

**Ethiopian Environmental Policy: Challenges and
Prospects on Sustainable Social and Economic
Development**

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CERTIFICATE

I Certify that the Dissertation entitled **Ethiopian Environmental Policy: Challenges and Prospects on Sustainable Social and Economic Development** submitted by **Kelbesa Wakuma Keneais** is his own work and has been done under my supervision. It is recommended that this Dissertation be placed before the examiner for evaluation.

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Acronyms

UNEP- United Nations Environmental Program

EPA- Ethiopian Environmental Protections
Authority

EIA-Environmental Impact Assessment

UNDP- United Nations Development Program

WB-World Bank

POP -Persistant Organic Pollutants

EKC- Environmental Kuznets Curve

NGO- Non Governmental Organizations

CSO- Civil Society Organizations

EPRSP- Ethiopian Poverty Reduction Strategy
Program

EWCO- Ethiopian Wildlife Conservation
Organization

UNIDO-United Nations Industrial Development
Organization

GDP- Gross Domestic Product

NNI- Net National Income

ABS- Access Benefit Sharing

EFAP- Ethiopian Forestry Action Program

TLU- Tropical livestock units

DPU - Depleted Uranium

MoFED -Ministry of Finance and Economic
Development

EMP- Environmental Monitoring Plans

DDT-DichloroDiphenyl Toluene

PPP- Polluter Pays Principal

MDG- Millennium Development Goals

CBO- Community Based Organizations

EFAP-Ethiopian Forestry Action Program

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Preface

Ethiopia is a country with immense natural resources potential including, among others, agricultural produce, minerals, wildlife and water. Man made and nature driven challenges however made it difficult to the Ethiopian people not to enjoy this national wealth. The Constitutional provisions, appropriate policies, institutions and legislations put in place are clearly articulated in protecting the environment. However, the challenges of limited public awareness, limited political and bureaucratic commitments in environmental national policy implementation, less commitment of regional and local environmental affiliated offices, few environmental impact assessments and monitoring in huge project implementations of the construction sector and, and manufacturing industries across the country are found to be the major problems associated with the environmental policy issues of the country. This study on Environment Policy Challenges of Ethiopia is basically an attempt to give the highlights of Ethiopian Environmental policy directions and the potential challenges confronting its dialogue. It is a dialogue in the sense that it is still an evolving issue in Ethiopia.

Chapter One

Introduction

1.1. Background of the Study

In a number of developing countries, balancing poverty and socioeconomic needs with environmental concerns creates very pressing problems. To meet this challenge and to realize the spirit of the World Summit on Sustainable Development held in Rio de Janeiro, Brazil, 1992, a number of countries have formulated strategic environmental sustainability policies to include environmental concerns in their mission statements, develop long-term objectives, generate alternative strategies to pursue those objectives, implement strategies to devise policies, motivate employees, and allocate resources so that the formulated strategies can be executed, monitor the execution of strategies and make adjustments according to feedback; and assess whether the strategies actually fulfill the countries' mission statements (Desta:2010)

Realizing that natural resources are the foundation of an economy, Ethiopia has attempted to develop a policy to protect its ecosystems. To counteract the short term results of economic and technical policies of the past and to meet the needs of present and future generations “the first comprehensive statements of Environmental Policy for the Federal Democratic Republic of Ethiopia were approved by the Council of Ministers in April 1997” (UNEP Training Resource Manual: 2006).

By Proclamation No. 9/1995 the Ethiopian Environmental Protection Authority (EPA) has created an environmental policy, as well as legal and regulatory reforms to manage its environmental and natural resources. The overall aim of the Ethiopian Environmental Protection Authority (EPA) 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” (EPA: 2010).

As practiced by other developing countries (Kofi and Desta:1998), the Environmental Impact Assessment (EIA) generally includes: an assessment of strategic environmental policies and strategies (refers to a proactive approach for integrating environmental considerations with higher levels of decision-making in the development of policies and plans); regional, sectional development for an EIA (the concept of regional planning that integrates environmental concerns with plans for developing a specific geographic region); project-level EIA effects (refers to development activity and the impact that it exerts on the receiving environment). In other words, the EIA determines: social impacts on health, demography, work, recreation, consumption, culture, and values; economic impacts on markets, technologies, resource management, industrial structure, regional development, business practices, and trade; and environmental impacts on ecosystems, habitats, resources, air, water and soil.

1.2. Objective of the Study

a. General Objective

This research paper was intended to explore the challenges inherent in Ethiopian Environmental Policy in relation to the social and economic wellbeing of the citizens. It further explores and analyzes the policy gaps and implementation problems at national, state and local government level.

b. Specific Objectives

Specifically the research was intended to:

- Analyze the realistic implementation and the bottlenecks of Environmental Policy of Ethiopia and its prospects.
- Identify the gap prevailing in implementation, monitoring and evaluation of the policy at Federal, State and Local government levels.
- Explore the policy implementation function bottlenecks in relation to the institutional frameworks, community participation and possible solutions.
- Analyze the resource mobilization capacity of the government at Federal, State, and Local level in relation to the Policy issue.

- Identify the parameters used and time frame scheduled for the achievement of the policy frameworks.
- Identify the policy weaknesses at all levels for future uses by the policy makers and other stake holders.
- Suggest alternative solutions to the weaknesses identified in the policy implementation.

1.3. Statement of the Problem

While it is recognized that environmental resources contribute significantly to sustainable economic development, the conceptual framework of Ethiopia's comprehensive environmental policy is too general. It is not systematically formulated to meet the strategic management process stated above. In its strategic objectives, the Ethiopian Environmental Policy does not include strategies for rigorous implementation, monitoring, or evaluation. In addition, the implementation of its functions is hindered by the lack of institutional frameworks. The capacity to initiate and sustain change and mobilize adequate resources linking activities effectively among sectors is hardly visible.

The long-term strategic objectives of Ethiopia's Environmental Impact Assessment (EIA) are congruent with the mission statement but they do not seem to be very realistic. They are hardly measurable and there is no time frame for achieving the stated objectives. Assuming that the Ethiopian Government is on the right track, it does not appear to have worked out the enforcement capacity, or trained human resources, or established the technical and scientific base for setting standards to measure compliance. The researcher is interested to deal with these problems and systematically explore their alternative solutions in the sequence of the research.

In identifying these problems and seeking the solution the research was intended to answer the following basic questions;

- Are there practical challenges in Ethiopian Environmental policy implementation?
- Are there Environmental policy frameworks in Ethiopia in terms of time and space?
- Are there resource gaps in implementing the policy?

- Are the stakeholders fully involved in policy making, implementation and evaluation?
- Are the stakeholders fully benefited from the Environmental Policy?

1.4. Research Methodology

The methodology used in this research was based principally on collecting and analysis of facts gathered from various sources of information. These are:

- Reports, publications, and research papers of organizations involved in the environmental policy issues in Ethiopia particularly in recent times as well as reports prepared by international organizations like UNEP and UNDP, WB.
- Personal communication with leading experts in the field may be used as sources of information.
- Different news, publications researches released on multiple websites particularly on environmental matters.

In general, an algorithm of data collection and interpretation was demonstrated as follows:

- Collection and analysis of information from reports and papers
- Analysis of facts and assessment of risk using data of foreign experts
- Own assessment of an anthropogenic risk by analysis of information gathered from various reports, and research papers.
- Own assessment of a level of risk spread by environmental hazards: deforestation, air pollution, water pollution, land degradation by analysis of data obtained from corresponding materials.

The unstructured raw data was analyzed using both qualitative and quantitative methods which seek to assess the impacts of policy gaps on economic, social and environmental dimensions.

1.5. Significance of the Study

The research was significant as it was intended to explore the major challenges of Ethiopian Environmental Policy in relation to the practical associated problems on the social and economic wellbeing of the country. The research was to dig out the gap between theoretical legislations and policy frameworks, institutional capacity and resources mobilization limitations. It was significant as it

explored the consequences being observed due to mal adaption of environmental policy in the country. Further, the research was significant to give alternative recommendations for the environmental stakeholders and policy makers to revise the policy implementation problems and come to actualization of the policies. Finally, the research was significant as it helped the researcher to come to new ideas through the research process and solve national problem.

1.6. Scope of the Thesis

Practically it was too wide to touch all pitfalls of Ethiopian Policy Challenges. Hence, the researcher focused on the policy challenges pertaining to the environmental sector. It should be stated that this thesis brought to a focus Environmental Policy challenges mainly related the social and economic dimensions in Ethiopia. Additionally, the scope of the research was specified principally to the assessment of challenges posed by non-practicability of the environmental policies in general and the ultimate impact it results on air, water, soil, forest, and land use in the country which are directly related to the lives of the citizens. Generally, the purpose of this thesis was to identify anthropogenic and natural factors impacted by the Environmental Policy implementation gaps in Ethiopia.

1.7. Limitations of the Research

The research was limited by some primary factors. The scarcity of similar research materials which are relevant to the subject of study was one limiting factor. Secondly, financial scarcity was also a limiting factor in hiring data collectors and gather adequate primary data from the corners of the country. Lack of willingness or reluctance of different environmental organizations not to offer secondary which they think confidential data on the study topic was another third factor. Finally, time resource was another limiting factor in the study as the researchers was a full time government employee and hence lackadequate time to carry out exhaustive research on the subject matter.

Chapter Two

Review of the Literature

2.1. Introduction

The world faces an environmental crisis of global proportions. It is now widely acknowledged that environmental problems affecting life in one part of the world will ultimately affect life in other parts. It is therefore no longer adequate only to consider what is happening in a given locality or to address environmental problems at the local level alone. In response to this realization, environmentalism has become a global movement. Most environmental activists and policy-makers agree that global problems require international cooperation if they are to be addressed and resolved. Many are beginning to believe that the best way to foster the required cooperation is to promote a global ethic (Andrew: 2004).

A human being needs clear and healthy environment to exist. This needs a well-balanced ecological and economic policy. Environmental problems have no limitations. They are regional, national and global. However, after the human being has realised that natural resources on this Planet have been exploited the term sustainable development has emerged. For about fifty years, for the first time in the history, the environmental pioneer ideas and programmes were discussed. In the beginning of the 70th the necessity to put economic developments on the same level with ecological sustainable programs was introduced.

Despite the fact that several national, and international meetings, conferences, summits have been held, the equilibrium between ecology and economy has never been reached so far.

2.2. Global Environmental Problems

Global Environment concerns are: global warming, deforestation and greenhouse gas production, persistent organic pollutants, (POPs), trans boundary movements of hazardous wastes, atmospheric pollution from civil and military air craft, other gases (methane, carbon dioxide, nitrogen oxide, sulphur dioxide etc.), wreck of old satellite and rockets, radioactive waste disposal, chemical and radiological weapons. (www.akababi.org)

Environmental impacts rose from the civil technology developments as well as from developments and applications of military technology, whether conventional, nuclear or radiological, they all belong to the global problems.

In the past 50 years or longer, chemical, biological, radiological, and nuclear weapons have been developed and applied in some part of the world. Chemical warfare like agent orange, agent blue, agent purple were used during the Vietnam War, others types of chemicals were applied in Kurdistan, Iraq, Tanganyika, (Africa), South America, Afghanistan etc. In all these areas, health, economic and ecological problems still exist. Let us examine the effects of Depleted Uranium (DPU) on human and his environment (Moret: 2004).

Depleted Uranium weapon system was manufactured and tested 1973. In the year 1991, it was applied in Gulf war. Therefore, most observers said that the Gulf war was one of the most toxic and environmentally devastating wars in world history. Two main reasons can be mentioned. First, hundred tons of depleted uranium weapons applied in the Gulf war had shown global environmental effect. The probability that the dust storm from the war region spreads the radioactive contamination all over the world is certain. Radiation does not recognise national borders and air space sovereignty. Furthermore, Uranium munition on battlefields and other areas will provide new sources of radioactive contamination in future years. This type of ecological devastation causes also carcinogenic, leukaemia and other toxic environment in the regions like Middle East, Iraq and other neighbour countries.

Second, during the Gulf war oil tankers and oil wells were bombed. Firing these oil reservoir, had released millions of gallons of oil into the atmosphere above the desert, the oil which is organic product containing millions of Hydrocarbons and other chemical elements destroyed the ecosystem of the entire region. When it rains it will be carried by rain and storm and destroy the global environment. These types of contaminated areas have no border at all and they belong to the global environmental impacts.

To deal with global warming and its effect on human and his environment, the Kyoto protocol has to be examined closer. The Kyoto conference (protocol) held in February 2005 is understood as annexation of the United Nation Convention about the global emission.

The main purpose of this protocol was that the industrialised countries should reduce the harmful greenhouse gas emissions at five percent (5%) below the level of 1990. The reduction process has to be completed by the year 2012 (www.europa.eu).

The global warming is due to climate change. According to earth and atmospheric scientists, since 1900 the temperature of our Planet has increased by 0.7 °C (Degree Celsius).

With global warming are associated, natural events like floods, hurricanes, that had occurred in the last two or three years in the world. In this context, also rising of sea level and ocean temperature can be mentioned.

To protect the environment and promote the exchange of information about Persistent Organic Pollutants (POPs) the UNEP has organised the Stockholm Convention and has established an office known as Ozone Secretariat. The Secretariat deals with matters of the Vienna Convention for the protection of Ozone Layer and the Montreal Protocol on substances that deplete the Ozone Layer. (www.irptc.unep.ch)

2.3. Corruption, Democracy, and Environmental Policy

Theoretical and empirical studies have shown that democracy and corruption influence environmental policies. Corruption stands out as a substantial and significant determinant of environmental policies, while proxies for democracy have an insignificant impact. Nevertheless, democracy could affect environmental policy stringency given that countries with a history of democratic rule tend to be less corrupted (Hardin, 1968).

2.4. Democracy and the Environment

Conservationist authors writing in the 1960s and 1970s have frequently called for a Hobbesian approach to environmental issues. To them, freedom needs to be constrained for the conservation of common goods in general, and for the environment specifically (Hardin, 1968).

A different view emerged in the 1980s, after which most of the literature emphasized the positive effects of democracy. Mounting evidence of the poor environmental performance that characterized the Soviet Union, Eastern European countries, and the dictatorships of Latin America, Africa, and Asia was one of the factors behind this shift. After 1980, the arguments commonly cited in favor of democracy's positive effect on the environment connect democracy with citizens' freedom, the availability of information on environmental degradation, and the ability to protest against it. Moreover, the responsiveness of democracies to citizens' demands, the propensity of democracies to engage in international cooperation, and the coincidence of market economic systems with democracies are stressed (McCloskey, 1983)

In addition, a recent case study of the Canary Islands found that the main cause of environmentally disruptive decisions is the deterioration of democratic institutions (Klink & García, 2005).

As for the theory on democracy and environmental policy, an influential study was conducted by McGuire and Olson (1996). They analyzed the optimal behavior of an autocrat in providing public goods. In their model, an increase in the size of the elite would bring about a more efficient solution with higher levels of public goods. The size of the ruling class, which could be considered a measure of democracy, would positively affect the provision of public goods such as environmental quality. Deacon (1999) presented an adaptation of McGuire and Olson's (1996) model and provided empirical results that support the interpretation of environmental quality as a public good and ascertain a positive effect of democracy on environmental quality. Torras and Boyce (1998) also found evidence of the positive effect democracy has on environmental quality when they estimate the environmental Kuznets curve (EKC) for sulfur dioxide, smoke, heavy particles, dissolved oxygen, fecal coliform, availability of safe water, and sanitation. Harbaugh, Levinson, and Wilson (2002) provided similar results when they include a democracy index in their estimate of the EKC; they found a consistent negative relation between sulfur dioxide and democracy levels.

Others have studied the link between democracy and environmental policy, instead of targeting the environmental variables themselves. Congleton (1992) estimated the positive effect of democracy on the probability of signing the global convention on the reduction of emissions of ozone depleting substances. Neumayer(2002) presented statistical evidence of the positive effect of democracy on the degree of environmental commitment of countries. He used the probability of signing multilateral environmental agreements, participating in environmental intergovernmental organizations, the area of a countries' territory under protection, the presence of national councils on sustainable development, and the availability of environmentally relevant information as measures for environmental commitment.

Fredriksson, Neumayer, Damania, and Gates (2005) presented a theoretical model where democracy is interpreted in terms of increased participation of citizens in the electoral process and competition for the support of the electorate. In this model, democracy induces the administration to better represent public preferences, leading to more stringent environmental policy. These authors supported their model with an empirical analysis of maximum lead content in gasoline, as an inverse proxy for environmental policy stringency.

Although most of the recent literature suggests a positive effect of democracy on environmental policy stringency, some authors reject the democracy–dictatorship dichotomy and claim that market-oriented democracy and autocracy cannot solve environmental issues in a satisfactory manner. Dryzek (1987), for example, proposed radical decentralization as a political structure suitable for facing environmental problems.

2.5. Environmental Movements in Ethiopia

The environmental movement in Ethiopia dates back to the first decade of the last century, at the time which some dedicated and foresighted Ethiopians such as Negadras Gebrehiwot Bykedign (1886-1919) started articulating concerns and trends in the degradation of natural resources and the environment. Commendable contributions were made in analyzing the political economy underlying dependency and environmental degradation in Ethiopia and in other developing countries with emphasis on the environmental impacts indulging in trade activities that are based on the export of primary and natural

products and importing high value manufactured products. First attempts to account for environmental degradation were also made along with near to precise predictions of the consequences that are being experienced by the current generation. The era of Menilik II was also an era government concerns particularly associated with the declining vegetation and forest cover were being expressed and some efforts were started through policy interventions and practical actions.

In recent times, prompted by major drought catastrophes and food crises in the 70s and 80s, environmental issues started gaining increased public and government attention.

Several environmental policies and legislations were issued and strategies designed which were also complemented by international environmental movements. Civil society participation with a combination of relief and rehabilitation as well as environmental activities which mainly took the forms of awareness creation, soil conservation and reforestation also dramatically increased during this.(MoFED, 2006)

Driven by growing interest both in developed and developing countries for alternative (clean affordable and reliable) energy sources, the development of liquid bio-fuel has attracted attention and is gaining momentum. Ethiopia is among the several countries that have developed strategies and programs for the promotion of bio-fuel development.

2.6. Utilization of Bio-Fuels in Ethiopia

Although bio-fuels could not be considered entirely new for the country deriving most of its energy requirements from bio-mass, the development of bio-fuels offers new attractive prospects. Reducing dependency on fossil fuel with unprecedented price hike that has become unbearable and possible contribution to economic growth through income and employment opportunities are among the several factors underlying the increased attraction. The country also recognizes the possible contributions that could be made through bio-fuel development towards the attainment of global commitments that it has entered into through the endorsement and ratification of several international environmental conventions and also meeting MDG targets. However, regardless of the rhetoric of considering economic, social as well as environmental dimensions by the protagonists of bio-fuels, environmental groups such as the Forum for Environment have started expressing their environmental concerns and worries. Concerns

regarding competition for land, water and other resources, habitat destruction, marginalization of pastoralists and small scale farmers and doubts on net environmental benefits (carbon reduction) are among the major ones. Although, it is argued that proper policies are put in place to ensure sustainability and environmental protection, many agree, the challenge lies in their implementation and enforcement. (Development Fund: 2008)

2.7. The State of the Environment: Natural Resource Degradation

Soil erosion and degradation remains the number one environmental challenge the country is facing. Increased horizontal expansion of agricultural production into marginal land as a result of population growth and increased livestock grazing, deforestation and soil erosion in the central highlands. Formal and informal resettlements, commercial farming and fire are seriously threatening vegetation cover in the south and south west, while in the eastern and southern lowlands, commercial farming, rangeland enclosures, charcoal production; invasive alien species are exerting increased pressure on the natural resources and traditional livelihood systems. According to studies (NBC, 2000), soil loss from agricultural land reaches about 100 tons per hectare per year. The current scramble for land for the production of large scale bio-fuels is adding to the pressure on the environment. Complex and fragile ecosystem equilibrium and interdependencies are being disturbed and ecosystems are seriously degraded. Community managed natural resources are increasingly falling into private hands in the form of investment.

2.8. Assessment of major environmental Public Institutions

These groups of stakeholders include the federal and regional governments and the publicly funded institutions they establish to carry out their laws, policies, strategies and directives. These bodies are ultimately responsible for the welfare of the country's natural resources, the environment, biotic and non-biotic components contained therein. They influence how these resources are managed and utilized through legal and institutional mechanisms. According to Development Fund (2008) the following are the major institutions with roles and mandates in environmental protection and management.

a. Environment Protection Authority (EPA): this federal institution is the main agency that has great responsibility for developing the appropriate policies, regulations and guidelines for the protection of the environment in the course of agricultural, industrial and other sectoral development activities. As such, it has both the legal power to ensure that development activities conform to standards set forth in such policies, regulations or guidelines. The Authority itself is in the process of building its own capacity and supporting regional environmental bodies in the regions. The authority represents the country in all international environment related engagements and serves as focal institute for the implementation of international conventions. EPA, since its establishment in 1995, has been executing its duties under its jurisdictions. The Federal agency is organized into nine technical departments and four service units, with an overall staff of 167. The regional EPA bureaus operate independently of the Federal EPA, reporting to regional governments.

This institution could not step further in accordance with its objective and goal due to mainly lack of capacity, weak institutional development, and lack of financial resources and requisite of professional capabilities.

b. The Ministry of Finance and Economic Development: is the central organ of the federal government responsible for the overall co-ordination and supervision of publicly funded development programs. It approves physical development plans and allocates the required budget for implementation including for monitoring and evaluation of activities by all government implementing agencies. Although mainly in an indirect way, it plays a significant role in influencing environment related activities such as allocating budget for the regional and federal stakeholder institutions in environmental movements.

c. The Ministry of Agriculture (MoA): this public organization is the main organ of the federal government responsible for activities related to agricultural and rural development in the country. It has the actual and potential powers to regulate agricultural development through the introduction of

appropriate laws and guidelines to ensure that such developments do not affect the long-term interest of the country in terms of sustainable utilization of natural resources and environmental protection.

MoA is responsible for a range of responsibilities including: agricultural production and research, food security, poverty reduction, natural resource management and rural development programs and activities. The regional Bureaus of Agriculture and Natural Resources Development departments are directly involved in delivery of programs with woredas¹, in keeping with the decentralized strategy and the government's Growth and Transformation Policy. Nonetheless, the actual implementation of natural resource conservation is hardly seen at local community level due to the fact that the conservation strategy of the sector is not well integrated up to the grass root community.

d. The Ethiopian Road Authority (ERA): transport networks can be considered as one of the crucial requirements for economic and social development in any country. Because of difficult terrain characteristics as well as poor economic capacity, Ethiopia is said to have the lowest density of road transport network among the countries of the world. The current huge road construction programs and activities that are under implementation by the Authority may have significant bearing on the environment in a way that the hundreds and thousands of kilometers long distance road construction requires largely the deforestation of natural habitat. Few construction companies make rehabilitation projects due to lack of follow up of the project owner. Similarly, (as shown in the next chapter), some road construction may be conducted in a poor engineering manner which exposes the construction to mass land slide after the construction is completed.

This mainly happens due to weak follow up of the authority, and the construction consultants as per the Environmental Impact Assessment Proclamation of Ethiopia.

e. The Ministry of Water Resources (MoWR): The conservation and the rational development of the

Woreda is an Amharic word which represents district or sub district

water resources of the country are also a prime concern to the Federal as well as the regional governments.

Water resources development and hydropower projects mostly those involving the inundation of large areas of grazing and agricultural land could have far reaching consequences on natural resources and local environments.

f. Investment Authority of Ethiopia: this is a federal institution charged with the task of promoting and licensing investments for development activities in various sectors, including agriculture. As such, it should have the powers to ensure that such development activities do not seriously jeopardize the long-term interest of the country with respect to the environment and natural resources. Environmental Impact Assessment (EIA) which is engaged in environmental planning, management and monitoring according to the standard of

Rio Declaration is a requirement for issuing investment licenses. However, the authority doesn't consider those standards at the strict manner and only see the feasibility of the investment project and the return it has for the economic growth which has a short term and long term impact on the employees, local dwellers, and the natural habitat. (See the flower toxicity and industrial pollution topics under the next chapter).

g. Ministry of Science and Technology: the Commission is charged with the task of taking all measures necessary to advance the development of scientific and technological research in all sectors of the national economy. It has the legal powers and means to develop policies, strategies and guidelines for ensuring environmental safety and enhancement is incorporated in all research endeavors.

h. Ethiopian Institute of Agricultural Research: as the name implies, EIAR is charged with the task of developing and implementing research programs and projects in all areas of agriculture for the development and dissemination of improved technologies and management practices that enhance agricultural production and productivity.

i. Educational institutions: these are all teaching institutions that have the mandate to provide both academic education as well as skill-oriented training. They have the responsibility to inculcate awareness, in the minds of their students, to the need for the protection of the environment and rational utilization of natural resources.

j. Institute of Biodiversity Conservation (IBC): this is the institution charged with the task and legal powers for, ensuring the conservation and rational utilization of the rich biodiversity in the country (Proclamation No.120/1998). It does this through the development and implementation of *in situ* and *ex situ* mechanisms and processes in appropriate locations across the country. It also has the lead responsibility to link as well as collaborate with national and international organizations that have similar mandates. IBC is the only mandated government institution in the country for conservation, sustainable utilization and Access and Benefit Sharing (ABS). The institute operates mainly at the federal level but also carries out activities in the various regions. It has policy guidance, regulatory as well as direct implementation functions. Its areas of core business are mainly biodiversity conservation which extends into environment, natural resources, forestry development and protection as well as agriculture and rural development.

The IBC considers climate change, erosion of land and biodiversity degradation to be the major environmental challenges that the country is confronted with.

k. National Seed Industry Agency: this organization was established to develop and implement plans and programs that enhance the production and supply of high quality seeds of crop varieties. Obviously, seed systems development connotes the identification, multiplication and supply of crop varieties that have high yielding potentials supplemented with other desirable traits. This aim could be achieved through schemes involving public and/or private organizations; including smallholder-farming communities. This has the inherent potential for genetic erosion by facilitating the replacement of traditional land races through the introduction of exotic varieties.

2.9. Current overview of environmental NGOs/CSOs

There are about 419 NGOs in Ethiopia out of which 128 are international. Most of the NGOs are rural based and are engaged in integrated rural development activities, including agriculture and environment. Only few of the NGOs are believed to have environmental rehabilitation and conservation as their core businesses are covered under this assessment. Concerns of NGOs have grown following the issuance of the recent proclamation on charities and societies. Some of the critical issues include:

- a. The Proclamation does not allow local NGOs and CSOs to receive more than 10 percent of their income from foreign sources and the international NGOs are prevented from working on human rights, governance, conflict resolution and judicial reform.
- b. The Proclamation permits excessive government interference in the function of CSOs and NGOs through the power to carry out random investigation. CSOs and CBOs must provide the government with seven days' notice of any general meeting.
- c. It creates a web of exhaustive reporting procedures; proclamation gives the government a convenient way to intimidate NGOs and CSOs. Once an NGO and CSO is denied registration, or fails to apply, the organization is then declared unlawful. If members and supporters continue their involvement with NGOs and CSOs they risk severe punishments including three to fifteen years in prison.
- d. CSOs and NGOs have limited rights to appeal against decision taken under the Proclamation. For example, if an NGO and CSO are denied registration, it will not be able to ask for judicial review of facts on which the government has based its assessment (FDRE Proc. No. 621/2009).

2.10. Influence of the environmental movement on Policy

Policy advocacy in an organized and focused manner is not only a recent phenomenon in Ethiopia, but also very limited in scope and intensity. Large scale relief prompted environmental activities which have taken the forms of mainly soil and water conservation activities and replanting campaigns initiated and implemented by multilateral UN agencies and other NGOs had some influence on policy and strategy formulations. These efforts have helped in better understanding and appreciation of natural resources and environmental issues by policy makers. Significant participation and contribution was made by NGOs and CSOs during the preparation process of the Ethiopian Poverty Reduction Strategy

Program(PRSP) with government invitation and request. Some NGOs such as the Forum for Environment are currently active in making the voices of the civil society heard with regard to the controversial issues surrounding the regulation of bio-fuel development efforts in the country. MELCA, the Ethiopian Forestry Association and Forum for Environment have intensively participated during the formulation process of the Ethiopian forestry policy in which they have managed to infuse civil society opinion. According to Development Fund (2008), generally pro-active role played by NGOs and CSOs in environmental policy advocacy has been and still is minimal. Frequently changing and by and large unfavorable relationships between successive governments and civil society organizations and limitations that arise from lack of organized, professionally backed and focused approaches have constrained effective policy advocacy in the country.

Although, major government environmental institutions such as the EPA, the Ministry of Agriculture and Rural Development recognize the significance of broader civil society participation in general, they believe this has not been developed to the desired degree due to lack of capacity in terms of resources in implementing the program. These organizations particularly recognize the positive roles that NGOs and CSOs could play in the popularization and implementation of environmental legislations and international conventions to which Ethiopia is a part. Most believe also that they are important to narrow the capacity gaps at local levels. Recognition of NGOs and CSOs as significant partner in the generation of policy suggestions and ideas is not wide spread. In conclusion, government is reluctant to allow real civil society participation in policymaking. There is however scope for “collaborative” (not confrontational) advocacy from NGOs and CSOs.

2.11. Community Based Natural Resources Management

In Ethiopia there is limited experience in traditional community based natural resource management including rangelands, forests/woodlands and water resources. Recently governments as well as non-governmental organizations are in the process of institutionalizing innovative community based natural resource management practices. The Afar and Borana communities could be cited as examples that does exercise the traditional community based natural resource management practices.

Decision-making and action among the community members occurs at different levels including individuals, household, community and regional level. Community level decisions are made through group discussion and consensus. They also have strict rules and regulations concerning the cutting of trees. In particular acacia trees are not cut without the permission of clan elders because these trees are used as a fodder reserve during dry season and drought periods.

2.12. Constraints in Community Based Natural Resource Management

Zewdu (2002) said that traditional systems are more geared to maintain equity within the community or group, while interventions have complicated resource management and have led to socio-economic differentiation within the communities. External interventions have been particularly disruptive with regard to local resource management institutions. Traditional institutions have often been replaced by state imposed committees, as the state perceived local resource management to be inadequate. The new institutions (village development committees) often do not have the power and status to be effective. State interventions has undermined the customary land tenure arrangements, seriously increased land tenure uncertainties for local farmers with negative effects on indigenous soil and water conservation investments.

Unfortunately, the knowledge and authority of local communities has often been undermined so far. As a result of interference with community systems, communal areas, which include community forest, pastures and wetlands they are generally thought to be open access resources that external forces can exploit with little or no responsibility for their protection. As a consequence many commonly owned resources that were once highly regulated by local communities, sometimes not openly accessed even by the communities themselves, have turned into open access resources leading to destruction of environment as a whole.

Institute of Biodiversity Conservation (2002) said that so as to make local community based agricultural development and biodiversity management effective; policies should decentralize responsibilities and strengthen the role of local communities and their institutions. It must be recognized that institutionalized local communities are more capable of exercising proper management and control of

biological diversity, and may even be able to effectively channel to the state a proportion of the revenue generated from commercial use of genetic resources.

This type of arrangement could be materialized by recognizing and protecting the community's right to manage and use these resources and allowing retaining a fair proportion of the revenue generated from communal resources. To implement this, appropriate policies should be formulated.

Chapter Three

Findings and Discussions

3.1. Introduction

Over the centuries, the concern for the environment in Ethiopia has undergone many stages and continuously evolved. The use-oriented period represents the main features of legislations, which were led by human needs and capacity to exploit natural resources. The resource oriented period on the other hand was more focused on the management of the natural resources and recognized the fact that such natural resources could be depleted. The eco-system-oriented legislations, however, are characterized by a holistic and integrated approach, which is focusing on the complementarily of society's development needs and that of ecological balance. In other words, the concept of sustainable development is reflected in most of the current legislations regarding the environment.

With respect to the issue of environmental management and protection in Ethiopia, various government institutions and departments responsible for different aspects of the natural and human environment carried out the duties, until recently. This had led to fragmentation of environmental protection activities and consequently to serious deterioration and damage to the environment because the said government institutions were responsible for both sectoral development and environmental protection of the resources of the country, which is inherently conflicting. In addition, there was no coordination mechanism to see to it that a development activity in one sector does not have a multi sectoral environmental harm or impact.

3.2. Main Environmental Challenges

Ethiopia is ancient country practicing crop cultivation for centuries. As a consequence and because of population growth coupled with changing climatic conditions over the past several decades, environmental degradation has drastically affected the natural resources and socio-economic infrastructure of the country. It is worthwhile to consider the environmental challenges of Ethiopia in the rural and urban setting. In the rural setting, massive deforestation and de-vegetation takes place for want

of cultivable land so as to accommodate the increasing rural population. This has exposed the soil for wind and running water erosions; thus depleting the soil nutrients. Timber, lumber and other forest products demands of the urban centers are also a major cause for deforestation in Ethiopia. The use of chemical fertilizers and pesticides is not abundantly used in the agriculture sector in the rural areas mainly because of the absence of modern commercial farming. Ethiopia is not for the time being faced with chemical hazardous related environment challenges.

The urban centers have their unique environmental concern, which is caused by population influx to urban centers from the rural areas in search of jobs thereby affecting/creating pressure on the unplanned cities and towns. The cities and towns of Ethiopia are not planned but created by accident and hence the social services in general, and health facilities in particular cannot support the ever-increasing migration and get regularly broken down because of the limited capacity.

According to Teku (2006), in many crowded urban settlement of Ethiopia, waste disposal facilities such as toilet, garbage and sewerage are not functional and hence the population is exposed to environmental health problems such as diarrhea, intestinal infections and influenza, which are caused by and large due to the municipality waste.

Although the industrial sector is said to be at its infant stage in Ethiopia, the few that are in and around the urban centers especially Addis Ababa, the capital city, are releasing untreated effluent/discharge into the surrounding rivers and streams like Akaki river stream and other water bodies. For example, the textile, tannery, and iron tools industries are polluting the environment of the Akaki River, system and underground water south east of Addis Ababa.

In addition, lack of environmental awareness concerning the linkage between environment and development in general, weak participation of the people and community based organizations in environmental management activities are some of the environmental challenges Ethiopia is facing nowadays.

3.3. Constitutional Contexts and Environmental Policy Constraints

The 1995 Ethiopian Constitution, (Article 44, 55, 92) and its National Economic Policy and Strategy (Proc. 4, 1995), have recognized and given due importance to the country's environmental sustainability.

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.

The objectives of the environment policy in particular are aimed at ensuring that essential ecological process and life support system are sustained, biological diversity is preserved and renewable natural resources are used, improving the environment of human settlement to satisfy the needs of their inhabitants on a sustainable basis, preventing the pollution of earth, air and water ensuring the participation of the people at all levels in environmental management activities, raising public awareness on environmental issues.

According to Hailu (2000) these positive Constitutional and policy concepts, however, have not been matched by appropriate institutions to give them life, as it were. Federal as well as regional agencies are not able to fulfill these objectives. Institutional capacity building in the field of environmental protection is the major problem. The relation of federal agencies with that of regions and region to region relation need more clarity and harmony.

Regional level institutions in particular do not have trained/skilled manpower and adequate financial resources to realize their environment objectives. Moreover, these institutions are also expected to follow the federal environmental policy and strategy. Theoretically, this is less difficult which will be tested practically in the future.

3.4. Environmental Assessment

Ethiopia is currently following a market economic policy and it is encouraging and attracting investments in different sectors of the economy. Development activities in the past took into account virtually no environmental considerations in development planning. Project evaluation was solely based on short-term technical and economic benefits. This, in turn, resulted in a seriously degraded natural environment. However, recently the need for environmental assessment is getting the due recognition. Some important measures are being taken in this regard. Among these, the establishment of the Environmental Protection Authority (EPA) is a landmark. One of the rationales for the establishment of the EPA is to realize the objective of ensuring "that social and economic development activities are

carried out in a manner that will protect the welfare of human beings and sustainably utilize the resource bases." Furthermore, the Environmental Policy of Ethiopia places premium on the need for undertaking and promoting environmental assessment in the country. Consequently, one of the major tasks is developing an Environmental Impact Assessment (EIA) system necessary to integrate environmental concerns into development endeavors. In order to ensure the integration of environmental concerns in development planning and build competence, a number of activities such as EIA procedural guideline, sectoral EIA guideline and other relevant procedures used in reviewing development projects and raising awareness of both public and private sectors had to be carried out.

According to Zewdu (2002) has identified that the foremost problems in this area are the virtual absence of competent and experienced staff; lack of the required technical and financial support; inadequate physical capacity; and, in general, the low level of concern allotted to EIA. These have been hindrance to the speedy development of EIA.

3.5. The Natural Resource Base and the Rural Environment

Data obtained from EPA show that natural resources are the foundation of the economy. Smallholder peasant agriculture, in some areas including forestry, is the dominant sector accounting for about 45 per cent of the GDP, 85 per cent of exports and 80 per cent of total employment. Agriculture has also been the main source of the stagnation and variability in GDP growth caused in the main by policy failures and exacerbated by recurrent drought, civil war, natural resource degradation, and poor infrastructure.

According to Reda (2004) renewable natural resources, i.e. 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. In many areas of highland Ethiopia, the present consumption of wood is in excess of unaided natural sustainable production. Estimates of deforestation, which is mainly for expansion of rain fed agriculture, vary from 80,000 to 200,000 hectares per annum.

Further, Reda elaborates that burning of dung as fuel instead of using it as a soil conditioner is considered to cause a reduction in grain production by some 550,000 tons annually. In 1990, accelerated soil erosion caused a progressive annual loss in grain production estimated at about 40,000 tones, which

unless arrested, approximately reach about 190,000 tons by 2013. Livestock play a number of vital roles in the rural and national economy but according to one estimate some 2 million hectares of pasture land will have been destroyed by soil erosion between 1985 and 1995. Land degradation is estimated to have resulted in a loss of livestock production in 1990 equivalent to 1.1 million tropical livestock units (TLUs), and, unless arrested, will rise to 2.0 million TLUs or to 10 per cent of the current national cattle herd by 2013.

In economic terms, soil erosion in 1990 was estimated to have cost (in 1985 prices) nearly Birr 40 million in lost agricultural production (i.e. crop and livestock) while the cost of burning dung and crop residues as fuel was nearly Birr 650 million. Thus in 1990 approximately 17 per cent of the potential agricultural GDP was lost because of physical and biological soil degradation.

The permanent loss in value of the country's soil resources caused by soil erosion in 1990 was estimated to be Birr 59 million. This is the amount by which the country's soil "capital" should be depreciated in the National Accounts or which should be deducted (as capital depreciation) from the country's Net National Income (NNI). The Ethiopian Forestry Action Program (EFAP) estimated the full value of forest depletion in 1990 to have been about Birr 138 million or some 25 per cent of the potential forestry GDP of Birr 544 million. Despite the presence of mineral resources in quantities and qualities suitable for exploitation, they currently contribute only about 2 per cent of the GDP. Only 1 per cent of the potential of Ethiopia's vast water resources for irrigated agriculture and hydropower generation have been developed. The energy sector is one of the least developed in the world with 90 per cent of needs being met from biomass fuels, particularly wood, charcoal and animal dung. The genetic diversity of Ethiopia's domesticated plants and its unique flora and fauna is increasingly being eroded because the long history of disruptive interventions by the state and the weakening of local management in the face of an expanding population and the increasing needs of agriculture (Ethiopian Environmental Policy, 2005).

3.6. The Urban Environment

Data obtained from the unpublished Ethiopian Environmental Policy (2005) explains that the current urban proportion of the population is relatively low at only 15 percent although the annual rate of

growth is 5.4 per cent and this rate is likely to rise to 30 per cent by the year 2020. The current stock of urban housing is both insufficient and of very poor quality. About 31 per cent of households in Addis Ababa have no sanitation facilities, while in other urban areas the proportion is about 48 per cent. The serious deficiencies in sanitation services and the inadequacy of sewerage infrastructure and random defecation in urban areas have created dangerous health and environmental problems. Rivers and streams in the vicinity of Addis Ababa and other large urban centers have become open sewers and is one of the main sources of infections resulting in diarrhea and other diseases. Privacy is almost impossible as many latrines are shared among many people and even simple doors are often absent.

3.7. The Need for a Policy on Natural Resource and the Environment

The Government of the Federal Democratic Republic of Ethiopia (FDRE) has established a macroeconomic policy and strategy framework. Sectoral development policies and strategies have been, or are currently being, formulated. Environmental sustainability is recognized in the constitution and in the national economic policy and strategy as a key prerequisite for lasting success. EPA (2002) believes that there is yet no overall comprehensive formulation of cross-sectoral and sectoral issues into a policy framework on natural resources and the environment to harmonize these broad directions and guide the sustainable development, use and management of the natural resources and the environment. Therefore, given the current stage of the country's political and policy development, the time is opportune for developing a comprehensive environmental policy on natural resources and the environment.

3.8. Policy Challenges and Responses

Data obtained from Tedia and Lemma (2009) depict that about half of the country is a high plateau region, cut in two by the Great Rift Valley. But, 5,000 years of land cultivation and demographic expansion have degraded the natural environment. The actual rates of soil erosion and deforestation are debatable, but most agree that both are occurring on a large scale. Soil erosion is believed to affect 82 percent of the country; only 2.4 percent of the country remains forested, down from an initial estimate of 40 percent forest cover. Moreover, the effects are linked in which the fuelwood shortage due to deforestation has direct implications on soil fertility, since animal waste and crop residues are collected

as fuel rather than left as natural fertilizers and stabilizers in fields. Eighty percent of the country's population lives in the highlands, which cover only 45 percent of the country. But the rich highland soil is becoming less fertile; droughts are more frequent and intense; and water resources are declining, due in part to the loss of vegetative cover and corresponding soil erosion. Furthermore, climate change may be altering the predictability of rainfall in Ethiopia.

Moreover, Jacobs and Schloeder (2001) research findings share that the momentous warning about Ethiopia's natural environment began in the 1950s, sown in part by expatriates who were not always familiar with the country's landscape. Ethiopian environmentalists and policymakers internalized this legacy of environmentalism rooted in ecological calamity, and formulated policies bent on avoiding catastrophe, with long-term implications. For example, when the Ethiopian Wildlife Conservation Organization (EWCO) was created in 1965, it adopted an exclusionary protected areas policy that prohibited human access and required forced resettlement. The policy does not acknowledge traditional land uses, (for example, pasture usage in times of drought), and has limited the country's conservation success. People living adjacent to protected areas were neither involved in the management of, nor received benefits from the parks, and do not necessarily support them. During periods of instability, such as the 1991 transition, nearby populations sometimes damaged park infrastructure and shot or poached animals within the parks. Furthermore, civil war and political crises have limited tourism and revenue-sharing opportunities.

Tedia and Lemma (1998) also show that public programs to rehabilitate land through reforestation, terracing, and other methods, such as those instituted by the socialist government in the 1980s (with funding from the World Food Program) were coercive and top-down, and not popular among rural populations. The lack of ownership of the environmental assets created by the programs undermined the sustainability of coercive reforestation on communal land, and when socialism collapsed, destruction of infrastructure and extensive deforestation ensued.

The current government enacted a National Environmental Policy in 1997, which aimed to enhance the quality of life of Ethiopians by promoting sustainable development through sound management and use of natural resources (Haile, 2004). Policy goals include preserving essential ecological processes, life support systems, and biological diversity; encouraging sustainable exploitation of nonrenewable

resources; improving the environment of human settlements; and promoting understanding of the essential linkages between environment and development. Unfortunately, the policy has been difficult to translate into on-the-ground actions due to institutional bottlenecks.

World Bank (2007) data reports that current local programs include reforestation and construction of erosion control structures. The government's Productive Safety Net Program, implemented at the watershed level, builds and protects community assets such as woodlots and common grazing lands. The program has been slow to achieve its objectives. Nevertheless, the situation may improve because of recent policy changes and the blossoming of environmentalism in Ethiopia, which has yielded many grassroots civil society and advocacy organizations.

3.9. Bad Experiences while applying Environmental Impact Assessment

a. Gilgel Gibe I Hydroelectric Project

According to the Environmental Impact Assessment research report of MELCA Mahiber (2008), the quarry site at the Gilgel Gibe I was not rehabilitated with appropriate stockpiled topsoil and other stabilizing structures. The intended drainage of water into natural watercourses was not attained at all. This quarry site affected the aesthetic beauty of the surrounding environment by converting the topography of the area and leaving scars behind. A pond was also formed inside the excavated quarry. During that time, the project owners were told that if the site remains as it is, it can be potentially dangerous to the life of both domestic and wild animals, which live in and around the project area. The pond can also be a favorable site for water and vector borne diseases. According to the team's observation, this was one of the most unwelcomed situations within the project area. (MELCA Mahiber: 2008)



Fig. 3.1. Abandoned Quarry site at Gilgel Gibe I hydroelectric project(2008)

b. Bordede–Kulebi-Harar Road Project

This project, which is located at the Oromia Region, can be taken as one of the examples of bad project experiences. Rapid assessment of the project carried out by EPA on June 2001 has revealed the following environmental problems associated with the construction activities of the project. Occurrences of mass land slide as well as the completed asphalt road at the nearby of Medina town. According to the explanations of various stakeholders, this environmental damage has been caused, among others, due to ditches that have been buried under the road, or due to ground water level rise and/or soil types.

Poor design of road construction and non-conducting EIA implies that environmental protection policy is not implemented by the concerned sector. The incident of land slide easily causes the erosion of tones of top soil from the affected area.



Fig. 3.2. Land slide along Bordede-Harar Road project

c. Gilgel Gibe II Hydroelectric Project

The Picture below shows that water quality was affected by soil erosion and pollution generated during associated civil engineering works (e.g. tunnel, quarry and borrow pits). Excavated soils were disposed directly on to the available open spaces, the surrounding streams and Gilgel Gibe II River without any treatment. These discharges are muddy and grayish in color, contain mixtures of cement, grease, oil and other unknown substances that can be detrimental to water quality, aquatic ecosystem and the surrounding environment.

It is also noted that sediment ponds constructed below the stone crushing plant are not properly managed.



Fig.3.3. Polluted streams resulted from the construction activities of the project



Fig.3.4. Damage of the tree and the surrounding land caused by the mass slide of the spoil

As can be seen from picture 3.4. , soil, stones and other materials excavated from tunnel, dam and quarry sites are dumped close to creeks and river, i.e. out of the specific places designated for spoil. The team has also observed the occurrence of a mass slide of the spoils. This mass slide has caused damage to the patches of remaining forest and valuable trees in the buffer zone. Moreover, the slide of the spoil

has also interfered with the natural flow of streams. It has been observed that the stockpiles and spoils in the project area are washed off and transported to the creeks and rivers. It is felt that this might have various effects in aquatic fauna and flora.

In general the most important lesson learnt from these projects is that even a complete and well conducted EIA would not have helped to prevent environmental damage that occurred because the finding of the EIA document was itself neglected during the implementation phase of this projects.

Factors that contributed for the poor performance of EIA are:

- Lack of capacity to monitor the implementations of environmental monitoring plans (EMPs)
- Absence of monitoring system and other specific mechanisms
- Absence of active and vibrant civil society who work on EIA issues
- Limited private sector involvement
- Poor linkage between EIA and the project cycle

3.10. Legal Framework for EIA

The 1995 Constitution of the Federal Democratic Republic of Ethiopia contains provisions that support the enactment of EIA legislation. It stipulates that the design and implementation of development programs and projects in the country should not damage or destroy the environment and recognizes the right of people to be consulted to express their views on the planning and implementation of environmental policies and projects that affect them. (Article 92)

Despite these provisions, data obtained from Yohannes (2008) points out that there are some challenges as listed below:

a. Lack of awareness about EIA among different stakeholders. Even those who are put in position to implement the laws (at Woreda and Zonal levels), do not have sufficient knowledge about these laws. In addition, awareness creation programs have not been given to these sections. Communities also do not have sufficient knowledge about EIA. Local government bodies consider it as a bottleneck for development. Thus, it is difficult to implement EIA in such situations. In the case of the EIA law, there was limited public participation during its formation. Thus, this could be one of the reasons why there is limited awareness about the issue.

- b. Lack of capacity: EPA leads the EIA process at both Federal and Regional levels. However, starting from its inception, EPA has never been well capacitated. There are no sufficient laboratories to conduct EIA, and shortage of documents. In addition, it was observed that the EIA studies are big volumes which require more time and skilled human resource to assess them.
- c. With regards to budget, EPA has very limited budget of which 90% is used for administrative purpose. The remaining 10% is not sufficient for effective environmental regulatory and program implementation.
There are also problems in relation to consulting organizations. EPA has not yet given license to competent consulting organizations or individuals to undertake this task. Therefore, most project owners go to consultants who require less payment, and this compromise the quality of the assignment.
- d. There is insufficient structure to effectively put EIA to use. There are laws, but the means of implementation are not clear. There is no monitoring system.
- e. There is also lack of functional linkage with regional and sectoral organs. There is no coordination.
All stakeholders are responsible for the effective use of EIA. However, all are pointing fingers at EPA. Since it is an agenda of all, everyone should share the responsibility.

3.11. Flower Industry and Toxicity

The indigenous civil society known as Forum for Environment points out that as the flower industry grows, it has become a concern for environmentalists and trade unions that the flower industry is chemically intensive and will ultimately have an effect on the environment and on the workers who are exposed to it in their day-to-day working life. As pleased as the government is, the rapid development of the floriculture industry, environmentalists are equally worried.

The pioneers in the private sector were Meskel Flower PLC, a local company established in 1993, and the Golden Rose Agro Farm Ltd, a foreign company, which entered the industry in 1999. The current figure from the Ethiopian Investment Agency shows an aggregate capital of 7.5 Billion Br from 235 projects registered, out of which 171 were foreign investors with a total capital of 5.3 billion Br. The remaining 64 are local investors. At present, 75 to 80 projects are underway.

As this labor intensive sector grows, so does the number of workers on farms increase. Currently, the industry involves 25,000 workers out of which 70% are women. With a few floriculture farms located around the Rift Valley area expected to hire around 72,000 workers when they begin operations. The numbers just keep on increasing to the alarm of those concerned about the welfare of the workers.

In his research findings Getahun (2000) criticizes that there are around 120 chemicals which enter into the country for the floriculture industry. Referring to the World Health Organizations' negative pesticide list, the environmentalists have categorized these chemicals as having a carcinogenic potential. A carcinogen element is any chemical, biological, or physical agent that can potentially be a cause of cancer. The term is most commonly applied to chemicals introduced into the environment by human activity. Out of these highly hazardous chemicals, Flucythrinate, Chlorothalonil, Cyproconazole, FOLPET and MANCOZEB including 15 other chemicals are used in the flower farming sector in Ethiopia.

For soil development fertilizers like phosphor and nitrogen salts are applied. These guarantee the self sufficiency of food to the country by increasing the agricultural food production or by raising the production of the so called cash crops. Furthermore, except for plant protection, pesticides are also used to control the anopheles mosquito insect that transmits malaria disease. For these reasons, Persistent Organic Pollutants (POPs) like Aldrin, Chlordane, DDT, Dieldrin are used for a long period of time in the country, and their utility may continue until environmental friendly biological control agents have replaced them (www.geocities.com). These types of insecticides well give balanced agro-ecosystem. Until recently, there were about 2000 tons of obsolete pesticides as well as empty pesticide barrels stored in poor conditions at different places in the country.

But the Forum for Environment (FfE), which consists of 160 non-governmental organizations and was established ten years ago, said that these chemicals need attention as they are hazardous to humans and the environment.

According to a study done on six floriculture farms in the sector, while some farms are reported to have no work related hazards on its workers and its surrounding environment, other farms were identified as having chemical contamination and accidents as major work related risks for workers.

Regarding employees' health inspections, some studied farms indicated not having their own clinic, but that they nevertheless ensured that a regular medical checkup for its employees in general and those working directly in the farm compound in particular be done in intervals of six months at the nearest hospital. Other farms revealed that no regular health check-up for workers was made, but that they offered the possibility to seek free medical checkup if necessary.

According to a chemist from the Addis Ababa University Science Faculty, the long term effects that can result from some of these chemicals are not only cancerous to the workers handling them, but can also be toxic in the sense that it could cause miscarriages, low immunity and even deteriorate brain cells over time. The chemist explained that the symptoms include, fainting spells, nausea or extreme vomiting. (www.akababi.org)

3.12. Industrial Pollution Challenges

In Ethiopia the generation of industrial waste, including hazardous waste is increasing rapidly as a result of industrialization, urbanization, and the implementation of a new economic policy. While the Ethiopian economy grew by 1.9% in the period 1980 to 1990 in real terms the toxic load generated per unit of industrial output increased by 1.8 which is higher as compared to the Sub-Saharan Africa average of 1.3 (UNIDO, 2001). During the 1990s the government claimed that the country's economy has shown strong performance, as a result of the government's reform program. This time is noted as when a major departure is made in areas of industrial development. For example, between 1993 and 1998, the economic growth vis-à-vis the economic sector was 3.4% for agriculture, 5.3% for industry and 6.3% for services (IPS, 2004). According to UNIDO (2001) the industrial pollution, however, has increased disproportionately at higher rate compared to the economic growth in the country. During this time the GDP growth record was 5.8% while the toxicity intensity of the industrial production grew by 2.3%.

Hence, the present challenge is how to effectively manage the increasing industrial waste due to a host of environmental and health problems associated with poor waste management. The following pictures illustrate the observations of the student researcher at the selected factories in Addis Ababa as sample examples (Dec.2011).



Fig. 3.5. Incineration on Site by MAMCO Paper Products Company (Observation of the researcher)

Unfortunately, like other developing countries, Ethiopia does not possess sufficient resources to deal with this and other serious environmental issues. Accordingly, it has become imperative to prevent or at least minimize the generation of wastes in the first place, a concept known as ‘pollution prevention’ or ‘waste minimization’.

With a rapidly expanding population and a growing trend of industrial development, problems related to the management of industrial waste have become of considerable magnitude in Ethiopia. The problem is more severe in Addis Ababa the capital where most of the industrial establishments of the country are taking place. At present among the existing industries operating in the city, only a few of them treat their wastes to any degree while the majority discharge their wastes into nearby water bodies and open land without any or little form of treatment. Industrial wastes are disposed together with the respective domestic wastes at poorly designed underground septic tanks, allowing pollutants to leak into the ground water.



3.6. Solid Waste Generated by Meher Fiber Products Share Company

Teku (2006) research data illustrate wastewater treatment status of eight factories in Ethiopia as follow:

Industrial Firm Wastewater Treatment Methods

a. Akaki Textile S. C.	Flotation, aeration, chemical dosing and siltation
b. Ethiopian Iron and Steel Factory	No treatment
c. Fewes Pharmaceuticals PLC	No treatment
d. Kadisco Chemical Industry	No treatment
e. Kality Foods S.C.	No treatment
f. Kality Metal Products Factory	No treatment
g. MAMCO Paper Products Factory	No treatment
h. Meher Fiber Products Factory	No treatment

Furthermore, hazardous industrial wastes are not treated separately but are mixed with other inert solid or liquid wastes. This has created concern at all levels in the country that the capital city's water bodies are close to biological death from the excessive industrial discharges and may lead to serious health and environmental consequences.

Alemu on his internet proceedings wrote that Wonji, WonjiShoa, Metheara and Akakai are industrial towns of Ethiopia. In Wonji and Metehara sugar production factories are residing. Whereas in AkakiBeseka small textile and metal industries are located. The rivesurrounding them are heavily polluted by the hazardous wastes generated from the industries. There exits noise pollution. Excess chemicals and metals like chromium, nickel, arsenic, zinc, cadmium, cobalt, copper, manganese and other toxic organic substances are present in Akaki River. The chemical called fluoride is present in the river water of Wonji. Furthermore, asbestos and industrial smoke fills the air of Wonji and Methara and the surrounding regions. In fact, industrial pollution primarily affects the health and the environment of workers and inhabitants of the towns respectively. (<http://www.telecom.net.et/estc/Publication/Proceedi.htm>)

Hence, one can deduct that the small scale agriculture particularly along major rivers of Addis Ababa, and those towns are highly exposed totoxic minerals previously mentioned which are quite dangerous for the health of the end consumers.

This has not only forced the government to formulate regulations and standards for discharge limits but also prompted the development of methods and systems by which wastes can best be managed. However, their implementation is quite at the juvenile stage.

3.13. Industrial Waste Management and Pollution Control Policy

Environmental related issues are not new to the Ethiopian legal system.Ethiopia's 1994 Constitution, Article 44(environmental rights) and Article92(environmental objectives) contain references to environmental concerns(FDRE, 1994). Consequently, Environmental Policy was formulated, institutionalarrangements were made and legislations were crafted (Proclamation 9/1995;FDRE, 1997). Based on the Constitution, EPA was established in 1995 to caterenvironmental matters. The enabling

environment, however, was created seven years later in 2002 when environmental guidelines like Environmental Impact Assessment (EIA) were prepared. Further, Waste Management Collection and Disposal Regulations of Addis Ababa City Government enacted only in 2004 (Regulation No 13/2004).

The law prohibits all acts causing environmental degradation, environmental pollution or environmental incidents. The law, in general terms, defines the responsibilities of institutions and the public, requires proper management of waste applicable to all sources and types of waste. The law deals with penalty schedule (all the same for a house hold, industry and different institutions) for breaking the law and adopt the Polluter Pays Principal (PPP), whereby the individual or organization responsible for pollution or degradation of the environment must financially compensate for the damage. Existing environmental regulations have not been fully enforced (in Ethiopia, we have no problem of laws/principle or guideline. The problem is the implementation capacity of the role players –unqualified staffs appointed for their political affiliation, not for their qualification, corruption and other malfunctioning) because of the low enforcement capabilities of the institutional set up. Moreover, the regulations, guidelines and standards are not well developed, nor do they reflect the institutional capabilities within the country. Inadequate expertise, funds and equipment, above all, lack of political will and limited public support and participation are found to be the bottlenecks.

Ethiopia, like other developing countries, has adopted the traditional command and control approach based on quality or discharge standards. This is where command and control legislation is often criticized. It fails to adequately address the impacts of cross media pollution. Besides, full compliance with regulations creates economic hardships for existing enterprises. This seems discouraging to environmental actors to aggressively work at it.

Capacity building efforts with assistance from international agencies are currently underway. They have focused on environmental monitoring, EIA, pollution control and waste management. It is expected that these measures will improve Ethiopia's inspection and enforcement capabilities and in turn, will reduce the gap between environmental policy and implementation.

Like economic instruments, voluntary environmental initiatives have hardly been adopted in Ethiopia. In Addis Ababa, since 1999, the Ethiopia Cleaner Production Centre has welcomed voluntary participation

in their in-plant demonstration program. The goal of this program is to assist companies with identifying environmental problems, developing appropriate cleaner production options, and selecting feasible options for implementation. Yet the focus is to export oriented industries. To date, a few companies used to send their personnel to the center's cleaner production training program.

Chapter Four

Conclusion and Recommendation

4.1. Conclusion

The following conclusions depict the current environmental realities in Ethiopia, based on the data analysis of the researcher.

- a. A very good legal framework put in place towards addressing the complex environmental challenges could not be implemented due to mainly lack of capacity of sectoral institutions, weak institutional development, and lack of financial resources and requisite of professional capabilities.
- b. Civil society although showed some growth in recent years remains small and environmental policy advocacy is at juvenile stage to significantly influence environmental policy in the country.
- c. NGOs and CSOs that are engaged in environmental preservation, rehabilitation and policy advocacy are very few in number when seen against the huge environmental challenges of the country and the volume of task that should be accomplished.
- d. Impacts on public opinion and policy are results of a wide range of environmental rehabilitation and conservation work often carried out in combination with relief and developmental endeavors. The donor driven tendency of many to take up a wide spectrum of activities has greatly undermined their specialization and focus in areas in which they command comparative advantage.
- e. EIA is challenged with lack of awareness of stakeholders including the zonal and woreda level, and local communities.
- f. Environmental affiliated organizations at regional and local level lack laboratories so as to test the poisonousness of materials released to the environment. Further, they lack the capacity of

monitoring the implementation of environmental plans, civil society, private sector involvement, linkage between EIA and the project cycle.

- g. Environmental policies which are clearly indicated on the constitutional articles and environmental protection proclamation are not engaged in implementation at various levels of government sectors.
- h. EPA lacks sufficient budget for environmental protection projects implementation, and structure to effectively put EIA in to action.
- i. There is no functional linkage between environmental bureaus, e.g. EPA at federal level, regional and sectoral offices so as to work for common objective.
- j. There exist weak participation of people and community based organizations in environmental management activities.
- k. Serious difficulties are observed in sanitations services, inadequacy of sewerage infrastructure and random defecation in urban areas which are the main sources of infections that cause diarrhea and other vector borne diseases particularly in urban areas.
- l. Lack of political will and limited public support and participation are found to be the bottlenecks.

4.2. Recommendations

In line with the findings discussed in chapter three above, the researcher has forwarded the following recommendations.

- a. As the knowledge level on environmental awareness is very low in the country, efforts must be made to enhance awareness. Emphasis must especially be on key actors, such as parliamentarians, various governmental officials, woreda administrators, business persons, people directly affected by development programs and projects, etc. All stakeholders, mainly NGOs, must start an extensive awareness creation campaign.
- b. Work must be done to eliminate the notion that EPA is the sole entity responsibility for the environmental protection process. Regional environmental organs and sectoral units must be part and parcel of it so as to achieve the environmental protection policy national objective.

- c. Environmental policy implementation needs huge capacity, both on the side of consultants and reviewers. Additional efforts must be made by all stakeholders to enhance the capacity of those who steer the wheel of the policy process.
- d. Politicians have to show strong commitment towards the implementation of environmental policies.
- e. Efforts must be made for the realization of functional linkage, including revising the law to clearly set up a viable institutional link between EPA and other organs. This can be through:
 - i. Opening discussion forums with proponents (both private and government) to raise awareness on the importance of environmental protection
 - ii. Finding ways to impose EIA as a condition for access to credit, business licenses, access to market and getting land for the operation of the project or the initiative etc. Such initiatives must be backed by legal instruments and must spread to other lending banks.
 - iii. Establishing the public interest litigation in relation to the EIA system
 - iv. Insurance schemes must exist to cover the environmental liability held by development programs and projects.
 - v. Strictly applying both the EIA law and the Criminal Code (Article 521) to punish those who do not submit their EIA to EPA or the relevant Regional organ, through effective cooperation with the prosecution office.
- f. Government and private organizations have to work closely together so as to apply environmental policies of the country.
- g. EPA has to work closely work with the various stakeholders of environment at federal and regional level so as to create awareness, build the capacity of professionals, information exchange, and empower the local dwellers in environmental policy objective.
- h. EPA has to adopt successful environmental policy implementation strategies of some countries.
- i. The government has to work in close collaboration with the NGOs/CBOs so as to avoid the alarming environmental problems at rural and urban areas.

- j. Federal, regional and local governments have to adopt regular monitoring and evaluation techniques of environmental policy implementations.
- k. The contribution and potential positive impact of environmental NGOs and CSO in the environmental movement is immense which need to be promoted and supported strongly.
- l. In the short and the medium-term, the approach of conducting environmental advocacy along with other relief and development activities will have to be pursued with gradual deliberate actions towards specialization.
- m. Institutions need to be encouraged and supported to develop cutting edge know how and skill in environmental preservation and protection work in general and specialized areas such as environmental advocacy.
- n. Reliable and predictable finance is basic to undertaking environmental work in consistent and effective manner.
- o. The different institutions that deal with chemicals, i.e. trade, transport, storage, etc. are also required to be able to know or provide as much detail as possible about each chemical they are concerned with.
- p. As it is clearly stated in the country's environmental policy, the Environmental Protection Authority has to work hard to ensure the people's right to access environmental information. In order to implement this, in particular, and the policy, in general, the Environmental Protection Authority needs to acquire the relevant data/information related to chemicals.
- q. It is hoped that good relationships that are to be developed among the pertinent international and local organizations in the area of the exchange of data/information on chemical management will facilitate this further.
- r. In the future, the following have to be done if the state of chemical management in this country is to acquire a sense of adequacy: systematize all available information related to chemical management; collect enough international literature and master database that could be accessed easily by users; and, create awareness by different means including networking and other exchanges of data or information.

- s. Education and training of stakeholders, including policy level decision makers, are important catalysts for the success of assessing vulnerabilities and planning adaptation activities, as well as implementing adaptation plans. It is important to communicate both successful and unsuccessful efforts at planning and implementation to avoid future mistakes. Short policy cycles are a major challenge in keeping decision makers up to date.
- t. Capacity-building at local, national and regional levels is vital to enable the country adapt to climate change. Collaboration between educational, training and research institutions would help to enable the formal exchange of experience and lessons learned among different institutions of the respective regions. Universities, tertiary centers and research centers have a special role to play in educating and building the capacity of stakeholders in key sectors, and climate change and adaptation issues should be integrated into education curricula.
- u. Improving public awareness and developing overall communications strategies makes climate change science accessible to the average citizen and can reduce their vulnerability. Besides awareness-raising at local levels, it is also important to involve high-level policymakers to ensure integration of climate change risks into national development policies. For example, in Cuba, hurricane and disaster risk reduction is taught in schools and training is carried out for the entire population every year (Cuba 2001). Important public awareness activities include linking research to policy-making, with an emphasis on getting research messages to appropriate target groups and building credibility of forecasts and improving their dissemination and use.

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