weakened TEG. For instance, the recognition of the principle of ecological governance, which the Sheka TEG is based on, could regain the sense of territorial belonging of the people so that they defend their forests from illegal logging, random resettlements, and expansion of tea/coffee plantation activities in the name of ‘investment’ activities. Likewise, the principle of maintaining diversity can be translated into practice through the exercise of the right to ecological self-

determination of the people for the protection of their forests which are sources of their wellbeing and life for all species. The food sovereignty strategy, which is also advocated by this work, can be effectively implemented if people protect their forests through their right to ecological self-determination, which in turn is a means of exercising their sovereign powers.

7.3.7 The Sheka TEG and the Law

In the previous section the debates between the government officials and clan leaders have been outlined. Both groups tried to base their arguments on the laws of the country. In this section, the relevant Ethiopian laws and whether/how they recognize TEG shall be examined.

The first law to be examined is the FDRE Constitution. The FDRE Constitution declares that land and all natural ‘resources’ in Ethiopia are under the ownership of the people and the state.¹¹⁸ The Constitution here seems to have considered the state and people as two distinct entities, and land as a joint property of these two entities. In Ethiopia, many societies, predominantly the pastoralist and forest communities believe that land is held in common given to them by their Creator. They, therefore, see themselves as custodians or guardians for looking after the land given by the Creator¹¹⁹ Further that the land they occupy and/or access does not belong to the state or any other organ. This belief was also reflected during the making of the Constitution.¹²⁰

Irrespective of the notions and practices of communal landholding systems in societies like the Shekacho people, the Ethiopian Constitution brought land and other natural ‘resources’ under the ownership of the state and people. Therefore, even societies which held land and other natural ‘resources’ such as forests under communal rule are now forced to jointly own such ‘resources’ with the state.

¹¹⁸ See FDRE Constitution, Article 40(3).

¹¹⁹ A number of theses written by undergraduate and postgraduate students at the Ethiopian Civil Service University show these communities firmly believe that land belongs to the Creator, bestowed to them, and to nobody else. For instance, see Yilma Miressa, (2004) *The Significance of Cultural Laws and Beliefs of the Sheko Community for Environmental Protection*, (Senior Thesis, ECSU).

¹²⁰ Representatives of different communities and professionals argued, during the making of the Constitution, that land is under a communal holding of local communities in many parts of Ethiopia. (See the minutes of the making of the Constitution of Hidar 14, 1987 EC, Volume 3, pp. 7 to 51. Note that the minutes of the making of the constitution are available in Amharic)

The Constitution also recognizes the cultural rights of people. Under its national policy principles and objectives it provides that: “[g]overnment shall have the duty to support, on the basis of equality, the growth and enrichment of cultures and traditions that are compatible with fundamental rights, human dignity, democratic norms and ideals, and the provisions of the Constitution.”¹²¹ The constitution also provides that communities and societies have the right to speak, to write and to develop their own language; to express, to develop and to promote their culture; and to preserve their history.¹²² In addition to these rights, the Ethiopian Constitution recognizes the right to self-determination of each ethnic group or society or a group of people up to secession. Recognizing the cultural rights of the people means the Constitution also recognizes the customary institutions and governance systems which uphold such cultures. Based on this analysis, it can be observed that the Ethiopian Constitution recognizes TEG of communities.

The other set of laws to be considered are the land laws of the country.¹²³ The federal government enacted a framework land law in 2005.¹²⁴ Even if the constitution is the supreme law of the land, the federal and the regional land laws have vested an exclusive ownership right of land in the government and disregarded the principle of joint ownership as enshrined in the constitution. Both laws similarly provide that: “Government being the owner of rural land, communal rural land holdings can be changed to private holdings as may be necessary.”¹²⁵ It seems that these land laws are enacted with the view to transferring communally held lands to private holdings in the name of large-scale agricultural investments.¹²⁶ If the constitution is the supreme law of the land and if it recognizes the joint ownership of land and other natural ‘resources’ of the state and people, then it is profoundly unconstitutional for subsidiary laws to violate this constitutional rule.¹²⁷ If the government claims all the ownership right over land and

¹²¹ FDRE Constitution Article 91(1).

¹²² FDRE Constitution Article 39(2).

¹²³ There are two sets of land laws relevant for the discussion at hand; the federal and the regional land laws.

¹²⁴ This federal law is entitled ‘Rural Land Administration and Land Use Proclamation No. 456/2005’. As this is a framework proclamation, regional states are expected to enact specific laws for the purpose of its implementation. (In this regard, Article 17 (1) of the proclamation provides that: “Each regional council shall enact rural land administration and land use law, which consists of detailed provisions necessary to implement this Proclamation.”)

¹²⁵ See Article 5(3) of the federal land law and Article 5(14) the SNNPRS land law (Proclamation No. 110/2007).

¹²⁶ See details on land transfer to agricultural investments in Chapter 4.

¹²⁷ In Ethiopia it is HF (the Upper House) that is empowered to interpret the constitution. A number of cases have been forwarded to the HF and it has passed decisions on these cases. However, it has not yet nullified any lower law for contradicting the constitution. Moreover, no case has yet been brought to the attention of the HF for constitutionality of the land laws under discussion.

other natural ‘resources’ by removing the opportunities or abilities for local communities to participate in decision-making, there is a great risk that it can take away communally held tracts of land at any time and transfer to investors.

In terms of forest laws, the federal forest law¹²⁸ recognizes only two forest ownership types; private forest and state forest¹²⁹ – not communal forest. The Sheka customary forest holding is communal yet both the federal and regional forest laws do not recognize this customary holding. The only way by which local communities could be recognized as having forests, according to the land and forest laws of the federal and regional governments, is when they develop forests on land given to them by the government.¹³⁰ When the provisions of the land and forest laws of the federal government and the SNNPRS are examined closely, they do not recognize that local people have natural forests under communal holdings since all natural forests are considered to be state forests. Communities are only recognized as having communal forests on the land that is given to them for this purpose by the government.¹³¹

Regarding the benefits that can be derived from forests, Article 9(3) of the federal forest law recognizes the benefit sharing rights of local communities from state forests in general language. However, the benefits that have been specified in other provisions are so scanty as compared to the customary use of forests by the Sheka people.¹³² The land and forest laws of the federal and the SNNPRS have highly reduced access to customary land and forest utilization by the Sheka people. By doing this the laws have created two major problems. Firstly, they have seriously affected the sense of belonging of the people towards land and forests. For traditional people like

¹²⁸ The Forest Development, Conservation and Utilization Proclamation No. 542 of 2007

¹²⁹ See Article 3 of Proclamation No. 542 of 2007. The same applies for the SNNPRS forest Proclamation No. 77/2004.

¹³⁰ See Article 2(12) of Proclamation No. 456/2007 which states that: “‘communed holding’ means rural land which is given by the government to local residents for common grazing, forestry and other social services.”

¹³¹ The arguments made by the civic societies and professionals for the recognition of communal forest ownership were not accepted during the making of the federal forest law. (See the minutes of the Rural Development, Natural Resources and Environmental Protection Standing Committee of the HPR of Sene 4, 1999 EC. Note that the minutes are available only in Amharic).

¹³² For instance, Article 10(3) of the federal forest law provides that “the local community may reap grasses, collect fallen woods and utilize herbs from a state forest in conformity with the management plan developed for the forest by the appropriate regional body.” Another relatively better benefit scheme but which requires the authorization of government officials is the benefit that is specified under Article 11(6). It reads as: “The local community may be permitted to keep beehives, produce spices, forest coffee, forage and the likes in a protected forest by providing them forest development and conservation training and technical support.”

the Shekacho, land and forests are not mere property. The cultural, spiritual and emotional attachment and relationship of the people to their land and forests is still strong. During the focused group discussions, however, some clan leaders and elders expressed their concerns that the Shekacho may give up on protecting the forests or even destroy forests if they totally lose hope in protecting them.¹³³ Secondly, the forest laws of the federal and the regional governments have poorly been implemented even to fulfill their goals. That is, they did not maintain customary forest protection in principle and practice nor were they effective enough on their own to protect the forests.¹³⁴

7.3.8 The Shekacho and Wildlife

The Shekacho are very efficient hunters by using both modern and traditional weapons. There are three reasons why the Shekacho engage in large-scale hunting activities. Firstly and most importantly, the Shekacho hunt wild animals which feed on their crops and domestic animals. According to key informants,¹³⁵ the Shekacho do not tolerate any wild animal of such kind and they kill these animals mercilessly by all means possible. To eliminate these animals, they conduct a group or mass hunting. As the result of the pressure on the wildlife from the group and individual hunting, the Sheka forests are devoid of these wildlife except in areas which are extremely inaccessible.¹³⁶ Secondly, they kill the wild animals for the sake of heroism.¹³⁷ Lastly, people hunt for food. There are people who are still hunter-gatherer in Sheka zone.¹³⁸

In the personal communication with Mr. Atestata,¹³⁹ he admitted that the Sheka forests are no longer serving as a safe home for the wildlife. He gave two reasons for the scarcity of wildlife in the forests. The first reason was hunting. The other reason he gave was prayer. That is, clan leaders and other elders earnestly prayed for the elimination of those species of wild animals that

¹³³ One of the elders explained the situation by referring to the Amharic maxim “whenever your father’s house is looted, you should also participate in the looting.”

¹³⁴ As mentioned repeatedly, forest poachers are attacking the Sheka forests in addition to the indiscriminate clearing for investment purposes.

¹³⁵ For instance, Mr. Tamru Fekadu, expert at the Sheka zone Agricultural Office and Mr. Alemseged Addisu, also expert at the Masha woreda Agricultural Office.

¹³⁶ Personal communication with Mr. Alemayehu Awash, expert at Masha woreda Agricultural Office.

¹³⁷ See Chapter 4 for details on this behavior of the Ethiopian people. Like other parts of Ethiopia, the Shekacho also value hunting for social status.

¹³⁸ This is mainly true for the Menja communities.

¹³⁹ Mr. Dakito Atestata, Chairperson of the Clan Leaders’ Association.

attack humans, crops and domestic animals. Mr. Atestata further admitted that it was a mistake to hunt and pray for the elimination of wildlife. He also explained that such actions against wildlife were not exercised by the distant Shekacho ancestors and they could be rectified for the harmonious living of the people with all creatures. He even promised to conduct prayers and to teach his people not to mercilessly eradicate the wildlife, if the government organs were willing to cooperate with them to stop the dangers that the Sheka forests are now facing.

Conclusion

The case study in this chapter has demonstrated the contribution of the Shekacho TEG in protecting and sustainably using the plant biodiversity in the zone. The TEG has been implemented through customary practices which the Shekacho have exercised for centuries. It is due to the Shekacho TEG that the forests of Sheka still exist today, albeit reduced to the last remnants of the tropical rain forests in Ethiopia. Irrespective of their contribution for the protection of the Sheka forests and their more democratic governance features towards nature, the Sheka TEG systems are presently threatened due to various factors. The major factors include the influence of modernization, religions and development projects.

The tensions demonstrated during the focused group discussions and joint sessions have clearly indicated the differences in the understanding of the meaning of development and ecological governance. For most of the Shekacho people forests are sources of their wellbeing, inspiration and spiritual practice. For most of the government officials, especially for the executive organs, forests are mere ‘resources’ to be utilized through any means.

The findings from the case study also revealed that the assumption, made by the author before the study, that the Shekacho TEG was ecocentric and it was due to this ecocentric approach that Sheka has remained a biodiversity rich area in Ethiopia, was only partially true today. The case study revealed that the Shekacho are concerned predominantly about plant biodiversity than animal biodiversity. That is, the Shekacho TEG no longer covers wild animals which feed upon their crops or domestic animals. The Shekacho TEG’s ecocentric features are related mainly to plant biodiversity and it can be said that it is inclined towards anthropocentric oriented ecocentrism. That is, The TEG is losing its ecocentric values and now being influenced towards

human centered values. The customary protection of biodiversity of the Shekacho is, therefore, based on the conditions that the biodiversity needs to be beneficial to the community or it should not affect the economic and/or the livelihood interests of the community so long as it is related with animal biodiversity. However, the respect and care for the plant biodiversity by the Shekacho is immense, even though the plant biodiversity has less perceived benefit for their economy or livelihood.¹⁴⁰

Even if the Sheka TEG no longer fulfills ecocentrism in its fullest sense, many lessons could be learnt from it. The respect and care for plant biodiversity and other aspects of nature, such as wetlands show the deep concern and emotional relationship developed and implanted in the people through the traditional Shekacho TEG. The Ethiopian legal and policy framework/system needs to recognize the TEG systems of the Shekacho for the furtherance of ecocentric governance for the protection of the whole range of biodiversity. To achieve this, efforts from all stakeholders, predominantly, the Sheka people, civil society organizations, justice organs and other governmental and nongovernmental institutions are required. The significant responsibility in this regard, however, falls on the Ethiopian government to forego some of its sovereign powers and recognize and share the rights and responsibilities of the communities in ecosystem governance. If the government did this, it would enhance the government-community partnership for the better protection of biodiversity in the zone.

¹⁴⁰ The respect and care for the wetlands, rivers and shrines from which the people benefit less in economic or livelihood terms are also immense.

CHAPTER 8

CONCLUSION

Introduction

This study is conducted in response to the increasing loss of biodiversity in Ethiopia and at a global level. It mainly focuses on the exploration of the underlying problems that are expected to hinder the control of biodiversity loss through legal and policy instruments in Ethiopia. It argues that the underlying problems are related with the dominant paradigms and that these dominant paradigms have influenced human thoughts and the human governance system, legal and policy instruments.

The major controversies in the area of the study are the arguments around the dominant worldview of anthropocentrism and emerging ecocentric view in which the former perceives humans as the center of all nonhuman nature and so they have the right to exploit the nonhuman nature without taking much responsibility. Furthermore, it values nature instrumentally while the latter worldview perceives it intrinsically and humans as its part. The study asks a major question for the purpose of identifying the problems embedded in the legal and policy instruments: “What is the underlying problem in the Ethiopian legal system that has hindered the control of loss of biodiversity in the country?” Following this major question, other subordinate but related questions were asked with the aim of further exploring the problem. These are:

1. Which philosophical paradigms predominantly influence the international and national biodiversity protection legal instruments?
2. What are the main causes of loss of biodiversity in Ethiopia? How far these causes have been influenced by the dominant paradigms?
3. What alternative approaches are available to challenge the dominant paradigm which would help facilitate controlling biodiversity loss in Ethiopia? How can these alternative approaches be translated into policy or legal form?

4. To what extent the Sheka TEG systems have contributed to the protection of biodiversity? Are they still strong enough in controlling loss of biodiversity?

Each of these questions has been discussed in different chapters. This final chapter provides the summary of chapters and delivers the analyses and discussions arising from the study. Finally it concludes with reflections, directions for future researches and actions.

8.1 Summary of Chapters

Chapter 2 aims at providing a wider meaning for biodiversity commensurate with its significance. The chapter argues that the existing definition of biodiversity is not sufficient to shape human thinking in line with the holistic processes of the Earth's systems or to shape human action for the better protection of biodiversity. The existing definitions of biodiversity do not recognize its true essence as they mainly focus on its economic utility for humans, leading to approaches to the protection of biodiversity in the direction of its economic importance alone. The chapter identifies that most biodiversity has no direct economic benefit for humans.

The other aspects discussed in the chapter are the material provision and nonmaterial functions of biodiversity; direct uses such as the provision of food are the material uses while spiritual, cultural and recreational functions have been considered as the nonmaterial uses of biodiversity. The main purpose of this discussion is presenting the roles of biodiversity in the holistic functions of the Earth's systems. From this it follows that biodiversity is more than a mere 'resource' for human exploitation in that it constitutes a major part of the Earth's life support system. The chapter finally indicates that, irrespective of its significance, biodiversity is being depleted in an alarming rate due to human activities which are guided by anthropocentric thinking.

Chapter 3 builds on the facts and arguments presented in Chapter 2 by displaying the sources of anthropocentric thinking which consider humanity as pinnacle of creature and relegate biodiversity to a mere 'resource'. It aims at: demonstrating how anthropocentrism has shaped human-nonhuman nature relations by promoting the notions of separation and human dominion over the nonhuman nature; showing that Western thinkers' assertions, 'modern' religions and 'modern' knowledge have served as major sources of anthropocentric worldview; and displaying

that the notions of separation and human dominion have impinged on international and national legal and policy instruments.

Chapter 3 argues that anthropocentrism emphasizes on human differences from the rest of nature on the basis of human rationality and humanity's creation in the image of God. This worldview disregards the fact that humans are co-voyagers with the rest of biodiversity for the purpose of moral treatment of the latter. The belief that humans are separated from nature and they are at the zenith of creation led to another level of belief that humans are free to plunder the natural world for their own benefit alone. This is demonstrated by examining the development of anthropocentric notions from ancient Greek philosophers to modern times. From this assessment, we see that anthropocentrism played a key role in shaping human thought in a way that human capacity is used for the exclusive advantage of humans and to the detriment of the nonhuman nature.

Being influenced by philosophy and religious teachings, the birth of modern science led to an extreme dualism termed as the Cartesian division. This division allowed scientists to see the nonhuman world as a multitude of different objects assembled into a 'giant machine' rather than a holistically functioning unit. Descartes' philosophy had a tremendous influence on the Western way of thinking, which promotes the fragmentation of man and nature. This fragmentation was an essential reason for the present series of social, ecological and cultural crises. Because reductionism obliterates the way we see everything, it leads to thinking that destruction or loss of part of the 'giant machine' has little impact on the 'machine'. It also leads to an assumption that it is possible to 'develop' part of the whole at the expense of another part. This reductionist approach legitimizes undue exploitation of biodiversity for the exclusive interest of humans. Although this approach yielded some fruits for humans, the ultimate result harms the whole, including humanity.

The chapter highlights that protection of biodiversity depends on the mode of governance that is shaped on the basis of how humans establish relationships with the nonhuman nature. The relationship which humans established with nature through a reductionist anthropocentric lens led to legal and policy frameworks which, to a large extent, legitimize biodiversity exploitation than providing a sincere protection for it. To protect biodiversity, stricter rules and better

enforcement mechanisms are not enough. Laws and policies for the protection of biodiversity need to be formulated in a way that prohibits harm to the integrity of ecosystems.

Based on these analyses, the chapter examines some international and national legal and policy instruments for their anthropocentric nature. It reveals that these instruments reflect the dominant worldview by encouraging protection of biodiversity on the basis of shallow rationale of promoting human interest. As mirror of society, the legal and policy instruments reflect societal values, especially those of the dominant Western values. The instruments have been crafted on the rationale that – what benefits humans secure if biodiversity is protected. These can be seen from the expressions used in the instruments which state the centrality of humanity over the natural environment and the economic features of natural ‘resources’ for the benefit of humans. Both international and national legal and policy instruments fail to perceive humanity as part of the holistically functioning nature. They also fail to prescribe human’s roles towards the integrity of the ecological systems. The chapter concludes that these instruments observably demonstrate that they are the outcomes of anthropocentric worldview leading to a biodiversity crisis scenario. Finally it suggests that it is ‘systems thinking’ that aligns with Earth’s functions,¹ and understanding the Earth’s system in a holistic manner could help solve the problem of loss of biodiversity. This is because, as Capra contends, systems thinking leads to the understanding of ecological interdependence which means understanding relationships. Such understanding requires the shifts of perception that are characteristics of systems thinking – from the parts to the whole, from objects to relationships, from contents to patterns.”² Adoption of such thinking facilitates an integrated protection of biodiversity with the consideration of the components of the ecosystem as parts of a unified whole.

The main purpose of Chapter 4 is demonstrating the connection of loss of biodiversity in Ethiopia with anthropocentric perceptions. It argues that in parts of the country where anthropocentric thoughts and practices are more prevalent in comparison to others, loss of

¹ Stephan Harding argues that “[r]eductionism works very well if we design things like cars and computers, but its success is more limited in areas such as biology, ecology or in the realm of human social life where complex, nonlinear interactions are the norm. In these areas we need to apply a different style of thinking which builds on and incorporates reductionism whilst moving beyond it.” (Stephan Harding (2006), *Animate Earth: Science, Intuition and Gaia*, Green Books, p.32.)

² Fritjof Capra (1996), *The Web of Life: A New Scientific Understanding of Living Systems*, Anchor Books, pp.30 & 298.

biodiversity is widespread than the latter. It further argues that the application of Western development models without integrating them with the local knowledge systems led to further loss of biodiversity and livelihoods of the people. The chapter presents two major factors that are actually contributing to the loss of biodiversity in Ethiopia, namely; socioeconomic and cultural aspects and developmental mindset. In the socioeconomic and cultural realm, six major factors have been identified as contributors to loss of biodiversity in the country. These factors can be grouped either as activities conducted by people on a daily basis for the purpose of earning their livelihoods or those activities which are conducted in the name of cultural practices. Even if the study does not claim that all of these factors have been solely guided by anthropocentric notions, it argues that they have been influenced by the concepts of human-centeredness and human dominion over nature, which are considered to be pillars of anthropocentric worldview. The chapter concludes that a developmental mindset, which prevails now in Ethiopia, is a manifestation of anthropocentric conception. The fact that developmental mindset employs modern knowledge by ignoring local knowledge systems which are enriched by long time cultural practices, especially in food production and territorial governance is provided as evidence for its anthropocentric/reductionist tendencies.

Chapter 5, based on the discussions of the preceding chapters suggests a shift from the dominant anthropocentric paradigm to an emerging paradigm, Earth jurisprudence, which hopes to heal the hitherto skewed human-nature relationship. Translation of Earth jurisprudence into policy and legal instruments has also been suggested by adopting selected tenets of Earth jurisprudence, namely; subjectivity and communion to soothe long-flawed relationship between humans and nonhuman nature. The chapter argues that the manifestation of Earth jurisprudence in the policy and legal systems would assist humans attain their appropriate place, a place where humans assume high level responsibility and standing together against loss of biodiversity. It also argues that the emerging notion of ecocentrism would replace anthropocentrism which is a just system for both humans and nonhuman nature.

Regarding practical ways as to how this new emerging philosophy is going to influence policy and legal instruments, Chapter 6 identifies and outlines two specific areas of intervention. These are: a shift from exclusive state sovereignty to state-community joint sovereignty over ecological

governance and a shift from the idea of food security to food sovereignty. These shifts are derived from the principles of Earth jurisprudence – maintaining diversity and ecological governance.

Chapter 7 is devoted to a case study which aims at exploring the TEG of the Shekacho people in the Southwest Ethiopia. The case study tries to verify whether the Sheka TEG is ecocentric and its conformity to the tenets of Earth jurisprudence. It examines the practicability of the principles of Earth jurisprudence in the Shekacho TEG systems and their contribution to the protection of biodiversity in the Shekacho landscape. The case study proves the existence of traditional practices in Sheka and their compatibility with the tenets of Earth jurisprudence. It reveals that these practices are highly threatened due to various factors such as the change in the lifestyle of the younger generation, spread of modern religions and agricultural investment activities proliferating in the area. It also identifies that the Shekacho TEG has shortcomings in fully protecting loss of biodiversity as it has weak mechanisms in controlling hunting of wild animals which are claimed to feed on domestic animals and cultivated crops.

8.2 Analyses and Discussions

The above research questions entail the analysis of the origin, development and method by which the notion of anthropocentrism has crept into the Ethiopian legal system and the extent of its influence on international and national legal instruments. It also involves analyzing how much the proximate causes of loss of biodiversity in Ethiopia are linked with the proposed underlying problem. The study provides a broader meaning to biodiversity, paving the way for biodiversity protection through the new paradigm, Earth jurisprudence. This is because the wider meaning given to biodiversity is designed to conform to the holistic features of the Earth's system by including evolutionary processes which made biodiversity a reality and go beyond the existing definitions of biodiversity that have been crafted to fit into the anthropocentric rationale for its protection.

Being conceived by ancient Greek philosophy, then developed and spread by religious teachings and the Scientific Revolution, anthropocentrism is a powerful tool in allowing humans to ruthlessly exploit the natural environment. What is commonly known as 'Western thinking' is

the result of anthropocentrism. Western thinking has facilitated loss of biodiversity not only by directly affecting the natural world but also by dismantling the cultures which are known for protecting biodiversity. That is why Santos compared modern knowledge with totalitarianism as it does not recognize the plurality of knowledge outside its own realm.³ The belief that anthropocentrism is embedded only in Western industrialized culture is disproved by this study since it has been seen that such conceptions are also characteristic of the societies of the South. In Ethiopia, loss of biodiversity can be attributed to anthropocentric reasons as some of the activities of the people which have been considered as causes of loss of biodiversity are linked with anthropocentric conceptions.

Two major causes of loss of biodiversity in Ethiopia were identified. Of these, one is related to the daily livelihoods of the people; and the other is related to the developmental mindset. It is identified in the study that even the former causes of loss of biodiversity are linked to an anthropocentric worldview. It is also seen that it is not simply the prevalence of poverty that was causing loss of biodiversity in Ethiopia. Two major reasons can be given for this. First, the loss of biodiversity in Ethiopia goes back to centuries where poverty was not intensified as it is today. Second, even today with widespread poverty, land scarcity, recurrent drought and intermittent famine, church and monastery areas are still biodiversity rich as compared to other landscapes. In addition to poverty, dwindling landholdings, lack of secured land tenure, not establishing a good relationship with nature, for instance, the merciless and pointless killing of wild animals and the burning of forests for minor reasons, have contributed to the loss of biodiversity in Ethiopia.

The developmental mindset, which is driven by the ‘developmental state’ ideology of the ruling party is even beyond anthropocentrism in its answer to the question ‘development for whom?’ This is to mean that; developmental mindset does not take into account the development of the ecosystem, where biodiversity proliferates and also the basis for the ‘development’ envisaged by the developmental state. Likewise, it does not take into account to the development of the local people that grows from their own knowledge systems as a viable option. This ‘development’, especially in the form of large-scale commercial agriculture, is being conducted without even undergoing the EIA scrutiny. By even going beyond anthropocentrism, it is affecting the

³ See Boaventura de Sousa Santos, ‘A Discourse on the Sciences’, Fernand Braudel Center, Vol. 15, No. 1, *The “New Science” and the Historical Social Sciences* (Winter, 1992), p.13.

livelihoods of the local people by forcefully removing them from their culturally occupied lands and depriving them of their rights to effectively participate in the development projects.

The implementation of developmental state ideology has clearly shown the mismatch between the ways that the government and the local people perceive land and the entire ecosystem. For the government, land is simply an economic and political instrument with no emotional element in it. For the local people land is far greater than a simple economic tool, it is inextricably linked with their material and spiritual life. They are emotionally attached to it and eviction from the land has a pervasively negative impact on their livelihoods and belief systems. The government's hasty decision to transfer large tracts of land without having pilot cases shows its complete lack of understanding of these deeper attachments.

Conferring intrinsic value on biodiversity is believed to fundamentally shape human thinking by giving an evolutionary place to biodiversity and by toning down the centrality and dominance of humans over all creation. The recognition of intrinsic value of biodiversity is seen as promoting respect and care for biodiversity. Respect and care for biodiversity can be promoted by introducing a shift from human dominion to human stewardship where the caretaking role of humans for the nonhuman nature is expressed. The role of humans as stewards originates from the special capability of us to determine the fate of biodiversity. No any organism has the power to either destroy or rescue the natural environment; it is the choice of humanity to go to either side. A cultural shift that reverses the present dominant thinking with the view to harnessing human capacity for biodiversity protection is needed now. The problem of loss of biodiversity is not the fundamental problem on its own; it is simply the symptom of the human cultural problem. A shift in culture leads to a shift in law.

This shift allows humans to think that we are not here to freely compete with other organisms. If we humans think that we should compete with other organisms, irrespective of our unique features of rationality, it becomes deeply unjust. The correct place of humans is caring for the rest of nonhuman nature with the motto of 'live and let live'. The Holy Scriptures are even in support of the tenets of Earth jurisprudence by imposing the stewardship responsibility on humans. In this regard, these scriptures support ecocentrism than they do to anthropocentrism.

Shift from an exclusive state sovereignty to joint state-community sovereignty is suggested as one area of intervention for the application of Earth jurisprudence with a view to enhancing the roles of the local people in the TEG. States are institutions situated at distance from the environment and if all powers are concentrated in their hands, their decisions could be very much detrimental than if such powers are shared with the people. States have not used their sovereign powers in a just manner as far as protection of biodiversity is concerned. As the track records reveal, states focus on quick fixes for problems than seeking lasting and holistic solutions which are advantageous for all life, including humans and the Earth's systems. Moreover, they put themselves even above the people and usually are not only limited in degrading the environment, but also their decisions would seriously affect livelihoods and the wellbeing of the people.⁴ The concept of joint sovereignty also helps in checking the collaboration of state and MNCs to the detriment of the peoples' livelihood and the natural environment. As Cullinan suggests, "states need to set aside their obsequiousness to the corporations,"⁵ in a way that affects the natural environment and livelihood of the local people.

Exclusive sovereignty of state enabled the Ethiopian government to enforce its top-down strategy of 'development' and to transfer vast tracts of land to MNCs by dispossessing the local people of their land they have held under customary tenure.

8.3 Reflections and Directions for Future Researches and Actions

8.3.1 Reflections

In Ethiopia, protection of biodiversity is highly linked to the mode of agricultural system that the country adopts. Presently, the country is at a crossroads of economic growth, food security and environmental protection. The country is in list of least developed countries of the UN classification. The Ethiopian government frequently declares that it will quickly reverse this situation and works to join the group of middle income countries by 2020-2023. To fulfill this

⁴ A recent UN report expressed its concern about the 'development' activities by the Ethiopian government are affecting the environment and the livelihoods of local people, especially pastoralists, in southern part of the country. See for details Fergus MacKay, 'Indigenous Peoples and United Nations Human Rights Bodies: A Compilation of UN Treaty Body Jurisprudence, the Recommendations of the Human Rights Council and its Special Procedures, and the Advice of the Expert Mechanism on the Rights of Indigenous Peoples', Volume V, 2011-2012.

⁵ Cormac Cullinan (2002), *Wild Law: Governing People for Earth*, Siber Ink, p.214.

goal it adopted various strategies and programs of which the major one is the ADLI strategy that focuses on large-scale commercial agriculture. To ensure food security, for already big and still growing population, the ADLI strategy relies on small-scale farming. To protect the natural environment, some environmental laws and policies have been adopted. With respect to ensuring economic growth and food security, vast activities are being conducted in the country. In the area of environmental protection, except making some laws and policies there is little concern to enforce even the existing laws and policies.

The modes of operation of large-scale commercial farming are proved to be destructive to the natural environment and to the livelihoods of the people. Most of large-scale commercial farming projects are operating without fulfilling the minimum environmental requirements. Thousands of local people also faced eviction from their lands and homes to give way for the large-scale commercial farming, which resulted in denial of access to riverbank farming, grazing fields and wild fruits.

Although the idea of ensuring food security through small-scale farming appears to be tenable, it faces two major difficulties. First, farmers are highly encouraged to shift from food crops to cash crops with the corporate driven idea of pushing small farmers to shift from controlling food to cash dependent lifestyle. Second, small-scale farming system is being branded as unproductive and should shift from depending on local seed varieties to HYVs. This is done without devising mechanisms to conserve local seed varieties and without making an appropriate investment on the local farming systems. With the progress of these processes, the complex and diverse agricultural systems are being replaced by the corporate prescribed model without considering the local conditions. Corporate prescriptions imposed on the local farming systems have the power of dismantling livelihoods, long-standing agricultural and knowledge systems and biodiversity.

As discussed in Chapter 3, the tendencies of dominance and violence against ‘others’ are rooted in the anthropocentric worldview. From these tendencies of dominance and violence, it seems that anthropocentrism even changed its essence towards plutocratic governance. The land deals in Ethiopia which caused eviction of many families for the profits of few illustrate this.

While controlling loss of biodiversity is an issue, these scenarios appear at the frontline of the problem. Controlling loss of biodiversity needs dealing with the problem of human thinking and culture as biodiversity depletion is the symptom of this problem. In line with this Hartmann writes:

“The problem is not a problem of technology. The problem is not a problem of too much carbon dioxide. The problem is not a problem of global warming. The problem is not a problem of waste. All of those things are symptoms of the problem. The problem is the way that we are thinking. The problem is fundamentally a cultural problem. It is at the level of our culture that this illness is happening.”⁶

From Hartmann’s comments it can be seen that environmental crisis (or specifically biodiversity crisis) is the result of cultural crisis. This cultural crisis is in turn the result of the dominant paradigm of anthropocentrism. The dominant paradigm uses various powerful instruments to influence the whole spectrum of human culture. Modern knowledge, religion, international business, national and international laws are some of such instruments. It appears that it is high time now to get out of the crisis by making a correct decision to save humanity and the Earth before it is getting too late. The correct decision is the decision that treats the source of the problem, not its symptom.

Regarding making of the correct decision, Berry comments that “[c]ultural selection is now a decisive force in determining the future of the biosystems of the Earth.”⁷ Continuing his writing on the issue, Berry contends: “[w]e need to understand where we are and how we got here. Once we are clear on these issues we can move forward with our historical destiny, to create a mutually enhancing mode of human dwelling on the planet Earth.”⁸ By this statement, Berry

⁶ See Peru Caral, ‘A Thousand Years of Peace’, in Tai Moses (ed.) (2011), *The Thom Hartmann Reader*, Berrett-Koehler Publishers, Inc., p.245.

⁷ Thomas Berry (1999), *The Great Work: Our Way into the Future*, Bell Tower, p.4. Berry compared Darwinian natural selection and cultural selection in determining the future of the Earth’s biosystems. He concludes that at present it is not the Darwinian natural selection but cultural selection is decisive in determining the future of the Earth’s systems. (See *Ibid.*)

⁸ Thomas Berry (1999), *The Great Work*, Bell Tower, p.ix.

calls for a movement which can take the Earth's systems and humanity from the prevailing crisis to an era which he calls as an ecozoic era.⁹

Earth jurisprudence can be a means to ignite the movement towards the ecozoic era envisaged by Berry, since it is a philosophy that promotes the reestablishment of human-Earth relations in a mutually enhancing manner. It calls for radical shift in human thoughts to attain these mutually enhancing relations. If humans attain this level of collective consciousness, it will be easier for them to develop appropriate technology which aligns with Earth's technologies;¹⁰ to enact appropriate laws which prescribe rights of natural entities to continue existing for their own sake, in addition to their use to humans and which define the responsibilities of humans; and to establish businesses which are fair to the whole of humanity and the Earth's systems.

The collective consciousness that is responsible to reverse biodiversity crisis can be achieved through movements that engage people from all sectors. Genuine democracy for all including the Earth is required. Genuine democracy is a democracy that engages the Earth in addition to humans. Bosselmann defines Earth democracy as, "as a type of democracy that promotes decision-making that is reflective of the relationship between human and nonhuman spheres and their ecological balancing."¹¹ Earth jurisprudence is perceived as a guiding philosophy to attain this level of democratic governance and to liberate the Earth and the whole of her systems from human dictatorial governance.

⁹ Berry states that: "Ecozoic is a more biological term that can be used to indicate the integral functioning of life systems in their mutually enhancing relations. For this to emerge there are special conditions required on the part of the human, for although this era cannot be an anthropocentric life period, it can come into being only under certain conditions that dominantly concern human understanding, choice, and action." (**Eleventh Annual E. F. Schumacher Lectures October 1991, Great Barrington, Massachusetts**, <http://neweconomy.net/publications/lectures/berry/thomas/the-ecozoic-era>, accessed on 26 August 2012.)

¹⁰ Berry argues that: "Nature has its own technologies. The entire hydrological cycle can even be regarded as a huge engineering project, a project vastly greater than anything humans could devise with such beneficent consequences throughout the life systems of the planet. We can differentiate between an acceptable human technology and an unacceptable human technology quite simply: an acceptable one is compatible with the integral functioning of the technologies governing the natural systems; an unacceptable one is incompatible with the technologies of the natural world." (See **Eleventh Annual E. F. Schumacher Lectures, *ibid.***)

¹¹ Klaus Bosselmann, 'Earth Democracy: Institutionalizing Sustainability and Ecological Integrity' in J Ronald Engel, *et al* (eds) (2010), *Democracy, Ecological Integrity and International Law*, p.107, cited Peter Burdon (2011), *Earth Jurisprudence: Private Property and Earth Community*, PhD Thesis, The University of Adelaide, p.158.

In the course of this work, it has been observed that there are three major challenges for the envisaged democratic governance under the guidance of Earth jurisprudence. The first challenge comes from the government itself. In Ethiopia, the political system is led by a party that has ruled the country for more than two decades and is increasingly showing tendencies to become a vanguard/dominant party. It is also increasingly violating its own constitution. Moreover, it is increasingly becoming intolerant to any different opinions. This behavior of the government may have the effect of weakening civil society organizations, scientists, professional associations, political parties and researchers from assisting the local people in regaining their powers of TEG, which is expected to nurture democratic governance for the Earth.

The second challenge comes from those whose interests are threatened by the TEG of communities and by more ecologically sustainable economy of the local people.¹² But through various methods of resistance such as mass movement initiative to civil disobedience may be employed to overcome these problems. Having a green party may assist these processes for creation of active ecological citizens who can ensure realization of a democratic system that incorporates the Earth's systems. When such a democratic system sees the light of the day there will not be any difference between 'legal' and 'illegal' actors. For instance, now there are 'legal' and 'illegal' actors who are causing loss of biodiversity. Those who engaged in large-scale commercial farming are 'legal' destroyers of biodiversity because they are doing 'investment'. On the other side, those who cross ethnic boundaries to conduct small-scale agriculture are 'illegal' destroyers of biodiversity because they are not 'investors'. The point here is the Earth does not understand which is 'legal' and which is 'illegal' and it is necessary to have biodiversity laws which do not lend a hand to its destruction under the guise of 'investment'.

The third challenge could be the idea of Earth jurisprudence may appear for some as quixotic which cannot be realized in the real world. However, adopting Earth jurisprudence does not mean totally replacing all present legal, policy and governance systems overnight with ecocentric or Earth-centered counterparts. Once key decision makers and other necessary parts of the society are convinced with the tenets of Earth jurisprudence, adopting it to guide societies in transforming their legal, policy and governance systems can be achieved in evolutionary steps.

¹² International and national investors/'developers' and their allies may form this group.

8.3.2 Analysis of the Main Findings of the Case Study

In Chapters 5 and 6 paradigm shifts have been suggested which are oriented towards theoretical and practical issues respectively. The shifts suggested indicate how the principles of Earth jurisprudence are going to be translated into legal rules and policy statements. The case study is conducted in Sheka zone, the zone that harbors the remnant tropical rainforests in Ethiopia. The forests have survived due to the TEG of the Sheka people that gives special consideration to the natural ecosystems. The Sheka people have the culture of practicing most of the aspects of paradigm shifts suggested in Chapters 5 and 6. The major findings of the case study and the shifts suggested in the two chapters preceding it align to each other. This alignment helps the possibility of putting the principles of Earth jurisprudence into practice. In this subsection, the main findings of the case study are organized and analyzed in accordance with the four principles of Earth jurisprudence discussed in Chapters 5 and 6.

The main finding in relation to the principle of subjectivity or intrinsic valuation of biodiversity is the practice of respecting and allowing any form nature to survive.¹³ This ranges from small plants to complex forests and from rivers and wetlands to mountains and the whole of the landscape. In this regard, those natural phenomena even without direct economic benefits are highly respected and intrinsically valued by the Sheka TEG. Consideration of the intrinsic value of natural entities by the Sheka TEG results from the spiritual significance of these entities. Spiritually it is sin to abuse any natural entity. Any natural entity should be used properly and only for valid reasons. The existence of sacred natural sites throughout the Sheka forests is one of the key factors in maintaining the culture of respect and consideration to living creatures, especially plant biodiversity and rivers, wetlands and mountains.

Under the principle of stewardship the main finding is the care the Shekacho provide for most of biodiversity and natural phenomena such as wetlands, rivers and mountains and the sense of collective responsibility of the people towards the protection of the natural environment. This sense of responsibility is taught from early childhood at home and at community level. Young children are told to respect and care for rivers, wetlands, hills, *dedos* and *gudos*. They are told

¹³ The only forms of life that the Shekacho are violent are the wildlife which feed on their domestic animals or food crops.

not to cut or uproot seedlings of trees; not to throw any waste and even not to urinate into a river. This is part of the Sheka culture and TEG system. Except for a need, the Sheka TEG does not allow cutting trees. With long time practice of the TEG, the Shekacho have developed a collective stewardship responsibility towards the natural environment. As the result of this, the Sheka people, particularly the clan leaders and elders consider themselves as guardians of their ecosystems.

The main finding in relation to the principle of ecological governance is the traditional organization of the Shekacho in clan lines and the strict customary rules which allowed them to control the commons, especially forests from misuse by individuals in their own best interest. The societal organization in clan line is cohesive and strong enough to govern the ecosystem using traditional knowledge which is transferred to generations via folklores and story telling. Clan leadership, which is transferred through succession from a father to a son, is a very respectable position in the Shekacho culture. The reverential fear of the people towards the clan leaders made the words of the latter highly respectable. The vigor of the Sheka TEG lies in the reverence towards clan leaders, the stern cultural rules and the strong social organization in clan lines. Existence of enforceable rules, specific clan boundaries and strong powers in the hands of the clan leaders are adhesive factors for the strong traditional organizations for effective ecological governance.

The last main finding which conforms to the principle of diversity is the fact that the Shekacho life style depends on diversity of the means of livelihood. One aspect of this diversity is that the diverse food sources of the people. The primary objective of farming in Sheka is to ensure existence of enough food for the family. There are varieties of food crops but the largest food source is *enset*, an ecologically friendly food crop.¹⁴ The people also obtain food from various wild fruits, stems and roots. Honey, spices and livestock are the major sources of family income in addition to the surplus food crops which are sold for additional income. The livelihoods of the Sheka people depend on the biological diversity which they have protected through their TEG. The diversity of life within the Sheka forest is the manifestation of the culture which expresses itself through the TEG.

¹⁴ See Chapter 4, note 142 for further information on *enset*.

The lessons derived from the case study can be used to study similar cosmologies in other parts of the country where remnants of such cosmologies still survive. The lessons can be significant in reviving such cultures through their legal recognition and protection. This does not, however, mean that taking the Sheka TEG systems and implanting them in other areas. Different societies can have their own specific TEG systems with different strengths. Application of the principles of Earth jurisprudence can be realized by seeking decentralized and specific community based solutions than centralized or generalized solutions.

Irrespective of its contribution in maintaining healthy ecosystem for the wellbeing of humans and the rest of living organisms, the Sheka TEG is weakening at this time. The major threats to this kind of livelihood and TEG are ‘development’ activities. A major question that needs serious answer is – to whose benefit these ‘development activities are being done. As most of the ‘development’ projects are perpetrated by the MNCs, it is expected that most of the benefits of the ‘development’ projects go to the MNCs and their allies in government bureaucracies. The other issue that has to be seriously considered is, instead of rushing to import and impose ‘development’ from outside, it is better to think to bring actual development which is based on and grows from the local knowledge base and practices. When necessary, these can be combined with knowledge and appropriate technologies from outside.

8.3.3 Directions for Future Researches and Actions

The following are proposed as directions for future research and actions:

1. The philosophy of Earth jurisprudence is at its infantile stage and has got complex and controversial ideas. It needs to develop further to clarify its position in environmental ethics and its role in promoting ecological governance in an integrated manner.
2. In Chapter 4, the argument is made to show that anthropocentric notions have contributed to environmental degradation in Ethiopia in relation to day-to-day activities of the people for their livelihood and other cultural activities like merciless hunting. This argument is based on scanty historical evidence and on casual observation by the author. To make the argument more robust in this line, further historical, sociological and anthropological studies need to be made.

3. In chapters 5 and 6 specific areas where the philosophy of Earth jurisprudence might influence law and policy instruments have been identified. It would be appropriate to refine further how these specific areas of intervention are going to influence law, policy and governance for biodiversity protection more effectively. For instance, how business needs to be regulated so that it would conform to the tenets of Earth jurisprudence is an interesting legal or policy research area. Moreover, other specific areas of intervention need to be explored. In relation with these and other specific areas yet to be developed, research works need to be made to show the way to ignite social movements to challenge those conditions which aggravate loss of biodiversity and affect the livelihoods of the people, such as corporate takeover of agricultural systems and territories, in countries which are new for such movements.
4. One of the problem areas in controlling of loss of biodiversity is the concept of GDP. Where there are no cash flows, the concept of GDP hardly operates. This has resulted in the ignorance or undervaluation of the livelihoods of local people which they earn from their ecosystems and the ecological functions of biodiversity. The idea of GDP encourages loss of biodiversity by calculating only the conversion of nature into cash as growth. The ecological functions of biodiversity and the livelihood people directly earn from it is zero in the calculation of GDP. To rectify these problems, research works are needed to suggest other measurement tools beyond GDP.
5. The other area that requires further research is on the performance of the Earth jurisprudence friendly legal reforms which have taken place in countries like Ecuador, Bolivia and New Zealand and how challenges are going to be rectified and strong sides are going to be augmented. Efforts also need to be made at international as well as national levels to convince more countries to join these countries that have pioneered such legal reforms.
6. As a dominant paradigm, anthropocentric notions are widespread in almost all aspects of societal life and lots of efforts are required to be accomplished to inculcate ecocentric notions through environmental NGOs, professional associations, concerned individuals, mass media, school clubs and community based organizations.

7. Ecocentric cultures can be nurtured and strengthened at international and national levels by carefully applying international environmental law principles like the precautionary principle. It is, therefore, necessary to work for refinement and further development of such principles.
8. In Ethiopia, one of the main causes of depletion of biodiversity is habitat loss and fragmentation, especially for agricultural purposes. Habitat loss and fragmentation must be reduced significantly by: (1) increasing land productivity through, mainly, investing on small-scale agricultural activities and adopting ecological farming and seed diversification and seed enhancement mechanisms; (2) with genuine and effective participation and consultation of all stakeholders, especially the local communities, it is necessary to establish nature reserve areas which constitute a certain proportion of a given landscape with networks for free movements of populations from one nature reserve area to another; (3) mechanisms such as PFM should be employed whereby local people could earn economic benefits by integrating such mechanisms with their customary ecological governance, where appropriate; (4) the Ethiopian government must not wrongly interpret land ownership in Ethiopia in a manner that increases its power to relocate people from their customarily held tenures in an inappropriate manner; and (5) efforts need to be made to reduce the burdens of the Ethiopian highlands by adopting various off-farm income generating activities for their inhabitants who are suffering from the declining landholding.
9. Religions can play vital roles in shaping societal perceptions on the natural environment if they also focus on the human stewardship responsibility towards its protection than only focusing on human-to-human relations. The congruence between the principles of Earth jurisprudence and the contents of the Holy Scriptures need to be explored by religious institutions and their followers.

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