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INDUSTRIAL POLLUTION CONTROL AND MANAGEMENT IN ETHIOPIA:

A Case Study on Almeda Textile Factory and Sheba Leather Industry in Tigray Regional State

By

Tsegai Berhane Ghebretkle

(LL.B, Addis Ababa University, Ethiopia; LL.M, Oslo University, Norway)

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List of Abbreviations

AAEPA	Addis Ababa Environment Protection authority
ADLI	Agricultural Development Led Industrialization
AGOA	African Growth and Opportunity Act
APAP	Action for Professional's Association for the People
AV	Automatic Valve
BoARD	Bureau of Agriculture and Rural Development
BPR	Business Process Re-engineering
CDR	Community driven Regulation
CRGE	Climate Resilient Green Economy
EBA	Everything But Arms
EC	Environmental Council
EEPCO	Ethiopian Electric Power Corporation
EFFORT	Endowment Fund for Re-habilitation of Tigray
EIA	Environmental Impact Assessment
EIAP	Environmental Impact Assessment Proclamation
EIs	Environmental Inspectors
EKC	Environmental Kuznets Curve
EMME	Ethiopian Ministry of Mines and Energy
EPCP	Environmental Pollution Control Proclamation

EPE	Environmental Policy of Ethiopia
EPLAUA	Environmental Protection, Land Administration and Use Agency
EPOEP	Environmental Protection Organs Establishment Proclamation
ERA	Ethiopian Road Authority
ESAF	Enhanced Structural Adjustment Facility
FD	Federal Democratic Republic of Ethiopia
FEPA	Federal Environmental Protection Authority
GDP	Gross Domestic Product
GF	Gravitational Force
GTP	Growth and Transformation Plan
HPR	House of Representatives
IMF	International Monetary Fund
I-PRSP	Interim Poverty Reduction Strategy Paper
IUCN	International Union for Conservation of Nature
LLPTI	Leather and Leather Products Technology Institute
MDG	Millennium Development Goal
MoFED	Ministry of Finance and Economic Development
MoJ	Ministry of Justice
MoTI	Ministry of Trade and Industry
NGOs	Non Governmental Organizations

PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
REAs	Regional Environmental Agencies
SAF	Structural Adjustment Facility
SDPRP	Sustainable Development and Poverty Reduction Programme
SNNP	Southern Nations Nationalities and Peoples
TIDI	Textile Industry Development Institute
TPLF	Tigray People Liberation Front
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization

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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.

Tsegai Berhane Ghebretkle

Abstract

As a new emerging industrializing nation, industrial pollution is a challenge in Ethiopia. To address the problem, the government has introduced different laws, policies, strategies and established environmental organizations at federal and regional levels. However, the government has not performed well in this regard due to various barriers militating against sustainable industrial pollution control and management. Partly this is due to organizational weaknesses, lack of effective implementation of standards as well as the absence of expertise and capacity building.

The aim of this research is to investigate the practice of industrial pollution control and management in Ethiopia with particular emphasis on two selected industries. For the practical investigation a methodology that combines semi-structured interview from key informants in industrial pollution, together with documentary and observational data has been employed.

The findings of the research show that the magnitude of industrial pollution is rapidly increasing in the country. This is particularly the case in the textile and leather industries. It is also more severe in urban centers where most of the industries are located. The problem is most operating industries in Ethiopia do not have waste treatment plants. They simply discharge their untreated effluent to the nearby rivers or drainage facilities in violation of the established standards. Even for those industries with treatment plants (including the two case study industries) the treatment plants are not functioning properly due to cost implications; and they discharge their effluent to the nearby rivers with nominal treatment. Thus, they are sources of damage to the environment and the nearby communities.

The main barrier to industrial pollution control has been the application of weak form of sustainable development policy and lack of institutional regulations—including laws and organizational implementing mechanisms. This is manifested through lack of political will on the part of the government to enforce the existing industrial pollution control laws; lack of capacity (resource and personnel) and coordination among the environmental organizations. On the part of the affected community there is lack of awareness and organization to protect their constitutionally enshrined right—the right to clean and healthy environment. Similarly there is also lack of corporate social responsibility on the side of the two industries subject of the study.

CHAPTER 1

ETHIOPIA'S DEVELOPMENT ENDEAVOUR AFTER 1991

1.1 Introduction

Ethiopia is one of the poorest countries in the world. According to the United Nations Development Program (UNDP), Human Development Report 2013, Ethiopia's total population is 86.5 million; Human Development Index (HDI) 0.396 (the 13th lowest out of 185 countries); life expectancy at birth is 59.7 years; inequality-adjusted HDI 0.269; population in severe poverty and living under degraded land are 72 %; and GDP per capita at PPP is 979 USD.¹

For this reason, poverty alleviation is Ethiopia's primary development concern. Since 1992 the government has embarked on implementing policy reforms focusing on introducing free markets to enable it to develop and eradicate poverty. However, the type of free market promoted by the government is state regulated free market. The government's overriding development objectives are attaining "fast, broad based and more equitable economic growth with macroeconomic stability."² In these objectives three main components are highlighted. These are: accelerated economic growth, pro-poor economic growth and macroeconomic stability. To achieve these objectives the government has implemented different policies, strategies and programs as explained and discussed in various chapters of this thesis.

Nevertheless, in the process of rapid economic development in the country, the magnitude of industrial pollution, especially, from textile and leather industries is alarmingly increasing. This increase of industrial pollution is causing damage to the environment and human health in contravention to the right to clean and healthy environment as envisaged in Art.44 of the Federal Democratic Republic of Ethiopia (FDRE) Constitution, Environmental Policy and other subsidiary environment legislation.

¹UNDP, 2013. Human Development Report 2013, the Rise of the South: Human Progress in Diverse World, USA: New York, pp. 143-92.

²Ethiopia-Enhanced Structural Adjustment Facility Medium-Term Economic and Financial Policy Framework. Paper, 1998/99-2000/01. (<http://imf.org/external/np/pfp/eth.etp.htm#I>), (Accessed on September 20, 2011)

As a background to the thesis, this chapter deals with the general context relating to industrial pollution control which includes the historical, social, economic and political dimensions.

Moreover, it explains the objectives, questions, assumptions, methodology, originality and outline of the thesis. It also addresses the justification for undertaking the thesis.

The scope of the thesis is limited to the period between May 1991 and June 2013 for the following reasons:

- Since May 1991, due to the implementation of the new economic policy and rapid industrialization in the country; the generation of industrial pollution has increased;
- In post 1991 Ethiopia, there is an attempt on the part of the government to harmonize and integrate environmental, economic, cultural and social considerations into a decision making process to promote sustainable development; and
- Up to July 2013, due to the fact that it was at this period of time where all the required field works and data collection for this thesis were completed.

1.2 Historical Background

Ethiopia is located in the horn of Africa. It is bordered by Eritrea in the North, Sudan and S. Sudan in the West, Kenya in the South, Somalia in South East and Djibouti in the East. With a population of 91, 195, 675;³ it is the second populous country in Africa next to Nigeria.

After the defeat of the military regime (the Derg)⁴ in mid-1991 and followed by a brief transition period⁵, Ethiopia adopted a new constitution that established the Federal Democratic Republic of Ethiopia (FDRE) in 1995.⁶ It is a federation consisting of nine⁷ regional states and two city administration councils—Addis Ababa⁸ and Direedawa.⁹

The Federal Democratic Republic is composed of states delimited on the basis of settlement patterns, language, identity and consent of the peoples concerned.¹⁰ (For the constituent states of the FDRE, see Figure 1.1 below)

³US Central Intelligence Agency available at; <https://www.cia.gov/library/publications/the-world-factbook/geos/et.html> (Accessed on October, 11/ 2012).

⁴“The Derg military junta run by Col. Mengistu Hailemariam ruled Ethiopia from 1974 until 1991. It was, at that time, one of Africa’s most brutal and authoritarian regimes. During what has been called the Red Terror from 1976 to 1978, tens of thousands of Ethiopian intellectuals, opposition party members and sympathizers were imprisoned, tortured and killed. The current Ethiopian government, the Ethiopian Peoples’ Revolutionary Democratic Front (EPRDF), managed to topple the Derg by arms in May 1991, and in the process detained hundreds of officials from the Derg regime in order to make them accountable for the human rights atrocities conducted in the 1970s and 1980s.” See; Kjetil Tronvoll, et al (eds.), 2009. *The Ethiopian Red Terror Trials, USA*: Indiana University Press, p. Xi.

⁵ “In July 1991 a national, transitional conference was convened where more or less all Ethiopian opposition movements were represented. The conference formally endorsed and established the transitional government of Ethiopia (TGE). The conference also endorsed a national Charter that worked as an interim constitution and a governmental framework for political priorities, until a new permanent constitution was ratified by the newly elected federal parliament n 1995.” *Ibid.*, p. 6.

⁶FDRE, 1995. The Constitution of the Federal Democratic Republic of Ethiopia, Proclamation No. 1/1987, Federal Negarit Gazeta, 1st year No. 1, Addis Ababa, pp.1-38.

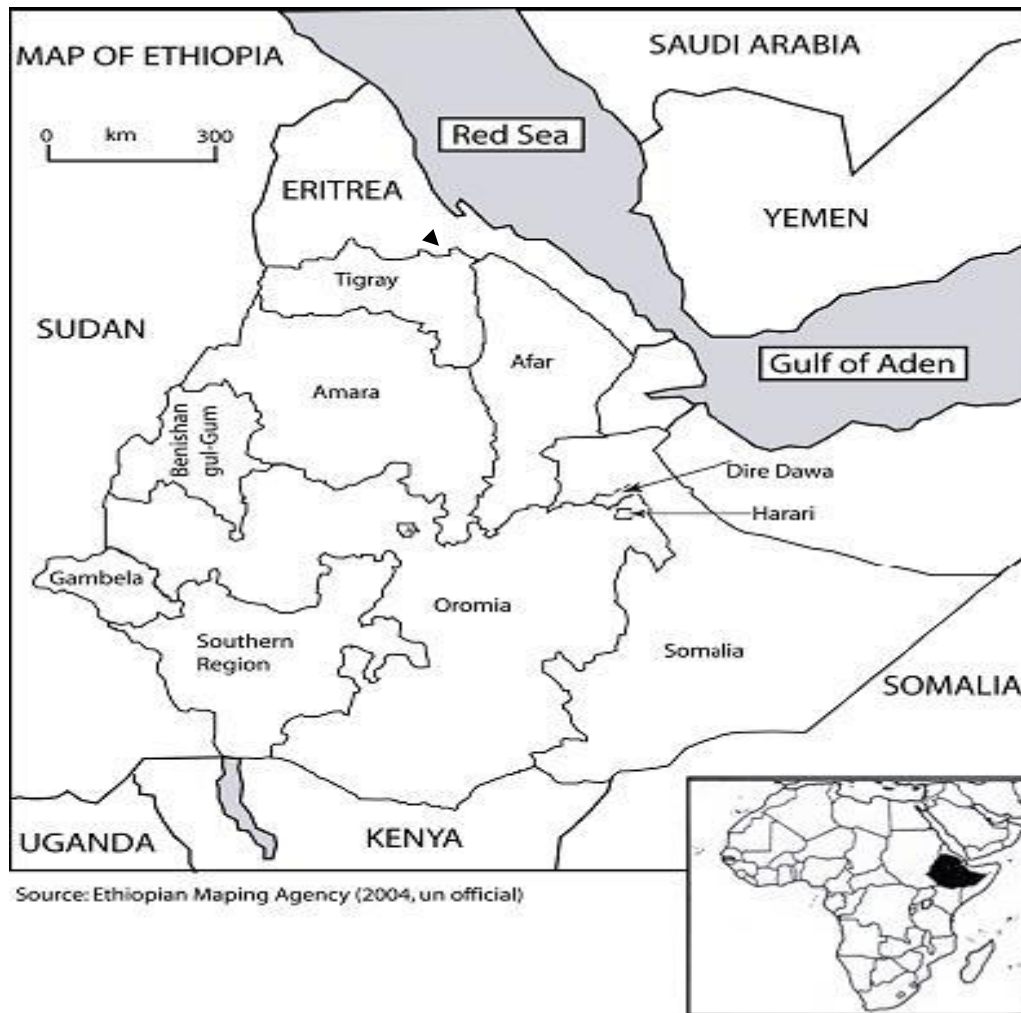
⁷*Ibid.*, art.47 (1).

⁸*Ibid.*, art. 49(2).

⁹FDRE 2004. The Direedawa Administration Charter, Proclamation No. 60/2004, Federal Negarit Gazeta, 10th year No. 60, Addis Ababa, at. 2808-2837.

¹⁰FDRE Constitution, *Supra*, n. 6, Art.46 (2).

Figure 1.1: the constituent states of the Federal Democratic Republic of Ethiopia



Source: (Ethiopian Mapping Agency, 2004)

The FDRE Constitution Art.51(2) empowers the Federal Government to “enact laws for the utilization and conservation of land and other natural resources, historical sites and objects”; Art. 51(11) to “determine and administer the utilization of the waters or rivers and lakes linking two or more states or crossing the boundaries of the national territorial jurisdiction”; and Art.51 (20) to “establish uniform standards of measurement.” The Constitution in Art.52 (2) (d) also empowers the regions “to administer land and other natural resources in accordance with federal laws.”

The power to enact laws on industrial pollution control is primarily the mandate of the Federal Government. Regional states are mandated to administer environmental issues based on Federal Laws. The 1995 Constitution contains a comprehensive Bill of Rights from Art.14-44. In Art. 9 (4), it proclaims that all international treaties ratified by Ethiopia are part of the law of the land. The Constitution, in Art.13 stipulates that the rights and freedoms enshrined in the Constitution shall be interpreted in a manner conforming to the principles of the Universal Declaration of Human Rights (UDHR), International Covenants of Human Rights and international instruments adopted by Ethiopia. As per the Constitution, the House of Peoples Representative (HPR) is the highest federal legislative organ to proclaim environmental legislation, ratify environmental conventions and establish regulatory environmental institutions at federal and regional level. (See chapters 2, 3 and 4)

The FDRE Constitution in Arts.78 & 79 proclaims that the judiciary is independent and judges shall exercise their functions in full independence directed only by the law. More specifically, in Art.79, it further proclaims that all judicial powers are vested in courts. However, against these pronouncements, the Constitution in Art.62 & 82 assigns the power to interpret the Constitution to the House of Federation (HoF), a non-judicial and political organ which is composed of representatives of the nations, nationalities and peoples in Ethiopia. In Art.84 of the Constitution, when the constitutionality of state or federal law is contested courts are supposed to submit such a dispute to the Council of Constitutional Inquiry. The Council is mandated to give advisory opinion to the HoF which is empowered to give final decision. Such handing over of power to a political body “reflects and responds to a populist or skeptical conception of the rule of law and the role of the judiciary.”¹¹ It is also based on the opinion that “handing over the power to define the limits of legitimate government and popular rule to an elite group trained in law violates people’s sovereignty”, and “the members of the judiciary are not popularly elected and therefore are the least accountable to the people.”¹² But it should be stressed that such handing over of power to a political body has been subject of criticism.

¹¹Girmachew Alemu, Beyond the Red Terror Trials-Analyzing Guarantees of Non-Reparation; in Kjetil Tronvoll, et al (eds.), 2009. The Ethiopian Red Terror Trials, USA: Indiana University Press, p.119.

¹²*Ibid.*

For instance, Alemu argues that “it poses conceptual and practical difficulties.”¹³ He categorizes these difficulties into three. These are:

First and foremost, the terms of the Constitution that gives the power to interpret the Constitution to the HoF contradict the very declarations of the Constitution that proclaim that all judicial power is vested in courts. Second, the provision of the Constitution that gives the power to interpret the Constitution to the HoF takes away the most important function of courts: the interpretation of the supreme law of the land. Third, the power of Constitutional interpretation given to the HoF implies that courts are expected to send each and every case that may involve constitutional interpretation to the HoF.¹⁴

Since 2004, Ethiopia’s economy has grown on average by 11% per annum from less than 3% annual growth during the previous seven years.¹⁵ This is much faster than the average annual growth in Africa as a whole which is nearly 6%.¹⁶ According to Ali, Ethiopia was one of the world's five fastest-growing economies in 2010. It is also forecasted to be the third-fastest growing economy in the world over the next five years, after China and India. As a result of the fast and equitable economic growth rate, Ethiopia’s head count poverty ratio has also progressively fallen from 2000 to 2010/11. For instance, the poverty ratio has fallen from 55% in 2000 to 39% in 2005;¹⁷ and from 39% in 2005 to 29.6% in 2010/2011.¹⁸ The IMF also acknowledged Ethiopia’s progress in economic growth and poverty eradication. It stated that “the Ethiopian economy continues to grow at a robust pace, poverty continues to fall, and inflation, while still high,¹⁹ has been declining. The expansion in economic activity has been supported by robust export growth and public enterprise investments.”²⁰

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ Shimeles Ali, 2011. Ethiopia's Imperfect Growth Miracle, International Economic Bulletin, Carnegie Endowment for international peace. (<http://carnegieendowment.org/2011/10/20/ethiopia-s-imperfect-growth-miracle/60yk>), (Accessed on October, 11/ 2012).

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ Capital News Paper, available at; http://www.capitalethiopia.com/index.php?option=com_content&view=article&id=900:ethiopia-registers-114-percent-gdp-growth-in-1st-year-of-gtp-period&catid=45:news-in-brief&Itemid=37 (Accessed on May 20, 2012).

¹⁹ However, as the government claims, currently the inflation rate has dropped from two digits to one digit, that is, 6.4% See; Ethiopian Central Statistics Agency website available at; <http://www.csa.gov.et/> (Accessed on July 1, 2013)

²⁰ Statement by an IMF Staff Mission on the 2012 Article IV Consultation with Ethiopia, Press Release No. 12/224. (Available at, <http://www.imf.org/external/np/sec/pr/2012/pr12224.htm>) (Accessed on June 10, 2012)

The World Bank in its report noted that "over the past decade, the Ethiopian economy has been growing at twice the rate of the African region, averaging, 10.6 percent GDP growth per year between 2004 and 2011 compared to 5.2 percent in Sub-Saharan Africa."²¹ The Bank states that "two and a half million people in Ethiopia have been lifted out of poverty over the past five years as a result of strong economic growth, bringing the poverty rate down from 38.7 percent to 29.6 percent between 2004/05 and 2010/11"²² The Bank attributes this growth to "agricultural modernization, the development of new export sectors, strong global commodity demand, and government-led development investments."²³ However, the Bank stressed that "the government target to reduce poverty to 22.2 percent by 2014/15 is ambitious but attainable."²⁴

1.3 Concepts and Theories of Development

There are two compelling reasons for discussing these development theories in this thesis. These are: first, to briefly indicate the evolution of development theories from growth and economic development to the current paradigm related to sustainable development (which is at the heart of Ethiopia's development policy and strategy) as discussed in chapter 2 and to briefly indicate the politics of development as a background. Second, to make a link between industrial pollution control and the various development theories. For example, in the case of Ethiopia, as far as the researcher is concerned, industrial pollution from textile and leather industries were not analyzed in line with these different development theories.

However, among these various development theories, the thesis has selected sustainable development as a development paradigm to analyze the industrial pollution control in the selected textile and leather industries in Ethiopia.

The concept of development is hard to define and it is ideologically very controversial. In fact there is no universal definition for development. Different development scholars, organizations and practitioners from different disciplines define it differently depending on their ideology.

²¹The World Bank, 2012. Ethiopia Economic Update-Overcoming Inflation, Raising Competitiveness. Available at: <http://www.worldbank.org/en/news/2012/12/13/ethiopia-economic-update-overcoming-inflation-raising-competitiveness> (Accessed on December 23, 2012)

²² *Ibid*

²³ *Ibid*

²⁴ *Ibid*.

Frankel, for example notes that;

We talk a lot about development, about the need for development, and that some people, countries, regions or even continents require development. We call some people or countries developed and other underdeveloped. But nobody has really defined what development is.²⁵

Frankel also suggests that "the concept of development must be considered a dynamic process that is changing continuously with advances in culture; literacy; technology, science, religion, and our understanding of man him or herself."²⁶

Dernbach, however, observes that "its ordinary meaning can be inferred from a United Nations General Assembly Resolution on the Right to Development, various UN agendas for development, the annual Human Development Reports of the United Nations Development Program and the indicators of development that are employed in those reports, and a considerable body of development experience."²⁷ He further observes that from the above mentioned UN resolutions, reports, development programs and indicators follows "development [could be inferred to be] a framework for improving the quality of life and standard of living in the poorest countries of the world, which are also (not surprisingly) known as developing countries." He argues that "even if there is no universally accepted definition of development, its ordinary meaning—economic development and social development or human rights are pillars of development. Social development and economic development, in turn, are mutually dependent."²⁸

Sen has also defined development as a process that enlarges individual freedom.²⁹ In defining development as freedom, he underlines the following core values—"freedoms are not only the primary ends of development, they are also among its principal means"³⁰; "freedom as the capabilities of persons to lead the kind of lives they value and have reason to value"³¹;

²⁵ Ernst G. Frankel, 2005. *Managing Development: Measures of Success and Failure in Development*, New York: Palgrave Macmillan, p.xviii.

²⁶*Ibid.*

²⁷John C. Dernbach, 2011. *Creating the Law of Environmentally Sustainable Economic Development*, *Pace Environmental Law Review*, Vol.28, Issue 3, pp.617-18.

²⁸*Ibid.*

²⁹ A. Sen, 2000. *Development as Freedom*, New Delhi: Oxford University Press, p.3.

³⁰*Ibid.*, p.10.

³¹*Ibid.*, p.18.

"individual freedom as the basic building blocks"³² of the development process; and "democratic system [to be] an essential component of development."³³

Nevertheless, Sen's conceptualization of development as freedom is not free from criticism. For instance Chimni argues; "while Sen's vision is powerful in terms of elaborating the concept of development it is not as attentive to social structures and processes that inhibit its realization. He tends to avoid dealing with hard questions of power and social conflict."³⁴ Chimni further argues; "Sen does not advance a theory of practice commensurate with his conception of development. The absence of any strategy to achieve the goals of development in Sen's work somewhat detracts from his theory of development."³⁵ In other words Chimni argues; "Sen has little to tell us how to go from underdevelopment to development."³⁶ From the above it could be argued that the latest understanding of development by some scholars is about freedom, opportunity, and quality of life even if it has nothing to say directly about environmental protection.

Art.43(3) of the FDRE Constitution stipulates that "the People of Ethiopia as a whole, and each Nation, Nationality and People in Ethiopia in particular have the *right to improved living standards* and to *sustainable development*"(Emphasis mine). In line with the capability approach of Sen discussed above, the Constitution in Art.43 (4) stipulates that the "basic aim of development activities shall be to enhance the capacity of citizens for development and to meet their basic needs." (See section 1.4 for details)

As to the ideological bias of development, Easterly argues that like all ideologies, development:

Promises a comprehensive final answer to all of society's problems, from poverty and illiteracy to violence and despotic rulers. It shares the common ideological characteristic of suggesting there is only one correct answer, and it tolerates little dissent. It deduces this unique answer for everyone from a general theory that purports to apply to everyone everywhere. There is no need to involve local actors who reap its costs and benefits. Development even has its own intelligentsia,

³²*Ibid.*

³³*Ibid.*, p.157.

³⁴ Bhupinder Chimni, 2008. The Sen Conception of Development and Contemporary International Law Discourse: Some Parallels, *The Law and Development Review*, vol.1, Issue 1, Article 2, p.7.

³⁵*Ibid.*

³⁶*Ibid.*, p.10.

made up of experts at the International Monetary Fund (IMF), World Bank, and United Nations.³⁷

Sam Adelman, argues that “development is the path away from impoverishment, malnutrition, mortality and morbidity and thus a universal aspiration.” But he also warns us that “when it is based on Industrialization, Westernization, Modernization and, latterly, Neo-liberalism, it often changed from an object of desire into a nightmare of impoverishment, exploitation and pollution.”³⁸

Sachs completely refutes the concept of development and argues that “the idea of development stands like a ruin in the intellectual landscape. Delusion and disappointment, failures and crime have been the steady companions of development and they tell common story: it did not work.” He further argues that “moreover, the historical conditions which catapulted the idea into prominence have vanished: development has become outdated.”³⁹

Escobar describes development as an “apparatus that links forms of knowledge about the Third World with the deployment of forms of power and intervention, resulting in the mapping and production of Third World Societies.” He further argues that “development constructs the contemporary Third World, silently, without our noticing it. By means of this discourse, individuals, governments and communities are seen as 'underdeveloped' and treated as such.”⁴⁰

Crush defines development as “the power to transform old worlds, the power to imagine new ones.”⁴¹ He also argues “The power of development is the power to generalize, homogenize and objectify.”⁴²

³⁷ William Easterly, 2007. The Ideology of Development, Foreign Policy. (<http://www.foreignpolicy.com>), (Accessed on March 2013)

³⁸ Sam Adelman, 2008. Between the Scylla of Sovereignty and the Charybdis of Human Rights; the pitfalls of development in pursuit of justice, 2HR & ILD 1 (2008), p.18.

³⁹ W.Sachs (ed.), 2010. The Development Dictionary: A Guide to Knowledge as Power (2nded.), London: Zed Books, p. xv.

⁴⁰ Arturo Escobar, Imagining a Post-Development Era, in Jonathan Crush (ed.), 1995. Power of Development, USA: Routledge, p.207.

⁴¹ Jonathan Crush (ed.), 1995. Power of Development, USA: Routledge, p.3.

⁴² *Ibid.*, p.21.

Pieterse criticizes those scholars who are against development for failing to come up with a feasible alternative.⁴³ Adelman counter argues, Pieterse's argument "misses the point that it is not development *per se* that provokes resistance but the depredations of developmentalism."⁴⁴

Even if the concept of development has long history, it is hard to define and is a politically loaded concept. As Mickelson notes; "The emergence of development studies as a field of scholarly inquiry is a relatively recent phenomenon. It could be characterized as an academic response to the political reality of the decolonization process of the 1950s and 1960s."⁴⁵ Accordingly, the emergence of development theories is also of recent occurrence. For Mickelson, development theory is "a specialized sub-field of development studies that attempts to provide a *conceptual framework* for the development process (emphasis mine)."⁴⁶ Pieterse also observes that for a development theory to be significant and effectively applied, "social forces must carry it." To be carried by social forces "it must catch their worldviews and articulate their interests; it must serve an ideological function." To serve their interests, "it must also make sense and be able to explain things." Although, "explanation is not a neutral function."⁴⁷

It should be stressed that, the history of development studies has witnessed different development theories such as—Modernization Theory, Dependency Theory, Post Development Theory and Alternative Development Theory. All of which are briefly discussed below.

1.3.1 Modernization Theory

Modernization Theory arose into prominence after World War II, "primarily through the efforts of U.S. economists, political scientists, and sociologists."⁴⁸ It was based on the assumption that "development was an inevitable, evolutionary process of increasing societal differentiation that would ultimately produce economic, political and societal institutions similar to those in the

⁴³ J.Nederveen Pieterse, 2000. After Post-development, 21 Third World Quarterly, Vol 21, No 2.

⁴⁴ Sam Adelman, 2008, *supra*, n.38, p.18.

⁴⁵ Karin Mickelson, Critical Approaches, in Daniel Bodansky, Jutta Brunnee and Ellen Hey (eds.), 2007. The Oxford Handbook of International Environmental Law, New York: Oxford University Press, p.276.

⁴⁶ *Ibid.*

⁴⁷ J.Nederveen Pieterse, 2001. Development Theory: Deconstruction/Reconstructions, London: Sage Publications, p.3.

⁴⁸ Brian Z. Tamanaha, 1995. Book Review, 89 Am. J.Int'l L. p.471. (Reviewing Law and Development (Anthony Carty, ed., 1992)).

West."⁴⁹ Sarkar describes Modernization Theory as "an ahistorical, linear process based on the experience and cultural values of Western nations."⁵⁰For Modernization Theory, "rationalization, nation building, democratization and mobilization" were four essential elements to any political development.⁵¹

Tamanaha notes that Modernization Theory itself was subjected to intense critical scrutiny. It was criticized for its "ethnocentrism, evolutionism, invalid teleological reasoning, and naiveté."⁵² Moreover, "the structural-functionalist paradigm underpinning Modernization Theory came under increasing attack, especially on the grounds that it was a conservative social theory oriented to the preservation of an inequitable status quo, masquerading as neutral science."⁵³ Sarkar also observes Modernization Theory was criticized for failing to take into account "cultural differences and the legal histories of developing nations; promoting one style fits all approach."⁵⁴

The initial response to the criticism was "to see the failure as due to problems internal to developing countries."⁵⁵ The prevailing diagnosis to this criticism was "developing countries lacked the proper attitudes—the proper political or civic culture—necessary to the successful maintenance of Western Institutions."⁵⁶By 1970s "Modernization Theory and the political development movement it has informed ran out of steam."⁵⁷ Sarkar observes that "by 1974, less than a decade after it had begun in earnest, the modernization movement was in crisis leading to its apparent collapse, despite subsequent attempts to reform it."⁵⁸

⁴⁹*Ibid.*

⁵⁰*Ibid.*, p. 369.

⁵¹*Ibid.*

⁵²*Ibid.*

⁵³*Ibid.*

⁵⁴ Rumu Sarkar, 2004-05. Critical Essay: Theoretical Foundations in Development Law: A Reconciliation of Opposites?, 33 *Denv. J. Int'l L. 7 Pol'y*, p. 370.

⁵⁵ Brian Z. Tamanaha, 1995, *supra*, n.48, p. 472.

⁵⁶*Ibid.*

⁵⁷*Ibid.*

⁵⁸Rumu Sarkar, 2004-05, *supra*, n.54, p.371.

1.3.2 Dependency Theory

One of the critics of Modernization Theory is Dependency Theory propagated by Marxist scholars in Latin America in the 1960s which later became very influential in the early 1970s. They argue that “the structure of the international economy was such that developing countries would never be able to achieve economic development but would instead always remain as the periphery.” It is often associated with “strategies such as import-substitution, which was intended to provide support for the development of domestic industry and infrastructure through the erection of trade barriers and other protectionist measures.”⁵⁹

Sarkar argues that, unlike Modernization Theory, Dependency Theory "is not a descriptive process of change leading to broad-based economic development." It rather "considers the historical nature, causes, and implications of colonialism and aftermath." The most important work contributed by dependency thinkers was “an analysis of neo-colonialism that argued that newly independent developing countries were entering into global markets at their own peril.” The legacy of colonialism, they argued, “left these countries without the necessary infrastructure of commerce, transportation, trade, and communications as well as supporting social, educational, and political institutions." Dependency Theorists also argue; "international laws and practices of commerce, trade, and investment were all created by and thus, skewed in favor of, industrialized nations leaving developing countries in a declining state of impoverishment and underdevelopment."⁶⁰

Sarkar also notes, “one persistent theme that has emerged from Dependency Theorists is the legal concept of equity-based relations in international law now referred to as common but differentiated responsibilities (CBDR).”⁶¹ The concept of Common But Differentiated Responsibility was incorporated as Principle 7 of the Rio Declaration at the first Rio Earth Summit in 1992. Principle 7 reads as:

... In view of different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to

⁵⁹ Karin Mickelson, *Critical Approaches*, supra, n.45, p. 276.

⁶⁰ Rumu Sarkar, 2004-05, supra, n.54, p.372.

⁶¹ *Ibid.*, p. 373.

sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.⁶²

The principle has at least two consequences. First, “it entitles, or may require, all concerned States to participate in international response measures aimed addressing environmental problems.” Second, “it leads to environmental standards that impose differing obligations on States.”⁶³ In the CBDR Principle, common responsibility applies where resource is shared and it is not under the exclusive control of one state. But, even if differentiated responsibility aims to enhance substantive equality rather than formal equality between developed and developing countries; its practical application is questionable. The importance of the CBDR is clearly visible in international assistance like in financial aid and technology transfer. Its implication is that developed countries are expected to provide technological and financial assistance to developing countries to fulfill their sustainable responsibilities. In Agenda 21, in order to implement the CBDR principle, developed countries committed themselves to contribute 0.7% of their annual gross national product to official development assistance.⁶⁴

Elliot argues that by the late 1980s, “Dependency Theory had to a large extent moved out of fashion within development thinking, criticized in particular for its rather deterministic emphasis on the role of external economic structures in shaping society and development.”⁶⁵ Tamanaha also argues that the problem with Dependency Theory was “the narrowness of its Marxist framework, which designated the dynamics of capitalism and class as the exclusive explanatory factors.” He further argues that “the pervasive impact of religious, national, ethnic and clan rivalries within and across many developing countries simply could not be accounted for by dependency theory.” He suggests the current approaches to development should “combine aspects of both Modernization and Dependency Theory, and reject aspects of both.”⁶⁶

⁶²The Rio Declaration on Environment and Development, June 14, 1992, Principle 7, UN Doc. A/CONF. 151/5/Rev.1 (1992), reprinted in 31ILM 874,878 (1992).

⁶³ The Center for International Sustainable Development Law (CISDL), Legal Brief, 2002. (Available at: http://cisdl.org/public/docs/news/brief_common.pdf) (Accessed on march, 2013)

⁶⁴*Ibid.*

⁶⁵ Jennifer A. Elliott, 2006. An introduction to sustainable development, London: Routledge publisher, p. 38.

⁶⁶ Brian Z. Tamanaha, 1995, *supra*, n.48, p. 478.

1.3.3 Post Development Theory

Despite the significant differences between Modernization and Dependency Theories both share a number of common assumptions about the object and meaning of development. For instance, Schuurman has argued that three characteristics are shared by Modernization and Dependency Theories: “the essentialization of the Third World and its inhabitants as homogenous entities”; the “unconditional belief in the concept of progress and in the makeability of society”; and the “importance of the (nation) state as an analytical frame of reference and a political and scientific confidence in the role of the state to realise progress.” For Schuurman “each of these views was increasingly under attack by the mid-1980s, with the result that development studies as a field seemed to be left without a common conceptual foundation.”⁶⁷ Post Development Theory is perhaps one of these critics.

The premise of Post-Development Theory is that “the orthodox understanding of development has done little to bring about prosperity in the developing world, and have instead contributed to the oppression and marginalization of large sectors of the population.” In place of an essentialized Third World, Post Development Theory emphasizes “an attention to context—local cultures and conditions.”⁶⁸ Arturo Escobar also argues that the “Third World was in fact a product of the discourse of development, which categorized certain countries and region’s as underdeveloped because of their failure to conform to a particular (Western) understanding of appropriate economic and social structure.”⁶⁹ Post-development scholars “have criticised the failure of their predecessors to recognize the extent to which progress was defined in terms of the evolution of Western societies.” They also challenge “the central role of the state as well as other alternative approaches.”⁷⁰ In its place, “they emphasize grassroots empowerment and community-based decision-making.”⁷¹

⁶⁷F.J.Schuurman, 2000. “Paradigms Lost, Paradigms Regained? Development Studies in the Twenty-First Century”, 21 *Third World Q.*7, p.8.

⁶⁸ Karin Mickelson, *Critical Approaches*, supra, n.45, p. 277.

⁶⁹ A. Escobar, 1995. *Encountering Development: The Making and Unmaking of the Third World*, Princeton, NJ: Princeton University Press, p.31.

⁷⁰ Karin Mickelson, *Critical Approaches*, supra, n.45, p. 277.

⁷¹ *Id.*

According to Mickelson, Post-Development Theory has been criticized from different angles. The most common criticisms are that “it romanticizes the traditional, and fails to recognise the extent to which mainstream development has been able to meet the aspirations (if not the needs) of many developing world.” It promotes “a view of development for the South that could never be applicable to the North and, thus, of accepting the perpetuation of an international system that is deeply unequal.” She argues that “it is not enough to critique traditional development; there must be some meaningful alternative.”⁷² Mickelson also argues that “it is all very well to criticize the state-centered approach to development, but, in an age of globalization, the state has the potential to provide a critical buffer between the forces of global capital and local communities and regions.”⁷³

1.3.4 Alternative Development Theory

Alternative Development Theory "can be viewed as concerned with local development, with alternative practice on the ground, or as an overall challenge to the mainstream, and part of global alternative."⁷⁴ It tends to be “practice oriented rather than theoretically inclined.”⁷⁵

Nonetheless, it “is not necessarily anti-development but it is intellectually segmented.”⁷⁶ For Pieterse, its distinctive element should be found in “the redefinition of development and not merely in its agency, modalities, procedures or aspirations.”⁷⁷ It is part of the general concern with civil society.⁷⁸ Alternative Development Theory combines “the aims of development and emancipation. As development from below endogenous outlook is its fundamental concern.”⁷⁹ Endogenous development implies “a refutation of the view of Development-Modernization-Westernization.”⁸⁰ Or “there are no front runners to be followed”⁸¹For Pieterse, endogenous development implies “each society should find its own strategy.”⁸²

⁷²*Ibid.*, p.278.

⁷³*Ibid.*

⁷⁴ J.Nederveen Pieterse, 2001, *supra*, n.47, p.85.

⁷⁵*Ibid.*,p. 91.

⁷⁶*Ibid.*, p. 92.

⁷⁷*Ibid.*

⁷⁸ *Ibid.*

⁷⁹*Ibid.*, p. 97.

⁸⁰*Ibid.*, p. 96.

⁸¹Majid Rahnema, as quoted in J.Nederveen Pieterse, 2001. *Development Theory: Deconstruction/Reconstructions*, London: Sage Publications, p.96.

In Alternative Development “the forces to carry and implement ‘another development’ [are] the community and informal sector, or the ‘third system’. From the three main actors in development—state, market and society—the emphasis [is] entirely on society as the foundation for another development.” The central characteristic of alternative development methodology is participation. The role of the state is “to act as an enabler, a facilitator of people's self-development.” But, in order for the state to play its role “democratization is implied.”⁸³

Another central issue in Alternative Development and Post Development thinking is “critique of science.”⁸⁴ According to Escobar “Western science through development exercises a form of cultural violence on the Third World and what are needed are alternative conceptions of knowledge.”⁸⁵ Beck regards the critics of science and technology as the main form of struggle in the current modern risk society. He notes that “in view of the globalization of risk—such as global ecological hazards, the export of polluting industries and waste materials, the risks of biogenetic engineering, and the spread of reproduction technologies—this is rapidly becoming a global contestation. In the south, indigenous knowledge is a countervailing position to western science.”⁸⁶

Alternative Development Theory is criticized for failing to “develop a clear perspective on micro-macro relations, an alternative macro approach, and a coherent theoretical position, although it is often claimed that there is an alternative development paradigm.”⁸⁷ As Pieterse notes the problem is “there is no clear line of demarcation between mainstream and alternative: alternatives are co-opted and yesterday's alternatives are today's institutions. The difference between mainstream and alternative, then, is a conjectural difference, not a difference in principle, though it tends to be presented as if it is.”⁸⁸ Alternative Development is also criticized for the fact that “endogenism is difficult to turn into a hard principle.”⁸⁹ In this regard Gordon

⁸²J.Nederveen Pieterse, 2001, *supra*, n.47, p.97.

⁸³*Ibid.*, p.94.

⁸⁴*Ibid.*, p.99.

⁸⁵ Escobar, A. [1992b] “Reflections on development”: grassroots approach and alternative politics in the Third World', *Future*, June: 411-36.

⁸⁶Ulrich Beck, 1992. *Risk Society: towards a new modernity*, London: saga.

⁸⁷J.Nederveen Pieterse, 2001, *supra*, n.47, p.97.

⁸⁸*Ibid.*, p.89.

⁸⁹*Ibid.*, p.97.

argues that “generally the boundary between inside and outside is one of the fundamental problems of development thinking.”⁹⁰ Pieterse also argues that “endogenism at its worst evokes the spectre of ethno-fundamentalism.”⁹¹ Kiely also argues that “the assertion of endogenous development calls to mind dependency theory and the foreign bad, local good position.”⁹²

From the above discussions regarding Alternative Development, Pieterse notes that; "there is considerable overlap between mainstream and Alternative Development, which shares much the same rhetoric, ideals and definition of development: participation, work with the poor and vulnerable groups, local action."⁹³ Thus, one could argue so far there has not been a dominant development theory. Many scholars define and describe development in different ways based on their own respective backgrounds, disciplines and ideological orientation. With this brief discussion on development and development theories in section 1.3 examined above as a background; section 1.4 below deals with Ethiopia’s development endeavors.

1.4 Ethiopia’s Development History Post 1991

After the overthrow of the military regime in 1991 as discussed in section 1.2, the Ethiopian government began implementing an economic reform programme to replace the previous central control and planning system⁹⁴ with a market-based system in order to create a favorable economic environment for growth and to eradicate poverty.

The economic reform process was initially supported by a three-year loan under the IMF’s Structural Adjustment Facilities (SAF).⁹⁵ In mid-1996, the government adopted a medium-term adjustment programme for the period 1996/97-1998/99 supported by a three-year arrangement under the IMF’s ESAF, by the World Bank in the form of new sector investment loans, and by

⁹⁰ D.Gordon, as quoted in J.Nederveen Pieterse, 2001. *Development Theory: Deconstruction/Reconstructions*, London: Sage Publications, p.97.

⁹¹ J.Nederveen Pieterse, 2001, *supra*, n.47, p.97.

⁹² Ray Kiely, 1999. "The last refuge of the noble savage? A critical account of post-development", *European Journal of Development Research*, 11(1): 30-55.

⁹³ J.Nederveen Pieterse, 2001, *supra*, n.47, p.105.

⁹⁴ After the fall of Emperor Haileselassie in 1975 through a popular revolutionary, the Derg Military regime assumed power and was promoting socialist ideology (command economy system thought it has introduced a mixed economy during its last days) until it was deposed by the incumbent Government in 1991.

⁹⁵ Ethiopia-Enhanced Structural Adjustment Facility Medium-Term Economic and Financial Policy Framework Paper, 1998/99-2000/01, *supra*, n.2, p.1.

other multilateral and bilateral donors.⁹⁶ In 2000, the government prepared an Interim Poverty Reduction Strategy Paper (I-PRSP). The paper outlined “structural reform to promote private investment, increase competitiveness in agricultural inputs, and streamline public development expenditure, particularly in health and education.”⁹⁷ In 2002 the government prepared the first phase of the PRSP known as the Sustainable Development and Poverty Reduction Programme (SDPRP) 2002/03-2004/05.

The SDPRP was built on four pillars: “ADLI and food security; governance, decentralization, and empowerment; reform of the justice system and the civil service; and capacity building [of government institutions].”⁹⁸ In order to carry forward the first PRSP the Government introduced the second phase of poverty reduction program—Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) 2005/05-2009/10.⁹⁹ As a continuation of the 2nd phase of poverty reduction Plan (PASDEP) the Government has introduced the Growth and Transformation Plan (GTP) as the national planning document of the country for the period 2010/11-2014/15.¹⁰⁰

The government’s overriding development objective is to attain fast, broad based, and more equitable economic growth with macroeconomic stability.¹⁰¹ As it claims the development agenda is not simply growth for its own sake but pro-poor growth. The main focus closely related to these twin objectives, that is, growth and price stability is also the progressive integration of the country to the global economy.¹⁰² Thus, Ethiopia’s main development objective especially since mid 1992 is to build a free-market economic system that would enable it to rapidly develop and eradicate poverty. Consistent with this objective the late Prime Minister Zenawi in his report to the 36th Parliamentary Session underlined the fact that Ethiopia is the

⁹⁶*Ibid.*

⁹⁷ The World Bank Report No.4336, April 2008. Project Performance Assessment Report, Ethiopia, p.19.

⁹⁸*Ibid.*

⁹⁹ MoFED, 2006. *Ethiopia: Building on progress: A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)* (2005/06-2009/10). Addis Ababa, September 2006.

¹⁰⁰ MoFED, 2010. *Growth and Transformation Plan (GTP)* (2010/11-2014/15), Addis Ababa, November, 2010.

¹⁰¹ Ethiopia-Enhanced Structural Adjustment Facility Medium-Term Economic and Financial Policy Framework Paper, 1998/99-2000/01, *supra*, n.2.

¹⁰²*Ibid.*

only African country which allocates 70% of its budget to poverty alleviation programs.¹⁰³ However, despite the fact that Ethiopian has done good job in poverty eradication, there is still an increasing concern that poverty is still a problem.

The government's main development strategy is Agricultural Development Led Industrialization (ADLI). This demonstrates the government's commitment to agriculture based industrialization which is intended to improve the living standards of the vast majority of rural population. This has been its focus of development. ADLI's core principles are; "the private sector [as] an engine of industrialization; focus on labour-intensive industries [like textile & leather]; effective combination of domestic and foreign investors; the notion of "developmental state" and popular participation."¹⁰⁴

In the country's development agenda, the encouragement and promotion of domestic and foreign investment is crucial to accelerate economic development and improve the living standards of the citizens. In order to promote and facilitate the role of foreign investment in Ethiopia, the government embarked on large privatization measures. It issued Proclamation No.146/1998 and Proclamation No.412/2004 whose objectives have been to: "change the role of participation of the State in the Economy and to implement privatization; encourage the expansion of the private sector and thereby promote the economic development of the country."¹⁰⁵ For example, the main aims and objectives of the new Ethiopian Investment Proclamation No. 769 of 2012 are to encourage and expand investment, especially in the manufacturing sector, strengthen the domestic production capacity; further increase the inflow of capital and speed up the transfer of technology into the country; accelerate the economic development of the country and improve the living standards of its peoples; enhance and promote the equitable distribution of investments among regions and benefit the society by ensuring competitiveness among investments made by investors; and put in place a system of supervision to ensure that permits and incentives granted

¹⁰³ Ethiopian Journal, http://www.ethjournal.com/index.php?option=com_content&task=view&id=2781 (accessed on July 07,2010)

¹⁰⁴ MoI, 2002. Federal Democratic Republic of Ethiopia Industrial Development Strategy (Amharic), August 2002.

¹⁰⁵ FDRE, 2004. A Proclamation to Provide for The Establishment of The Privatization and Public Enterprise Supervising Authority Proclamation No.412 , Federal Negarit Gazeta, 10th year No.57, Addis Ababa, p. 2791-2800, Art. 4; and FDRE, 1998. Privatization of Public Enterprises Proclamation No. 146, Federal Negarit Gazeta, 5st year No. 26, Addis Ababa, pp. 933-941, Art. 4.

to investors are used for the intended purposes and to make sure that the system of administration of investment is transparent and efficient.¹⁰⁶

It is also important to note that one of the main other reasons why it has become necessary to revise the existing law on investments is because it has been considered that the establishment of Industrial Development Zones is one of the preferable strategies to create favorable and competitive environment for the development of manufacturing industries through their linkages and value creation.¹⁰⁷ The underlying rationale and philosophy is that the Federal Government of Ethiopia strongly believes that the encouragement and promotion of such investments have become necessary in order to “accelerate the economic development of the country and to improve the living standards of its peoples”.¹⁰⁸

Article 5 of Proclamation No. 769 of 2012 which is not applicable to investments in the prospecting, exploration and development of minerals and petroleum resources¹⁰⁹ states that the objectives of the investment policy of the Federal Democratic Republic of Ethiopia are designed to improve the living standards of the peoples of Ethiopia through the realization of sustainable economic and social development, the particulars of which are to:

- 1) Accelerate the country’s economic development;
- 2) Exploit and develop the immense natural resources of the country;
- 3) Develop the domestic market through the growth of production, productivity, and services;
- 4) Increase foreign exchange earnings by encouraging expansion in volume and variety of the country’s export products and services and the improvement of their quality as well as to save foreign exchange through production of import substituting products;
- 5) Encourage balanced development and integrated economic activity among the Regions and to strengthen the inter-sectoral linkages of the economy;
- 6) Enhance the role of the private sector in the acceleration of the development of the country’s economy;

¹⁰⁶The Preamble of; FDRE, 2012. The Ethiopian Investment Proclamation, Proclamation No.769, 18th Year, No. 63, 17th September, 2012, pp. 6572-6598.

¹⁰⁷*Ibid.*

¹⁰⁸*Ibid.*

¹⁰⁹*Ibid.*, Art.3.

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- 7) Render foreign investment play its proper role in the country's economy; and
 - 8) Create wide employment opportunities for Ethiopians and to foster the transfer of technical know-how, of managerial skills, and technology required for the progress of the country.¹¹⁰

In short, the Ethiopian investment policy and law and the various incentives as examined above are intended to bring about socio-economic development short of environmental considerations as advocated in the concept of sustainable development envisaged in Art. 43 of the Constitution. Rather, like any underdeveloped country Ethiopia is experimenting with government led industrialization¹¹¹ and modernization¹¹² to achieve its comprehensive socio-economic development.

It should however, be stressed that despite the policy of encouraging foreign direct investment and free market economy, the state is still a major development player. The notion of the developmental state in Ethiopia is adopted from the experiences of the East Asian "miracle" economies like South Korea. However, the government included the *prefix democracy* to the concept of developmental state and labels it as "*Democratic Developmental State*" (emphasis mine). This is meant to differentiate the type of developmental state to be built in Ethiopia from some of the authoritarian developmental states that existed in the East Asian miracle economies and the neoliberal model. As the late Prime Minister Zenawi remarked that "we in Ethiopia very nicely and politely have rejected a number of neoliberal prescriptions given to us, and we have

¹¹⁰See also Article 4 of the Ethiopian Investment Proclamation No. 280/2002 of 8th year No.27 of 2nd July 2002 as amended by the same Article 4 of the Investment Proclamation No. 37/1996. It is also important to stress that generally the overall investment objectives in the new and old investment Proclamations are similar and not the same except that under the new Investment Law, there is more emphasis, among others on manufacturing and exports. See also Export Trade Duty Incentive Schemes Proclamation No.768, Federal Negarit Gazeta, 18th year, No. 62, 4 September, 2012

¹¹¹As Kiely, R. noted; industrialization could be defined in three ways-"*first*, as the production of all material goods not grown directly on the land; *second*, as the economic sector comprising mining, manufacturing and energy; *third*, as a particular way of organizing production and assumes there is a constant process of technical and social change which continually increases society's capacity to produce a wide range of goods." See; Kiely, R. 1998.*Industrialization and development-a comparative analysis*, UK: UCL Press. p.3.

¹¹²Although modernization has come to encompass different emphasis and viewpoints through time, Francis G. Snyder characterized it by referring to its three attributes; "First, it adopted a notion of social change that emphasized differentiation and integration. Second, it postulated a conception of modernity that was formal and ahistorical but teleological. Finally, it envisaged development as an evolutionary movement from an original state of underdevelopment to an idealized version of the United States or Western Europe." See; Francis G. Snyder, 179-80.*Law and Development in light of Dependency Theory*, 14 *Law and soc'y Rev.* p. 726.

lived to tell the story.”¹¹³Zenawi further remarked that "our argument [with the IMF] has been that the neoliberal model does not work in Africa."¹¹⁴Gill also observes that there was an ideological rift between the IMF and the Ethiopian government. He remarks that Prime Minister Zenawi told him that;

In developed countries [neoliberal model] is a perfectly legitimate (or it was-it needs serious modification now). In the case of underdeveloped economies without the push of the state, an effective developmental state, it is very unlikely that the markets that do exist now are going to function efficiently and push the country forward.¹¹⁵

Zenawi noted that "we believe that democracy, good governance and transparency and fighting corruption are good objectives for every country, particularly for developing countries." He added that;

In the case of Ethiopia we go beyond that and say unless the country successfully democratizes, it will inevitably disintegrate...Where we had our differences with the so-called neoliberal paradigm is first on the perception that this can be imposed from outside. We do not believe that is possible... So this concept of the external environment imposing a certain set of governance rules is in our view impractical, and could be counter-productive... Internalization of accountability is central to democratization... the state has to be accountable to the citizens, and not some embassy or foreign actor.¹¹⁶

Zenawi also argued that “the most likely scenario for a state that is both democratic and developmental to emerge is in the form of *a dominant party or dominant coalition democracy* (emphasis mine).” When Zenawi argued this way he had in mind “The broad coalitions that kept stable democratic governments in power for long periods in Scandinavian and Japan, the so-called dominant party democracies.” But, he argued that “a democratic outcome is never guaranteed in the developing world, but in the right conditions there is a reasonable chance for a developmental and democratic state to emerge.”¹¹⁷ It appears that Zenawi doubted the idea that both democracy and development could be achieved at the same time in a developing country like Ethiopia. In this regard he clearly argued that; “Some [people] in the neoliberal world seem

¹¹³Peter Gill, 2010. *Famine and Foreigners: Ethiopia since Live Aid*, USA: New York, Oxford University Press Inc., p.81.

¹¹⁴*Ibid.*, p.85.

¹¹⁵*Ibid.*

¹¹⁶*Ibid.*, p.168

¹¹⁷*Ibid.*

to believe that economic development and growth and good governance and democratization are inseparable, but that is not validated by historical facts."¹¹⁸ He argued that;

Theoretically, there is no reason to believe that democratization is a precondition of economic development. The reverse—that democratization can be the result of a certain level of economic development—appears to be more robust than the other way round, but even that in our view is not a proven fact. Germany was the most advanced economy in Europe prior to the Second World War. It never had much success in democratization—a brief interlude in the Weimar Republic, and even that was a very problematic period.¹¹⁹

Common characteristic of developmental states include “promoting economic development by explicitly favoring certain sectors; commanding competent bureaucracies; placing robust, competent public institutions at the center of development strategies; clearly articulating social and economic goals; and deriving political legitimacy from their record in development.”¹²⁰ The developmental state in Ethiopia aims to foster pro-poor economic development by increasing incentives to investors (both foreign and nationals) to engage in transformative investments like manufacturing sector, especially in textile and leather industries. The Ethiopian government by incorporating the concept of Democratic Developmental State has decided to go beyond the usual regulatory function of the government to undertake entrepreneurial activities which are very crucial for economic transformation. Thus, it is common practice to find government affiliated industries in Ethiopia like the two industries that are subjects of research in this thesis.

The justification for ADLI as the main development strategy is based on the country’s large number of working age population and potentially cultivable land. Lack of capital is a critical problem.¹²¹ Consistent with this the government claims that:

ADLI is the first phase of an industrialization strategy, the impetus for which is provided by agricultural growth, notably by an expansion in demand for industrial goods. The growth of agriculture in turn is hoped to facilitate and increase the demand for its products in overseas markets.¹²²

¹¹⁸*Ibid.*, p.169.

¹¹⁹*Ibid.*

¹²⁰Evans 2010; Chang 2010; Edigheji 2010; and Block 2008; as cited in UNDP, 2013. The Rise of the South: Human Progress in Diversified World, USA: New York, p.67.

¹²¹MoI, 2002, *supra*, n.104.

¹²²Ethiopia-Enhanced Structural Adjustment Facility Medium-Term Economic and Financial Policy Framework Paper, 1998/99-2000/01, *supra*, n.2.

ADLI is also seen by the government as foundation for a long-term strategy to achieve faster growth and economic development by “making use of technologies that are labour intensive, land enhancing techniques, like fertilizer and improved seeds and other cultural practices.”¹²³

ADLI is, however, criticized by different scholars, national and international organizations like World Bank and International Monetary Fund. It is mostly criticized for its assumption that industrialization and urbanization are derivative processes that will naturally accompany the rapid development of the agricultural sector. Critics argue that given all the support accorded to agriculture in the last fifty years it was not able to induce industrialization, acceptable growth and reduction of poverty.¹²⁴ Their argument is that Ethiopia’s industrial strategy led by ADLI needs some re-thinking. The key argument in this thesis is that the development policy of the country should be based on the country’s ecosystem integrity.

1.5 Industrial Development Strategy of Ethiopia

The Industrial Development Strategy of Ethiopia prepared based on ADLI has been implemented since 2001/02.¹²⁵ The fundamental objective of the strategy is “to increase the benefits earned from economic integration with the ultimate goal of becoming an industrialized country.”¹²⁶ This involves strengthening inter-sectoral linkages (agriculture and industry) on the domestic front and through exploiting the potential and opportunities of regional and global economic integration.¹²⁷

1.5.1 The State of Industrialization in Ethiopia

The history of manufacturing industry is linked to the post Ethio-Italian war.¹²⁸ In the second half of the 1940s, there were very few manufacturing industries which accounted only for 1% of

¹²³MoI, 2002, *supra*, n.104.

¹²⁴ See; Admit Zerihun, 2008. Industrialization Policy and Industrial Development Strategy of Ethiopia. In Taye Assefa (ed.), 2008. *The Digest of Ethiopia’s National Policies, Strategies and Programs*, 2008. Addis Ababa: Forum for Social Studies, p. 261; World Bank, 2007a. Ethiopia Accelerating equitable growth: Country economic memorandum, Part I: Overview, Report No. 387662-ET, p. 19; and World Bank, 2007b. Ethiopia Accelerating equitable growth: Country economic memorandum, Part II: Overview, Report No. 387662-ET, p. 19.

¹²⁵MoI, 2002, *supra*, n.104, p. 151.

¹²⁶ *Ibid.*

¹²⁷ *Ibid.*

¹²⁸ *Ibid.*

the national income.¹²⁹ Between 1927-41 thirty-five factories were established in Addis Ababa and Dire Dawa.¹³⁰ This was ascribed to the completion of Ethio-Djibouti railway.¹³¹ It was only in the 1950s that industrialization in the proper sense began and a deliberate strategy to encourage the expansion of industrial sector evolved.¹³²

Industrialization began to emerge in the latter half of the 1950's and 1960's with the express aim of import substitution of consumer goods.¹³³ Most of the enterprises established were not equipped with modern industrial technology since they depended largely on manual operation.¹³⁴

Industrial development, however, is still in its infancy and has a narrow base and its linkage with the agricultural sector is weak.¹³⁵ Nevertheless, due to different reforms and the opening up of the economy and the creation of an encouraging investment environment, steady growth of industry and trade has been registered in the country since 1991.¹³⁶ Currently, the industrial sector's share of GDP is 15 percent.¹³⁷ Despite its small contribution to GDP the industrial sector supplies important goods mainly to the domestic and to a lesser extent to the international markets. These include textiles and garments, canned and frozen meat, semi-processed hides and skin and leather products.¹³⁸ Semi-processed hides and skin exports include "pickled sheep skin, crust sheep skin, wet blue goat skin,¹³⁹ crust goat skin, crust cow hides, finished garment leather, finished glove leather, lining/upper leather, suede leather, full grain leather, embossed leather,

¹²⁹ *Ibid.*

¹³⁰ Mohammed Ali, 2002. *Industrial Pollution and its impact on the Little Akaki River*, Msc Thesis, Faculty of Engineering, Loughborough University, UK.

¹³¹ *Ibid.*

¹³² Admit Zerihun, 2008, *supra*, n.124, at. 240.

¹³³ *Ibid.*

¹³⁴ *Ibid.*

¹³⁵ *Ibid.*, p. 149.

¹³⁶ *Ibid.*

¹³⁷ MoFED, 2012. *National Accounts Statistics (GDP) Estimates for 2012* (available at www.mofed.gov.et/English/Pages/Home.aspx) (Accessed on April 12/ 2012)

¹³⁸ *Ibid.*

¹³⁹ Ethiopian goatskins are classified as "Bati-genuine, the international name for high quality goatskins- a term coined after the type of goatskins supplied from one of the Ethiopian provinces. Bati goat skins are well recognized in the international market for making high quality suede for fashion products." see, Addis Ababa Chamber of Commerce and Sectoral Associations, <http://addischamber.com/aacsa/inv/inv.php>. (Accessed on September 25/2011)

patent leather and other leather articles.”¹⁴⁰ The export of finished leather and leather products includes leather garments, foot wears, gloves, bags and other leather articles.¹⁴¹

According to the FDRE Central Statistics Agency the total number of large and medium scale manufacturing establishments increased to 2,172 in 2009/10¹⁴² compared to 1443 in 2006/07. It has shown an increase of 729 establishments i.e. by 50.5 %. (See Appendix 1.1)

As Appendix 1.1 indicates, establishments classified under the manufacture of food products and beverages constitute the largest share, accounting for 26.43 per cent of the total. Non-metallic mineral products and furniture manufacturers which represent 22.19 and 12.94 per cent of the total number of establishments are in the second and third positions respectively. Manufacturing of Textile, Wearing Apparel except Fur; Tanning and Dressing of Leather; Foot Wear, Luggage and Handbags combined together account for 9.44 percent of the total number of establishments. However, it is important to stress that although the number of leather and textile establishments in Ethiopia is low compared to the other establishments the magnitude of the pollution they generate is the highest. (See chapter 5)

The figures in Appendix 1.1 reveal the distribution of large and medium scale manufacturing industries in the country is highly skewed. Forty point twenty nine per cent (40.29%) of the large and medium scale manufacturing industries operating in 2009/2010 are located in Addis Ababa. Following Addis Ababa, Oromiya, SNNP, Amhara and Tigray regions covered 20.76, 13.44, 10.64, and 9.16 per cent respectively. Industrial pollution problem is therefore predominantly an urban development issue.

The other important point that needs to be underlined from reading the Growth and Transformation Plan (GTP) (2010/11-2014/15) is the projected rise in the number of large and medium scale manufacturing industries. (See Table 1.1 below)

¹⁴⁰ *Ibid.*

¹⁴¹ *Ibid.*

¹⁴² FDRE Central Statistics Agency, 2011. *Report on Large and Medium scale manufacturing and electricity industry survey*, Addis Ababa, p.31. (LMMIS_2010-2011%20 Report [1].pdf) (available at <http://www.csa.gov.et>) (Accessed on September 23,2011)

Table 1.1 Projected Trends in the Structure of GDP by Industrial Origin (% Share)

Sectors	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	Average
Agriculture and allied activities	41.6	40.6	39.7	38.7	37.8	36.9	38.8
Industry	12.9	13.2	14.0	15.3	16.9	18.8	15.6
Service	45.6	46.2	46.3	46.0	45.3	44.3	45.6

Source: (MoFED, 2010)

As indicated in Table 1.1, in order to bring structural transformation in the economy from 2010/11-2014/15, the Industrial Sector is expected to grow from 12.9% to 18.8% while the Service and Agriculture Sectors are expected to decrease from 45.6% to 44.3% and from 41.6% to 36.9% respectively. At the moment, even if, the share of Manufacturing is less than that of the Agriculture; in the long run, the Industrial Sector is expected to surpass the share of Agriculture. It is also expected to transform primary goods producing sectors such as the Agricultural sector.

As envisaged in the GTP, when the Manufacturing sector surpasses the share of agriculture,¹⁴³ additional industries are expected to be established in the country. Moreover, it is also possible that foreign companies to open their subsidiaries in Ethiopia. For instance, with regard to textile industries two Turkish Textile Companies named Ayka Addis¹⁴⁴ and Saigin SC¹⁴⁵ respectively have opened subsidiaries in Ethiopia.¹⁴⁶ Ayka Addis opened its subsidiary at a cost of USD 140 million and is expected to create 10,000 jobs.¹⁴⁷

¹⁴³ Currently *Agriculture* constitutes 41.1% of the GDP while *Service* and *Industry* constitute 46.6% and 13.4% respectively. See, MoFED, 2012. *National Accounts Statistics (GDP) Estimates for 2003 E.F.Y [2012]* (available at www.mofed.gov.et/English/Pages/Home.aspx) (Accessed on April 12/2012)

¹⁴⁴ Ayka Addis is a vertically integrated subsidiary of Ayka Textiles located in Turkey. Ayka Textiles is engaged in spinning, knitting, dyeing and sewing facilities. More information is available at www.aykatextile.com/profile.htm (Accessed on April 12/2012)

¹⁴⁵ SayginDima Textile share Company is part of Saygin Group in Turkey and has planned to begin production on March 2012. In the Company the Ethiopian Government has a share of 60%. See, The Capital news paper (Available at <http://www.capitalethiopia.com/index.php?option=comcontent&view=article&id=735:ethio-turkish-textile-investment-begins-this-month&catid=35:capital&Itemid=27>) (Accessed on April 2012)

¹⁴⁶ Wudineh Zenebe. 2010. Delegation to Turkey to determine textile deal, Addis Fortune Ethiopian News Paper, Vol. 10, No. 507, Addis Ababa, January, 17, 2010.

¹⁴⁷ News Dire-Ethiopian News Source, available at www.newsdire.com/news/726-140-min-usd-worth-textile-factory-inaugurated-in-ethiopia.html (accessed April, 12/2012)

The main reasons for these two Turkish companies to open subsidiaries in Ethiopia are the relatively high cost of production in Turkey, the benefits to duty free access to US under AGOA¹⁴⁸ and European market under EBA¹⁴⁹ provided to Ethiopia and export incentives offered by the Ethiopian government.¹⁵⁰ Spintex,¹⁵¹ an Indian textile company has also received 50 ht of land at the Kombolicha Industrial Zone in the Amhara Regional State to construct the largest textile factory five times the capacity of the Ayka Addis subsidiary.¹⁵² There is a plan to develop additional 46 projects in the textile industry by 2015.¹⁵³ Six of the projects will be operational during the 2013 financial year with a further 18 to be launched in 2014; and the remaining 22 will be operational before 2015.¹⁵⁴

¹⁴⁸The African Growth and Opportunity Act (AGOA) in the case of USA. The African Growth and Opportunity Act (AGOA) as a part of U.S. legislation have been approved by the Congress in May 2000 to assist the economies of Sub-Saharan Africa. The Act currently liberalises market access to the US for 40 selected Sub-Saharan African (SSA) countries including Ethiopia. It is claimed by the US to improve economic relations between the region and the United States. The Act is also designed as an incentive for Sub-Saharan Africa countries to further open up their economies and build free markets. The President of the United States is empowered by the Act to determine eligible sub-Saharan African Countries and decide which country should remain eligible. Originally, the Act covered 8 years from October 2000 up to September 2008. But in July 2004, President George W. Bush extended it up to 2015. See; African Growth and Opportunity Act available at <http://www.agoa.gov/> (Accessed on October 12, 2012)

¹⁴⁹Everything But Arms Deal (EBA) in the case of European Union. Everything but Arms (EBA) which entered into force on March 05/2001 is European Union initiative under which all imports except armaments from the Least Developed Countries to EU are duty free and quota free. It is part of the EU Generalized System of Preference (GSP). The aim of EBA is to promote development in least developed countries including Ethiopia. With regard to identifying the beneficiaries, the United Nations determines which countries are considered least developed. Currently, there are 48 countries, including Ethiopia who benefit from this scheme. See; Everything But Arms available at <http://ec.europa.eu/trade/wider-agenda/development/generalised-system-of-preferences/everything-but-arms/> (Accessed on October 12, 2012)

¹⁵⁰ Wudineh Zenebe, 2010, *supra*, n.146.

¹⁵¹ With four companies under it, Spintex was established in 1972 in India, specializing in different areas of the textile industry. It has been producing different machinery for knitting, weaving and spinning. Spintex will fully own the factory it will establish in the Amhara Regional State in Ethiopia. See; News Dire-Ethiopia news Source, available at <http://www.newsdire.com/business/190-indian-firm-to-fabricate-largest-textile-plant-in-kombolcha-zone.html> (Accessed April 20/ 2012)

¹⁵² Wudineh Zenebe. 2010. Indian firm to fabricate large textile plant, Addis Fortune Ethiopian News Paper, Vol. 10, No.507, Addis Ababa, January 17, 2010.

¹⁵³ FDRE, 2012. The Monthly Publication for the Ethiopian Embassy in London, Issue No.2 March 2012, p.7.

¹⁵⁴ *Ibid.*

In January 2012, the Chinese Huajian International Shoe PLC signed a deal with the Ethiopian government and on March 9, 2012 it announced it would invest 2 billion USD in Ethiopia.¹⁵⁵ Under the deal, “a light manufacturing zone would be established in Ethiopia which could create employment for over 100,000 people, with an annual production turnover worth 4 billion USD.”¹⁵⁶ The firm began two production units and started shoe production on January 5, 2012. It is currently the largest manufacturer of ladies shoes in Ethiopia.¹⁵⁷ The leather sector in Ethiopia is also expecting 27 new investments from international companies’ from Germany, China, India, Sudan, Italy, Israel, Turkey and the UK to be located in Addis Ababa, Mojo, Gondar and Sendafa.¹⁵⁸

1.5.2 Textile and Leather Industries

In order to implement its pro-poor development objective, the government has selected textile and leather industries. It has also extended special support to these industries as discussed in section 1.5.2.1 below. Some of the justifications for selecting textile and leather industries as winning industries are:

First, textile and leather industries are labour intensive. In 2009/10 they employed 41,431¹⁵⁹ people out of the total of 185,086¹⁶⁰ in all major industrial groups, both public and private. This figure is approximately 22.4% of the total employment of all major industrial groups and is likely to rise. The trend in the textile industry for future expansion is very high due to the incentives available through the AGOA and EBA initiatives.

Second, the textile and leather industries depend on domestic agricultural inputs like cotton, skin and hides. Cotton is one of the most important cash crops in the country which is extensively grown in the lowlands of the country under large-scale irrigation schemes and on small-scale

¹⁵⁵Ezga. com news available at (<http://www.ezga.com/NewsDetails.aspx?Page=heads&NewsID=3234>) (Accessed on April, 20/2012)

¹⁵⁶ *Ibid.*

¹⁵⁷ *Ibid.*

¹⁵⁸FDRE, 2012. The Monthly Publication for the Ethiopian Embassy in London, Issue No.2 March 2012, *supra*, n.60.

¹⁵⁹FDRE Central Statistics Agency, 2011, *supra*, no.142, p.29.

¹⁶⁰ *Ibid.*

farms under rain-fed agriculture.¹⁶¹ Ethiopia produced around 120,697 tons of cotton with a yield of 1.85 tons per hectare in the year 2007/08.¹⁶²

With regard to skin and hides Ethiopia is well endowed with livestock resources as compared to other countries in Africa.¹⁶³ In this regard United Nations Industrial Development Organization (UNIDO) acknowledged Ethiopia to be the first in Africa and tenth in the world in numbers of cattle.¹⁶⁴ The BBC also confirms this fact.¹⁶⁵

Third, textile and leather industries save capital and generate hard currency. According to the GTP textile and garment industries are targeted to export 1 billion USD while exported leather and leather products are expected to earn 496.87 million USD in 2014/15.¹⁶⁶ In line with the GTP target the Textile Industry Development Institute notes that the country is trying to minimize its local garment consumption which currently stands at 90 percent and raise its export volume.¹⁶⁷ Textile industries have shown remarkable development in the last five years. The amount of foreign currency secured from export of garments has reached 25 million USD in 2010 from only 4 million USD some eight years ago. Currently 42 medium and high-level enterprises engaged in the textile sector are taking part in the export trade directly or indirectly.¹⁶⁸

Fourth, textile and leather industries enable the country to penetrate and compete in the international market although the success of securing markets comes along with producing quality and standard competitive products. In this regard Biru the former Minister of Trade and Industry emphasized that “coming up with quality products is an avenue to excel competitors as

¹⁶¹Addis Ababa Chamber of Commerce and Sectoral Associations, *supra*, n.139. Major Cotton producing areas in the country are: Awash Valley, South Omo (Omorate), North West (Humera, Metema, Quara, and Belles Valley), Gambella, Tekeze Valley, Dabus Valley and Wabeshebelle Water shade area. See, FDRE, 2009. *Agricultural Investment Potential of Ethiopia, Ministry of Agriculture and Rural Development*, Addis Ababa, March (2009), p. 10.

¹⁶²Addis Ababa Chamber of Commerce and Sectoral Associations, *supra*, n.139.

¹⁶³*Ibid.*

¹⁶⁴UNIDOScope weekly internet newsletter, 22-28 February 2004 (Available at; http://www.unido.org/fileadmin/import/21401_0402UNIDOScope2228Feb2004.4.pdf) (Accessed on July 21, 2012)

¹⁶⁵BBC News, available at; <http://news.bbc.co.uk/2/hi/business/6703551.stm>. (Accessed on July 21, 2010)

¹⁶⁶MoFED. 2010. *Growth and Transformation Plan (GTP) (2010/11-2014/15)*, *supra*, n. 100, p. 35.

¹⁶⁷*Ibid.*

¹⁶⁸*Ibid.*

well as to successfully penetrate the global market.”¹⁶⁹ However, this requires the Ethiopian Quality and Standard Authority to devise a system and ensure the quality of products exported from these two industries maintain the required level and do not adversely affect the good name of the country’s products.¹⁷⁰

However, with all these justifications for selecting textile and leather factories as winning industries to achieve the pro-poor development objective of the government, whether they are able to compete with capital and technology intensive factories in other developing countries (China, India and Turkey) and developed countries is something to be seen in the future.

1.5.2.1 Special Support to Textile and Leather industries

With the spirit of the industrial development strategy, the government has extended special support to the Leather and Textile industries. This is demonstrated by the establishment of two autonomous federal government institutions directly accountable to the Ministry of Trade and Industry (MoTI): the Leather and Leather Products Technology Institute (LLPTI)¹⁷¹ and Textile Industry Development Institute (TIDI).¹⁷² The objectives of the LLPTI are “to produce trained manpower for the sector by providing theoretical and practical training and conduct research and consultancy activities in all aspects of Leather and Leather products manufacturing, raw materials, chemical process, mechanical operations and quality control methods.”¹⁷³ The objectives of TIDI are:

To assist the textile and apparel industries in market development and by giving long and short term training that will result in the upgrading of their management, [the] supervision and production of manpower skills and in sustainable supply of technicians needed by the industries, so as to enable them become competitive in domestic and foreign markets by acquiring product quality and standard recognition internationally.¹⁷⁴

¹⁶⁹ Walta information center; http://www.waltainfo.com/index.php?option=com_content&task=view&id=22009 (accessed on June 29, 2010)

¹⁷⁰ Admit Zerihun, *supra*, n.124, p. 252.

¹⁷¹ FDRE (1998). Leather and Leather Products Technology Institute Establishment , Regulation No. 41/1998, Federal Negarit Gazeta, 5st year No. 1, Addis Ababa, p. 848-852.

¹⁷² FDRE (2005). Textile and Apparel Industry Institute Establishment, Regulation No. 118/2005, Federal Negarit Gazeta, 11st year No. 47, Addis Ababa, p. 3152-3156.

¹⁷³ FDRE, 1998, *supra*, n.171, Art.5.

¹⁷⁴ FDRE, 2005, *supra*, n.172, Art.5.

In order to promote the leather industry, the government facilitated the establishment of an Indian leather processing chemicals PLC known as Adorn Chemicals PLC which was established on July 18, 2010 at the cost of 25 million Birr (around 1.9 million USD).¹⁷⁵ It was established to supply products mainly to local leather manufacturing firms. The purpose is to make Ethiopia self-sufficient in leather processing chemicals and save much needed foreign currency.

1.6 The Environmental Impact of Industrialization

Textile and leather industries as discussed above enable the country to generate hard currency, create employment and penetrate global markets.

However, they generate solid, liquid and gas wastes. Due to the current lack of enforcement of legal provisions and the low level of community awareness about pollution, industrial waste is being discharged without proper treatment. For instance, according to the Addis Ababa Environment Protection Authority (AAEPA), in 2008 more than 2000 factories (small, medium and large) in Addis Ababa were advised to end their polluting practices within five years.¹⁷⁶ So far, only ten per cent have installed treatment facilities. The other ninety per cent have not done so due to high cost and lack of technical skills.¹⁷⁷ It cost a minimum of six to seven million Birr (332, 641.29 USD to 338, 081.50 USD) to set-up a treatment facility.¹⁷⁸

According to the AAEPA's assessment, each of the ninety per cent that do not have treatment plant release between one cubic meters to 1000 liquid waste daily.¹⁷⁹ Pollutants from these factories include "industrial chemicals; petroleum; pesticides; inorganic contaminants (like salts and metallic components) and radioactive materials,"¹⁸⁰ all of which are released into Akaki Rivers in Addis which are sources of drinking water for people and animals living in Addis Ababa and its environs. (See chapter 5)

¹⁷⁵The Ethiopian News Agency; <http://www.ena.gov.et/EnglishNews/2010/Jul/18Jul10/117362.htm> (accessed on July, 22, 2010).

¹⁷⁶Mercy Kahenda. 2012. Addis Ababa factories running out of time to treat waste or close down, Addis Fortune Ethiopian News Paper, Vol.13, No.647, Addis Ababa, September, 23, 2012.

¹⁷⁷*Ibid.*

¹⁷⁸ Interview with Dereje Taye, communication affairs process leader in AAEPA, (on September, 25, 2012)

¹⁷⁹Mercy Kahenda, 2012, *supra*, n.176.

¹⁸⁰*Ibid.*

In order to classify the problem of industrial pollution, the AAEPa has introduced a scheme that identifies factories by a range of five colours that is expected to begin in 2013/14. This color scheme was adapted from Rwanda and China. The scheme aims to rate and publicly disclose the environmental performance of factories in Addis Ababa. A black label will be given to factories with no pollution control efforts that cause serious environmental damage; red to factories that fail to meet standards; blue to factories that meet minimum standards; green to factories that perform above standards; and gold to best performers that use clean technology, waste minimization and pollution prevention.¹⁸¹ If the scheme is implemented as planned, it will empower communities, environmental NGOs, civil society by providing information about factories' environmental performance (See chapter 7). However, in order for the AAEPa to implement the programme support from the government is necessary in the form of human and financial resources.

The leather and textile industries in general generate significant amounts of waste. Leather factories produce hazardous waste from chemicals such as sodium sulphide, lime, ammonium sulphate, sulphuric acid, chromium sulphate, dyes and pigments.¹⁸² Spent salt, hides and skin residues, which are contaminated with chemicals and alkaline, are also potentially corrosive.¹⁸³ For example, waste that contains chromium is toxic.¹⁸⁴ Effluent from textile industries contains high concentrations of ionic substances, organic colours and reactive dyestuff and heavy metals which are used for fixing colours in the dye. Washing and dyeing operations in textile factories utilize chemicals including sodium hydroxide, sodium chloride, acetic acid and dyes.¹⁸⁵ (See chapters 5 and 6).

¹⁸¹ Dereje Taye, 2012, *supra*, n.178.

¹⁸² Addis Ababa Environment Protection Authority (AAEPa), 2009. Qualitative and Quantitative Assessment and Evaluation of Impacts of Hazardous Wastes in Addis Ababa and the way forward (unpublished material), p. 31.

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*

¹⁸⁵ *Ibid.*, p. 22.

1.7 Objectives of the Thesis

This thesis addresses the major problem of pollution from industrialization in the textile and leather industries during a period of rapid development of Ethiopia. The thesis analyzes the effectiveness of the legal and organizational frameworks of industrial pollution control through the application of two case studies. The issues examined in the thesis are discussed in the context of sustainable development and development theories in light of Ethiopia's development strategies. Ethiopia's Constitution adopts sustainable development as a fundamental right. Legislative powers include the power to enact laws on industrial pollution control and management. Despite these apparently robust legal controls and organizations, doubts arise about the effectiveness of law and its enforcement. These are some of the main issues examined in this thesis.

1.8 Primary Research Questions

The main research question that needs to be answered throughout the thesis is:

- How effective is the *institutional*¹⁸⁶ *framework* on industrial pollution control and management in the two case study industries in Ethiopia?

To answer the main research question, this thesis addresses the following specific research questions.

- How effective is the *legal framework* on industrial pollution control and management?
- How effective is the *organizational framework* on industrial pollution control and management?
- How is industrial pollution controlled and managed in *Almeda textile factory* and *Sheba*

¹⁸⁶In this thesis, the word “institution” is not limited to mean “organization”. Rather, as Douglas North notes, it is meant to include “humanly devised constraints that structure political, economic and social interactions.” Hence, the word institution as used in this thesis also includes informal “sanctions, taboos, customs, traditions, and codes of conduct” or “formal enforceable legal rules”. See, Douglass C. North, 1991, "Institutions", *the Journal of Economic Perspectives*, Vol. 5, No. 1.(Winter, 1991), p. 97. Chang also notes that institutions refer to both “the forms of institutions (such as democracy, independent judiciary, etc.) and the functions that they perform (such as rule of law, respect for private property, government effectiveness, enforceability of contracts, maintenance of price stability, the restraint on corruption)”. See, Ha-Joon Chang, 2010, "Institutions and Economic Development: theory, policy and history", *Journal of Institutional Economics* (2011), 7:4, p. 485.

leather industry?

- What is the role of the *community* on industrial pollution control and management?

1.9 Hypothesis

To address the main research question, the following hypothesis is developed:

- The institutional framework on industrial pollution control and management are not effective partly due to organizational weaknesses as well as the absence of expertise, capacity building and lack of effective implementation and enforcement mechanism.

1.10 Methodology

In order to investigate the main research question, the thesis uses relevant primary and secondary sources, including: the Constitution, proclamations, regulations and treaties, policies, strategies, court cases, reports, different researches, text books, journal articles, chapters in books, letters, internet websites and personal interviews.

The methodology includes research conducted or commissioned by competent federal or regional environment bodies, interviews conducted with key informants and two exemplary case study industries. Key informants in the research include: heads, ex-heads and experts of federal and state environmental bodies; regional council members; affected community members; selected industries' managers and waste management section heads; the Ministry of Justice (MoJ) and academicians in the fields of environment and law.

Interviews are employed in parts of the thesis that deal with organizational and enforcement issues. In conducting interviews an attempt is made to supplement interviews with documentary background as points of reference. Semi-structured interview which relies on interview guide is used in cases where rigid questionnaire are not necessary.¹⁸⁷ The advantage of semi-structured interviews is that the respondents have flexibility in responding and the possibility to provide information that explains the topics.¹⁸⁸ All interviews in this thesis are conducted in Amharic the working language of the federal government and in Tigrigna the regional working language in

¹⁸⁷ Alan Bryman. 2008. *Social Research Methods*, 3rdedn., New York: Oxford University Press, p. 438.

¹⁸⁸ *Ibid.*

Tigray Regional State where the two case studies industries are located. Questions are designed in light of the specific needs. All responses during interviews were translated into English by the researcher and are available on file.

For the purpose of this thesis, a case study is understood to mean a method that examines the two selected industries in their natural setting. There are three main reasons for using a case study. First, it enables the researcher to collect data in the cases' natural setting. Second, it enables the researcher to answer "how" and "why" questions, that help to understand the nature and complexity of the process taking place in the two case industries.¹⁸⁹ Examples include how industrial pollution is managed in the textile and leather industries? Third, case study is an appropriate way to research an area in which few previous studies have been carried out.¹⁹⁰ As far as I am aware there is no PhD research done on industrial pollution control and management in textile and leather industries in Ethiopia.

The initial task in any case study is case selection. As Seawright and Gerring note, in the process of choosing cases one also sets out an agenda for studying those cases.¹⁹¹ Out of more than ninety¹⁹² textile factories and twenty-three¹⁹³ leather factories the researcher has selected one textile and one leather industry located in Tigray Regional State. The two exemplary case study industries were selected because that they are amongst the largest in each sector. Since they are government affiliated, they provide an insight into Ethiopia's economic and social development and its commitment to control and manage industrial pollution.

A major issue that needs to be addressed in the process of case selection is where to draw the boundaries? And what to include and exclude? The boundaries of a case study are usually to be determined by geographical location. The textile and leather industries involve geographically

¹⁸⁹ Izak Benbasat, David K. Goldstein, Melissa Mead. Sep., 1987. *The Case Research Strategy in Studies of Information Systems*, MIS Quarterly, Vol. 11, No.3, p. 370.

¹⁹⁰ *Ibid.*

¹⁹¹ Jason Seawright and John Gerring. June 2008. Case Selecting Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options, *Political Research Quarterly*, Vol.61, No. 2, p. 294.

¹⁹² Eden Sahle, 2011. Looking gift horse in mouth-Ethiopia AGOA exports falling short of potential; in need of diversification, *Addis Fortune*. Addis Ababa, Vol.12, No. 580. (June 12, 2011)

¹⁹² Eden Sahle, 2011. Looking gift horse in mouth-Ethiopia AGOA exports falling short of potential; in need of diversification, *Addis Fortune*. Addis Ababa, Vol.12, No. 580. (June 12, 2011)

¹⁹³ Workineh Zewdie, 2011. Leather Institute hires Indian firm to boost industry, *Addis Fortune News Paper*, Vol.12, No.584. (July 10, 2011)

dispersed stakeholders' including—suppliers, customers, environment regulating institutions and communities. In order to address this difficulty—taking geography as determinant factor in a case study boundary—this thesis has also considered social, institutional and historical context of the two selected industries.

1.11 The Originality and Significance of the Thesis

The research addresses one of the most important issues in Ethiopia's development agenda—industrial pollution control and management. The lessons to be drawn from my analysis are designed to assist the relevant environmental protection organs and the industries to develop strategies for the effective management of industrial pollution.

Second, the thesis highlights the fact that effective industrial pollution measures in Ethiopia need to address problems of organizational structures, resource allocation and capacity building in order to enable effective protection, monitoring and regulation. It highlights the need to coordinate and conduct industrial pollution control at different levels of governance and organizations; complemented by market instruments and community participation.

This thesis also highlights the paramount importance of effective control and management of industrial pollution for health, environment protection and the achievement of sustainable development. The research reveals that industrial pollution poses a serious environmental threat to the people who are not aware of their constitutional and statutory environmental rights.

Finally, the thesis makes an original contribution by linking poverty reduction and industrial pollution control on the one hand and the paradigm of sustainable development on the other in Ethiopia.

1.12 Chapter Outline

Together with this chapter, this thesis consists of eight chapters.

Chapter 2 critically analyses the literature related to the concept, paradigm shift and mainstreaming of sustainable development from general and global perspective and as it is implemented in Ethiopia. The analysis in the chapter includes some conclusions.

Chapter 3 deals with the legal framework regulating industrial pollution. The chapter examines whether the legal framework on pollution control is effective or not? It defines and analyses pollution in general and in the Ethiopian context in particular. It also specifically deals with the Environmental Pollution Control Proclamation (EPCP) schemes and strategies. The analysis in the chapter also includes some conclusions.

Chapter 4 addresses the organizational framework on industrial pollution. Its focus is on pollution control organizations at federal and regional level. It examines the effectiveness and coordination of these organizations. The analysis in this chapter also includes some conclusions.

Chapter 5 deals with industrial pollution and its magnitude from the national perspective in general with particular focus on hazardous industrial waste from textile and leather industries. The analysis in the chapter also includes some conclusions.

Chapter 6 deals with the case study industries—Almeda textile factory and Sheba leather industry located in Tigray Regional State. They are selected in order to evaluate—the strength of the national and local regulatory regimes, the types and levels of pollutants they release (e.g. solid, liquid and air pollution) and their impact on neighbouring communities. The analysis in the chapter also includes some conclusions.

Chapter 7 deals with the role of the community participation on industrial pollution control. It examines the significance of community participation and the main actors involved. The main focus of this chapter is to create a link between community based actors and the main environmental organizations. The analysis in the chapter also includes some conclusions.

Chapter 8 provides general thesis conclusion. The conclusion has identified five major factors that are responsible for a failure to control and manage industrial pollution in Ethiopia. These factors are (i) lack of political will from the side of the government to address industrial pollution; (ii) lack of enforcement of the existing industrial pollution control laws (iii) lack of capacity (resource and personnel) and coordination within environment protection, regulation and monitoring bodies; (iv) lack of awareness and organization within the affected communities regarding their constitutional rights—the right to a clean and healthy environment; and (v) lack of corporate social responsibility on the part of the two industries subject of this case study. It also recommends that the move towards stronger sustainable development as a way forward.

CHAPTER 2

SUSTAINABLE DEVELOPMENT IN THE ETHIOPIAN CONTEXT

2.1 Introduction

As discussed in chapter 1, developing countries like Ethiopia face different daunting and sometimes contradictory challenges to promote sustainable development. Some of these challenges are promoting equitable economic development, protecting the environment and social justice.

A critical issue of concern in this chapter, which is also widely discussed in the literature, is the issue of mainstreaming the environment into development agenda. Even though there are various definitions of environmental mainstreaming¹⁹⁴ depending on the issues to be addressed, the standard definition is: “informed inclusion of environmental concerns in the decisions of [organizations] that drive national, local and sectoral development policy, rules, plans, investment and action.”¹⁹⁵ For the purpose of this thesis, environmental mainstreaming is understood as the informed inclusion and enforcement of industrial pollution control issues into the decisions of organizations that drive national, local and sectoral development policy, rules, plans, investment and action.

The main reason for mainstreaming the environment is;

Economic and social development and the environment are fundamentally interdependent. While the way we manage the economy and political and social institutions has critical impacts on the environment, environmental quality and sustainability, in turn, are vital for the performance of the economy and social well-being. As such, the task of environmental integration and mainstreaming is at the forefront of development planning and policy formulation.¹⁹⁶

¹⁹⁴ For example, the UNDP-UNEP Poverty-Environment Initiative interprets environmental mainstreaming specifically in terms of “integrating poverty environment linkages into national development planning processes and their outputs, such as Poverty Reduction Strategy Papers (PRSPs) and Millennium Development Goal (MDG) strategies” (PEI (2007) Guidance Note on Mainstreaming Environment into National Development Planning, UNDP-UNEP Poverty-Environment Initiative, Nairobi (available at; <http://www.unpei.org/PDF/Guidance-Note-Mainstreaming-eng.pdf>) (Accessed on April 22/2011)

¹⁹⁵ Barry Dalal-Clayton & Steve Bass, 2009. *The challenges of environmental mainstreaming: Experience of integrating environment into development institutions and decisions*. Environmental Governance No.3. International Institute of Environment and Development. London, p.19.

¹⁹⁶ GEF Mainstreaming Environmental Issues into Development: (http://www.gefcountrysupport.org/report_detail.cfm?projectId=175) (Accessed on May 25/2011)

According to the Ethiopian government, the reason for mainstreaming the environment is the belief that *environmental resources are the foundations of social and economic development* (emphasis mine). Environmental resources are the sources of goods and services needed for poverty reduction and economic growth. The government argues that their mismanagement coupled with their under utilization has reduced their contribution to Ethiopia's overall development. It argues that environmental degradation threatens physical and economic survival and undermines prospects for fighting poverty and achieving sustainable development. Reversing environmental degradation and poverty eradication are thus mutually reinforcing imperatives and have to be implemented together in Ethiopia's development initiatives.¹⁹⁷ This is expected to be done through integrating national economic development programs and environmental regulatory systems. The government stresses that:

It is urgent for Ethiopia to take the necessary action, as envisaged in target 9 of the MDG 7, to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and enhance the quality of life of its present generation of citizens without compromising that of its future generations.¹⁹⁸

Both environmental protection (industrial pollution control and management) and equitable economic development (pro-poor growth) need to be put at the core of everything governments do. As far as this thesis is concerned, this is one step ahead in the protection of the environment (industrial pollution). But the issue is, whether it is possible to have both of them at the same time? Especially, in a developmental state like Ethiopia which strongly aspires to make poverty history through fast and pro-poor economic growth within a very short period of time? If not, sustainable development is not possible.

The idea that economic growth and environmental protection could be achieved at the same time is either rhetoric or pretext to promote economic growth at the expense of the environment. One could view this rhetoric as the belief that environmental resources are the sources of goods and services needed for economic growth and poverty eradication. In other words, this indicates the government's strong belief that the environment should be used as an instrument to achieve equitable economic growth.

¹⁹⁷MoFED, 2006, *supra*, n. 99, p. 187.

¹⁹⁸ *Ibid.*

Bosselmann correctly argues that “the idea that we can have economic growth, prospering societies and a healthy environment at the same time is simply the application of *weak sustainable development policy* (emphasis mine).”¹⁹⁹ The core tenets of weak sustainability are: “a human-centered worldview is adopted; there is an emphasis on a growth-oriented approach to economic development; there is a relative lack of consideration given to the need for radical change in people's demands on the Earth; and there is a perpetuation of the view that nature is merely a collection of natural resources that can be subdued by the human race.”²⁰⁰ (See section 2.2 on discussions on weak sustainable development)

Bosselmann also argues that the idea of meeting all the three (economic, social and environmental aspects of sustainable development) at the same time is simply *wishful thinking* (emphasis mine). He underlines that “in history such a society has never existed and it is very hard to expect in the future.” He emphasizes that “this so-called weak version of [sustainable development] is popular among governments and business, but profoundly wrong and not even weak as there is no alternative to preserving the Earth’s ecological integrity.”²⁰¹ He strongly argues that if the concern of mainstreaming the environment is intended to make sustainable development meaningful, and an “overarching paradigm in law and governance, its conceptual core, i.e. *the principle of sustainability*, needs to be (re-)discovered, explained, defined and applied (emphasis mine).”²⁰²

Richardson argues that if the concept of sustainable development is "to have any real meaning, other than as a consensual phrase of political agreement, it needs to be radically redefined along purely ecological lines. If that is not possible it should be totally abandoned.”²⁰³

Palmer argues that “if sustainable development is to be achieved, then the necessary fundamental change in and modifications to agriculture, energy, forestry and other physical and industrial

¹⁹⁹ Bosselman, Klaus, 2008. *The Principle of Sustainability-Transforming Law and Governance*, USA: Ashgate Publishing Company, p. 27.

²⁰⁰ Colin C. Williams and Andrew C. Millington, 2004. *The Diverse and Contested meanings of Sustainable Development*, the *Geographical Journal*, Vol. 170, No.2, Environment and Development UK, p. 101

²⁰¹ Bosselman, Klaus, 2008, *supra*, n 199, p.1.

²⁰² *Ibid.*, p.4.

²⁰³ Dick Richardson, *the politics of sustainable development*. In Susan Baker et al, 2005. *The Politics of sustainable development: policy and practice within the European Union*, USA: Routledge, p. 41.

systems cannot stand alone.”²⁰⁴ He argues that “alongside these changes must be a corresponding shift in attitude and values—in the social, economic, political and moral aspects of human life.”²⁰⁵ But, he emphasizes the fact that “at the baseline of such shift will be the realization that the Earth in its natural form must be valued—not at the level of how it may be exploited for the support of Homo Sapiens and our needs and interests, but as an indispensable entity, worthy of values in its own right.”²⁰⁶

I argue that, in the Ethiopian context,²⁰⁷ the concept of sustainable development will only be meaningful if related to the core idea of ecological sustainability. Long term economic growth is only possible if we protect and enhance the environmental resources that underpin it. As long as the pursuit of economic and social development remains the practical driving force behind the Ethiopian government’s policy and the primary measure of national success, sustainable development will remain peripheral and impractical. The benchmark for the application of sustainable development should be the country’s ecosystem integrity. The implication of this is that, it is the economic growth which needs to be mainstreamed to the ecological integrity not the other way round. The corollary is that, it is possible to achieve equitable economic growth by protecting the ecosystem. If sustainable development is not based on ecological integrity, it remains:

An archetypical form of hegemonic knowledge, an ideological cocktail of anthropocentrism, developmentalism, neoliberalism and scientism based on a narrow and weak notion of sustainability that promotes reformist fantasies that the crisis can be addressed within the social, political, economic and cultural structures that created it.²⁰⁸

However, even if one is forced to agree with the idea of mainstreaming the environment to the economic growth as the first step in the right direction in protecting the environment; it is not an

²⁰⁴David E. Cooper and Joy A. Palmer (eds.), 1992. *The Environment in Question: Ethics and Global Issues*, New York: Routledge, p.183.

²⁰⁵*Ibid.*

²⁰⁶*Ibid.*

²⁰⁷ The fact that Ethiopia is endowed with solar, wind, hydro and geothermal power sources makes it imperative to base the application of the concept of sustainable development on the principle of sustainability or ecological integrity unlike the fossil fuel rich countries or countries which are not endowed with the sources Ethiopia is blessed with.

²⁰⁸Sam Adelman, 2011. *Re-Imagining Climate Justice in the Ecology of Knowledges*; in *Re-Imagining Our Sociological Contemporaneity: What is the Age of Re-Embodiments?* (Unpublished), p.5.

easy task. It faces different implementation challenges. Some of these challenges are: the prevailing development paradigm which treats environment as an institutional and economic externality; lack of data, information, skills and institutional capacity to work on environment-development links; weak environmental mainstreaming initiatives; and lack of political will for change.²⁰⁹ The main challenges for mainstreaming the environment (industrial pollution) in Ethiopia include political will to enforce the existing pollution control laws and lack of capacity and coordination on the side of environment regulating institutions. (See chapter 3 & 4)

As to the relation between environment and development, there are different arguments. For example, economists like Georgescu view economic and industrial development as “the use of excess inputs of energy and material to generate excess quantities of waste and pollution resulting in continuous degradation of the environment until its carrying capacity is completely exhausted and economic activity itself declines.”²¹⁰

At the other extreme Beckerman argues industrial development as the fastest road to environmental improvement.²¹¹ He argues that “with higher incomes, generated by development, comes increased demand for goods and services that are less harmful to the environment. Furthermore, at higher income levels there is increased demand for improved environmental protection measures.”²¹² Therefore, he asserts that, by slowing down economic development, environmental regulation reduces environmental quality.²¹³

Panayotou argues that “the relationship between environmental quality and economic development is not fixed along a country’s development path.”²¹⁴ Scholars like Grossman argue that “even if the relationship between the environment and development is more likely to be

²⁰⁹Barry Dalal-Clayon& Steve Bass, 2009, supra, n.195, p.31.

²¹⁰ See, Daly, H.E. (1977). *Steady State Economics: The Political Economy of Biophysical Equilibrium and Moral Growth*, San Francisco; W. H. Freeman & Co; Georgescu-Roegen, N. (1971). *The Entropy Law and Economic Process*, Cambridge: Harvard University Press; Meadows, D.L., J. Randers, and W.W. Behrens (1972). *The Limits to Growth*, London: Earth Island Limited.

²¹¹Beckerman W. 1992. ‘Economic Growth and the Environment: Whose Growth? Whose Environment?’, *World Development* 9, p.165–185.

²¹² *Ibid.*

²¹³ *Ibid.*

²¹⁴UNIDO Industrial Development Report, 2004.*Industrialization, Environment and the Millennium Development Goals in Sub-Saharan Africa, the new frontier in the fight against poverty*. UNIDO Publication, Austria: Vienna, p. 95.

negative at the earlier stage of economic development when a country begins to industrialize and incomes are too low to demand clean industrial technologies and practice; the relationship turns positive as industries mature, the share of services rises and incomes grow to levels at which people can afford efficient infrastructure and a clean environment.”²¹⁵ This view is explained by the Environment Kuznets Curve (EKC) hypothesis. The hypothesis postulates that;

At low levels of development, as agriculture and resource extraction intensify and industrialization takes off, the emission and concentration of pollutants accelerate; while at higher levels of development, structural change towards a rising share of services, lighter and cleaner industries and more efficient technologies, as well as increased demand for environmental quality, result in pollution levels leveling off, then entering a steady decline.²¹⁶

The impact of the above arguments on industrial pollution control is on the relevance and type of environmental policy to be pursued in any country. For instance, the uniform increase of industrial pollution with economic growth calls for “strict environmental regulations and even limits on economic growth to ensure a sustainable scale of economic activity within the ecological life-support system.”²¹⁷ The uniform decrease of industrial pollution along a country’s development path suggests that policies that accelerate economic growth lead to rapid environmental improvements and no explicit environmental policies are needed. Indeed, they may be counterproductive if they slow down economic growth and thereby delay environmental improvement.²¹⁸ The key prescriptive implication of the EKC hypothesis is that, smart environment related interventions need to be a factor in the level of development.²¹⁹ (See subsection 2.3.2 for the discussion on the difference between policy and law.)

The first argument calls for strict environmental regulations. Its emphasis is on the application of strict traditional command-and-control approach. As Stewart notes that “command-and-control

²¹⁵ See, Grossman, G., and A. Krueger 1993. ‘*Environmental impacts of a North American Free Trade Agreement*’, The U.S. Mexico Free Trade Agreement; Panayotou, T. 1992. *Environmental Kuznets Curve: Empirical Tests and Policy Implications*, Cambridge: Harvard Institute of International Development, Harvard University; Selden, T., and D. Song 1994. ‘Environmental Quality and Development: Is there a Kuznets Curve for Air Pollution Emissions?’ *Journal of Environmental Economics and Management* 27, pp. 147–162; Shafik, N., and S. Bandyopadhyay 1992. ‘*Economic Growth and Environmental Quality: Time-Series and Cross-Country Evidence*.’ World Bank Policy Research Working Paper, WPS 904.

²¹⁶ *Ibid.*

²¹⁷ Arrow, K., *et al* 1995. ‘Economic Growth, Carrying Capacity and the Environment’, *Science* 268, p. 520–521.

²¹⁸ UNIDO Industrial Development Report, 2004, *supra*, n.214, p. 96.

²¹⁹ *Ibid.*

regulation specifies required or prohibited conduct for each individual regulated actor with the aim of limiting, directly or indirectly, the level of pollution, stress, or resource consumption by each.”²²⁰ Command-and-control regulation includes quantitative limitations on the amount of pollution, waste, other environmental stresses, or resources use by individual actors through performance standards. And the application of certain types of technology through specification standards, prohibition on the discharge of certain pollutants or waste and liability for causing environmental harm under a negligence standard.²²¹

The problem with command-and-control regulation is that though it has a role to play in industrial pollution control it cannot properly address every issue. There might be a situation where it could be replaced or supplemented by other means like self-regulation or economic instruments depending on the case.

Currently, there is a growing dissatisfaction with this system and a search is underway for more effective modes of regulation.²²² Stewart stresses that “until recently domestic environmental regulation was exclusively based on command-and-control. But, due to the declining efficacy of the system there has been growing interest in alternative approaches.”²²³

The World Bank acknowledges that “alternatives to traditional environmental regulation have been found to reduce the pollutant intensity of the manufacturing sector in developing countries.” For instance, there are many examples of developing countries that have adopted incentive systems to modify the polluting behaviour of industrial firms. These systems include: “financial incentives (China, Colombia, Malaysia and Philippines), targeted enforcement (Brazil), pollutant rating systems (Indonesia and Philippines) and community pressure (Mexico and China).”²²⁴

The second argument which advocates for no explicit environmental policy implies free market will take care of the environment. The idea here is that “there will be an economic incentive

²²⁰ Richard B. Stewart, 2007. *Instrument Choice*, in the Oxford Handbook of International Environmental Law, New York: Oxford University Press, at.150.

²²¹ *Ibid.*

²²² R. Baldwin and J.Black, ‘Really responsive regulation’, (2008) 71 (1) MLR 59-94. C.T.Reid, ‘Regulation in a changing world: review and revision of environmental permits’ (2008) CLJ 126; as cited in John and Sharron McEldowney, 2010. *Environmental law*, England: Pearson Education limited p. 145.

²²³ Richard B. Stewart, 2007, *supra*, n.220, p. 154.

²²⁴ UNIDO Industrial Development Report, 2004, *supra*, n.214, p. 98

[market regulation] system put in place that uses economic instruments²²⁵ that impose a price or opportunity cost on each unit of pollution, waste, stress, or resource consumption by regulated actors.”²²⁶ In other words, “the system allocates rights to pollute through a system requiring payment of a fee, a tax, or a charge.”²²⁷ Unlike command-and-control measures that “call for or prohibit specific conduct by each actor, this system uses the price mechanism to guide behavior in the required direction by giving each actor the discretion to determine the quantity and appropriate control measures of its pollution.”²²⁸

However, markets cannot always be relied upon to serve the long-term public interest in managing environmental pollution. Key market failures that demand industrial regulation are *information externalities* and *coordination externalities* (emphasis mine).²²⁹ If we exemplify the problem of information externality by taking pollution charges and taxes as examples of market based regulation; Orts notes that the difficulty from the side of the government to set charges or taxes is that government officials must guess how much to charge and to produce an estimate level of pollution production.²³⁰

Stiglitz argues that though markets lie at the heart of successful economies they do not work well on their own.²³¹ He emphasizes the need for government intervention.²³² He argues that “economics call for *equilibrium between the function of markets and government intervention* through non-market and non-governmental institutions (emphasis mine).”²³³

A third widely held view is the EKC hypothesis. However, UNIDO cautioned that it is controversial and raises different unsolved issues like:

²²⁵ Economic instruments include: environmental taxes or fees; tradable pollution, stress, or resource consumption quotas; pollution, waste, or risk bubbles; property rights in natural resources; pure subsidies; and liability for causing environmental harm.

²²⁶ Richard B. Stewart, 2007, *supra*, n.220, p. 151.

²²⁷ E.W.Orts (Oct., 1995). A Reflexive Model of Environmental Regulation, *Business Ethics Quarterly*, Vol.5, No.4 the Environment, p.783.

²²⁸ Richard B. Stewart, 2007, *supra*, n.220, at.151.

²²⁹ Rodrik, Dani 2004. Paper prepared for UNIDO, “*Industrial Policy for Twenty-First century*”, Harvard University, (September), p. 6.

²³⁰ E.W.Orts (Oct., 1995), *supra*, n.227, p.783.

²³¹ Joseph E. Stiglitz, 2010. *Freefall: free markets and the sinking of the global economy*, Penguin Books, England: London, p.12.

²³² *Ibid.*

²³³ *Ibid.*

At what level of per capita income, is the turning point? How much damage would have taken place, and how could it be avoided? Would any ecological thresholds be violated and irreversible damages take place before environmental degradation [industrial pollution] begins to decrease and how could that be avoided? Is environmental improvement at higher income levels automatic, or does it require deliberate institutional and policy reform? And how could the development process be accelerated so that poor countries might experience the same improved economic and developmental conditions enjoyed by developed countries?²³⁴

The EKC approach tacitly assumes that “the industrialization process in developed and developing countries are independent of each other, and that developing countries will follow the same path of development as developed ones.”²³⁵ However, in reality “since globalization results in increased interdependence, it is *idealistic* to regard trends in the composition of industry in the developed and developing countries as completely independent of each other (emphasis mine).”²³⁶ This may be exemplified through developed countries opening subsidiary industries in the developing ones. Though, the opening of subsidiary industries is not only from developed to developing countries. It is also from developing countries (like India, China and Turkey) to least developing countries like Ethiopia as discussed in chapter 1 section 1.5.1.

Critics like Susmita have challenged the EKC hypothesis by arguing that “cross sectional evidence for the EKC is nothing more than a snapshot of a dynamic process. They claim that overtime, the curve will rise to a horizontal line at maximum existing pollution levels as globalization promotes a race to the bottom in environmental standards.”²³⁷ They also argue that “if certain pollutants are reduced as income increases industrial society continuously creates new unregulated and potentially toxic pollutants.” In their view “the overall environmental risks from these new pollutants may continue to grow even if some sources of pollution are reduced.”²³⁸

From the arguments discussed above, this thesis stresses the paramount importance of state involvement in industrial pollution control through the application of command-and-control

²³⁴ *Ibid.*, p. 98.

²³⁵ Rhys Jenkins, et al. 2002. *Environmental Regulation in the New Global Economy-the impact on industry and competitiveness*, Edward Elgar Publishing Limited, USA: Massachusetts, p. 10.

²³⁶ *Ibid.*

²³⁷ Susmita D., et al, 2002. *Confronting the Environmental Kuznets Curve*, *the Journal of Economic Perspectives*, Vol. 16, No. 1 (Winter, 2002), p. 147-148.

²³⁸ *Ibid.*

system. It argues that the major roles for the state remain and continue to be evident in industrial pollution control in Ethiopia. One of the main roles of the state is to intervene in the face of market failure. The existence of minimal market regulatory mechanisms on industrial pollution control in Ethiopia is a solid ground for government intervention. However, we shall see that enforcement of environment related laws is difficult in a country at Ethiopia's stage of development with limited institutional structures (See chapter 3).

Despite the Ethiopian government's stated concerns about the environment, its primary focus is on equitable economic growth. This is consistent with the widely accepted and criticized EKC hypothesis discussed above. It is also typically the Chinese way of development which aims at development first and cleaning the environment later.

Prioritising economic growth over control of pollution is based on the concept of false economy.²³⁹ In this regard, China's emphasis on economic development which is being also practiced by the Ethiopian government is a typical example of false economy—aiming at short term economic benefit first but spending more money on cleaning up pollution later. This type of development policy is destined to result in both economic loss and environmental deterioration which is very difficult to remedy in the long term. For instance, the calculation of the environmental costs in 2010 in China shows that “pollution had caused 1.1 trillion Yuan (179,331,847,444.01 USD)²⁴⁰ in economic losses, or 2.15 times the 511.8 billion Yuan (83,454,983,590.72 USD)²⁴¹ loss in 2004.”²⁴² The direct cost of pollution accounted “for 2.5 per cent of total economic output in 2010, but if damage to the ecosystem—including forests, wetlands and grassland—was included, the losses adds up to 1.54 trillion Yuan (251,096,544,382.70 USD)²⁴³ or 3.5 per cent of that year's gross domestic product.”²⁴⁴ Pollution in China also grew

²³⁹ Macmillan Dictionary defines false economy as “something you do because you think it will save you money, but in fact it costs you more.” See Macmillan Dictionary, available at; <http://www.macmillandictionary.com/dictionary/british/false-economy>; (Accessed on June 13, 2013)

²⁴⁰ As per June 13, 2013 conversion rate.

²⁴¹ *Ibid.*

²⁴² Li Jing, 2013. 1.1 trillion Yuan in economic losses from pollution in 2010, China Report says, the South China Morning Post, Thursday, 28, 2013. Available at; Available at; <http://www.scmp.com/news/china/article/1201364/11-tr-yuan-economy-loss-pollution-2010-chinareport-says> (accessed on June 13, 2013)

²⁴³ As per June 13, 2013 conversion rate.

²⁴⁴ Li Jing, 2013, *supra*, n.242.

“more rapidly than GDP in 2010, up 13.7 per cent compared with GDP growth of 10.4 per cent.”²⁴⁵ The 2012 Environmental Conditions Report in China also found that “57.3 per cent of the groundwater in 198 cities in 2012 was ‘bad’ or ‘extremely bad’, while more than 30 per cent of the country's major rivers were “polluted” or “seriously polluted.”²⁴⁶ Thus, one can see how serious the consequence of the false economy is both on the economy and the environment.

Premier Li Keqiang has pledged that “the country will not pursue economic growth at the expense of the environment. Such growth [he emphasized] won't satisfy the people.”²⁴⁷ President Xi Jinping warned that “government officials will be held responsible ‘for life’ if they approve a project that causes serious pollution (emphasis mine).”²⁴⁸ This call for life time accountability was also “flagged in the party congress report in November [2012].” The President also underlined “pollution had become a major concern of the people and China could no longer develop its economy by sacrificing the environment. The government must create a system of accountability.” He urged “the addition of new criteria—such as the exhaustion of natural resources, environmental damage and protection efforts—to reviews of officials' political performance to encourage them to be environmentally responsible.”²⁴⁹ This is a very tough warning from the Chinese President but some environmentalists doubt about its seriousness and its feasibility. For instance, Li Bo, a senior adviser to Friends of Nature, a major environmental NGO, notes that “this sounds like a new attitude and we welcome it. However, when and how the policy would be executed remains unclear. In practice it could be very difficult.”²⁵⁰ He also argues in China “pollution data for a factory is collected by government and kept by government. Even if a project has caused serious pollution, the public is often kept in the dark. If you can't hold an official responsible at all, how can you hold him responsible for a life time?”²⁵¹ The Action for Professional’s Association for the People (APAP) Case in Ethiopia is also a typical

²⁴⁵ *Ibid.*

²⁴⁶ Jennifer Duggan, 2013. China's environmental problems are grim, admits ministry report, the Guardian, Friday 7 June 2013. Available at; <http://www.guardian.co.uk/environment/chinas-choice> (Accessed June 13, 2013)

²⁴⁷ Li Jing, 2013, *supra*, n.242.

²⁴⁸ Stephen Chen, 2013. Xi warns officials they'll be held responsible for pollution ‘for life’, South China Morning Post, May 25, 2013. Available at; <http://www.scmp.com/news/china/article/1245558/xi-jinping-warns-officials-theyll-be-held-responsible-pollution-life> (Accessed on June 13, 2013)

²⁴⁹ *Ibid.*

²⁵⁰ *Ibid.*

²⁵¹ *Ibid.*

example of this where the Federal Environmental Protection Authority (FEPA) were not held responsible for not taking measures against the polluters and failing to introduce environmental standards. (See chapter 3 sub-section 3.3.1.5)

At present, market regulating institutions in Ethiopia are few and not well developed. Solomon argues that; “the institutions established by the government to act as independent market regulators are few and the bulk of government-business relationship is left to ministries that are administrative by nature.”²⁵² He argues that “the country appears to be under a government that pursues the market enhancing approach with a view to building the institutions of free market in the long run,”²⁵³ but he cautions that this characterization is erroneous for three reasons. First, “the Ethiopian government has largely remained to be administrative despite the policies and reforms.” Second, “the majority of market actors are not subject to market regulation, nor to competition law, as though the system is laissez-faire.” Third, “the government has already advanced economies in its policies and strategies in favor of the developmental stage approach.”²⁵⁴ Consistent with its developmental nature, it is difficult to expect the government to introduce market based regulation (like green tax) on industrial pollution control at the expense of industrialization in the near future. Thus, in the Ethiopian context, the command-and-control system needs to be complemented with market based strategies.

In the absence of an effective command-and-control system and market regulatory mechanisms, I argue that public participation has the potential to fill the gap (See chapter 7). The idea of public participation is to link community based actors with the main environmental agencies. It is based on the idea that effective industrial pollution control must be broadly based. It calls for the collective efforts of government, non-government organizations and the general public. However, the effectiveness of public participation needs to be scrutinized and carefully considered. The thesis stresses that public participation alone cannot determine the effectiveness of industrial pollution regulation from the two case studies but nevertheless has the potential to serve as a checking mechanism on the state and industries. Public participation has the potential

²⁵²Solomon Abay, 2009. Designing the Regulatory Roles of Government in Business: The Lessons from Theory, International Practice and Ethiopia’s policy path, *Journal of Ethiopian Law*, vol. XXIII No.2, p. 125.

²⁵³*Ibid.*

²⁵⁴*Ibid.*, pp. 126 & 128.

to motivate the state and its environmental agencies and industries to act properly and to be accountable for their failures and inactions. In other words, public participation enhances political accountability by demanding why environmental agencies, industries and the relevant executive bodies are not doing their jobs? I argue that, sustainable industrial pollution control and management can be achieved when state regulation is complemented by state guided market regulation and community participation. It is the synergy of these three that constitutes sustainable industrial pollution control.

Hence, the thesis argues for a regulatory approach that incorporates a wide variety of flexible regulatory approaches; a purposive focus on competence of environment regulating agencies; emphasis on participatory citizenship and negotiation among different stakeholders. This regulatory approach as indicated in chapter 7 of this thesis also tries to empower citizen associations to regulate industrial pollution from the two case study industries. It also empowers industries to play their roles in pollution control by writing down their own corporate rules but when there is failure of these rules government will be involved to enforce them. The main thrust of this regulatory approach is that when one institutional order is weak in industrial pollution control, efforts are made to compensate through the other institutions.

The main argument in this chapter is that the increase in industrial pollution in Ethiopia is mainly attributable to the weak sustainable development policy pursued by the government. The development agenda in the country should not be limited to the language of mainstreaming the environment, because short of endorsing the principle of sustainability this is simply a rhetorical pretext to promote economic and social development in disguise.

Thus the mixed approach of industrial pollution control advocated in this thesis empowers pollution regulating bodies, industries and affected communities. It argues for a vibrant interventionist state that redistributes industrial pollution control power through enforcing participation rights including access to information, public participation and access to justice as discussed in chapters 3& 7.

Of course, the thesis underscores that state intervention to empower the powerless could imply less attention to the polluting industries which generally gain recognition through the market, and more attention to those excluded from market power—the affected communities. The trick of successful industrial pollution regulation is to establish a synergy between these different mixes of regulations.

To illustrate the above arguments section 2.2 discusses the concept of sustainable development in general and section 2.3 deals with sustainable development as a development paradigm in Ethiopia. The analysis in the chapter includes some conclusions.

2.2 The Concept of Sustainable Development

As discussed above, in any development agenda there is an underlying tension between the need to industrialize and the need to protect the environment. This tension lies at the heart of environmental politics. The concept of sustainable development is an attempt to resolve this tension. Its underlying message is that economic growth and environmental protection are possible at the same time because they complement each other. However, I argue that the idea that economic growth and environmental protection are possible at the same time is a pretext to enhance economic growth at the expense of the environment. If the concept of sustainable development is to be meaningful, economic growth should be based on the sustainability of the ecosystem which in turn should be enhanced through the application of appropriate environmental standards (See chapter 3); the establishment of effective environment protection, regulation and monitoring (See chapter 4) and promoting public participation (See chapter 7).

However, an emphasis on ecosystem sustainability does not mean there should not be any economic growth but rather that growth should be based on the sustainability of the ecosystem.

Bosselmann argues that;

Sustainable development does not call for a balancing act between the needs of people living today and the needs of people living in the future, nor for balancing act between economic, social and environmental needs. The notion of sustainable development, if words and their history have any meaning, is quite clear. It calls for development based on ecological sustainability in order to meet the needs of people living today and in the future. Understood this way, the concept provides content and direction. It can be used in society and enforced through law. The legal quality of the concept of sustainable development forms up once its core

idea is being realized.²⁵⁵

Sustainable development has been criticized as an ambiguous and politically fabricated concept designed to accommodate irreconcilable interests.²⁵⁶ Pearce et al. note that there are more than forty definitions.²⁵⁷ The most widely used is the definition in the Brundtland Report, which defines it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”²⁵⁸

This definition contains two fundamental principles; *intragenerational* and *intergenerational equity* and *the key concepts of needs and limits* (emphasis mine).²⁵⁹ The concept of needs holds that “sustainable development requires meeting the basic needs of all,”²⁶⁰ in both the global North and South. The concept of limits emphasizes the need to moderate our demands since the current state of technology and the existing social arrangement imposes limits on the environment to meet both present and future needs.²⁶¹

Sustainable development was endorsed for the first time though in its limited sense by NGOs involved in the protection of the environment. With regard to the early endorsement by NGOs, Carter notes that the application of sustainable development “was primarily concerned with ecological sustainability, or the conservation of living resources, and directed little attention to wider political, economic or social issues.”²⁶²

After the Brundtland Report which gave a broader meaning to sustainable development many countries both developed, developing and least developing countries including Ethiopia have in principle endorsed the concept in the 1992 Rio Conference. Even if the concept is endorsed by many governments in their legal systems, there is considerable controversy about how it is

²⁵⁵Bosselmann, Klaus, 2008, supra, n.199, p. 11.

²⁵⁶Lele, Sharachandra, 1991. ‘Sustainable development: A critical Review’, *World Development*, 19(6), p.613 and Dick Richardson, 1997. The politics of sustainable development. In, Susan Baker, Maria Kousis, Dick Richardson, and Stephen Young (eds.), 1997. *The politics of sustainable development-theory, policy and practice within the European Union*, London: Routledge, p.41.

²⁵⁷Pearce et al. 1989. *Blueprint for a Green Economy*, London: Earthscan, p.173-185.

²⁵⁸WCED, 1987. *Our Common Future*, Oxford University Press, p.43.

²⁵⁹ *Ibid.*

²⁶⁰ *Ibid.*, p.44.

²⁶¹ *Ibid.*, p.45.

²⁶² Neil Carter, 2007. *The politics of the environment-ideas, activism and policy* (2nd edn.), Cambridge University Press: UK, p. 208.

understood. Due to this ambiguity there are various forms of sustainable development starting from a light touch (weak form) to a more substantive and tougher test (strong form) adopted. The debate over these two forms of sustainable development revolves around the degree to which “natural capital and human-made capital can be substituted for each other.”²⁶³

Proponents of weak sustainability argue that “natural capital and human-made capital are indefinitely or even infinitely substitutable.”²⁶⁴ Weak sustainable development espouses an anthropocentric view of the relationship between people and nature, composed of “three strands: the perception that people are separate from nature; the idea that nature is a 'resource' to be used for the benefit of society or individuals; and the view that we have the right to dominate nature.”²⁶⁵ At the center of weaker sustainable development is an implicit optimism that “people will be able to find a solution to environmental problems that arise,” and they will be able to “enhance the stock of resources.”²⁶⁶ Technological progress is “assumed to enable people to manipulate the Earth to meet their enormous demands on it.”²⁶⁷

Proponents of strong sustainability argue that:

There are limits to [the extent] which natural capital can be replaced or substituted by human-made capital. [Hence] sustainability requires that we maintain the level of natural capital or at any rate that we maintain natural capital at or above the level which is judged to be critical.²⁶⁸

The common thread in strong sustainability is the view of “the Earth as finite and their conceding that no habitable future is possible unless the demand-side of the equation radically alters by rethinking our attitude towards nature as well as our view of economic progress and development.”²⁶⁹ For stronger sustainability advocates “the weaker versions of sustainable development are much more about sustaining development rather than sustaining environment, nature, ecosystems or the Earth's life support systems.” In the stronger versions of sustainable development, a different view of the relationship between people and nature is adopted. The

²⁶³ John O’Neill, 2007. *Markets, Deliberation and Environment*, Routledge, USA: New York, p.101.

²⁶⁴ *Ibid.*

²⁶⁵ Williams and Millington, 2004, *supra*, n. 200, p. 100.

²⁶⁶ *Ibid.*, p.101.

²⁶⁷ *Ibid.*

²⁶⁸ John O’Neill, 2007, *supra*, n.263.

²⁶⁹ Williams and Millington, 2004, *supra*, n. 200, p. 102.

objective is “to protect natural ecosystems but not simply for the pleasure of people, as is often the case in anthropocentrism. Instead, the argument of strong sustainability theorists is that nature has biotic rights.” They argue that “nature has a right to remain unmolested that does not require justification in human terms, just as there are inalienable human rights that require no justification.” Stronger sustainability theorists argue that “human society—in its endless pursuit of materialism—is heading in the wrong direction.”²⁷⁰

2.2.1 Brief History of Sustainable Development

The international community adopted the concept of sustainable development in 1992 as a paradigm²⁷¹ but not as binding legal norm.²⁷² Baker notes that the concept opens up debates about our relationship with the natural world, what constitutes social progress and what the character of the development should be?²⁷³ Nwankwo *et al.* stress that “concerns about sustainable development mirror our (humankind) collective anxiety about the sort of society we wish to create and how we wish to live in it.”²⁷⁴ They argue that “it is also about the sort of society we have created and the implication for present and future existence.”²⁷⁵

In order to reconcile the different theories of development that have been briefly examined in chapter 1, section 1.3, many new environmental development models have emerged. Sustainable development model represents an example of these new environmentalist approaches even though there are different versions of it and all of them are not mutually compatible. (See Appendix 2.1)

²⁷⁰*Ibid.*

²⁷¹ Dryzek defines Paradigm as: “a type of inter-subjective understanding that condition individual action, and social outcomes, in the international system no less than elsewhere. It has no formal existence resembling that of organizations, constitutions, laws, and treaties. Yet they can be nonetheless effective in coordinating the behaviour of large numbers of actors...” See, John S. Dryzek (2007). *Paradigms and Discourses*, in Oxford Handbook of International Environmental law, New York: Oxford University Press, p. 45.

²⁷² Magraw and Hawke, 2007. *Sustainable development*, in the Oxford Handbook of International Environmental Law, New York: Oxford University Press, p. 637.

²⁷³ Baker, 2006. *Sustainable development* (Routledge introductions to the environmental series). London: Routledge publisher, p. 20.

²⁷⁴ Nwankwo *et al.*, Sustainable Development in Sub-Saharan Africa: Issues of Knowledge Development and Agenda Setting, p. 2. Available at; <http://homepages.uel.ac.uk/D.A.C.Boyd/IJTMSD%20Multidisciplinary%20paper.pdf> (accessed on June 01, 2013)

²⁷⁵*Ibid.*

As Mickelson correctly argues, “sustainable development should promote a form of development that is contained within the ecological carrying capacity of the planet that is socially just and economically inclusive.”²⁷⁶ It should also focus “not upon individual advancement but upon protecting the common future of humankind.”²⁷⁷ In order for sustainable development to be effective and meaningful, it should be based on a new knowledge. Nwankwo *et al.* note that “perceivably, much of the orthodox knowledge [on sustainable development] reflects axioms that are inextricably linked to the idiosyncrasies of developed world.”²⁷⁸ They assert that “many developing and African regions have remained bystanders in the sustainable development discourse yet they bear the burden of the fall-outs.”²⁷⁹ Santos *et al.* argue that sustainable development is a clear indication of the epistemological crisis of modern knowledge that “perpetuates the relations of colonial inequality, giving shape to a monoculture of knowledge in which local, indigenous or traditional knowledges are regarded as valid only to the extent that they serve global capitalism.”²⁸⁰

2.2.2 Sustainable Development Implementing Principles

Principles serve to inform and shape sustainable development policies, strategies and programmes. But, Jonathan cautions that “principles themselves do not comprise enforceable legal duties. [But] they shed more light on the (moral) target of legislative rules and thus form the link between the morality of aspiration and the morality of duty.” He notes that “Principles are a necessary medium for ideals [like sustainable development] to find their way into concrete rules.”²⁸¹ (See chapter 3 sub-section 3.3.1.1 (ii))

However, it should be noted that in the process of setting such principles every country may take its context into consideration. In effect this means that we should not expect sustainable

²⁷⁶Baker, 2006, *supra*, n. 273, p. 24.

²⁷⁷*Ibid.*

²⁷⁸ Sonny Nwanko *et al*, Sustainable Development in Sub-Saharan Africa: Issues of Knowledge Development and Agenda Setting, p. 2.

²⁷⁹*Ibid.*

²⁸⁰*Ibid.*

²⁸¹Verschuuren, Sustainable Development and the Nature of Environmental Legal Principles. Potchefstroom Electronic Law Journal, Vol. 9, No. 1, 2006, p.52. Available at SSRN: <http://ssrn.com/abstract=899537> (Accessed on June 12, 2013)

development to be implemented in a uniform fashion. In this regard the Brundtland Report notes that:

No single blueprint of sustainability will be found, as economic and social systems and ecological conditions differ widely among countries. Each nation will have to work out its own concrete policy implications. Yet irrespective of these differences, sustainable development should be seen as a global objective.²⁸²

For instance, the UK government has adopted five principles, these are: “living with environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; using sound science responsibly; and promoting good governance.”²⁸³

But, it is good to stress that the UK experience is mentioned in this section not for comparative purpose but to show the importance of setting principles to implement sustainable development. Otherwise, every country may set up similar or different principles depending on its context. Richardson correctly states that “in today’s post-modern world of ethnic and cultural diversity, concepts such as ‘sustainable development’ or ‘corporate responsibility’ may be read differently depending on the actors and their situations.”²⁸⁴

2.2.3 Current Status of Sustainable Development (Rio+20)

The international community adopted sustainable development as a development paradigm at Rio de Janeiro, Brazil in 1992. However, since then no meaningful progress has been achieved towards sustainable development. Even the report of the Rio+20 acknowledges that;

Since 1992 there have been areas of insufficient progress and setbacks in the integration of the three dimensions of sustainable development, aggravated by multiple financial, economic, food and energy crisis, which have threatened the ability of all countries, in particular developing countries, to achieve sustainable development.²⁸⁵

²⁸² Our Common future: Report of the World Commission on Environment and Development, Chapter-One: A threatened future, UN document, p.14. (Available at <http://www.un-documents.net/wced-ocf.htm> (Accessed on June 12, 2011).

²⁸³ Defra, shared UK sustainable development principles. Available at: <http://archive.defra.gov.uk/sustainable/government/what/principles.htm> (Accessed June 20, 2012)

²⁸⁴ Benjamin J. Richardson, 2008. *Socially Responsible Investment Law: Regulating the Unseen Polluters*, USA: New York, Oxford University Press, p. 524.

²⁸⁵ UN General Assembly Draft Resolution A/66/L.65, *The Future We Want*, 24 July 2012.

In order to assess and secure renewed political commitment for sustainable development, the United Nations General Assembly adopted a Resolution to organize a conference in Rio de Janeiro, Brazil on December 24, 2009. In the Resolution, two themes of focus were identified. First "a green economy within the context of sustainable development and poverty eradication"; and second, "an institutional framework for sustainable development."²⁸⁶ As per the Resolution, the Rio+20 Conference was held at Rio de Janeiro, Brazil from 13 to 22 June 2012. It is the third and the biggest global United Nations Conferences on sustainable development after the Stockholm in 1972 and Rio in 1992.

The Rio+20 Conference outcomes document, “The Future We Want”, outlines four important agreements reached at the Conference. These are: first, to design universal sustainable development goals. Second, the application of green economy²⁸⁷ as a critical tool for achieving sustainable development. Third, the application of over-see development assistance and other development finance to promote sustainable development in developing countries.²⁸⁸ Fourth, the centrality of enhanced capacity and resilience in promoting sustainable development.²⁸⁹

However, these outcomes have been criticized for instance by Pearce, who argues that:

The Rio+20 summit produced a largely meaningless document that failed to address the daunting environmental challenges the world faces. But many at the conference looked to an alternative approach called green economics—using market forces to help nations achieve sustainable development.”²⁹⁰

He argues that “the conference did agree to start talks on setting sustainable development goals to augment the world's existing millennium development goals, but could not agree on what

²⁸⁶ UN General Assembly Resolution A/RES/64/236, adopted 24 December 2009.

²⁸⁷ UNEP defines a green economy as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities." See; UNEP, 2011, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Available at; www.unep.org/greeneconomy (Accessed on September 21, 2012)

²⁸⁸ For instance, in the Ethiopian case “building green economy requires an estimated total expenditure of around USD 150 billion over the next 20 years.” See; FDRE, 2011. *Ethiopia's Climate-Resilient Green Economy: Green Economy Strategy*, November 2011, Government of Ethiopia, Addis Ababa.

²⁸⁹ UN General Assembly Draft Resolution, 2012, *supra*, n.285.

²⁹⁰ Fred Pearce, 2012. *Beyond Rio, green economics can give us hope*. The Guardian available at; <http://www.guardian.co.uk/environment/series/guardian-environment-network> (Accessed on December 18, 2012)

topics they might cover.”²⁹¹ Jim Leape, the World Wildlife Fund Director, criticized the Rio+20 outcomes as a “colossal failure of leadership and vision.”²⁹² Care International labeled it as a charade.²⁹³ Achim Steiner, the director of the UNEP remarked “we can't legislate sustainable development in the current state of international relations.”²⁹⁴ Marc argues “sustainable development remains mostly just that—a concept rather than an on-the-ground reality. To date, the focus has been heavily skewed towards the economic pillar, with less attention paid to the equally important pillars of social equity and environmental sustainability.”²⁹⁵

Adelman argues that “Rio+20 failed because it replicated the failing of sustainable development in the form of green economy.” Rio+20 was a double failure:

First, it offered vague aspirations rather than concrete solutions to climate change, species extinction and environmental destruction. This reflected a second and more profound failure, because the summit further entrenched the erroneous idea that the solution to the environmental crisis lies in the self-same neoliberal ideology that has intensified the crisis during the past 40 years.²⁹⁶

He argues that “the green economy concept is designed to mask or displace attention from the failure of markets to provide viable solutions to the climate crisis, the epistemological bankruptcy of market fundamentalism and the resistance of the hegemonic discourse to alternative ways of understanding.” He asserts that “like sustainable development, the green economic approach seeks to elide the irrefragable contradiction between the expansionary logic of capitalism and the absolute limits of nature,” and concludes that “Rio+20 deepens the epistemological crisis by regarding the limits of the ecosystem as incidental problem rather than a fundamental constraint.”²⁹⁷

Despite its failings, the Rio+20 conference and its outcome demonstrates that an economic system solely based on growth is not able to enhance sustainable development. Second, that the

²⁹¹ *Ibid.*

²⁹² WWF Global, available at; http://wwf.panda.org/wwf_news/?205290 (Accessed on December 21, 2012)

²⁹³ Fred Pearce, 2012, *supra*, n.290.

²⁹⁴ *Ibid.*

²⁹⁵ Robinson Marc 2012. "Preface", in OECD, Development Cooperation Report 2012: Lessons in Linking Sustainability and Development, OECD Publishing. Available at; <http://dx.doi.org/10.1787/dcr-2012-5-en> (Accessed on December, 21, 2012)

²⁹⁶ Sam Adelman, Rio+20: sustainable injustice in a time of crisis. (Unpublished)

²⁹⁷ *Ibid.*

state remains central but non-state actors have to be accommodated. Third, the need for enhanced capacity and coordination among different stakeholders to enhance sustainable development. Fourth, the need for sustainable development indicators at global and national level. Fifth, and the most fundamental one is, the green economy advocated in Rio+20 needs to be implemented in ecological principles not simply focused on economic growth.

Moreover, from the Rio+20 conference discussions above we can see that the international community hopes the concept of *green economy* to play an important role in providing a coherent vision in guiding development policy and planning. In other words, from the outcome of the conference one can see that a green economy should be understood as one in which economic, environmental and social policies and innovations enable society to use resources efficiently while maintaining the natural systems.

However, the green economy concept as understood in the conference faces serious challenges. It focuses on economic growth in order to increase prosperity without increasing resource efficiency and environmental impacts. Yet, it is possible to become more resource efficient but still exert excessive demand on the environment. Hence, in this thesis I argue that to achieve sustainability we—also need to focus on ecosystem resilience—that is to maintain the status and limits of the natural system. Moreover, I also argue that while addressing these challenges of boosting resource efficiency and ecosystem resilience, there is a need to integrate the element of human well-being. In effect, including the element of human well-being means there is a need to ensure an equitable distribution of the benefits and costs of the economic growth.

However, currently the challenge with regard to international community *vis-à-vis* sustainable development is how to develop sustainable development goals with a wide political and policy appeal to both developed and developing countries. Of course, these goals need to be sufficiently clear to provide a valuable basis for decision making in both developed and developing countries. Whether we will have sustainable development goals to this effect is something to be seen in the near future.

2.3 Sustainable Development in the Ethiopia Context

Sustainable development is included in the 1995 FDRE Constitution,²⁹⁸ the 1997 Environmental Policy of Ethiopia(EPE),²⁹⁹ and the three core environmental proclamations, namely the Environmental Protection Organs Establishment Proclamation (EPOEP) No.295/2002; the Environmental Impact Assessment Proclamation (EIAP) No.299/2002; and the Environmental Pollution Control Proclamation (EPCP) No. 300/2002.³⁰⁰

2.3.1 Sustainable Development and the FDRE Constitution

The idea of sustainable development is endorsed in the FDRE Constitution, but neither the constitution nor subsidiary laws have defined it. Art.43 of the Constitution under the heading ‘the right to development’ reads as follows:

1. The people of Ethiopia as a whole, and each Nation, Nationality and People in Ethiopia in particular have the right to *improved living standards* and to *sustainable development*; (emphasis mine)
2. Nationals have the right to participate in national development and, in particular, to be consulted with respect to policies and projects affecting their community;
3. All international agreements and relations concluded, established or conducted by the State shall protect and ensure *Ethiopia’s right to sustainable development* (emphasis mine); and
4. The basic aim of development activities shall be to enhance the capacity of citizens for development and to meet their basic needs.

However, the Amharic version of Art.43 (4) differs from the English version in that the Amharic equivalent for sustainable development in the Constitution is “unstoppable or continuous growth.” The aim of development in the Amharic version is put as “the development of citizens and satisfaction of their basic needs.” From the disparity in the Amharic and English versions, it can be argued that sustainable development in Ethiopia is primarily about equitable economic growth. It does not deal with environmental issues. This argument is enhanced by the fact that the Constitution contains a separate provision on the “right to clean and healthy environment” in

²⁹⁸The Constitution of the Federal Democratic Republic of Ethiopia, *supra*, n.6.

²⁹⁹FDRE, 1997.*Environmental Policy of Ethiopia*, EPA/MoEDC, Addis Ababa, Ethiopia, p.3.

³⁰⁰FDRE, 2002. Environmental Protection Organs Establishment Proclamation (EPOEP), No. 295/2002, Federal Negarit Gazeta, 9th year No. 7, Addis Ababa, p. 1939-1944; FDRE, 2002. Environmental Impact Assessment Proclamation(EIAP), No. 299/2002, Federal Negarit Gazeta, 9th year No. 11, Addis Ababa, p. 1951-1958; and FDRE, 2002. Environmental Pollution Control Proclamation (EPCP), No. 300/2002, Federal Negarit Gazeta, 9th year No. 12, Addis Ababa, p. 1959-1966.

Art.44.As discussed in chapter 1, equitable economic development (especially poverty alleviation) is a priority in Ethiopia. From this disparity on the meaning of sustainable development, it can be argued that sustainable development has two different meanings at the *international* and *national* level (emphasis mine). At the national level it is understood as unstoppable growth while at the international level as development that includes economic, social and environmental protection. This implies that sustainable development could have different audiences at national and international levels. Krueger, *et al.* argue, “Ethiopia uses the language of sustainable development to communicate to the international community its commitment to world ecological stability and thus to secure foreign aid.” For the “domestic audience, sustainable development represents the promise of a brighter future and a higher standard of living.” They argue that “the government adds to its power and legitimacy, holding out the image of richer prospects and invoking the power of industrialized nations where the term [sustainable development] originates.”³⁰¹

Chapter 10 of the FDRE Constitution (Arts.85-92) contains principles and objectives which ostensibly help to define and guide the implementation of sustainable development.³⁰² The Constitution provides that “any organ of government [federal or state] shall, in the implementation of the Constitution or other laws and public policies, be guided by the principles and objectives specified under this Chapter.”³⁰³ From reading the Constitution it is clear that the objectives are intended to guide different government organs in enforcing and implementing the Constitution, subsidiary laws and public policies. In Ethiopia, constitutional objectives are elevated to the position of guiding principles and if properly implemented they can play vital role in implementing sustainable development.

Taking the Constitution at face value and treating sustainable development as a right, it might be interpreted as a very broad right which includes political, economic, social, cultural and environmental issues. But the main issue is, when these elements of the right to sustainable development are in conflict with each other which one prevails? What would be the way out? As

³⁰¹ James Krueger, et al. 2012. Environmental Permitting in Ethiopia: No Restraint on "Unstoppable Growth?", Haramaya Law Review, Vol. 1, No. 1, p.79.

³⁰² Arts.85-92.

³⁰³ Art. 85(1)

far as this thesis is concerned it is inevitable that these elements would result in a conflict. Unless one of these elements is given priority and taken as a bench mark, it is impossible to resolve the conflict. This thesis argues that as a way out from this conflict the principle of sustainability should be given priority and serve as a bench mark to implement the concept of sustainable development in Ethiopia.

I argue that even if the concept of sustainable development in the Constitution is put as right, it is difficult to accept it as a specific right. Although it is fundamental in character, it cannot be characterized as specific and mandatory right. The list of claims which can be included under this right appears to be entirely open-ended involving: prevention and control of industrial pollution, smoke from motor vehicles, discharge of oil, chemical effluents, garbage and raw sewage into rivers, and so on. Petitioners under the right to sustainable development must, before the trial court, show a more specific legal right, in a language of significantly lower order of generality than Art.43 (1) of the Constitution. In that case, the trial court can validly render judgment granting all or part of the relief prayed for. Otherwise, this will force courts into the unchartered territory of social and economic policy making. In a situation where no specific, operable norms and standards are shown to exist, policy-making bodies like the legislature and executive need to be given a real and effective opportunity to fashion and promulgate those norms and standards, and to implement them before the courts should intervene.

2.3.2 Sustainable Development and the Environmental Policy of Ethiopia

The Environmental Policy of Ethiopia (EPE) endorses the concept of sustainable development as its overall policy goal. It was designed to integrate development and environmental concerns.³⁰⁴ It has also substantially drawn from international initiatives like UN's Agenda 21 and IUCN'S Caring for Earth.³⁰⁵ 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

³⁰⁴Gedion Asfaw, Kifle Lemma & Sebsebe Demissew, 2007. Ethiopia: Protecting nature in a developing decentralized country. In Albert Breton, Giorgio Brosio, Silana Dalmazzone and Giovanna (eds), 2007. *Environmental governance and decentralization*, UK: Edward Elgar Publishing Limited, p.117.

³⁰⁵*Ibid.*, p.119.

environment as a whole so as to meet the needs of the present generation without compromising the ability of future generation to meet their own needs.³⁰⁶

In contrast to the Constitution, the EPE contains more specific policy objectives and key guiding principles, including: sustaining essential ecological and life support systems, protecting future generations' interest, the application of new technology for proper natural resource management, pollution prevention and ensure public participation in environmental management activities.³⁰⁷

Key principles include: the right to live in a healthy environment, sustainability, the precautionary principle and the polluter pays principle.³⁰⁸ These key guiding principles are supposed to guide the overall policy and the specific policy objectives of the EPE, and other strategies and programmes to implement sustainable development. The EPE states that:

Establishing and clearly defining these guiding principles is very important as they will shape all subsequent policy, strategy and programme formulations and their implementation. Sectoral and cross-sectoral policies and environmental elements of other macro policies will be checked against these principles to ensure consistency.³⁰⁹

The concept of sustainable development as envisaged in the Policy document is based on the principle of sustainability—sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment. The fact that principles like: the right to clean and healthy environment, sustainability, precautionary and the polluter pays are given emphasis in the policy document also corroborates the argument. It could also be argued that, the underlying assumption of the policy is, if the principle of sustainability is maintained, a situation of economic and social sustainability can be observed.

However, the point is how binding is this Policy? Or in other words, is public policy different from law?

Wilkinson argues that policy is distinguished from law in two ways:

First, policy is generally advisory in nature, recommending objectives or setting targets, rather than prescribing a particular action; second, policy may derive from number of institutional processes whereas law must pass strict secondary rules of

³⁰⁶ Environmental Policy of Ethiopia, *supra*, n.299, p.3.

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.*, p. 4, 5, 15, and 19.

³⁰⁹ *Ibid.*, p.4.

recognition before it has legal quality.³¹⁰

According to Dworkin a policy is "[a] kind of standard that sets out a goal to be reached, generally an improvement in some economic, political or social features of the community."³¹¹

Jonathan notes that "policies have much less legal influence: a court will test a decision primarily against its accordance with binding legal principles and rules."³¹² He stresses that "only in two situations where a statute is explicitly obliged to take a certain policy document into account, or indirectly via the general principles of proper administrative action that policy documents can play a role in a judicial procedure against a government decision." He notes that even in such a case "it will be easier for the government to give reasons acceptable to a court, not to follow the policy goal in a specific case."³¹³ He argues that "policies do play an important part in the promotion of an ideal, such as the ideal of sustainable development, as do principles and rules. All are different standards necessary in our efforts to reach the ideal."³¹⁴

Policy recommends a particular action in a certain area of public interest by setting objectives, targets and principles. It is created and enforced or interpreted through internal channels like relevant state agencies. Unlike policy, law is passed by a legislative body, interpreted by the judicial system and implemented by the executive. Thus a policy document is not a law, it is rather a document that outlines the overall goal what a government organ hopes to achieve by indicating the modality. Policy requires new laws to achieve its overall goals, objectives, targets and principles. Policy and law are created by different branches of the government through different processes. Keely and Scoones note that "policy making is a diverse, diffused and complicated activity, where sometimes competing, sometimes overlapping, policy positions are presented by a range of different groupings of actors, including scientists, administrators,

³¹⁰ David Wilkinson, 2002. *Environment and Law-Routledge Introduction to Environmental Series*, UK: Routledge, p.20.

³¹¹ As cited in Verschuuren, Jonathan M., Sustainable Development and the Nature of Environmental Legal Principles. *Potchefstroom Electronic Law Journal*, Vol. 9, No. 1, 2006, p.39. Available at SSRN: <http://ssrn.com/abstract=899537> (Accessed on June 12, 2013)

³¹² *Ibid.*

³¹³ *Ibid.*

³¹⁴ *Ibid.*

personnel of non-governmental organizations, government officials, rural people and politicians.”³¹⁵Hence, policy making is a discourse not a linear process.

According to the FDRE Constitution, the power to formulate and implement economic, social and development policies and strategies is vested in the Council of Ministers³¹⁶while approving these policies and strategies is the power and function of the House of Peoples’ Representatives.³¹⁷However, it is important to stress that the Constitution is silent on how environmental policies and strategies are to be formulated. The Environmental Protection Organs Establishment Proclamation (EPOEP) empowers the Federal Environment Protection Authority (FEPA) to prepare, review and update environmental policies, strategies and laws in consultation with competent agencies, other concerned organs and the public at large.³¹⁸ Upon approval by the Environmental Council (EC),³¹⁹FEPA is mandated to monitor and enforce their implementation.³²⁰ In view of this, the failure to mention the making and approval of environmental policies and strategies unlike economic, social and development policies and strategies at the Constitutional level, I would argue that this indicates the lower priority given to the environment. Hence, even if the EPE incorporates the principle of sustainability, it needs the backing of new laws to achieve its overall goal, objectives, targets and principles.

2.3.3 Sustainable Development and Core Environmental Laws

There are different proclamations and regulations directly related to protect the environment. Among these, three Proclamations constitute the core of the Ethiopian environmental law regime: the Environmental Protection Organs Establishment Proclamation (EPOEP) No.295/2002; the Environmental Impact Assessment Proclamation (EIAP) No.299/2002; and the Environmental Pollution Control Proclamation (EPCP) No. 300/2002.³²¹ These Proclamations deal with enforcement mechanisms, environmental impact assessments, protection of the environment and the safeguarding of human health and well-being.

³¹⁵ James Keely & Ian Scoones, 2003.*Understanding Environmental Policy-Cases from Africa*, UK: Earthscan Publishing Ltd, p.72.

³¹⁶The Constitution of the Federal Democratic Republic of Ethiopia, supra, n.6, Art.77 (6).

³¹⁷Art.55 (10).

³¹⁸EPOEP, 2002, supra, n.300, Art.6 (2).

³¹⁹ Art. 9(1).

³²⁰ Art. 6(2).

³²¹EPOEP, 2002, supra, n.300.

The preamble to the EPOEP states that;

Assigning responsibilities to separate organizations for environmental development and management activities on the one hand, and environmental protection, regulations and monitoring on the other is instrumental for the sustainable use of environmental resources, thereby avoiding possible conflicts of interest and duplication of efforts.³²²

The Proclamation aims to enhance the implementation of sustainable development by establishing two regimes: one for environmental development and management; and the other for environmental protection, regulation and monitoring. By designating two separate regimes, the Proclamation aims to avoid possible conflicts of interest—between economic development and the protection of the environment. The Proclamation aims to promote coordinated but differentiated responsibilities among the environment protection agencies at federal and regional levels. However, as shown in chapter 4, the coordination among environmental protection agencies is poor.

The EIAP preamble states that:

Assessment of possible impacts on the environment prior to the approval of public instrument provides an effective means of harmonizing and integrating environmental, economic, cultural and social considerations into a decision making process in a manner that promotes sustainable development.³²³

Environment Impact Assessments are important instruments of environmental planning to promote sustainable development. They are mechanisms through which environmental concerns are integrated into the development agenda of the country. However, with the poor coordination and ineffective environment protection, regulation and monitoring organs, it is unlikely that such environmental assessments can achieve their stated goals. Specifically, as discussed in chapter 4, the fact that some of the environment protecting, regulating and monitoring organs are established at lower organizational level and are not staffed and equipped with all the necessary expertise and equipments exacerbates the problem. Thus, strengthening the EIA system in Ethiopia could be a major advance in efforts towards sustainable development.

³²²*Ibid.*

³²³*Ibid.*

The Preamble to the EPCP states that:

The protection of the environment, in general, and the safeguarding of human health and well-being, as well as the maintaining of the biota and the aesthetic value of nature, in particular, is the duty and responsibility of all. [...]It is appropriate to eliminate or when not possible, to mitigate pollution as an undesirable consequence of social and economic development activities.³²⁴

The EPCP is meant to implement sustainable development in the country by protecting the environment through avoiding pollution from any economic activity. When this is not possible mitigate pollution through the application of Environment Impact Assessment (EIA). However, this should not imply that EIA's focus is simply mitigation. It is also a tool to prevent industrial pollution before it occurs.

The concept of sustainable development is in principle endorsed in the Ethiopian laws. The issue is how practical is it? To address this issue it would be useful to discuss the current Growth and Transformation Plan (GTP) which stresses that the country's primary economic and development goal as:

Building an economy which has a modern and productive agricultural sector with enhanced technology and an industrial sector that plays a leading role in the economy, sustaining economic development and securing social justice and increasing per capita income of the citizens so as to reach the level of those in middle-income countries.³²⁵

The Plan unequivocally states that Ethiopia's main Development agenda is *poverty eradication*³²⁶ (emphasis mine). It further states that Ethiopia's aim is "to become a country where democratic rule, good-governance and social justice reign, upon the involvement and free will of its peoples, and once extricating itself from poverty to reach the level of a middle-income economy as of 2020-2023."³²⁷ Ahmed, Minister of Finance and Economic Development (MoFED), confirms that all development policies and strategies are geared towards this end. He underlines the need for integrated implementation of policies and strategies to eradicate poverty

³²⁴*Ibid.*

³²⁵*Ibid.*

³²⁶MoFED, 2010, Growth and Transformation Plan, *supra*, n.100, p.vii.

³²⁷*Ibid.*, p.21.

and food aid dependency in a shorter period of time and stresses the existence of national consensus on the priority of poverty eradication in the country.³²⁸

In order to eradicate poverty, Ethiopia has "embarked on ambitious infrastructure investment projects to improve its economic competitiveness, including a multi-billion dollar plan to scale up energy generation [dam building]."³²⁹In 2012 budget year, in order to speed up the economic growth and the fight against poverty, the Council of Ministers; has approved more than 7 billion USD (137.7 billion birr) as a Federal government budget for the 2012-2013 fiscal year which is the highest ever in the country's history.³³⁰ As to the composition of the approved budget, MoFED notes that "about 95% of the budget is allocated for economic and social development focusing schemes aimed at combating poverty."³³¹

Taking Ethiopia's extreme poverty, it is absolutely right to capitalize on poverty alleviation. However, eradicating poverty and environmental sustainability are not one and the same. Poverty can be eradicated at the expense of the environment. Dobson argues "social justice and environmental sustainability are not always compatible objectives."³³² He stresses that "social justice [for instance poverty eradication] and environmental sustainability speak different languages and have different objectives."³³³ He emphasizes that "assertions to the contrary are more often, based on wishful thinking than on clear-sighted analysis or hard empirical evidence."³³⁴As chapters 5 and 6 show, the effort to alleviate poverty in Ethiopia is futile if the government and other development actors tend to ignore to protect the environment.

³²⁸*Ibid.*

³²⁹ Reuters Africa, (available at <http://af.reuters.com/article/investingNews/idAFJJOE85D07S20614?sp=true>) (Accessed on June 10, 2012)

³³⁰Ethiopian News-monthly publication from Ethiopian Embassy in London, 2012. (Available at <http://www.aigaforum.com/>) (Accessed on June 10, 2012)

³³¹*Ibid.*

³³² Andrew Dobson, Social Justice and Environmental Sustainability: Ne'er the Twain Shall Meet? In Julian Agyeman, Robert D Bullard and Bob Evans (Eds), 2003. Just Sustainabilities: Development in an Unequal World, UK: Earthscan Publications Ltd, p. 83.

³³³*Ibid.*, p. 91.

³³⁴*Ibid.*, p. 83.

Conclusion

The definition, concept and understanding of sustainable development and environmental mainstreaming vary from author to author, from institution to institution and even from country to country. There are as many diverse understandings as there are authors writing from different disciplines.

One of the main aims of environmental mainstreaming is that it has a holistic approach to the issue and goal of sustainable development. Environmental protection and pollution control management are indispensable policy factors that need to be taken into account in development planning. Environmental degradation has many negative socio-economic, health and political ramifications and may even threaten human survival. The idea that one can have sustainable development by economic growth alone is an outdated concept and argument that has no bearing in today's world that is suffering from the effects of climate change and pollution. The same is true in Ethiopia.

It is often argued that industrialization process is inversely proportional to an increase in emissions of pollutants. In short, as a country industrializes, the lower the emissions and the lower the stage of development the higher the pollution and environmental degradation. Its underlying message is that economic growth and environmental protection are possible at the same time and they do complement one another. Some of the main challenges of developing countries like Ethiopia are how to bring about equitable economic growth while at the same time demanding pollution free and clean environment? The concept of sustainable development is an attempt to resolve this tension. Sustainable development is likely to be achieved if environmental concerns are holistically integrated into the development agenda of the country.

From a perusal of the policy and legal documents of Ethiopia, one is inclined to conclude that there is an awareness of the relationship between environment and development. However, the main challenges for mainstreaming the environment (industrial pollution) in Ethiopia include political will to enforce the existing pollution control laws and lack of capacity and coordination on the side of environment regulating institutions. Policies and laws that cannot be implemented are not enough to bring about sustainable development in Ethiopia. The increase in industrial

pollution in the country is mainly attributed to the weak sustainable development policy the government pursues in its development agenda.

In Ethiopia, Environmental Protection Organs Establishment Proclamation (EPOEP) empowers the Federal Environmental Protection Authority (FEPA) to prepare, review and update environmental policies, strategies and laws in consultation with competent agencies, other concerned organs and the public at large.

Whether industrial pollution can be solved by voluntary or by command and control regulatory framework is an issue where there is no consensus among scholars and policy makers. The argument that free market will take care of the environment is not only naïve and simplistic but contrary to what is happening in reality and on the ground in many developing countries. Though markets lie at the heart of every successful economy they do not work well on their own in all cases and circumstances. The market regulating institutions in Ethiopia are after all very few and not well developed. Taking into account the low level of industrial development as well as weak and disorganized private sector and the Ethiopian Government official Policy that it is pursuing a developmental economic policy where the state plays a paramount role, the involvement of the state in industrial pollution control through the application of command-and-control system remains very crucial. Since industrial pollution control is not an activity of one or two environmental organizations, it is also argued that public participation can also serve as a catalyst to complement the command-and-control system. Although Art.43 of the Federal Constitution of Ethiopia deals with the right to development, its focus seem to be on equitable economic growth and not much about environmental issues which is dealt under the “right to clean and healthy environment” in Art. 44.

The Ethiopian government claims its top priority is reduction of poverty. It also strongly believes that poverty can be alleviated through accelerated economic growth, increased investment, creation of jobs, and higher income thereby giving less focus in reality to environmental concerns. It is also important to stress that at the international level, United Nations Conferences on sustainable development held in Stockholm in 1972 and Rio in 1992 and the RIO+20 outcomes have not achieve their intended objectives.

It is however important to stress that the idea of sustainable development is endorsed in the FDRE Constitution. But it is important to stress the fact that neither the Constitution nor the subsidiary laws have defined sustainable development.

CHAPTER 3

THE LEGAL FRAMEWORK FOR REGULATION OF INDUSTRIAL POLLUTION

3.1 Introduction

This chapter analyses the legislative framework for industrial pollution control. The core environmental pollution control laws are promulgated by parliament and interpreted by courts. The main purpose of an effective legislation is to: “establish binding policies and standards, provide the basis for substantive and procedural regulations, and create institutions at least theoretically capable of implementing policies and enforcing rules.”³³⁵

Gunningham observes that “modern environmental law on pollution dates back to 1970, the year in which the first major federal United States' legislation was enacted, the first Earth Day celebrated and the US Environmental Protection Agency (EPA) created.”³³⁶ He notes that “these developments were preceded by the considerable environmental activism of the late-1960s, by Rachel Carson's *Silent Spring*, by Paul Ehrlich's *The Population Bomb* and by a series of environmental disasters, all of which played a role in galvanizing legislators to act, not just in America but also in other advanced western nations.”³³⁷ The purpose of promulgating environmental legislation was “to prohibit or restrict environmentally harmful activities, (particularly pollution) by using direct or command and control mechanisms.”³³⁸ This technique was used in order “to identify an environmental target such as a limit on emissions of pollutants to water or the air (the command), with penalties that would be imposed if this target is not met (the control).”³³⁹ Ort notes that “the first major environmental statutes adopted in the early 1970s in the United States and Europe were command-and-control ... is top-down regulation,”³⁴⁰ that sought to control pollution in two ways. First, “the government can establish performance standards for polluters, commonly enforced through a system of permits. Second, the

³³⁵ Jaro Mayda, *Environmental Legislation in Developing Countries: Some Parameters and Constraints*, 12 *Ecological L.Q.* 997 (1984-85), p. 22.

³³⁶ Neil Gunningham, 2009. *Environment Law, regulation and governance: shifting architectures*, *J. Env. L.* 179, p.2.

³³⁷ *Ibid.*

³³⁸ *Ibid.*

³³⁹ *Ibid.*

³⁴⁰ E.W.Orts, (1994-1995). *Reflexive Environmental Law* 89 *Nw. U. L. Rev.*, p.1235.

government can require uniform technology-based controls for certain types of activities that cause pollution."³⁴¹ Environmental standards are applied to different activities like manufacturing industries. The aim of standards is "to reduce environmental harm to a socially acceptable level."³⁴²

Establishing effective legislative framework to control industrial pollution is not simple. The experiences of many countries show that programmes dealing with industrial waste (in particular industrial hazardous waste) evolve through five major stages. These are: "identifying the problem and enacting legislation; establishing lead agency; promulgating rules and regulations; developing treatment and disposal capacity; and creating effective compliance and enforcement program."³⁴³ Each of these stages takes a number of years, and at each stage there are numerous issues to be resolved.³⁴⁴

Mayda argues that some of the common constraints to effective environmental legislation are: lack of implementation; the fact that legislation does not have a reputation for effectiveness (environmental legislation is considered as obstacle to development); national decision making is dominated by the conventional economics in both public and private sphere; lack of personnel, budgetary resources, and motivation to implement existing legislation; and lack of public consciousness to force political leaders to correct the abuses to the environment.³⁴⁵ Leonard and Morell argue that the most significant barrier is the lack of political commitment to enforce enacted legislation. For them, "since most less developed countries have established some forms of regulatory framework, the important question is whether the environmental regulations can be enforced. This often is a much more difficult task than merely passing laws."³⁴⁶ They further argue that:

Environmental decisions in developing countries are embedded in political dynamics. In countries under military rule, for example, environmental policy can only be implemented if the military leaders understand the problems and choose

³⁴¹*Ibid.*

³⁴²*Ibid.*, p.2.

³⁴³Katherine N. Probst & Thomas C. Beierle, 1999. The evolution of hazardous waste programs: lessons from eight countries, Center for Risk Management USA: Washington DC, at. vii.

³⁴⁴*Ibid.*

³⁴⁵Jaro Mayda, *supra*, n.335, p.1007&1008.

³⁴⁶H. Jeffery Leonard & David Morell, Emergence of Environmental Concern in Developing Countries: A Political Perspective, 17 *Stan. J. Int'l L.* 281 (1981), p. 302.

to address them. Implementation of environmental policy in systems dominated by a single political party [like in the case of Ethiopia] requires a commitment to environmental quality from the party's highest leaders, and from cadres at various levels.³⁴⁷

Before dealing with the existing industrial pollution control legal framework, it is useful to stress the fact that in 1950s and 1960s Ethiopia attempted to copy different laws from different countries even if none of them aimed to directly address environmental issues. The aim was to modernize society and the legal system. Quoting Emperor Hailelassie, Singer observes that:

The necessity of resolutely pursuing Our programme of social advancement and integration in the larger world community ... make[s] inevitable the closer integration of the legal system of Ethiopia with those of other countries with whom we have cultural, commercial and maritime connections. To that end We have personally directed the search for the outstanding jurists of the continent of Europe to bring to Us the best that centuries of development in allied and compatible systems of law have to offer.³⁴⁸

According to the Emperor's statement, the spirit of introducing different laws in the 1950's and 1960's was to integrate Ethiopian legal traditions and institutions with that of foreign systems of law and thereby achieve development. Different codes were enacted in Ethiopia which were predominantly drawn from European sources. For instance, a Penal Code was enacted in 1957, Maritime, Commercial and Civil Codes in 1960, a Criminal Procedure Code in 1961 and a Civil Procedure Code in 1965.³⁴⁹ Before the introduction of these codes the law in Ethiopia was mostly dominated by customs, tradition and some legislation in the form of statutes and decrees. With regard to the law in the pre-codification period Beckstrom notes that:

Until the 1950's the "law" of Ethiopia was a rather amorphous mix. There was some legislation in the form of statutes and decrees, primarily in the public law sphere, as well as a Penal Code that had been promulgated in 1930. But, taking Ethiopia as a geographical whole, by far the major de facto source of rules governing social relations was found in the customs and traditions of the various tribal, ethnic and religious groupings.³⁵⁰

³⁴⁷ *Ibid*, p. 307.

³⁴⁸ Norman J. Singer, 1970/71. A Traditional Legal Institution in Modern Legal Setting: the Atbia Dagna of Ethiopia, 18 *UCLA L. Rev.* 308, p.308.

³⁴⁹ John H. Beckstrom, 1973. Transplantation of Legal Systems: An early Report on the Reception of Western Laws in Ethiopia, *the American Journal of Comparative Law*, Vol. 21, No. 3, p.559.

³⁵⁰ *Ibid*.

However, the transplantation of laws from different countries was not a successful project. It has not brought the development and modernization the government was looking for. Beckstrom notes that “Ethiopia is one of the world's least economically developed countries, with a low literacy rate and poor technical and administrative capabilities. Thus, one can theorize that the laws of more developed nations might not easily take root in Ethiopia.”³⁵¹ Singer argues that “the basic shortcoming of the program [modernization programme] was the attempt to institutionalize legal values without first investigating the readiness of the various segments of Ethiopian society to accept a shift in power structure.”³⁵² Clapham argues that “it is in the inadequacies of state power as an instrument of development that much of the answer to the problem/puzzle of Ethiopian failure is to be found.”³⁵³

The 1950s and 60s codification process in Ethiopia was influenced by the belief that law could be used as an instrument of change by imposing it from above without any visible public participation and analyzing the political, economic and social context. By then the theory of law as social engineering was dominating. However, the failure could be explained in relation to the failure of law and development movement which was initiated in the United States.

Snyder notes that “the movement was born as America’s cold war foreign aid programs in the late 1950's.”³⁵⁴ Trubeck and Galanter also note that “[the movement] adopted the basic tenets of modernization, adhering to the notion that evolutionary progress would ultimately result in legal ideals and institutions similar to those in the West.”³⁵⁵ They labeled this legal ideals and institutional similarity as legal liberalism.³⁵⁶ However, Gardner labeled the movement as “Legal Imperialism.”³⁵⁷

³⁵¹*Ibid.*

³⁵²Singer, 1970/71, *supra*, n.348, p.333.

³⁵³*Ibid.*, p.140.

³⁵⁴Francis G. Snyder, the failure of “Law & Development”, 1982 Wis. L. Rev. 373 (1982), p. 373.

³⁵⁵ David M. Trubeck & Marc Galanter, Scholars in Self-Estrangement: Some Reflections on the Crisis in Law and Development Studies in the United States, 1974 Wis. L. Rev. 1062 (1974), p. 1062

³⁵⁶ Trubeck and Galanter identified Legal liberalism as a situation where; "1) society is made up of individuals who consent to the state for their own welfare; 2) the state exercises control over individuals through law, and it is constrained by law; 3) laws are designed to achieve social purposes and do not offer a special advantage to any individuals or groups within the society; 4) laws are applied equally to all citizens; 5) courts are the primary legal institutions with the responsibility for defining and applying the law; 6) adjudication is based upon a comprehensive body of authoritative rules and doctrines, and judicial decisions are not subject to outside

Scholars like Snyder note that the law and development movement did not succeed. Snyder argues, its failure lies on its assumption that “the answer to many problems in underdeveloped countries lay in the modernization of legal and social structures according to an idealized version of United States history.”³⁵⁸ Marryman notes that “the law and development movement has declined because it was, for the most part, an attempt to impose US ideas and attitudes on the third world.”³⁵⁹ Tamanaha notes that the crisis of the movement lies on its assumption that “law can solve the many problems facing the developing countries.”³⁶⁰

An important lesson one learns from the modernization attempt in Ethiopia is that the use of law as the only means of social engineering is very unlikely to be successful. The specific lesson with respect to industrial pollution control is that law is not the only tool in industrial pollution control. It has to be “accompanied by institutional structures, administrative competence, and ability to train management, monitoring, and enforcement personnel (See chapter 4).”³⁶¹ Nonetheless, the irony is as Tamanaha notes that “even after the demise of the law and development movement, lawyers (indigenous and expatriate) in developing countries [including Ethiopia] continued apace the borrowing of laws and building of legal institutions based on Western models.”³⁶²

The Ethiopian government’s commitment to enact separate environmental laws is a recent phenomenon. In 1992, a year after the current government came to power, the Rio Summit was held and the government sent a high-level delegation.³⁶³ Ethiopia’s participation in the summit led the government to introduce the concepts of “sustainable development” and “the right to

influence; and 7) legal actors follow the restraining rules and most of the population has internalized the laws, and where there are violations of the rules enforcement action will guarantee conformity. *Ibid.*

³⁵⁷ James A. Garner, 1980. *Legal Imperialism: American Lawyers and Foreign Aid in Latin America*, Madison; University of Wisconsin Press, p. Xii & 401.

³⁵⁸ Snyder, *supra*, n.354, p.388.

³⁵⁹ John Henry Merryman, *Comparative Law and Social Change: On the Origins, styles, Decline and Revival of the Law and Development Movement*, 25 *Am. J. Comp. L.* 457 (1977), p. 483.

³⁶⁰ Brian Z. Tamanah, *the Lessons of Law-and-Development Studies*, the *American Journal of International Law*, Vol. 89, No.2 (Apr., 1995), p.486.

³⁶¹ Jaro Mayda, *supra*, n.335, p. 998.

³⁶² Tamanah, *supra*, n.360, p. 474.

³⁶³ Melakou Tegegn, 2008. *The EPRDF vis-a-vis Ethiopia's development challenges*, *African Identities*, Vol. 6, No. 4, p.463.

clean and healthy environment” in the 1995 Constitution and to enact the EPE in 1997 and other environment related core proclamations in 2002 (as discussed in chapter 2).

Melakou Tegegn argues that “the current government starting as a Maoist grouping with strong Stalinist orientation, the notion of environmental protection and conservation of nature did not exist in its agenda [from the very beginning].”³⁶⁴ He argues that “the perception of the government did change much after the Rio Summit, and that its concern for the environment originates from donors’ requirements for development funding. It is only to display that environment is on its agenda.”³⁶⁵ On the contrary, the late Prime Minister Zenawi was very quick to reject this Marxist tag. He argued that “we are not a Marxist-Leninist movement.” Even if he acknowledged that;

We do have Marxists in our movement. I acknowledge that. I myself was a convinced Marxist when I was a student at Addis Ababa University in the early 1970s, and our movement was inspired by Marxism. But we learned that Marxism was not a good formula for resistance to the Derg and our fight for the future of Ethiopia.³⁶⁶

Gill also remarks that “as the Ethiopian People’s Revolutionary Party (EPRDF) [the current ruling party] moved out of the country-side to take over the towns and the cities, it emerged into a post-communist world, and a rapid political make-over was needed.”³⁶⁷ General Tsadkan who served as a chief of staff of the new Ethiopian army and who remained in command for more than a decade before being dismissed by the ruling party remarks that:

When we entered Addis Ababa, the whole Marxist-Leninist structure was being disgraced. [And] we had to rationalize in terms of the existing political order... capitalism had become the order of the day. If we continued with our socialist ideas, we could only continue to breed poverty.³⁶⁸

Hence, it appears that the current government (ruling party) started as a communist party but claims to have discarded its Marxist ideology due to the changed global circumstances. However whether this change of heart from the side of the current government is genuine or it is a strategy to win the hearts and minds of the international community (donor communities) is controversial.

³⁶⁴*Ibid.*

³⁶⁵*Ibid.*

³⁶⁶Peter Gill, 2010, *supra.n.113*, p.75.

³⁶⁷*Ibid.*

³⁶⁸*Ibid.*

This chapter argues that pollution control laws in general and the schemes and strategies employed in the EPCP are not effective in controlling industrial pollution. To substantiate this argument, section 3.2 defines pollution and examines the justification for pollution controls. Section 3.3 deals with pollution control in Ethiopia with particular emphasis on the core EPCP schemes and strategies.

3.2 Pollution Control

Pollution is inevitable in any development venture, but its level differs depending on the nature and type of development. Bell and McGillivray argue that “it is impossible to get rid of pollution because it is a necessary risk.” They argue that:

It is nonsensical to talk of getting rid of pollution: pollution and harm caused [by development] are, to a certain extent, necessary risks, because they accompany activities that most of us are unwilling to do without. Certain polluting processes are beneficial to our existence, to prohibit them entirely would, arguably, cause more harm than good.³⁶⁹

This necessitates the need for pollution controls in different countries, including Ethiopia, where pollution control is done through the enactment of laws as discussed below.

3.2.1 Definition of Pollution

The Ethiopian Environmental Pollution Control Proclamation (EPCP) defines pollution as:

any condition which is hazardous or potentially hazardous to human health, safety, or welfare or to living things created by altering any physical, radioactive, thermal, chemical, biological or other property of any part of the environment in contravention of any condition, limitation or restriction made under this Proclamation or under any other relevant law.³⁷⁰

Pollution is thus an altered condition created by the intervention of a pollutant which is hazardous or potentially hazardous to the environment. In the Ethiopian context, pollution includes—contamination of drinking water and food (public health problem); uncontrolled emission of dust, toxic gases and hazardous chemical effluents from industrial process (air pollution); uncontrolled disposal of industrial and municipal solid and liquid wastes (soil

³⁶⁹Stuart B. and Donald McGillivray, 2009.*Environmental Law*, 7th Edition, New York: Oxford University Press, p.12.

³⁷⁰EPCP, 2002, supra, n. 300, Art.2(12).

contamination); uncontrolled storage and disposal of industrial solid and liquid wastes (storage & disposal of obsolete chemicals); and infiltration of contaminated water (ground water pollution).³⁷¹ Some of the priority areas in pollution control include—pollution of inland waters, chemical residues in food, and hazardous waste treatment/disposal.³⁷² (See Appendix 3.1)

Pollutant means any substance whether liquid, solid, or gas that directly or indirectly which affects the environment. Pollutants may be categorized as persistent and non-persistent depending on their nature and impact on the environment. Some pollutants are non-persistent and rapidly combine with other substances into harmless chemical compounds. Legal controls of pollutants depend upon their nature and impact on the environment. For instance, “carbon monoxide, which in its undiluted form is a nerve gas, in unconfined space will rapidly combine into harmless carbon dioxide and will no longer create any immediate danger.”³⁷³ Other pollutants, such as “lead, mercury, and cadmium, or beryllium and other heavy metals, are likely to degrade only over long period of time, or for practical regulatory purposes, never.”³⁷⁴ Such persistent pollutants are the most troublesome and need to be subject to stringent regulations. Non-persistent pollutants may also be causes of serious short-term problems which make them subject of legal regulation.³⁷⁵

Solid wastes (both hazardous and non-hazardous), effluent and gaseous wastes discharged into the nearby land and water bodies from Textile and Leather Manufacturing are typical examples of pollutants (see chapters 5 and 6). The mere presence of a pollutant in the environment is not enough to cause pollution. Rather, damage to the environment must result from this intervention. For instance, in the case of the textile and leather industries, the level of pollutants must exceed the limits set in the environmental standards in order to be regarded as polluters likely to damage the environment (see section 3.2.1 below). Such damage has to be proved in a court of law (like the case of *Berihu v Almeda Textile Factory* discussed in chapter 6) or in the federal or regional

³⁷¹FEPAE, 2010. *National Profile to assess the National infrastructure for the management of chemicals in Ethiopia*, p.20. Available at <http://www.epa.gov.et/default.aspx> (accessed on June 20, 2011)

³⁷²*Ibid.*, p.21.

³⁷³Frank P. Grad & Joel A. Mintz, 2000. *Environmental Law* (4th ed.), Lexis Publishing: New York, p.10.

³⁷⁴*Ibid.*

³⁷⁵*Ibid.*

competent environmental organs³⁷⁶ by the person who claims to have suffered from the damage. If a case is proved, damages may be awarded.

The two scientific techniques to assess damage are—toxicity and ecotoxicological tests. Toxicity testing can be applied “to establish the impact of chemicals and pollutants on humans and other organisms.”³⁷⁷ Ecotoxicology goes a step further and “assesses the impacts of chemicals on populations and communities.”³⁷⁸ Assessment of the damage is difficult in developing countries like Ethiopia due to lack of accredited laboratories³⁷⁹ to undertake toxicological and ecotoxicological test and the lack of uniform national guidelines on how to test for the effects of the pollutants.³⁸⁰ In Ethiopia, the overall technical infrastructure to handle environmental pollution from chemical pollutants is weak (see chapter 4).

It is difficult to define pollution precisely, partly due to “the difficulties faced by scientists in establishing environmental damage or harm.”³⁸¹ In Ethiopia the general practice is to simply put in place general guiding definition of pollution rather than to attempt to precisely define it.

3.2.2 The Rationale for Pollution Control

The main issues relating to pollution in Ethiopia are public health, air pollution, pollution of inland waterways, contamination of drinking water, soil contamination and ground water contamination (see Appendix 3.2).

³⁷⁶ Accordingly, the federal or regional environmental organs may take administrative or legal measure against the polluter. These measures could be: ordering the polluter to install sound technology that avoids or reduces pollution; order the polluter to clean up or pay the cost of cleaning up the polluted environment; and order the polluter to close or relocate its enterprise. See FDRE, 2002, Environmental Pollution Control Proclamation, *supra*, n.26, Art. 3.

³⁷⁷ John and Sharron McEldowney 2010. *Environmental Law*, England: Pearson Education Limited, p.151.

³⁷⁸ *Ibid.*

³⁷⁹ For instance, the Federal Environmental protection Authority does not have accredited laboratory with competent experts. As to the regional environmental organs, all of them do not have expertise and laboratory to verify the damage incurred to the environment. See also; EPA, 2010. National Profile to assess the National infrastructure for the management of chemicals in Ethiopia, p.56. Available at <http://www.epa.gov.et/default.aspx> (accessed on June 20, 2011)

³⁸⁰ For instance, as discussed in the previous chapters the main development agenda of the Ethiopian Government is poverty reduction through Agricultural Development Lead Industrialization (ADLI). Hence, for this very reason pollution from industries is tolerated due to the hard currency and employment opportunity they generate.

³⁸¹ John and Sharron McEldowney, 2010, *supra*, n.377, p.7.

The main reason for pollution control in Ethiopia is to protect public health. The FDRE Constitution Art.44 (1) states that “all persons have the right to clean and healthy environment.”³⁸² The Constitution regards enjoyment of a clean and healthy environment uncontaminated by chemicals and other pollutants as a fundamental right. As the word "all persons" in Art.44 (1) of the Constitution indicates, the right to clean and healthy environment in Ethiopia is stipulated as a group/solidarity right not as individual right. Thus, all persons are right holders and the government is a duty bearer. This fact shows the Constitution envisages the vertical application of relations between the state and its subjects as a right holder and duty bearer. Art.9 (2) of the Constitution also states that “All citizens, organs of the state, political organizations, other associations as well as their officials have the duty to ensure observance of the Constitution and to obey it.”³⁸³The Constitution stipulates both a horizontal (citizen-to-citizen) and a vertical (state-to-citizen) obligation to realize the right to clean and healthy environment.

The words “all persons” in Art. 41(1) may be interpreted to include the needs of current and future generations as stipulated in the Brundtland conception of sustainable development. This is due to the fact that “in cases involving the protection of the environment, the distinction between present and future generations is inconsequential—we cannot protect the right of future generations without protecting the rights of the present.”³⁸⁴

Subsidiary legislation like the core environmental proclamations³⁸⁵ which are intended to enforce the Constitution illustrates the above observation. Apart from protecting human health, the main objective of environmental protection is for its intrinsic value. Art. 92 (2) of the Constitution states that “The design and implementation of programmes and projects of development shall not damage or destroy the environment”³⁸⁶Although primary reasons for protecting the environment are anthropocentric, the Constitution acknowledges the need to protect the environment for its own sake as well.

³⁸² The FDRE Constitution, *supra*, n.6.

³⁸³ *Ibid.*

³⁸⁴ Dante B. Gattmaytan, 2002-2003. The illusion of Intergenerational Equity: *Oposa v. Factoran* as Pyrrhic Victory, 15 Geo. Int'l Env'tl. L.Rev. 457 2000-2003, p. 460.

³⁸⁵ EPOEP, 2002; EIAP, 2002; and EPCP, 2002, *supra*, n.300.

³⁸⁶ The FDRE Constitution, *supra*, n.6.

3.3 Pollution Control in Ethiopia.

The FDRE Constitution empowers the federal government to enact laws for the utilization and conservation of land and other natural resources, historical sites and objects.³⁸⁷ Regional states are mandated to administer land and other natural resources in accordance with federal laws.³⁸⁸ The federal government has exclusive legislative power over land and other natural resources while states are left with administrative power. In the process of administration states could, however, legislate more stringent laws to facilitate the administration process (see Appendix 3.3).

The Federal Government has introduced a variety of legislation in the hope of mitigating environmental harm, eliminating the undesirable consequence of development, to protecting the environment, safeguarding human health and well-being; and maintaining the biota and the aesthetic value of nature.³⁸⁹ Among these laws the Environmental Pollution Control Proclamation (EPCP) is the most important one.

3.3.1 The Environmental Pollution Control Proclamation

The EPCP is the core legislation that deals with pollution control in Ethiopia. It was issued in 2002 by the House of Peoples' Representatives, the highest legislative organ of the Federal Government. The Proclamation has devised different pollution control strategies and schemes in order to protect the environment. The strategies and schemes envisaged in the Proclamation are: environmental standards, eco-management, incentives, environmental crimes and public interest litigation. These are examined one by one below.

3.3.1.1 Environmental Standards

The EPCP empowers the Federal Environment Protection Authority (FEPA) and Regional Environment Agencies (REAs) to promulgate environmental standards. Art.6 (1) empowers the FEPA to set environmental standards and ensure their compliance in consultation with the other agencies. Though the primary role of standard setting rests with the FEPA, the Proclamation

³⁸⁷Art.51 (5).

³⁸⁸Art. 52(2) (d).

³⁸⁹EPCP, 2002, *supra*, n.300.

mandates regional states to adopt more stringent environment standards.³⁹⁰ However, they cannot adopt less stringent standards. But none of the regional environmental agencies have adopted stringent standards. They have merely replicated the federal standards in the same wording.

The standards to be set by the FEPA are on the discharge of effluents, air quality, the type and amounts of substances that can be applied and disposed into the soil, maximum allowable noise levels and the generation, handling, storage, treatment, transport and disposal of waste. These standards are subject to the approval of the Environmental Council (EC).³⁹¹ The Proclamation mandates FEPA and the REAs to enforce these standards through Environmental Inspectors (EIs) to be appointed by them.³⁹²

The fact is that the FEPA does not have EIs.³⁹³ Unlike the FEPA two REAs the Addis Ababa Environment Protection Authority (AAEPA)³⁹⁴ and the Amhara Regional State Environmental Protection, Land Administration and Use Bureau³⁹⁵ have assigned EIs. It is important to stress that AAEPA has taken measures on governmental and non-governmental organisations including industries as shown in Table 3.1 below. That is perhaps why AAEPA inspectors are more effective in inspecting and taking measures. In line with this, the FEPA in 2011 has written a letter to all regional environmental bodies calling on them to follow the example of AAEPA.³⁹⁶

³⁹⁰ Art. 6(4).

³⁹¹ Art. 9(3).

³⁹² Art. 7

³⁹³ Merhatbeb Teklemedhn. 2010. *Administrative powers of Federal Environment Protection Authority of Ethiopia in the protection of the Environment: the law and practice*, Msc Thesis, Addis Ababa University College of Development Studies, Institute of Environment and Development, p.33.

³⁹⁴ *Ibid.*

³⁹⁵ Interview with Sintayehu Tadesse, ex-head of the Environmental Protection section in the Environmental Protection, Land Administration and Use Bureau of Amhar Regional State on March 29, 2011.

³⁹⁶ Letter on file with the researcher.

Table-3.1 Measures taken by AAEP on relevant selected factories.³⁹⁷

Organization	Measure	Reason	Duration of measure
Addis Ababa Leather Factory	Suspended	Serious pollution to The environment	Until the pollution is abated
Bati Leather Factory	Warning to treat its waste	Untreated effluent discharged to the environment	To be implemented continuously
Zemil Paint Factory	Suspended	Serious pollution to the environment	Until the problem is addressed (no specified time)

Source: (FEPA, 2011)

Compared to AAEP, the Amhara Regional State Environmental Protection, Land Administration and Use Bureau focuses on awareness creation than taking specific measures. Tadesse states that, “we have our inspectors and the inspectors monitor the activities of textile and leather industries but we are more inclined to awareness creation.”³⁹⁸ The regional environmental agency in the two case studies in chapter 6, has not appointed any EIs.

i) The Nature and Role of Standards

Recently there has been a marked shift from the reactive provision of remedies to environmental pollution to more proactive provision of standards to protect the environment.³⁹⁹ It appears that it is high time to regulate the environment through the use of standards.⁴⁰⁰ The UK Royal Commission on environmental pollution emphasizes the crucial role of standards in environmental policy.⁴⁰¹ It is therefore important to define the meaning of standards.

In a narrow sense, standards are legally enforceable numerical limits.⁴⁰² In Kenya and Tanzania for example, standards are narrowly defined as "the limits of discharge or emissions established under [their respective Environment Management Acts] or under regulations made pursuant to these Act[s] or any other written law."⁴⁰³ In Uganda, Standards are defined in similar fashion

³⁹⁷ AAEP took measure on ten government and non government organizations including factories. However; only three relevant factories are mentioned in Table 3.1.

³⁹⁸ Interview with Sintayhu Tadesse, supra, n.395.

³⁹⁹ John and Sharron McEldowney, 2010, supra, n.377, p.165.

⁴⁰⁰ *Ibid*

⁴⁰¹ Royal Commission on Environmental Pollution, October 1998. *Setting Environmental Standards*, 21st Report, Cm.4053, p.3.

⁴⁰² *Ibid.*, p.5.

⁴⁰³ See; Kenyan Environment Management and Coordination Act, 1999, No. 8, section 2; and Tanzanian Environmental Management Act, 2004, No. 20, section 3.

except the definition uses different words like “limits of pollution” instead of “limits of discharge or emissions.”⁴⁰⁴

Standards are not defined in any of Ethiopia’s legal instruments. The Pollution Control Proclamation empowers the FEPA and REAs to set standards without defining them. I use standards in this thesis in both broader and narrower senses—as the rules incorporated in environmental legislation and numerical limits.

Standards have numerous advantages. For instance, they indicate what industries are required to do to limit or prevent pollution and more importantly, they guide those who regulate (environmental agencies) in determining how to achieve the overall objectives of regulatory policy and enforce the rules effectively.⁴⁰⁵ In some contexts standards also reduce the costs of obtaining information and doing business.⁴⁰⁶ They also determine the point at which a sanction may be applied against someone damaging the environment.⁴⁰⁷

Standards also have disadvantages. The UK Royal Commission on Environmental Pollution, argues that:

Setting a numerical standard has the disadvantage that a single figure cannot adequately reflect the complexities of actual situations. What is more, the existence of a standard specifying a concentration of a pollutant might be understood to imply that any concentration below that specified is ‘safe’ and any concentration above that specified is ‘hazardous’, where as in reality there is no sharp dividing line. Moreover, because circumstances vary from case to case, following a general standard may not achieve what would be the optimal solutions in individual cases.⁴⁰⁸

In short, as the Commission indicated putting a single figure may be arbitrary and does not take into account other factors. For this reason the thesis adopts both the broader and narrower application of standards in the control and management of industrial pollution from textile and leather industries.

⁴⁰⁴See; Ugandan National Environmental Act, 1995, section 1 (ggg).

⁴⁰⁵Stuart Bell & Donald McGillivray, 2008, *supra*, n.369, p.225.

⁴⁰⁶Royal Commission on Environmental Pollution, *supra*, n.401, p.5.

⁴⁰⁷*Ibid.*

⁴⁰⁸*Ibid.*

ii) Types of Standards

There are different types of standards. A basic division can be made into standards set by reference to the target being protected and those that set by reference to the source of the pollution.⁴⁰⁹ Source based standards are further divided into emission standards, process standards, and product standards.⁴¹⁰ These are not exclusive of each other;⁴¹¹ and may be applied simultaneously in relation to a particular pollutant or protected entity of the environment.

In Ethiopia, they take two forms: emission and process standards. The former are standards under which conformity is measured by reference to what is emitted rather than its negative effect on the environment,⁴¹² and tend to concentrate on the quantity and volume of wastes produced.⁴¹³ They can be specified in relation to the levels, concentration or mass of substances, or the amount of reduction required.⁴¹⁴ In contrast, process standards may be imposed either by stipulating precisely the process that must be carried out, or the performance requirements that the process must reach.⁴¹⁵ They may include requirements about the technology in use, raw materials used, or operational factors such as whether the process is being carried out properly or not.⁴¹⁶ (See Appendix-3.4 & 3.5)

In Ethiopia, both emission standards (see 3.4 and 3.5) and process standards (as provided for in the Prevention of Industrial Pollution Council of Ministers Regulation⁴¹⁷ and other environmental legislation) have been promulgated to control pollution in the textile and leather industries. For instance, the rules in the Regulation require every industry to prepare and implement its own internal environmental monitoring system;⁴¹⁸ keep written information about

⁴⁰⁹Stuart Bell & Donald McGillivray, *supra*, n.369, p, 229.

⁴¹⁰*Ibid.*

⁴¹¹*Ibid.*, p. 232.

⁴¹²*Ibid.*, p. 230.

⁴¹³*Ibid.*, p. 231.

⁴¹⁴ *Ibid.*

⁴¹⁵*Ibid.*

⁴¹⁶*Ibid.*

⁴¹⁷FDRE, 2008.Prevention of Industrial Pollution Council of Ministers Regulation No. 159/2008, Federal Negarit Gazeta, 15th Year, No. 14. Addis Ababa.

⁴¹⁸ Art.9(1)

its equipment, input, product, pollution and its disposal;⁴¹⁹ and report annually to the relevant environmental organ its compliance with the provisions of the Regulation.⁴²⁰

Standards differ from norms, principles, rules and guidelines, and it is therefore necessary to clarify and understand these differences. Norms are a “generic category which includes rules, principles, standards and guidelines.”⁴²¹

Principles are the main building blocks in any regulatory system. That is why, as we saw in chapter 2, the FDRE Constitution, the Environmental Policy of Ethiopia (EPE) and other environmental laws incorporate principles. Braithwaite and Drahos note that “principles are settled agreements on conduct, recognized by a group.”⁴²² For them “principles propel action in a certain direction.”⁴²³ To propel action and to have legal effect principles have to be incorporated in law. If not, they are considered as moral claims.⁴²⁴ But, the fact that a principle is included in legislation does not make it legal and enforceable. For instance, the fact that sustainable development is included in Art.43 of the FDRE Constitution does not necessarily make it legally binding and enforceable. Rather, all other lower legislation (proclamations, regulations and directives) have to be oriented toward the principle. Standards have to be established that provide sustainability measurement indicators. Bosselmann argues that “The mentioning of sustainable development in the Climate Change Convention does not in itself make sustainable development a legal principle. For this to happen, a law-creating act or process is necessary.”⁴²⁵ This suggests that the creation of legal principles is an incremental process. It is important to note that all principles are not legal principles; also non-legal principles evolve from the practices and values of certain community of actors.

The demarcation between principles and rules is not always clear and is therefore subject to controversy. Dworkin differentiates principles from rules in arguing that “principles state a reason that argues in one direction, but does not necessitate a particular decision while rules

⁴¹⁹ Art.11(1)

⁴²⁰ Art.11(2)

⁴²¹ Braithwaite and Drahos, 2000. *Global Business Regulation*, UK: Cambridge University press, p.19.

⁴²² *Ibid.*

⁴²³ *Ibid.*, p.18.

⁴²⁴ Bosselmann, 2008, *supra*, n.199, p.45.

⁴²⁵ *Ibid.*

apply in an all or nothing fashion to determine a decision.”⁴²⁶ Raz differentiates rules from principles in arguing that “Rules prescribe relative specific acts; principles prescribe highly unspecific actions.”⁴²⁷ For Sands, rules are “practical formulations of principles.”⁴²⁸ Thus the way to differentiate between principles and rules is on the level of actions they prescribe—rules prescribe relatively specific actions while principles prescribe general unspecific actions. For instance, the polluter pays principle prescribes the general notion that the polluter has to internalize the costs of environmental damage but it does not specify who the polluter is, what sort of pollution and the modality of internalizing the costs. Rules specify specific action that must be taken for example what constitutes pollution. Rules govern damages or cleaning up costs.

Standards and principles are sometimes used interchangeably.⁴²⁹ Principles “bring about mutual orientations between actors,”⁴³⁰ while standards are “measure of conduct.”⁴³¹ Unlike principles standards have high degrees of specificity. The emission standards for the leather and textile factories are specific measures regulating pollution. However, standards should be understood in both broader and narrower senses—as tangible and precise expressions of judgments and as legally enforceable numerical limits.

The need for guidelines arises when there is no agreement on principles but there is a need that something has to be done on certain pressing problem. Guidelines are employed to “suggest a direction for conduct in conditions of uncertainty.”⁴³² Compared to principles, guidelines lack settledness; they are provisional measures.⁴³³ However, it is important to note that guidelines can develop into standards or legal rules. Braithwaite and Drahos argue that:

In the regulatory histories we have examined we see that norms belonging to one species can undergo a process of transmutation. Norms put out by the Basel

⁴²⁶Dworkin R., as cited in Klaus Bosselmann, 2008. *The Principle of Sustainability-Transforming Law and Governance*, UK: Ashgate Publishing Ltd, p.47.

⁴²⁷ Raz Joseph, 1972. Legal principles and the limits of law, 81*Yale Law Journal*, p.838. (available at <http://heinonline.org>) (accessed on August 20, 2011)

⁴²⁸ Sands, P. 2003. *Principles of International Environmental Law*, 2nd edn. UK: Cambridge University Press, p.231.

⁴²⁹ John Braithwaite and Peter Drahos, 2000, *Global Business Regulation*, *supra*, n.421, p.20.

⁴³⁰*Ibid.*

⁴³¹*Ibid.*

⁴³²*Ibid.*, p.20.

⁴³³*Ibid.*

Committee started as guidelines. Progressively they have become standards accepted by banking regulators around the world. Guidelines can become standards or legal rules. Non-legal standards can become legal ones. Non-legal principles can become legal ones.⁴³⁴

3.3.1.2 Eco-Management

The Environmental pollution Control Proclamation provides a scheme for the restoration of the environment. Art.3 (4) of the Proclamation empowers the FEPA and REAs to order the polluter to clean up or pay the costs of cleaning up pollution. Art.17(c) empowers courts to order the convicted polluter to “restore to the state in which the environment was prior to the infliction of the damage, and when such restoration is not possible to pay appropriate compensation.”⁴³⁵

The FDRE Constitution embraces the polluter pays principle in two ways: implicitly, through recognizing the right to a clean and healthy environment⁴³⁶ and explicitly by obliging the state and individuals to protect the environment.⁴³⁷ In contrast, the Proclamation and the EPE explicitly employ the term polluter pays principle as their policy objective.⁴³⁸ The rationale for the adoption of the polluter pays principle in the Proclamation is to internalize social costs—both private and public costs incurred on the environment due to pollution. As envisaged in the Proclamation, the principle is a qualified one. It only seeks to internalize the cost of cleaning up the polluted environment as shall be determined by the FEPA or REAs depending on the case, but does not address the potentially more far-reaching and less predictable costs of environmental damage.

Although the polluter pays principle is recognized in Ethiopia, there is no scheme put in place for complete internalization of costs related to environment. There is no separate legal regime with regard to the claim and assessment of damages. In such situations where there is no way to secure compensation for environmental damage, one would be forced to resort to the traditional tort system. However, the traditional tort system in Ethiopia is fit only to govern traditional

⁴³⁴ *Ibid.*

⁴³⁵ EPCP, 2002, *supra*, n.300, Art.17 (c).

⁴³⁶ The FDRE Constitution, *supra*, n.6, Art.44 (1).

⁴³⁷ Article 92(1), (2) and (4)

⁴³⁸ The *Environmental Policy of Ethiopia*, *supra*, n.299, p.15.

liability issues like injury to person's health or property not to the environment per se. When the Civil Code (where we find tort provisions) was enacted in 1960, the environment was not a major concern the Code aimed to address. Ethiopia needs to adjust its tort system to accommodate environmental issues or introduce separate comprehensive environmental liability regime in order to ensure environmental justice and promote sustainable development through the application of the polluter pays principle.

Art.6 (5) of the Proclamation mandates the FEPA to promote the public interest by waiving the implementation of environmental standards on pollution for a fixed period of time.⁴³⁹ The Proclamation does not define the public interest though one can equate it with economic growth. By allowing waiver, the Proclamation licenses polluters. As things stand, the polluter pays principle is restricted so as not to limit the economic growth.

3.3.1.3 Incentives for pollution control

The Environmental Pollution Control Proclamation provides incentives to encourage industries to control pollution. For instance, it mandates the FEPA to exempt new imported equipment for controlling pollution from customs duty.⁴⁴⁰ To implement the incentive mechanisms envisaged in the Proclamation, the Council of Ministers is mandated to issue regulations. Although the Council has issued a Regulation on the prevention of industrial pollution in 2008, this did not contain specific provisions.⁴⁴¹

According to Art.12 (1) of the Regulation, factories established before its effective date are given a grace period of five years to comply with its provisions.⁴⁴² In effect this means that no measure is to be taken on the previously existing polluting factories until 2013. After the grace period expires in 2013, the competent environmental agency (federal or regional) can "take any measure it deems appropriate to avoid the adverse impacts".⁴⁴³ These may include "either the relocation or closure of the factory".⁴⁴⁴ However, as far as I know no measure has been taken until to date.

⁴³⁹ Article 6 (5)

⁴⁴⁰ EPCP, 2002, *supra*, n.300, Art.10(c)

⁴⁴¹ FDRE Industrial Pollution Regulation, 2008, *supra*, n.417.

⁴⁴² *Ibid.*

⁴⁴³ *Ibid.*

⁴⁴⁴ *Ibid.*

The Council of Ministers Regulation to Amend the Investment Incentives and Investment Areas Reserved for Domestic Investors also does not provide incentives for investors to invest in eco-friendly manufacturing.⁴⁴⁵ However, the fact that these two Regulations do not contain incentive provisions does not mean there are none. As discussed in chapter 1 section 1.2.1.3, the government has established two autonomous institutions the Leather and Leather Products Technology Institute and Textile and Apparel Industry Institute to assist textile and leather industries to meet the targets⁴⁴⁶ set for them and to assist them in managing their waste. The industries can import chemicals using the local currency, and assistance is available for establishment of the chemical industry and giving training on clean production techniques. As to how the two case studies are managing their waste see chapter 6.

3.3.1.4 Environmental Crimes

The Proclamation created environmental crimes to protect the environment from pollution. It subjects polluters to severe punitive sanctions. The crimes created relate to pollution,⁴⁴⁷ waste and hazardous materials,⁴⁴⁸ environmental inspectors⁴⁴⁹ and records.⁴⁵⁰

The Criminal Code⁴⁵¹ contains environmental crime provisions that prescribe more serious punishment for polluters than the Proclamation. For example, in the Criminal Code the penalty for intentionally poisoning a well, cistern, spring, water hole, river or lake is punishable up to fifteen years rigorous imprisonment.⁴⁵² In contrast, the maximum sentence in the Proclamation is ten years.⁴⁵³

⁴⁴⁵FDRE, 2008. Council of Ministers Regulation to Amend the Investment Incentives and Investment Areas Reserved for Domestic Investors No. 146, Federal Negarit Gazeta, 14th Year No.19, Addis Ababa.

⁴⁴⁶ For instance, the target set for Textile and Garment industry in the current Growth and Transformation Plan (GTP) discussed in chapter-one is to create new employment opportunities for about 40,000 citizens during the plan period and to raise foreign exchange earnings to USD 1.0 billion by the end of 2014/15. While the target for the Leather Industry is to raise the foreign exchange earnings from USD 75.73 million in 2009/10 to USD 496.5 mln by the end of the plan period. See; MoFED, 2010,GTP, supra, n.100, p.35 & 59.

⁴⁴⁷EPCP, 2002, supra, n.300, Art.26.

⁴⁴⁸ Art.15.

⁴⁴⁹ Art.13

⁴⁵⁰ Art.14.

⁴⁵¹FDRE, 2005. The Criminal Code of the Federal Democratic Republic of Ethiopia, Addis Ababa, Arts. 514-534.

⁴⁵² *Ibid.*, Art. 517.

⁴⁵³EPCP, 2002, supra, n.300, Arts.15 (2) & 16.

The Criminal Code states that “a juridical person other than the administrative bodies of the state is punishable as a principal criminal, an instigator or accomplice where this is expressly provided by law.”⁴⁵⁴ It is clear that any public or private enterprise engaged in commercial or industrial activity be held criminally liable if it commits certain acts designated as environmental crimes. The principal sanction that can be imposed on corporate entities is a fine not exceeding 500,000 Birr (27,048.4 UDS).⁴⁵⁵ Moreover “additional penalties may be imposed to suspend, close or wind up [corporate entities].”⁴⁵⁶ The Code states that “the punishment of the juridical person shall not exclude the penalty to be imposed on its officials or employees for their personal criminal guilt.”⁴⁵⁷ The Code aims to pierce the corporate veil and prosecute individuals responsible for environmental crime.

The Proclamation extends corporate criminal liability to discharging pollutants into the environment,⁴⁵⁸ failure to properly manage hazardous waste,⁴⁵⁹ failure to keep records of activities or products or the types, characteristics or amounts of waste,⁴⁶⁰ and hindering or obstructing an inspector on duty.⁴⁶¹

Why does the Proclamation create environmental crimes and corporate environmental criminal liability when the eco-management system discussed above is already in place? The underlying purpose of the two regimes is different. The aim of eco-management system is to restore the environment to its original state and when this is not possible to compensate for the damage incurred. The purpose of establishing environmental crimes is to deter⁴⁶² polluting activities through punitive measures like imposing fivefold fines⁴⁶³ compared to physical person.

⁴⁵⁴ The FDRE Criminal Code, *supra*, n.451, Art.34 (1).

⁴⁵⁵ Art.90(1)

⁴⁵⁶ Art. 34 (2).

⁴⁵⁷ Art 34 (3).

⁴⁵⁸ Art. 519 and EPCP, 2002, *supra*, n.300, Art.16.

⁴⁵⁹ EPCP, 2002, *supra*, n.300, Art.15.

⁴⁶⁰ Art.14.

⁴⁶¹ Art. 13.

⁴⁶² For instance, the Criminal Code in its preamble clearly states; its purpose to be protecting the society from the commission of crimes including environmental crime. See, *supra*, n.451.

⁴⁶³ Art.90 (4).

There is considerable debate as to whether corporate criminal liability is the appropriate way to regulate corporate behavior. Khanna argues that “A modified form of corporate civil liability could make corporate criminal liability obsolete by capturing the advantage of corporate criminal liability while avoiding or mitigating its disadvantages.”⁴⁶⁴ Fischel and Sykes argue that “there is no need for corporate criminal liability in a legal system with appropriate civil remedies and that corporate criminal liability in practice produces serious problems of over deterrence.”⁴⁶⁵ In the Ethiopian case both civil liability and corporate criminal liability are employed.

As to the issue should corporate criminal liability be imposed by the environmental organs (FEPAE or REAs) or courts? The Environmental Pollution Control Proclamation in Art.3 (2) states that “[FEPA] or [REAs] may take administrative or legal measures against a person who, in violation of law, release[s] any pollutant to the environment.”⁴⁶⁶ Under Art.3 these legal measures include making an order to install sound technology, an order to clean or pay cleanup costs and the closure or relocation of polluting enterprises.⁴⁶⁷ These measures do not include criminal sanctions. The powers of FEPA and the REAs as enumerated in Art. 6 & 15 of the Environmental Protection Organs Establishment Proclamation also do not include criminal sanctions.⁴⁶⁸ Instead criminal action may be initiated by the MoJ at the federal level or Justice Bureaus at regional levels. This is apparent from the phrase “the court, before which a person is prosecuted for an offence ...”⁴⁶⁹ in Art.17 of the Proclamation. This is consistent with Art.35 (4) of the Trade Practice and Consumers' Protection Proclamation which states that “when the Authority [Trade Practice and Consumers Protection Authority] knows or believes that the offences provided in this Proclamation are committed, it shall, together with its evidential findings and opinions, submit to the public prosecutor in charge of examining and determining the case.”⁴⁷⁰ Thus, if the FEPA or REAs want to initiate a criminal case on environmental pollution they have to report to the police or prosecutor like any criminal case.

⁴⁶⁴V.S.Khanna, 1996. Corporate Criminal Liability: what Purpose Does it Serve, *Harvard Law Review*, Vol. 109, No. 7, P.1477

⁴⁶⁵Daniel R. Fischel and Alan O. Sykes, 1996. Corporate crime, *The Journal of Legal Studies*, Vol. 25, No. 2, p.319

⁴⁶⁶EPCP, 2002, *supra*, n.300.

⁴⁶⁷Art.3.

⁴⁶⁸ Art. 6 & 15.

⁴⁶⁹ Art.17

⁴⁷⁰FDRE, 2010. Trade Practice and consumers' Protection Proclamation No. 685/2010, Federal Negarit Gazeta, 16th Year, No. 49. Addis Ababa, Art. 35 (4).

Wendwesen Sintayehu, the legal section head in FEPA notes that in practice FEPA has never taken either administrative or legal measures prescribed by law.⁴⁷¹ Kiflie Mahari, the Legal Research, Drafting and Training Directorate Director at the MoJ states that:

I do not remember an occasion when an environment related criminal case (including industrial pollution) has been initiated in any court of law by our Ministry. I am not also aware of any civil case. Our concern for the environment in the Ministry is very low.⁴⁷²

He further notes that “I have been in the Ministry for two years but we have never included environmental issues as part of our research and training agenda.”⁴⁷³ It should be stressed that even if there is no practice of taking administrative or legal measures by FEPA, it does not mean no one is in default. Rather it is indicative that things are not going right in the regulation of environmental pollution in general and industrial pollution in particular at the federal level.

The former head of Environmental Protection Department in the Tigray Land Administration and Environmental Protection Agency also notes that no administrative or legal measures have been taken by the Agency.⁴⁷⁴

Thus, it is therefore unlikely that corporate criminal liability for pollution will be enforced in the near future. Since textile and leather industries are the main sources of hard currency and the major employers in the country, the MoJ and the regional Bureaus of Justice are reluctant to sue the polluters for fear of losing all the advantages of the industries unless they are forced to do so by the affected communities.

For instance, the Almeda Textile Factory employs about six thousand employees and its industrial waste management is poor. The Sheba Leather Industry employs about one thousand and fifty employees and its industrial waste management is also poor. The environmental damage caused by these factories is well known by the local politicians and authorities but no criminal action has been initiated or taken against them. The affected communities have

⁴⁷¹ Interview with Wendwesen Sintayehu legal section head at FEPA on January 20, 2012.

⁴⁷² Interview with Kiflie Mahari Legal Research, Drafting and Training Directorate Director at the Ministry of Justice (MoJ) on April 27, 2012.

⁴⁷³ *Ibid.*

⁴⁷⁴ Interview Hadush Berhe former head of Environmental Protection Department within Tigray Land Administration and Environmental Protection Agency, on January 27, 2011.

repeatedly complained to local politicians and authorities of responsible institutions but without success (see chapters 6 & 7). Although there was no law to force these factories to undertake EIAs prior to their establishment, since 2002 an EIA law has been in place. But the industries continue to expand without undertaking any assessment.⁴⁷⁵ Berhe, notes that the damage they cause to the environment and the neighbouring communities is also expanding.⁴⁷⁶

The only feasible way to enforce corporate environmental criminal liability provisions in the Criminal Code, the Pollution Control Proclamation and other relevant legislation is through well organised, coordinated and supported public initiatives, like public interest litigation and other political means. This does not mean other measures like administrative measures discussed above are not applicable but that they need to be supplemented by public participation (see chapter 7).

3.3.1.5 Public Interest Litigation

One of the innovative strategies employed provided by the Proclamation is a provision for public interest litigation. The Proclamation grants standing to private individuals. Art.11 of the Proclamation reads:

Any person shall have, without the need to show any vested interest, the right to lodge a complaint at the Authority or the relevant regional environmental agency against any person allegedly causing actual or potential damage to the environment; when the Authority or regional environmental agency fails to give a decision within thirty days or when the person who has lodged the complaint is dissatisfied with the decision, he may institute a court case within sixty days from the date the decision was given or the deadline for decision has elapsed.⁴⁷⁷

The issue is what is the purpose of initiating public interest litigation? Could a private individual initiate public interest litigation to recover individual damage?

In general, public interest litigation (or as sometimes called citizen suit in other countries) cannot be initiated to recover private damages. It is only used to defend public rights. In the USA as P. Grad and Joel A. Mintz note:

⁴⁷⁵Hadush Berhe, *supra*, n.474.

⁴⁷⁶*Ibid.*

⁴⁷⁷ Art. 11.

The citizen suit provisions may only be used by a *private citizen to vindicate public rights*. They may not be used to assert a *private citizen's claim* for damages, and a private citizen who sues to vindicate a public right may not combine this claim with a claim for damages (emphasis mine).⁴⁷⁸

From the practice and law in other countries the purpose of public interest litigation is simply for administrative purposes to stop the polluter from polluting the environment and depending on the case to restore the environment to its original position. The case between *APAP v FEPA* is the pioneer public interest litigation in Ethiopia.

APAP, a social organization, lodged a complaint with FEPA about pollution of the Akaki⁴⁷⁹ and Mojo⁴⁸⁰ Rivers in Addis Ababa caused by the discharge of industrial effluents contrary to the Environmental Pollution Control Proclamation and urged FEPA to take immediate measures. FEPA responded that the environmental standards were still in draft⁴⁸¹ form and are awaiting the Environmental Council's approval and therefore they could not be relied upon to decide whether the rivers were being polluted. FEPA also asserted that it had taken all necessary measures to combat the pollution.

APAP was dissatisfied with this and initiated a case in the Federal First Instance Court against FEPA. It requested the court to order FEPA to take administrative and legal measures to stop the alleged pollution, to direct FEPA to clean the rivers, and to employ environmental inspectors to ensure that FEPA takes the necessary measures. The court ruled that Art.11 of the Environmental Pollution Control Proclamation does not empower APAP to sue the FEPA but does empower it to sue the polluter. The Federal Higher Court including the Cassation Bench of the Federal Supreme Court (which is the highest court in the country) subsequently endorsed the Federal First Instance court's ruling.

⁴⁷⁸ Frank P. Grad & Joel A. Mintz, 2000, *Environmental Law, supra*, n.373, p.1163.

⁴⁷⁹ The Akaki Rivers are found mainly in Addis Ababa Administrative region. The two river basins are bound within Addis Ababa city that geographically lies between the range of 50°10'-50° 35' N latitude and within the range of 37° 00'-37° 40' E longitude. Little Akaki river basin starts from Gullele (North Addis Ababa) while Great Akaki River starts from Entoto Kidane Miheret area (North East of Addis Ababa).

⁴⁸⁰ Mojo River Basin is found about 70km² south east of Addis Ababa, between longitudes 38° 56' E – 39° 17'E and 8° 34' N – 9° 05' N latitude.

⁴⁸¹ However; after Feb. 28/2011 different standards for different sectors are posted on the FEPA website <http://www.epa.gov.et/download/Forms/AllItems.aspx> (as accessed on April 20/2011). Of course, since these posted different standards are not qualified as draft on the website, the researcher is of the opinion that the standards to be approved by the Environmental Council of FEPAE and they are binding.

Thus, from the APAP case one can infer that the court has ruled that public interest litigation as envisaged in Art.11 discussed above can only be initiated where the specific claim involves a public interest purpose. That is, it was initiated and decided on a matter of administrative law, not as a private tort issue under the Ethiopian Civil Code. Accordingly, any victim of environmental pollution (including industrial pollution) cannot combine his private interest (claim for damage) in the public interest litigation. If he wants to do so he has to do it through the traditional tort system. For details see Section 4.3.

Conclusion

Pollution which in one way or another is unavoidable part of our society and at times very difficult to define means—an altered condition created by the intervention of a pollutant which is hazardous or potentially hazardous to the environment. It is understood as: contamination of drinking water and food (public health problem); uncontrolled emission of dust, toxic gases and hazardous chemical effluents from industrial process (air pollution); uncontrolled disposal of industrial and municipal solid and liquid wastes (soil contamination); uncontrolled storage and disposal of industrial solid and liquid wastes (storage & disposal of obsolete chemicals); and infiltration of contaminated water (ground water pollution). Pollution control also include: pollution of inland waters, chemical residues in food, and hazardous waste treatment/disposal.

Pollutant whether liquid, solid, or gas; directly or indirectly threaten or damage the environment. Solid wastes (both hazardous and non-hazardous), effluent and gaseous wastes discharged to the nearby land and water bodies from textile and leather industries are typical examples of pollutants. However, the ways to mitigate and reduce pollution vary from country to country. The main problems of pollution in Ethiopia are public health, air pollution, inland waterways pollution, contamination of drinking water, soil contamination and ground water contamination.

The historical and legal framework related to promoting and protecting the environment in general and industrial hazardous waste in particular dates back to the 1960s and the 1970s. Although environmental activism has contributed to raising awareness, it is only when principles and policies are translated into law that they become binding. Even then, enacting a law is different from implementation.

Ethiopia has introduced many foreign laws in attempt to modernize the Ethiopian society. However, it cannot be argued that the introduction of such alien laws, systems and models have been successful. Many scholars and authors have written the positive and negative aspects of introducing foreign laws as an instrument of modernizing the Ethiopian society and the relationship between law and development. The assumption that law can solve many problems facing the developing countries is a false start. One does not develop a society by law alone. Law is only one instrument. The other main problem—lack of implementation—also remains a very big challenge.

The Ethiopian government's commitment to enact separate environment related laws is a recent phenomenon, that is, in 1992; one year after the current government has come to power and after the Rio Summit was held. Some scholars argue that the concepts of “sustainable development” and “the right to clean and healthy environment” as incorporated in the 1995 Constitution have been influenced various conferences related to environment and sustainable development although some argue that it was greatly influenced by donors. However, irrespective of the question of influence, the fact of the matter is that a combined reading of Arts. 44, 92 (2) and 9(2) of the Ethiopian Constitution guarantees the right to clean and healthy environment as a fundamental right. In Ethiopia, the Environmental Pollution Control Proclamation is the core legislation that deals with pollution control standards at Federal and regional levels. Art.3 (4) and 17 (c) thereof state the need to protect the environment, but does not endorse the polluter pays principle in clear terms.

As long as there are polluters and victims of pollution, the need to minimize, reduce the threat of pollution and to seek damages become necessary. In such case assessing damages through scientific techniques such as toxicity and eco-toxicological tests become necessary although it might be difficult to assess the damage due to lack of accredited laboratories as well as due to lack of uniform national guidelines on how to test the effects of the pollutants on people and the environment.

Although there is a need to shift from reactive provision of remedies related to environmental pollution to more proactive provision of standards to protect the environment, there are many structural weaknesses of realizing such an objective in countries like Ethiopia simply because there is not even clarity on the definition, concept and types of standards. Moreover, in practice none of the regional environmental agencies have adopted stringent standards related to the discharge of effluents, air quality, the type and amounts of substance that can be applied and disposed into the soil, the maximum allowable noise level and the generation, handling, storage, treatment, transport and disposal of waste. They have merely replicated the federal standards. Furthermore, environmental inspectors fail to discharge their duties as they are mandated by law.

Although the polluter pays principle is recognized in Ethiopia, there is no scheme put in place for complete internalization of costs related to environment. There is no separate legal regime with regard to the claim and assessment of damages. In such situations where there is no way to secure compensation for environmental damage. The irony of it all is that Art.6 (5) of the Pollution Control Proclamation mandates the FEPA to waive the implementation of environmental standards on pollution for a fixed period of time. On the other hand the law subjects polluters to severe punitive sanctions expecting to have a deterrent effect. Whether corporate criminal liability is the appropriate means to regulate corporate behavior in pollution—all the indications are that it is unlikely that the concept of corporate criminal liability with regard to environmental pollution will be enforced in the near future in Ethiopia. The public interest litigation is also not as effective as it is supposed to be in Ethiopian courts as shown in the APAP case.

Moreover, despite the fact that incentive mechanisms in the form of exemption of any new imported equipment for controlling pollution from customs duty are granted in Ethiopia; the legal framework related to pollution control by the Federal Environment Protection Authority (FEPA) and Regional Environment Agencies (REAs) to prepare environmental standards and to ensure their compliance in consultation with the competent agencies has, over all, not been very effective. This is partly due to: institutional factors, lack of political will, coordination between the relevant institutions and due to financial constraints required to set up treatment plants both at Federal and regional states. Hence, one can argue that the legal framework related to pollution control suffers from lack of coherence, consistency, coordination and implementation.

CHAPTER 4

OGANIZATIONAL FRAMEWORK FOR INDUSTRIAL POLLUTION

4.1 Introduction

The purpose of this chapter is to discuss the federal, sectoral and regional institutions involved in industrial pollution control. In Ethiopia, administrative agencies⁴⁸² (which include environmental institutions) are established with different mandates. Some are established with broader mandates while others have specific task to implement certain government policy or program. Almost all administrative institutions in the country are accountable to the executive organ of the government.⁴⁸³ Very few are accountable to the House of Peoples Representative (HPR) which is the highest law making organ in the country.⁴⁸⁴ Those administrative institutions which are accountable to the executive organ of the government are known as executive agencies. Those accountable to the HPR are perceived to be autonomous agencies.

In the case of environmental institutions, since the FEPA is accountable to the Prime Minister and the sectoral and regional environmental organs are also accountable to the relevant competent executive organs; they are labeled as executive agencies. The implication of this is that the head of the FEPA and the sectoral and regional environmental institutions are appointed and dismissed by the Prime Minister and by the relevant competent executive heads depending on the case. The other implication is their budget is also dependent on the good will and available budget allocated by the executive organ.⁴⁸⁵

With regard to the Ethiopian government's initiative to establish environmental organizations one can argue that like the core environmental legislation discussed in chapter 3, it was

⁴⁸²The draft Administrative Procedure Proclamation of 2005, in Art. 2(1) defines an administrative agency as "any ministry, commission, authority of the FDRE, including Addis Ababa and Dire Dawa city administrations which are competent to render administrative decisions and exercising regulatory or supervisory functions."

⁴⁸³ The FDRE Constitution in Art.77 (2) authorizes the Council of Ministers to determine the organizational structure of administrative agencies responsible to it, coordinate their activities and provide leadership.

⁴⁸⁴According to the FDRE Constitution Art.55 (14) (15), Art.101 & Art. 103; the Human Right Commission, the institution of Ombudsman, the Auditor General and the Population Census Commission are accountable to the House of Peoples' representatives. Members of all these institutions are appointed and their budget is approval by the House.

⁴⁸⁵ For instance, the budget of the FEPA is allocated by the Federal Government; while the regional environmental institutions budget is allocated by their respective regions.

influenced by its participation in the Rio Summit in 1992. This argument can be substantiated by the establishment of the former Ministry of Natural Resources Development and Environment Protection right after the return of the high level delegation from the Summit.⁴⁸⁶ However, in 1995, the Ethiopian government enacted Proclamation No.9/1995 which subsequently was repealed by Proclamation No.295/2002, to establish the current FEPA as the principal institution to deal with the environment and nature conservation. With regard to this act, Melakou Tegegn argues “the relegation of the institution from a ministry to a mere authority is a major departure from the initial attitude that prevailed after Rio.”⁴⁸⁷

The main argument in this chapter is, regulating industrial pollution in general and pollution from textile and leather industries in particular requires identifying or establishing implementing agencies both at federal, sectoral and regional levels; and mandating them with clear regulatory power. It also argues that assigning regulatory authority to the organizations requires coordination among these organizations and allocating proper resources. The chapter argues in practice there is no such coordination and allocation of proper resources. It also argues courts cannot force the established environmental organizations to force them to perform their statutory responsibilities unless there is specific law which mandates them to do so.

To illustrate this argument, the research in section 4.2 deals with pollution control organizations at federal and regional levels. Section 4.3 deals with administrative and court remedies for industrial pollution. The analysis in the chapter includes some conclusions.

4.2 Pollution Control organizations

As indicated in chapter 1, an increase in investment and industrialization leads to an increase in industrial pollution, particularly around larger urban and industrial centers. In order to tackle this increase of industrial pollution, the country has put in place environment protecting, regulating and monitoring organizations both at the federal and regional levels.

⁴⁸⁶ Melakou Tegegn, 2008, *supra*, n.363, p.463.

⁴⁸⁷ *Ibid.*

Currently there are two types of organizations that deal with the environment. These organizations are those involved in the development and management;⁴⁸⁸ and in protection, regulation and monitoring of the environment.⁴⁸⁹ Those involved in environment protection, regulation and monitoring are: FEPA (the Authority) including the Council, Sectoral Environmental Units (SEUs) and Regional Environmental Agencies (REAs).⁴⁹⁰

However, as O'Rourke notes; "the success of the environmental agencies depends on their internal characteristics such as: their coherence, competencies, their connections to society at large and their public credibility and external accountability."⁴⁹¹ In order to play constructive role in pollution control, environmental agencies should have capacity, linkage and autonomy.⁴⁹²

Capacity means, "Basic organizational, fiscal, and human capital to enforce environmental laws."⁴⁹³ In other words, environmental agencies must be well staffed with experts, should have adequate budget and be equipped with the necessary facilities; to evaluate the complaints of the affected communities and challenge the resistance of industries. The second requirement for successful environmental agencies is linkage. Linkage is defined; as "the social and political connections among state agencies and between state officials and civil society actors that foster effective communication and feedback."⁴⁹⁴ Specially, with regard to linkage the most decisive one is the support the environmental agency gets from the high ranking political leadership. If the leadership is not committed to pollution control it would be difficult for the agency to enforce the law against the polluting industries. It is in this context that Van Rooij notes;

The first question [in pollution control] is whether there is sufficient leadership commitment to pollution prevention and control. Law enforcement will be particularly more difficult without such support, as politicians decide on

⁴⁸⁸EPOEP, 2002, supra, n. 300. Some of the Government agencies involved in the development and management of the environment are: Ministry of Water Resources; Ministry of Agriculture; Ministry of Mines; the Ethiopian Science and Technology Commission; Regional Agricultural Research Institutions; Institute of Biodiversity Conservation; Disaster Prevention and preparedness Commission; Regional Disaster Prevention and Preparedness Bureau; the Rural Energy Development Promotion Center; the Ethiopian Agricultural Research Organization; and the Ethiopian Wildlife Development and Protection Department.

⁴⁸⁹*Ibid.*

⁴⁹⁰Arts. 3-15.

⁴⁹¹ Dara O'Rourke. 2004. *Community-Driven Regulation-Balancing Development and Environment in Vietnam*, London: MIT Press, pp. 224.

⁴⁹²*Ibid.*, pp. 225.

⁴⁹³*Ibid.*

⁴⁹⁴*Ibid.*

enforcement budgets. Similarly, it is then less likely that pollution enforcement authorities will receive the necessary co-operation from other government agencies that may be able to help enforce the law.⁴⁹⁵

The third requirement for successful environmental organizations is autonomy. In the context of the environmental agencies, autonomy means protection from influence from other state organs and from the private sectors like industries and other elite groups. In the sections to follow the federal and regional environmental organizations in Ethiopia are discussed one by one.

4.2.1 Federal Environmental Protection Authority

The Federal Environmental Protection Authority (FEPA) has two parts. The Environmental Council, and a Director General and Deputy-Director General appointed by the government with all necessary staff.⁴⁹⁶ The objectives of the FEPA are: “to formulate policies, strategies, laws and standards, which foster social and economic development in a manner that enhance the welfare of humans and the safety of the environment and to spearhead in ensuring the effectiveness of the process of their implementation.”⁴⁹⁷ In effect, the main objective of the FEPA is to implement the concept of *sustainable development* in the country as discussed in chapter 2 (emphasis mine).

FEPA is accountable to the prime minister⁴⁹⁸ and is mandated with different powers and duties. Among these powers and duties are: to coordinate, monitor and enforce environmental measures; formulate environmental safety policies and laws on the production, importation, management and utilization of hazardous substances or wastes; establish environmental information system; prepare and avail periodic report on the state of the environment of the country to the government and the public; and prepare directives to implement environmental laws in the country.⁴⁹⁹ Thus, from the FEPA establishment objectives, powers and duties indicated above one could gather the FEPA is mandated with the rule making, adjudicating and investigating

⁴⁹⁵ Benjamin Van Rooij. 2008. *Pollution Regulation in Development-system Design, Compliance and Enforcement*, Amsterdam: Leiden University Press, p.19.

⁴⁹⁶ Art.7.

⁴⁹⁷ Art.6

⁴⁹⁸ Art.3(2)

⁴⁹⁹ Art.6

powers which are very important for the protection of the environment in general and industrial pollution from textile and leather industries in particular.

4.2.1.1 The Environmental Council

The Environmental Council (EC) is one organ of the FEPA. As per the Proclamation, it is composed of the Prime Minister or his designate (chair-man); members designated by the federal government; a representative designated by each National Regional State; a representative of Ethiopian Chamber of Commerce, a representative of local environmental non-governmental organizations; a representative of the Confederation of Ethiopian Trade Unions; and the Director General of the Authority.⁵⁰⁰ Currently the Council is composed of:

The Deputy Prime Minister, Chairman; the State Minister, Ministry of Agricultural and rural Development; the State Minister, Ministry of Mines and Energy; the State Minister, Ministry of Public Works and Urban Development; the State Minister, Ministry of Trade and Industries; the Mayor, Addis Ababa City Administration; the Mayor, Dire Dawa City Administration; the Head, National Regional States (all); the president, Ethiopian Chamber of Commerce; the President, Forum for Environment [NGO], the President, Confederation of Ethiopian Trade Unions; and the Director-General, EPA.⁵⁰¹

From the composition of the members of the Council one could easily see membership is dominated by senior politicians of high profile and ministries engaged in the development and management of the environment. The responsibilities of the Council include: review proposed environmental policies, strategies, laws; recommend and advise the government on the implementation of the Environmental Policy; and review and approve directives, guidelines and environmental standards prepared by the Authority.⁵⁰² From these responsibilities one could also observe the Council assumes very critical position in the protection of the environment in general and pollution control in particular. For instance, one of the crucial responsibilities mandated to the Council is to approve directives, guidelines and environmental standards prepared by the Authority. Thus, if the Council is not willing to approve the directives, guidelines and standards for different reasons, for instance, delaying the protection of the environment until a certain level

⁵⁰⁰ Art.8.

⁵⁰¹ Rose Mwebaza, Philip Njuguna Mwanka & Wondowessen Sintayehu Wonndamagegnehu, 2009. Situation Report-Environmental Crime in Ethiopia, p.30. Available at; (kms1.isn.ethz.ch/serviceengine/Files/ISN/.../en/July+2009.pdf) (Accessed on January, 11, 2013)

⁵⁰² EPOEP, 2002, supra, n.300, Art. 9.

of economic growth is achieved; the pollution control process in the country could be in limbo as shown in the *APAP v FEPA Case* in chapter 3 sub-section 3.3.1 (e).

With regard to the working procedure of the Council, it is expected to meet regularly every six months but when situations require it can call extraordinary meeting any time.⁵⁰³ The quorum shall be met when simple majority are present. Decisions are passed by a majority vote.⁵⁰⁴ However, the question is will the domination of the Council by senior politicians who have an interest in the development and management of the environment have an impact on the environment in general and industrial pollution control in particular?

In addressing this question, different responses are forwarded by different personalities. For instance, Dr. Teweldebrhan, Director General of the FEPA as cited in Merhatbeb argues that “the participation of the higher political officials in the current mandate of the Council is deliberate. It is done with the objective to give weight to the acts and outputs of the Council.”⁵⁰⁵ Desalegn, Deputy Director of FEPA, also emphasizes that;

The composition is deliberate and it enables to create conducive environment for the exchange of knowledge and skills between and among the different stakeholders; give a sense of ownership and develops commitment on sectoral institutions; and review and approval of directive, guidelines and environmental standards is quite detail and difficult than policy, proclamations and regulations to be exercised by the FEPA alone.⁵⁰⁶

However; Damete argues “even if the representation of high portfolio officials both from the federal and regional states may emanate from good faith, it is quite difficult to convene these officials and to engage them on detail matters which have to be addressed by technocrats.”⁵⁰⁷ In line with Damete, Merhatibeb also notes; “the EC is not in a position to convene regularly to review and approve directives, guidelines and environmental standards which are instrumental for the realization of its administrative powers.”⁵⁰⁸

⁵⁰³ Art.10.

⁵⁰⁴ *Ibid.*

⁵⁰⁵ Merhatbeb Teklemedhn, 2010, *supra*, n. 393, p.41.

⁵⁰⁶ *Ibid.*

⁵⁰⁷ *Ibid.*

⁵⁰⁸ *Ibid.*, p.3.

As far as this thesis is concerned, though the presence of “senior politicians” can have advantages like giving weight to the council’s decision, serving as a forum for education in environmental issue and creating sense of ownership by different stakeholders; the fact that the government can use the Council to promote its priority like poverty reduction and economic development by marginalizing environmental issues as discussed in the previous chapters could not be overruled. In this regard, it suffices to mention that *the APAP v FEPA case* where the Council has failed to come up with environmental standards. Convening these senior politicians who are already very busy with their own tight schedules is not that easy as well. The fact that they are not well versed with technical skills to regulate environmental pollution is also an issue of concern. (See chapter 5 and 6 for the details on the marginalization of the environment.)

Before we deal with sectoral environmental units, one might ask if there are any challenges for the effective implementation of FEPA’s statutory responsibilities as discussed above. Some of the challenges are lack of manpower for enforcement, expertise in the environmental sector to test and interpret pollution levels in the environment and facilities to test environmental quality levels.⁵⁰⁹ Another challenge is FEPA is not organized in a way that could help it to effectively perform its statutory duties. It is under the executive branch and doesn’t have its own ministerial portfolio which results in smaller budget allocation. This is a potential disadvantage in attracting foreign funding.⁵¹⁰ Most government offices are hierarchically at a higher level than FEPA and this makes things difficult for the FEPA to regulate their activities. Hence, regulatory organs like FEPA need to have sufficient powers or they will remain crippled.

Damete and Bayou also question the financial strength of FEPA. They argue that the budget allocated to it is not commensurate with its vast regulatory tasks. For instance, in 2007 the total money allocated to FEPA was Birr 3,907,642 (215,796.43 USD). From this amount, Birr 2,348,300 (129,683.01 USD) was allocated to cover the salaries of the employees, and the remaining Birr 1,559,342 (86,113.43 USD) was allocated to cover all of the FEPA's other

⁵⁰⁹Colby Environmental Policy Group. 2011. Environmental Policy Review 2011: Key Issues in Ethiopia 2011. Waterville, Maine: Colby College Environmental Studies Program, p.19. Available at; (accessed on September, 10, 2011) <http://web.colby.edu/eastafricaupdate/>

⁵¹⁰*Ibid.*

expenses.⁵¹¹ From this fact, one can observe that, with this amount of budget it is very difficult for the Authority to effectively run and discharge its statutory duties. Faced with limited resources, the FEPA “collaborates extensively with NGO partnership in project implementation and environmental education, especially when such activities are completed under the NGOs’ own budgets.”⁵¹²

The other challenge of the FEPA is the erosion of its power to review environmental impact assessment. Currently, the Authority’s power to review environmental impact assessment is delegated to setorial development agencies (ministries). These ministries are: the Ministry of Works and Urban Development, the Ministry of Health, the Ministry of Trade and Industry, and the Ministry of Transport and Communications, the Ministry of Agriculture and Rural Development and Ministry of Mines and Energy.⁵¹³ In line with the delegation, the Environmental Impact Assessment Department at the FEPA is closed.⁵¹⁴ However, the delegation raises a serious concern on the reliability of an assessment which is carried out by a development ministry whose mandate is the promotion of economic growth. This also raises the issue of conflict of interest. Since the same ministry which is empowered to promote economic growth is also empowered to review and approve or reject the EIA conducted under its ministry. What is most worrisome is there is no system in place to ensure the assessment will not be abused by each ministry.⁵¹⁵

Thus, from the above discussion, the challenges for the FEPA to perform its statutory obligations are: structural problem; lack of manpower and expertise; financial problem; and infrastructural problem.

⁵¹¹Mellese Damite and Mesfin Bayou, 2008. Environmental Impact Assessment in Ethiopia-Gaps and Challenges, MELCA Mahiber, Addis Ababa, Ethiopia, p. 41. Available at; <http://www.melca-ethiopia.org/images/stories/Publication/Overview%20of%20EIA-book.pdf> (accessed on September, 10, 2012)

⁵¹² Coby Environmental Policy Group, 2011, *supra*, n.509, p.21.

⁵¹³ The letter of delegation, written by the Ethiopian EPA, R/S no. 3/3.2/33, on the date 11/03/2001E.C (Ethiopian calendar)

⁵¹⁴ Addis Fortune News Paper , Published on March 21, 2010, *EPA loses Environmental impact assessment Authority to Ministries*, Vol.10 No.516 available at; <http://www.addisfortune.com/Vol%2010%20No%20516%20Archive/agenda.htm> (Accessed on June 13, 2012)

⁵¹⁵*Ibid*

4.2.1.2 Sectoral Environmental Units

Among the different environmental organs established by different countries in their line ministries and agencies are sectoral environmental units. However, the names given to these sectoral units could vary from country to country. For instance, these sectoral environmental units are known by different names like Environmental Cells, Environmental Liaison Units, Environmental Units, Environmental and Social Units, Environmental Desk, Environmental Focal Points, Sector Environmental Section and Environment and Monitoring Units.⁵¹⁶

The most common roles and responsibilities of these units include: "the integration of environmental considerations into sectoral ministries' or agencies' development and economic initiatives; environmental monitoring; cooperating and liaising with other environmental protection organs and stakeholders; and involvement in environmental education and awareness raising."⁵¹⁷ If these sectoral environmental units are established and equipped with all the required materials and are staffed with the necessary experts, they are very good instruments to mainstream environmental concerns in a country's development agenda and accordingly to achieve sustainable development as discussed in chapter 2.

The Environmental Protection Organs Establishment Proclamation mandates the establishment of sectoral environmental units. For instance, Art.14 of the Proclamation prescribes; "every competent agency shall establish or designate an environmental unit that shall be responsible for coordination and follow-up so that the activities of the competent agency are in harmony with this Proclamation and with other environmental protection requirements."⁵¹⁸

Questions that merit discussion in this sub-section are: do we have sectoral environmental units in Ethiopia as the Proclamation prescribes? What exactly is their mandate? And how effective are they?

⁵¹⁶ Tefera Eshetu, 2010. The Establishment and Operation of Environmental Units in the Ethiopian Ministry of Mines and Energy, the Ethiopian Road Authority, and the Ethiopian Electric Power Corporation: Law and Practice, LL.M Thesis submitted to Alabama University (USA), p.3.

⁵¹⁷ *Ibid.*, p.4.

⁵¹⁸ EPOEP, 2002, *supra*, n.300.

With regard to the establishment of sectoral environmental units in Ethiopia, it is important to assess different federal and regional government organs which are mandated by law to establish units based on previous researches and interviews. As to the establishment of sectoral units, Damete and Bayou note that;

Sectoral environmental units have not been established in most of the relevant federal institutions, except at the Ethiopian Roads Authority, Ethiopian Electric Power Corporation and the Ministry of Water Resources. At the regional level, not a single sectoral environmental unit has been established as yet.⁵¹⁹

According to Tefera who has undertaken research on three government institutions; the Ethiopian Ministry of Mining and Energy (EMME), the Ethiopian Road Authority (ERA), and the Ethiopian Electric Power Corporation (EPCO); he found out that EMME and ERA have established environmental units. In the EPCO, although a unit had been established, due to the recently introduced Business Process Re-engineering (BPR), it has been abolished.⁵²⁰ However, Hadush states that except in the Water and Mine Bureau there are no sectoral environmental units in Tigray.⁵²¹

As to the mandate of sectoral environmental units, as it is clearly indicated in Art.14, the Proclamation enjoins federal and regional government organs mandated by law to establish or designate an environmental unit without specifying what exactly their mandates would be? What is more, as far as I am concerned, there is no regulation or guideline to remedy this lacuna either. Thus, it is an open issue to be settled in the future. Solomon argues that “the mandates of sectoral environmental units in Ethiopia are not elaborated.”⁵²² A team of environmental experts who work in EPCO (Girma Demisse (sociologist), Alemayehu Desta (sociologist) and Yonness Yossef (environmentalist) also share Solomon's argument.⁵²³ These team of experts further commented that sectoral environmental units are either mandated by their respective offices or are engaged in activities which are beyond their legal mandates.⁵²⁴

⁵¹⁹Mellese Damite and Mesfin Bayou, 2008, *supra*, n.511, p.33.

⁵²⁰ Interview with Solomon Kebede Head of the EIA Department at FEPA on June 12, 2012.

⁵²¹Hadush Berhe, *supra*, n. 474.

⁵²² Tefera Eshetu, 2010, *supra*, n.516, pp.17-18.

⁵²³*Ibid.*

⁵²⁴*Ibid.*

With regard to the effectiveness of the sectoral environmental units, from the three sectoral environmental units discussed above, none of them have environmental lawyers or legal experts.⁵²⁵ Though this should not be interpreted as saying lawyers are the only experts needed. Thus, considering the unclear mandate and the non existence of experts, it is unlikely that the sectoral environmental units would be effective.

4.2.2 Regional Environmental Agencies

To protect the environment in general and industrial pollution in particular all regional states in Ethiopia are obliged to establish environment protecting, regulating and monitoring bodies. Accordingly, all the regions have established environmental organs though they have established them under different names and statuses. Some of them are established as an authority, some of them as a bureau and some of them as agency. For instance, in Diredawa Administration and Harari People National State they are established as authorities. In Amhara Regional State, Benshangul Gumuz Regional State, Gambella People's National State, and Oromiya Regional State they are established as bureaus. In Somalia National Regional State and Tigray Regional State (where the two exemplary case study industries are located) are established as agencies.

The responsibilities of the regional environmental bodies are to: coordinate the formulation, implementation, review and revision of regional conservation strategies; monitor, protect and regulate the environment; ensure the implementation of federal environmental standards or as may be appropriate, issue and implement their own no less stringent standards; prepare reports on their respective state of the environment and sustainable development to the FEPA.⁵²⁶

Questions that merit discussions are: does the fact that some regional environmental bodies are established as authority or bureau or agency have an impact on the protection of the environment in general and industrial pollution in particular? Is there any coordination between the FEPA and the regional environmental bodies in implementing their statutory obligations?

Before discussing about the effect of their establishment under different names, it would be good to see their line of accountability in their respective regional power structures. This will be done

⁵²⁵*Ibid.*

⁵²⁶EPOEP, 2002, *supra*, n.300, Art.15.

by taking one regional environmental organ as a model from the three categories (authority, bureau and agency). For instance, if we take Direedawa Administration, the environmental body is established as Land Administration and Use Authority. The Authority is accountable to the Executive Committee of the Region and to the Regional President.⁵²⁷ In Amhara Regional State, the environmental body is established as Land and Environment Protection Bureau.⁵²⁸ The head of the Bureau is a member of the Regional Cabinet and is accountable to the Regional President. In Tigray Regional State, it is established as Environment Protection and Land Use and Administration Agency (EPLAUA). It is established under the Natural Resources Department in the Bureau of Agriculture and Rural Development (BoARD). One of its main activities is land certification and for this purpose it has offices in all districts in Tigray.

From the above discussions one can observe that the organizational line of accountability and where the power of influence in the protection of the environment in general and industrial pollution in particular lies. In principle, the closer the environmental body to the ultimate decision maker the more influential it is. If it is very far away its influence is very minimal. For instance, EPLAUA is established under the Tigray Regional State BoARD. However, the irony is the Agency is supposed to control the BoARD which is practically very unrealistic institutional arrangement. This sort of institutional arrangement is against the accepted general principle of separation of power in general and against the spirit of the EPOEP which clearly stipulates in its preamble “environmental development and management activities and environmental protection, regulations and monitoring activities should be separate in order to avoid possible conflicts of interest and duplication of efforts.”⁵²⁹ At this point, it is important to stress that the Agency was first established as an Authority⁵³⁰ but later on it has lost this status and currently it is an Agency. When it was established as an Authority, it was accountable to the Region’s Chief Executive Head.⁵³¹ Thus, one can argue this shows the declining interest on environment protection in general and industrial pollution in particular in the region.

⁵²⁷Interview with Selam Kidane an expert at FEPA, on March 20, 2011.

⁵²⁸Sintayhu Tadesse, *supra*, n.395.

⁵²⁹FDRE, 2002, The EPOEP, 2002, *supra*, n.300.

⁵³⁰Tigray Regional State, Environment Protection and Land Administration and Use Authority Establishment Proclamation, 1996 E.C. Proclamation No. 77/1996 E.C, Tigray Negarit Gazeta, 12th year No. 8, Mekelle, p.929-936, Art. 3.

⁵³¹*Ibid.*

As to EPLAUA's difficulty to discharging its obligation, Yohannes & Waters-Bayer note that "EPLAUA is young, under-resourced and with little political influence to enforce environmental regulations. It is not in a position to oblige large scale enterprises [like the two case studies in this research] to comply with the law."⁵³² They also note that in Tigrai, even if EPLAUA is there, environmental issue is mostly associated with soil and water conservation and planting trees⁵³³ which is considered to be the mandate of BoARD.⁵³⁴ They further note that:

Environment is often regarded as something separate from and opposed to development rather than being an integral part of it. This mainstream approach to dealing with environmental issues does not encompass sustainable development through well-managed use of the environmental resources.⁵³⁵

As to the practical problem of being established as an Agency, Hadush and two other experts from the Agency stressed that the fact that it is currently established as an Agency has serious problems. For example, to implement its powers, it has to pass through different chains of commands. Since it is not a member of the Regional Cabinet its power is very much reduced and the allocated budget is not proportional to its activities. What is more, the fact that it is established as an agency also lowers its public perception.⁵³⁶ Furthermore, Hadush underlines that it is not only because it is an Agency that is a problematic, but the fact that it has merged with the Land Administration is also very problematic. He stresses that the Land administration should be part of the Regional Agricultural Bureau while the Environmental protection Department as separate independent entity.⁵³⁷

In order to examine the capacity, linkage and autonomy aspect of the regional agencies, let us take the Tigrai Regional Environmental Protection and Land Use & Administration Agency (EPLAUA) where the two case study industries are located as a model. If we start with the first, that is, capacity of the Agency (basic organizational, fiscal, and human capital) to control industrial pollution, Kibera notes that "as to capacity, our Agency does not have the required

⁵³²Yohannes GebreMichael & Ann Waters-Bayer, 2007. Trees are our backbone: Integrating environment and local development in Tigrai Region of Ethiopia, iied issues paper no 145, pp.8-9.

⁵³³ Here, one can easily see environmental issue in Tigrai is limited to soil and water conservation; and planting trees only. It completely ignores pollution control which constitutes the major part of environmental protection.

⁵³⁴Yohannes GebreMichael & Ann Waters-Bayer, 2007, *supra*, n.532.

⁵³⁵*Ibid.*

⁵³⁶Hadush Berhe, *supra*, n.474.

⁵³⁷*Ibid.*

trained experts. We also do not have our own laboratory where we can test an effluent sample for its chemical content.⁵³⁸ She also notes that;

The budget allocated to our Agency is less than one million Ethiopian Birr (less than 51,771.47USD). Even out of this amount, about 578,000 Birr [31,713.05 USD] is paid as salary to our eighteen staff members. With the remaining amount, it is difficult to perform proper regulatory activities. Accordingly, most of the activities of the Agency are limited to awareness creation. By the way, we have requested a budget to build a laboratory but our request was rejected.⁵³⁹

As to the second issue—linkage—the social and political connection among state agencies and between state officials and civil society actors that foster effective communication and feedback, Kibera states that;

We try to establish an interface with some relevant government organs. For instance, with regard to pollution control we try to work together with Bureau of Health, Bureau of Water, and Bureau of Urban Development. We also have good relation with Development Bank. The Bank always refers investors to us for EIA. With regard to other actors like the National or Regional Media, we do not have any relation. The regional media is not concerned about *pollution*. All its programs are concerned with *development agenda* only (emphasis mine).⁵⁴⁰

About the third issue—autonomy (protection from influence from other state organs and from the private sectors like industries and other elite groups)—Kibera states that;

We do not get any instruction from anybody on what to do and what not to do. But as I mentioned to you earlier we have capacity, budget and trained man power constraint. With all these constraints we find it difficult to perform our responsibility. Hence, even if not directly but indirectly we are constrained. What is more, *our report is not well addressed in the report of the Bureau*. It is only the development aspect of the Bureau which is widely covered rather than our department's regulatory report. So, our report is not given due attention when the Bureau reports to the Regional Council, it is rather taken as a side issue. Thus, I can say the Agency is not as autonomous as it is expected to perform its responsibility as it is given by law (emphasis mine).⁵⁴¹

From the above discussion on the role of the Regional Environmental Protection and Land Use and Administration Agency, one could observe the Agency does not have the required capacity, linkage and autonomy to prevent industrial pollution in the two industries which are subject of

⁵³⁸ Interview with Kibra Alemseged Head of Environment Protection within Tigray Regional State Environmental Protection and Land Administration & Use Agency (Feb.2012)

⁵³⁹ *Ibid.*

⁵⁴⁰ *Ibid.*

⁵⁴¹ *Ibid.*

this research. What is more, in Tigray Regional State, as the above interview reveals, the Environmental Agency has lower political status due to the fear that if it has a higher status it could veto the economic agenda in the Region. Hence, if the Agency is required to play a meaningful role in the prevention of industrial pollution, its capacity, linkage and autonomy need to be enhanced.

As to the coordination of the regional environmental bodies with the FEPA, Hadush commented that their Agency works together with FEPA and it supports them in: industrial effluent testing when and if they request, in capacity building and they also work together in project implementation. However, with regard to their relation with the FEPA there is a problem of integration and continuity of collaboration.⁵⁴² Hadush further commented there is no common goal and strategy regarding the federal and regional environmental organizations. Particularly there is no integrated pollution control strategy/goal/ other than the Environmental Policy at a national level. Each region/city/ administration prepares its own plan and strategy without a national benchmark. There is no national common forum/panel/ to discuss or evaluate the performance of national or regional strategies. There is no information exchange among regions and the federal EPA like what is being done in other non-environment sectors.⁵⁴³ Thus, one could argue this is a clear indication of the lower attention given to environmental protection (including industrial pollution control) in the country's environmental federal system.

Sintayhu the ex-head of the Environmental Protection in the Environmental Protection, Land Administration and Use Authority in Amhara Regional State also observed that;

The FEPA does not provide us with sufficient help. Of course, when they organize different conferences like on climate change and others they invite us and we participate, otherwise the help we get from them is not like what we expect. We expect them to do a lot.⁵⁴⁴

From the above discussion, one could observe that even if it appears some sort of coordination to exist between the federal and regional environmental protection, regulation and monitoring organs; it is not up to the satisfaction of the regional environmental organs. This indicates that

⁵⁴²*Ibid.*

⁵⁴³*Ibid.*

⁵⁴⁴Sintayhu Tadesse, *supra*, n.395.

low priority is given to the protection of the environment in general and industrial pollution in particular in Ethiopia.

4.3 Administrative and Court Remedies for Industrial Pollution

The issue that merits discussion under this section is whether there is an effective administrative or court remedy for the victims of environmental pollution including industrial pollution in Ethiopia? However, before addressing the question let us first see what these administrative or court remedies are?

With regard to both administrative and court remedies in general, Art.37 of the FDRE Constitution clearly state that:

1. Everyone has the right to bring a justiciable matter to, and to obtain a decision or judgment by, a court of law or any other competent body with judicial power;
2. The decision or judgment referred to may also be sought by:
 - a) Any association representing the collective or individual interest of its members; or
 - b) Any group or person who is a member of, or represents a group with similar interests.⁵⁴⁵

From the reading of the above constitutional provision one can see the right to justice either to courts or other competent bodies (administrative bodies) is one of the fundamental rights enshrined in chapter 3 of the Constitution along with other fundamental rights.⁵⁴⁶ The fact that a high place is given to this right may also exhibit the country's deep concern for justice at least at constitutional level. From the reading of the Constitution one can also gather this constitutional provision is meant to introduce at least in principle public interest litigation in the Ethiopian context which is very crucial for the protection of the environment as discussed in chapter 3 section 3.3.1 (e).

Public interest litigation can be used as an important tool to regulate environmental pollution in general and industrial pollution in particular, and to bring about a better enforcement of the right to clean and healthy environment as stipulated in Art.44 of the FDRE Constitution. When the

⁵⁴⁵The FDRE Constitution, *supra*, n.6.

⁵⁴⁶Some of the fundamental rights are: the right to live in clean and healthy environment; the right to livelihood and the right to sustainable development.

right to clean and healthy environment is protected through the application of public interest litigation with the purpose to keep polluters accountable and to render environmental justice; the public develops confidence on the application of different environmental laws. Accordingly, one can argue that the concept of public interest litigation is incorporated in the subsidiary environmental legislation in line with the Constitution.

Art.37 (1) of the Constitution particularly entitles ‘every one’ with a justiciable claim to seek remedy from court or administrative bodies with judicial power. It is also important to note that Art. 37 also appears to deal with issue of *locus standi*. However, from the reading of Art. 37(1) one could argue that because of the phrase “everyone” the *locus standi* refers to individual interest only. But, since the phrase “everyone” could be interpreted to include both natural and juridical person who seeks to initiate a case in the interest of the public in general as in the case of environmental pollution, it would not be a requirement to show a specific interest if NGOs and private persons want to initiate a case in courts of law or administrative tribunals. What is more, Art. 37 is not also framed in a way that shows a specific interest. In other words, it does not put specific interest as a precondition.

This liberal understanding of *locus standi* is also substantiated by Art. 84 (2) of the Constitution which deals with the powers and functions of the Council of Constitutional Inquiry. Art. 84 (2) of the Constitution reads “where any federal or state law is contested as being unconstitutional and such a dispute is submitted to it by any court or interested party, the Council shall consider and submit it to the House of Federation for a final decision.”⁵⁴⁷ In this provision the term ‘interested party’ could be interpreted in both narrower and broader sense. In the narrower sense, it could mean a person who is a party to litigation. In the broader sense, any person who wants to challenge the constitutionality of law irrespective of having personal interest affected by the contested legislation. In practice this broader understanding is adopted by the Council.⁵⁴⁸

The liberal approach for *locus standi* in the Constitution could also be inferred from Art.37 (2) of the Constitution when compared with that of the Civil Procedure Code. Art.37 (2) (b) of the

⁵⁴⁷ The FDRE Constitution, *supra*, n.6.

⁵⁴⁸ I. Idris, 2002. Constitutional Adjudication under the 1994 FDRE Constitution, 2002 (1) Ethiopian Law Review, 82.

Constitution deals with ‘class action’. However, unlike the Civil Procedure Code the Constitution does not require the consent of all interested persons for a representative to initiate a class action. Art.38 (1) of the Civil Procedure Code reads: “where several persons have the same interest in suit, one or more of such persons may sue or be sued or may be authorized by the court to defend on behalf or for the benefit of *all the persons so interested on satisfying the court that all persons so interested agree to be so represented* (emphasis mine).”⁵⁴⁹ Thus, one could argue the Constitution allows broader right than the Civil Procedure Code. It could also be argued that compared to the Constitution the strict requirement of consent by all interested parties in the Civil Code had rendered the notion of class actions in Ethiopia very difficult.

Now let us examine the administrative and court remedies one by one. If we start by looking at the administrative remedy, the remedy put in place for the victims of environmental pollution (including industrial pollution) is to apply to the FEPA or regional environmental agency. Art. 11(1) of the Environmental Pollution Control Proclamation clearly states: “any person shall have, without the need to show any vested interest, the right to lodge a complaint at the Authority or the relevant regional environmental agency against any person allegedly causing actual or potential damage to the environment.”⁵⁵⁰ With regard to the remedy from the court of law, Art.11 (2) of the same Proclamation states that;

When the Authority or regional environmental agency fails to give a decision within thirty days or when the person who has lodged the complaint is dissatisfied with the decision, he may institute a court case within sixty days from the date the decision was given or the deadline for the decision has elapsed.⁵⁵¹

Thus, in principle, in the Ethiopian legal system, there are both administrative and court remedies for environmental pollution—including for industrial pollution. Even from the reading of the Environmental Pollution Control Proclamation, unlike our Civil Procedure Code,⁵⁵² one can easily see that the rule on standing is liberal. Any person without the need to show any

⁵⁴⁹Civil Procedure code of the Empire of Ethiopia, 1965.Decree No. 52, Negarit Gazeta-Extraordinary issue No.3, Addis Ababa, 8th October 1965.

⁵⁵⁰EPCP, 2002, supra, n.300, Art.11 (1).

⁵⁵¹*Ibid.*, Art.11 (2).

⁵⁵²Civil Procedure code of the Empire of Ethiopia, supra, n.548. According to the Civil Procedure Code Art 33(2), no person may be a plaintiff unless he has a vested interest in the subject-matter of the suit.

vested interest can initiate a complaint or initiate a case at the concerned administrative organ or court.

However, the crucial precondition for the effectiveness of the administrative and court remedies as stipulated in the FDRE Constitution is the existence and proper implementation of environmental standards as discussed in chapter 3. By employing standards it would be possible to measure and decide the existence of pollution and keep the polluter accountable. But, as it is clearly indicated in the APAP case, when the case was initiated there were no binding environmental standards to be applied by both administrative organs and courts. As the FEPA put it in its response, the standards were still in draft form and were awaiting the approval of the Environmental Council. The reason for this delay was the Council did not meet regularly to review and approve the draft standards prepared by the FEPA.⁵⁵³ Since its establishment the Council has convened only twice and it has never called extraordinary meeting.⁵⁵⁴ As a result the draft standards were not applied in deciding whether the rivers were polluted or not. Thus, even if the FEPA in its response in the APAP case claims to have taken all the necessary measures to combat pollution (including industrial pollution) it is difficult to say there was effective administrative and court remedies for the victims. This is what the APAP case testifies.

As to the question whether there is a mechanism through which the victims of industrial pollution could protect their rights if FEPA including the Council fails to perform its statutory responsibilities. That is, if FEPA fails to set environmental standards or ensure compliance with those standards; or the Council fails to review and approve directives, guidelines and environmental standards prepared by the Authority. In the case at hand, APAP requested the court to: order the FEPA to take administrative and legal measures to stop the alleged pollution, direct the FEPA to clean the alleged rivers and to institute environmental inspectors in order to take necessary measures. Nonetheless, the Federal First Instance Court preferred to rule the case by stating that, Art.11 of the Environmental Pollution Control Proclamation does not permit APAP to sue the FEPA which is an administrative body. The justification given by the court was that Art.11 allows a case to be initiated only against a polluter and in the case at hand FEPA is

⁵⁵³ Merhatbeb Teklemedhn, 2010, *supra*, n.393, p.33.

⁵⁵⁴ *Ibid.*

not a polluter within the spirit of the article. As clearly indicated in the case, this reasoning of the Federal First Instance Court was endorsed by the Federal High Court and the Cassation bench of the Federal Supreme Court which is the highest court in the country. The implication of the case is that, if the FEPA (including the EC) and the REAs fail to perform their statutory obligations, their action or inaction will not be reviewed by courts unless the law mandates them in explicit way.

In this regard it will be helpful to consult relevant decisions of the Federal Supreme Court's Cassation Bench since its decision is binding on all courts in the country.⁵⁵⁵ For instance, the Cassation Bench in its File No.37964 between *heirs of Mohammed Hussien Vs Federal Government housing Agency and Hailesslassie Ghebremedhin* decided on 04/02/2011 that Art. 37 of the Constitution clearly prescribes that courts could only decide on any justiciable matter provided that justiciable matter is not the jurisdiction of any other competent body with judicial power.⁵⁵⁶ The Cassation Bench also underlined that courts which receive cases which are the jurisdiction of other competent bodies as envisaged in the Constitution shall reject them in line with Arts.231(1) (b), 9(2), 244(3) and 328 (3) of the Civil Procedure Code of the country.⁵⁵⁷

The Cassation Bench in its File No. 51790 between *Welday Zeru and other 61 people Vs Ethiopian Revenue and Custom Authority (ERCA)* in its decision of 25/5/2011 similarly stated that, courts can only entertain justiciable matter which is not clearly given to other competent bodies with judicial power.⁵⁵⁸ The cassation Bench also reasoned out that this is what Art.4 of the Civil Procedure Code Clearly shows.⁵⁵⁹ The cassation court further defined justiciable matter

⁵⁵⁵ Art.2(4) of the Federal Courts Reamendment Proclamation states; "Interpretation of a law by the Federal Supreme Court rendered by the cassation division with not less than five judges shall be binding on federal as well as regional courts at all levels. The cassation division may however render a different legal interpretation some other time." See; FDRE, 2005.Federal Courts Proclamation Reamendment Proclamation No. 454/2005, Federal Negarit Gazeta, 11th Year, No. 42. Addis Ababa.

⁵⁵⁶FDRE Supreme Court, 2011. Federal Supreme Court Cassation Bench decisions, No. 12, Addis Ababa, Ethiopia.

⁵⁵⁷*Ibid.*

⁵⁵⁸*Ibid.*

⁵⁵⁹ Art.4 states, "Without prejudice to the provisions of the following articles, the courts shall have jurisdiction to try all civil suits other than those of which their cognizance is expressly or impliedly barred." See, Civil Procedure Code, supra, n. 549.

as any matter that could be entertained by courts not by other competent bodies (administrative bodies) as envisaged by Art.37 of the Constitution.⁵⁶⁰

From the APAP case and the above two briefly discussed decisions of the Federal Cassation Bench, it appears that, the victims of environmental pollution would find it difficult to compel FEPA and the Council to perform their statutory obligations by applying to courts. Since the above decision of the federal cassation court is binding on all lower courts in the country the same would apply if a case is initiated on any of the REAs.

In situations like this, one might ask what option is there for the victims? One possible option left for the victims is political solution, that is, through the intervention of the Parliament (HPR at federal level and the Council at regional level) to force the FEPA or REAs to properly perform their statutory obligations. However, one could argue that political solutions are in large part not available. Political remedies are more readily used by well-organized members of regulated classes than by regulatory beneficiaries, who must overcome substantial barriers to the exercise of political power (see chapter 7).⁵⁶¹ What is more, Parliament is too distant from administrative decision making and too unmanageable an institution to respond effectively.⁵⁶² The Parliament also suffers from severe time constraints which make it impractical to review numerous individual cases of environmental agency decision making.⁵⁶³ Only in a few cases of overriding national importance could the parliament act as a final arbiter.⁵⁶⁴ Though, at this point, one may argue the parliamentary oversight committees can provide a detailed level of control over agencies that the parliament as a whole cannot provide. The problem with this argument is that it fails to note the function of these committees to be political rather than legal in its nature. Accordingly, they cannot solve the legislative inability to review agencies action or inaction. Equally true is, since the activities of these committees are usually initiated not by the regulatory

⁵⁶⁰ FDRE Supreme Court, 2011, supra. n.556.

⁵⁶¹ Cass R. Sunstein. 1985. Reviewing Agency Inaction after Heckler v. Chaney, U. Chi. L. Rev., Vol. 52, [accessed on Oct., 13, 2010], p.669.

⁵⁶² Peter H.A. Lehner. (1983). Judicial Review of Administrative Inaction, Colum. L.Rev. Vol. 83, p.639.

⁵⁶³ Harold Leventhal. January 1974. Environmental Decision Making and the role of Courts, U. Pa. L. Rev., Vol.122, p.515.

⁵⁶⁴ Peter H.A. Lehner. (1983). Judicial Review of Administrative Inaction, supra, n.562, p. 639.

beneficiaries but by members of the parliament, the committees cannot ensure that the most serious claims are brought for review.⁵⁶⁵

Conclusion

The federal, sectoral and regional Ethiopian organizations involved in industrial pollution control including environmental organizations are established with different mandates. The Federal Environmental Protection Authority (FEPA) is accountable to the Prime Minister and the sectoral and regional environmental organs are accountable to the relevant competent executive organs. Over all, they are accountable to the Executive organs of government and not to the legislative bodies both at the federal and regional levels.

The administrative and regulatory organizations are FEPA (the Authority) including the Council, Sectoral Environmental Units (SEUs) and Regional Environmental Agencies (REAs). The main objective of the FEPA is to implement the concept of sustainable development as enshrined in the FDRE Constitution. FEPA is also mandated with the rule making, adjudicating and investigating powers. The governing organ of FEPA is dominated by senior politicians of high profile and ministries engaged in the development and management of the environment. The problem with this is that, many of these political leaders are too busy with their own primary responsibilities which make it difficult for them to attend the FEPA meetings. Those who represent them are also not versed with the technical knowledge related thereto.

The other challenge of the FEPA is the erosion of its power to review environmental impact assessment (EIA). Moreover, FEPA does not get the necessary budget to undertake its activities effectively and efficiently. However, the criteria of successful environmental agency include the existence of a committed political leadership, capacity, linkage and autonomy.

Different countries have established different environmental organs aligned with different sectoral units whose names also differ. Although the Environmental Protection Organs Establishment Proclamation (EPOEP) requires the establishment of sectoral environmental units within each relevant ministry or regional bureaus, they have not been established except in few

⁵⁶⁵*Ibid.*

Ministries and organizations. However, the various regional states have established environment protecting, regulating and monitoring bodies. But they have been established under authority or bureau or agency and under different organizational line of administrative accountability depending on the power and influence in the hierarchy within the political structure of each regional state.

The capacity, linkage and autonomy aspect of the regional agencies to prevent industrial pollution is also very weak. What is more serious is, save some exceptions, the type of coordination between the FEPA and the regional environmental bodies in implementing their statutory obligations and environmental standards is not satisfactory. Moreover, the institutional arrangements are also against the accepted general principle of separation of powers in general and against the spirit of the Environment Protection Organs Establishment Proclamation (EPOEP) in particular. The problem is that the victims of environmental pollution would find it difficult to force FEPA and the Council to perform their statutory obligations by applying to courts. In short, there are no effective, coherent and integrated administrative or court remedies for the victims of environmental pollution including industrial pollution in Ethiopia at Federal or regional levels.

CHAPTER 5

THE MAGNITUDE OF INDUSTRIAL POLLUTION

5.1 Introduction

As shown in Chapter 1 & 2, the government's main development objective is poverty eradication (equitable economic growth) through the application of agricultural development led industrialization. Although the industrialization might have helped to reduce poverty and might have to some extent generated employment opportunity and earned hard currency; it has also resulted in environmental damage through industrial pollution. For instance, the National Report of Ethiopia for Rio+20 Conference mentioned pollution as a major problem. The Report attributes this problem to the current growth of industrialization and urbanization process in the country. The report further underlines that;

Many rivers around Addis Ababa are polluted with urban and industrial waste. There is also high level of air pollution in urban areas. The landfills are not well developed and properly managed. Pollution has become health threat, for people and livestock.⁵⁶⁶

Appendices in this thesis also clearly indicate that in Ethiopia inland water pollution is the most serious problem. For instance, appendix 3.2 clearly shows that pollution of inland waterways due to uncontrolled dumping of untreated industrial effluent and domestic waste from urban centers to be a serious national problem. Appendix 3.1 also clearly indicates that Pollution of inland waters to be the highest pollution control priority in the country. Chapter 6 deals with the specific problems and in particular involves two case studies.

This chapter deals with industrial pollution and its magnitude from the national perspective.

The main argument in this chapter is that, with the accelerated industrialization process in the country, the magnitude and volume of industrial waste problem from all types of industries in general and from textile and leather industries in particular is on the rise. Specifically, the industrial waste (hazardous waste) from textile and leather industries is alarmingly increasing.

⁵⁶⁶FEPA, 2012. Rio+20, National Assessment Report, Addis Ababa, Ethiopia, p.64. Available at; (<http://www.uncsd2012.org/content/documents/635National%20Report%20of%20EthiopiaRio20%20.pdf>) (Accessed on January 07, 2012)

To illustrate the argument, section 5.2 begins by defining waste in general and proceeds to discuss waste classification approaches in light of the Ethiopian context. Section 5.3 deals with industrial waste, industrial hazardous waste and hazardous waste from textile and leather industries. Section 5.3 also provides tables to illustrate the state of the industrial waste management in Ethiopia. The tables specifically demonstrate industries with treatment plant, major pollutants generated from industries, volume of waste water and summary of hazardous waste generated from some surveyed industries. Section 5.4 deals with industrial waste problem in Ethiopia, major industrial pollutants and volume of industrial wastes. The analysis includes some conclusions.

5.2 Defining Waste

Before defining industrial waste, it would be proper and logical to define what waste means in general. Defining waste is very helpful for different reasons, for instance, it establishes clarity and facilitates smooth implementation of waste laws in any legal system. Equally, defining waste has large economic and environmental implications as it will determine the mode of treatment like recycling, incineration etc.⁵⁶⁷

The relevance of defining waste in general is that, it serves as the first step to define industrial waste. Thus, in order to define certain material or substance as industrial waste it has to be first defined as waste. When dealing with its character or composition it could be categorized as industrial. Thus, before one legal system proceeds to define and classify waste, it has to put in place waste defining guideline, classification criteria and also it should set up or designate an existing organ⁵⁶⁸ empowered for this purpose. However, even in such situation defining waste is not easy as such. Stuart Bell and Donald McGillivray argue that it is difficult to define certain material as waste for lack of *inherent physical characteristic, subjectivity in identifying certain material as waste and due to the implicit connection between waste and lack of value* (emphasis mine).⁵⁶⁹

⁵⁶⁷John and Sharron McEldowney, 2010, *supra*, n.377, p.218.

⁵⁶⁸ Depending on the case the organ could be Federal Environment Protection Authority (like in the case of Ethiopia and USA), or the commission like in the case of the European Union (EU).

⁵⁶⁹Stuart B. &Donald McGillivray, *supra*, n.369.

5.2.1 Waste Definition in Ethiopia

In the Ethiopian context, there is no comprehensive definition of waste. Rather we have different types of wastes defined in different legislation. For instance, the Solid Waste Management Proclamation (SWMP) defines solid waste as: “anything that is neither liquid no[t] gas and is discarded as unwanted.”⁵⁷⁰ The same Proclamation defines litter as: “anything that may or may not have any value, including glass, metal, cigarette butts, paper fabric, food, garden remains or other materials that in any way spoil the aesthetic value of the [environment] or make it unhygienic.”⁵⁷¹ The Environmental Pollution Control Proclamation (EPCP) defines effluent as: “Wastewater, gas or other fluid, treated or untreated, discharged directly or indirectly into the environment.”⁵⁷² By combining the above definitions, one could infer waste to be any unwanted material (solid, liquid and gas) discarded with the intention that it has no, or limited value. In Ethiopia, a material is waste provided it is discarded as unwanted regardless of its commercial value.

However, from the definition of waste discussed above, issues that merit discussion are: what is the link between waste and pollution? When or in whose opinion is the classification of waste to be applied to a given material?

In order to address the first issue, it is necessary to define the concept of pollution first. In the Ethiopian context pollution is defined as:

Any condition which is hazardous or potentially hazardous to human health, safety, or welfare or to living things created by altering any physical, radioactive, thermal, chemical, biological or other property of any part of the environment in contravention of any condition, limitation or restriction made under this proclamation or under any other relevant law.⁵⁷³

From the above definition one could gather pollution to be an altered environmental situation which is hazardous or potentially hazardous to human beings, flora and fauna due to the introduction of waste. The implication from this definition is that, after a certain level of

⁵⁷⁰FDRE, 2007.Solid Waste Management Proclamation No. 513/2007, Federal Negarit Gazeta, 13th Year No.13, Addis Ababa, art.2 (6).

⁵⁷¹ Art. 2(3).

⁵⁷²EPCP, 2002, supra, n.300, Art.2(5).

⁵⁷³Art.2 (12).

threshold waste disposal is more likely to be hazardous or potentially hazardous or change into a state of pollution; though the level of threshold is not clearly indicated. Obviously, the threshold will be environmental standards as discussed in chapter 3.

As to the link between waste and pollution, although waste is not necessarily associated with pollution all the time, if it is not properly managed and regulated there is a potential for waste to change into pollution. Waste is not also necessarily synonymous with pollution or environmental harm. It is only when the quality or quantity of a waste is high enough and has the effect of bringing about harm to human beings and the environment that it can be treated as pollution. The lesson to be learnt from this distinction is the need to regulate the whole waste cycle from the production of the waste through handling, storing, transportation, and treatment of waste up to and including the final disposal independently of whether there is any actual pollution or harm caused.⁵⁷⁴ The discussion on pollution and waste also provides an understanding of the nature, types, sources, and amounts of wastes.

The second issue is the definition of waste discussed above does not give any clue as to when or in whose opinion the definition is to be applied to a given material? So, the issue is supposed to be resolved either by administrative tribunal or a court of law when litigation is initiated. Currently, as far as the researcher's knowledge is concerned there is no court case in Ethiopia that provides an answer to the issue at hand. It remains to be seen how Ethiopian courts would decide such issues in the future. Obviously, with the current trend of accelerated rate of industrialization and urbanization process in the country, such issue would inevitably land in courts in the near future. If we try to see other countries experience with regard to the issue, courts in UK consistently held that "the view of the person discarding the material and the time at which it is discarded are the material considerations."⁵⁷⁵ For instance, Deputy Judge P.J.Crawford QC, in *Berridge Incinerators v Nottinghamshire CC* [1987] case notes that;

It is of course a truism that one man's waste is another man's raw material. The fact that a price is paid by the collector of the material to its originator is, no doubt, relevant, but I do not regard it as crucial. ...In my judgment, the correct approach is to regard the material from the point of view of the person who produces it. Is it something which is

⁵⁷⁴Stuart B. & Donald McGillivray, 2009, *supra*, n.369, p. 632.

⁵⁷⁵*Ibid.*, p. 350.

produced as a product, or even as a by-product of his business, or is it something to be disposed of as useless?⁵⁷⁶

Thus, if Ethiopian courts happen to entertain such issue in the future, the crucial issue they have to consider is from whose view and at what time they have to consider the material in dispute as waste. However, it is not only whose view they have to take into consideration, they have also to prove the intention of that person was to discard the material as waste. The other lesson to environmental agencies in Ethiopia like the FEPA and REAs is that, in defining waste they have to come up with directives or guidelines to qualify words such as discard and unwanted.

5.2.2 Waste Classification

Classifying waste plays an important role in the waste management system. It determines the regulatory authority responsible for overseeing the waste management process.⁵⁷⁷ In the Ethiopian context classifying waste determines whether it is federal or regional states power to manage it. For instance, the EPOEP clearly states the FEPA “in consultation with competent agencies, formulate environmental safety policies and laws on the utilization of hazardous substances or wastes.”⁵⁷⁸ In the Ethiopian case, the management of hazardous waste including industrial waste from textile and leather industries is the mandate of the federal jurisdiction—the mandate of the FEPA. However, the Proclamation notes FEPA could delegate its power (including the power to formulate environmental safety policies and laws on the utilization of hazardous substances or wastes), as it may be deemed appropriate to other agencies.⁵⁷⁹ This is informed by the philosophy that the environmental organ more nearer to the site is in a much better position to supervise, monitor, as well as manage industrial pollution than a far distant Authority in Addis Ababa. However, though the philosophy of delegation is sound the practice is very problematic as we have seen it in chapter 4.

The classification of waste also indicates its likely composition, toxicity, possibly its volume and factors of significance in its subsequent treatment.⁵⁸⁰ For instance, if waste is classified as

⁵⁷⁶ *Ibid.*

⁵⁷⁷ John and Sharron McEldowney, 2010, *supra*, n.377, p. 218.

⁵⁷⁸ EPOEP, 2002, *supra*, n.300, Art.6 (10).

⁵⁷⁹ Art.6 (24).

⁵⁸⁰ John D. Leeson. 1995. *Environmental Law*, UK: London, Pearson Professionals Limited, p. 349.

hazardous the level of care (standard of conduct)⁵⁸¹ and the type of management expected from the person who produce or transport the waste is very high unlike the other non-hazardous wastes. If we try to exemplify this fact in the Ethiopian context, the Environmental Pollution Control Proclamation prescribes that “the generation, keeping, storage, transportation, treatment or disposal of any hazardous waste without a permit from the [FEPA] or the REAs is prohibited.”⁵⁸² The Proclamation also prescribes; “any person engaged in the preparation, production, manufacturing or transportation or in trading in any hazardous or restricted chemical [to] ensure that the chemical is registered, packed and labeled as per the applicable standards.”⁵⁸³

Currently, there are different approaches to classify different types of waste. For instance, waste can be classified either: by its origin (what activity created it?); composition (what it is made of?); the degree of danger it poses to humans and the Environment; or the modality it is managed and treated.⁵⁸⁴ But, it is important to note that these types of classification approaches lead to a list of wastes and often these definitions are overlapping and complicate the collection and interpretation of data about waste.⁵⁸⁵ (See Appendix 5.1)

In relation to classification of waste one might ask which classification approach Ethiopia follows. In order to answer this query one has to investigate the relevant laws of the country. If we try to see the two relevant laws of the country—the Environmental Pollution Control and the Solid Waste Management Proclamations; neither of them have a provision on waste classification or waste catalogue appendix. However, from reading the two Proclamations one could infer Ethiopia appears to endorse all approaches of waste classification. For instance, when the Solid Waste Management Proclamation prescribes conditions on household wastes,⁵⁸⁶ construction debris and demolition wastes;⁵⁸⁷ it could be argued that the Proclamation is

⁵⁸¹For instance, according to the Ethiopia Civil Code Art. 2069 (1), the level of care expected from a person engaged in activities like: storing explosives; or poisonous substances, or engaged in an exceptionally dangerous industrial activity is very high. The liability is also strict where the danger materializes, thereby causing damage to another. See, Civil Code of the Empire of Ethiopia, 1960.

⁵⁸²EPCP, 2002, *supra*, n.300, Art.4 (1).

⁵⁸³ Art. 4 (5).

⁵⁸⁴ Defining and quantifying waste: a tricky undertaking, www.grida.no/res/site/File/.../vital-waste2/VWG2_p40and41.pdf(Accessed on 13 January 2009)

⁵⁸⁵*Ibid.*

⁵⁸⁶FDRE, 2007, Solid Waste Management Proclamation, *supra*, n.570, Art.11.

⁵⁸⁷ Art.12.

following the origin approach. Equally, it could be argued that when the Proclamation prescribes certain requirements on plastic bags;⁵⁸⁸ glass containers and tin cans;⁵⁸⁹ used tires;⁵⁹⁰ food related solid wastes;⁵⁹¹ it is following the composition approach. When the Environmental Pollution Control Proclamation defines hazardous waste,⁵⁹² it could be argued that the Proclamation is classifying waste based on the degree of danger it poses to humans and the environment. When the Proclamation prescribes the way hazardous wastes, chemical and radioactive substances⁵⁹³ and municipal wastes⁵⁹⁴ are to be managed; it could be argued that it is following the management approach of classification.

Nonetheless, the purpose of waste classification as it is used in this sub-section is to highlight what activities generate waste, to identify the composition of waste, to investigate how waste is handled and who is in charge, and to show how dangerous waste is for human health and the biosphere. Above all, the purpose of the classification as employed in this sub-section is to gear the direction of this thesis towards industrial pollution which is its main thrust.

5.3. Industrial Waste

Before trying to address how industrial waste is defined in Ethiopia, let us first try to see some experiences from East African countries. For instance, in Tanzania, industrial waste is defined as; “waste emanating from processing industries or non-processing industries that is the source of energy, water, treatment plants or communication and includes any other solid wastes referred to under part IX of the Environmental Management Act.”⁵⁹⁵ In the case of Kenya and Uganda industrial waste is not specifically defined in their Environmental Management and Co-ordination Act and National Environmental Act respectively.

Industrial waste is not also defined in any of the Ethiopian environmental laws as discussed in chapter 3. Thus, taking the Tanzanian experience, industrial waste could be defined as waste

⁵⁸⁸ Art. 8.

⁵⁸⁹ Art. 7.

⁵⁹⁰ Art. 9.

⁵⁹¹ Art. 10.

⁵⁹² FDRE, 2002, EPCP, *supra*, n.300, Art.2 (9).

⁵⁹³ Art. 4.

⁵⁹⁴ Art. 5.

⁵⁹⁵ Tanzanian Environmental Management Act, 2004, No. 20, section 3.

emanating from both processing and non-processing industries. Industrial waste, as per the discussion on waste in general in the previous sections, it could be classified as solid, liquid and gas. It could also be classified as hazardous or non-hazardous waste depending on the type of hazard or harm it causes.

5.3.1 Industrial Hazardous Waste

In the Ethiopian context, the Environmental Pollution Control Proclamation defines hazardous waste for the first time as: “any unwanted material that is believed to be deleterious to human safety or health or the environment.”⁵⁹⁶ Other than this proclamation there is no legislation which is directly and wholly devoted to define and manage hazardous waste. Accordingly, one can argue that the proclamation serves as a framework or general rule to control environmental pollution from any source including waste from industries.

From the definition of hazardous waste above, one might ask what could be the basis for classifying hazardous waste. As basis of classification, the Proclamation has taken *the effect of the waste on humans and the environment* (emphasis mine). It says nothing about the waste stream, cause of generation, the constituent element of the waste and the characteristic of the waste. What is more, from the definition it is very difficult to answer with certainty who should believe the unwanted material is deleterious to human safety or health or the environment. Should it be the generator of hazardous waste, the regulator, the victim or the public at large? Equally difficult is the definition does not specify the level of risk that causes the unwanted outcome. Thus, the definition employed in the Ethiopian context sounds subjective and difficult to classify hazardous wastes further. Yet, one could argue since Ethiopia has ratified both the Basel and the Bamako conventions and these two conventions are part and parcel of the Ethiopian law according to the FDRE constitution⁵⁹⁷ it can be argued that Ethiopia has endorsed the basis for classification as adopted in the Basel and Bamako Conventions⁵⁹⁸ even if they are not expressly stated in the Ethiopian context.

⁵⁹⁶EPCP, 2002, *supra*, n.300, Art.2 (9).

⁵⁹⁷Art.9 (4).

⁵⁹⁸ In Basel and Bamako Conventions the basis for classification was *waste stream* (like wastes from medical care, industrial waste and other streams), the *constituent element* of the waste (like metal compounds and others constituents) and the *characteristic* of the waste (like explosive, flammable, poisonous, corrosive, infectious and others).

However, with regard to certain waste stream inclusion such as household wastes, sewage and sewage sludge, residues arising from the incineration of household wastes and radioactive wastes; the two conventions are not in agreement. For example, the Basel Convention⁵⁹⁹ excludes those waste streams from its scope while the Bamako Convention⁶⁰⁰ includes them. So, the issue is since Ethiopia ratified both Conventions which definition of hazardous waste is to be binding?

In response to this issue one could argue that the national definition of hazardous waste in Ethiopia is very broad and includes any unwanted material that is believed to be harmful to human safety or health or the environment. Hence, the national definition looks to be in line with the Bamako definition. This is due to the fact that the Bamako Convention conclusively takes household waste including sewage and sewage sludge and residues arising from the incineration of household wastes as hazardous wastes. But, it should be stressed that in Ethiopia in order to define waste as hazardous we should consider its effect on the human safety or on health or on the environment. Thus, these waste streams if they are not deleterious to human safety or health or the environment, they may not be classified as hazardous waste. However, though this apparently looks in contradiction to the Bamako Convention, in actual fact it is not. The Convention allows a member state (state of export, import or transit) to define hazardous waste in its own ways;⁶⁰¹ but has the obligation to inform to the Secretariat of the Convention within six months after it has become party to the Convention.⁶⁰²

Considering Ethiopia's aspiration to industrialize and taking for granted the inevitable consequence of industrialization in generating hazardous and non-hazardous waste; one of the core issues that this thesis seeks to examine is the problems and challenges caused by industrial waste with particular emphasis on textile and leather industries. Thus, the legitimate question one might ask is why should the research focus on leather and textile industries? With regard to this

⁵⁹⁹United Nations Environmental Program, Basel Convention on the control of transboundary movement of hazardous wastes and their disposal final act (Nairobi, Kenya: United Nations Environmental Programme, 1989), Art.1 (3).

⁶⁰⁰Organization of Africa Unity, Bamako Convention on the ban of the import into Africa and the control of transboundary movement and management of hazardous wastes within Africa (Addis Ababa, Ethiopia: Organization of African Unity, 1991), Art. 2 (2).

⁶⁰¹Art.2 (1) (b).

⁶⁰² Art. 3(1).

question the justifications are mainly two fold. The first justification is the magnitude of the hazardous waste generated from these two industries compared to other industries is significant.⁶⁰³For instance, between July and August 2008 AAEPa commissioned a study to be made on industrial hazardous waste. The study surveyed 49 industries in seven manufacturing industries in Addis Ababa including: Food & Beverage, chemical processing, Metal, Printing, Tannery, Textile and woodworks.⁶⁰⁴ According to the survey the estimated waste from leather and textile industries in the year 2014 is predicted to be 357,636.9 cm³ liquid waste and 10,887.54 tones solid waste; and 207,758.8 cm³ liquid waste respectively. Actually this is out of the total figure 1,871,392 (out of this 1,807,286.6 cm³ is liquid waste and 23,512.12 tones is solid waste). When we calculate the contribution of leather and textile industries *vis-a-vis* the other surveyed industries in terms of their liquid waste the percentage is 30.6. While the percentage in solid waste is 46.3. (See Table 5.1 below for details)

⁶⁰³AAEPa, 2009. Qualitative and Quantitative Assessment and Evaluation of Impacts of Hazardous Wastes in Addis Ababa and the Way Forward, p. 22. Unpublished. (On file with the researcher)

⁶⁰⁴*Ibid.*, p.25.

Table 5.1 Summary of hazardous waste generated from the surveyed industries

Sr.	Sector	State**	Characteristic of HW				Total
			Toxic	Corrosive	Flammable	Infectious	
1	Food & Beverage						
	Abattoir	Liquid				135000	135000
	Beverages	Liquid		1049140			1049140
		Semi-solid		4362.13			4362.13
2	Chemical processing						64817
	Chemical & Gas	Liquid		64817			64817
		Solid		211.65			211.65
	Foam	Liquid	0.6 ton				
		Solid	198				198
		Gas	0.5 ton				
	Paint	Liquid	322.65				322.65
		Solid	7708.8				7708.8
	Soap & Detergent	Liquid					
		Semi-Liquid		112			
	Pharmaceutical	Liquid		1			
	Plastic	Liquid					
		Gas			480		
3	Metal	Liquid	2.4	32607.5			32609.9
4	Printing	Liquid			1.2		1.2
5	Tannery	Liquid	357,636.9				357,636.9
		Solid	10,887.54				10,887.54
6	Textile	Liquid	207,758.8				207,758.8
7	Wood works	Liquid			0.05		0.05
		Solid	144				144
		Total (ton cu.m)	584,659.1	1,151,251	481.25	135,000	1,871,392

** Unless specified the unit for liquid waste is cubic meter and for the solid is ton

Source: (AAEPA, 2009)

The research further projects the estimated hazardous waste from the surveyed leather and textile industries in the coming 25 years beginning from the year 2014 to be: 22, 044,094 cm³ liquid waste and 671, 088.3 tones solid waste; and 16, 833, 092 cm³ liquid waste respectively. It also indicates the estimated annual percent increase in the coming 25 years for the surveyed leather and textile industries to be 6.8% and 8.87% respectively. (See Table 5.2 below for details)

Table 5.2: Prediction of hazardous waste generation for the next 5-year for surveyed industries

Sr.	Sector	State**	Current Total	Estimated annual % increase	Estimated HW generated in the next 25 years
1	Food& Beverage				
	Abattoir	Liquid	135000	7.6	9,311,014
	Beverages	Liquid			72,359,682
Semi-solid				300,858.2	
2	Chemical processing			6	
	Chemical & Gas	Liquid	64817		3,556,153
		Solid	211.65		11,612.07
	Foam	Liquid			
		Solid	198		
		Gas			
	Paint	Liquid	322.65	9	
		Solid	7708.8		
	Soap & Detergent	Liquid		19.4	
		Semi-Liquid	112		48,010.17
Pharmaceutical	Liquid	1	22.7	728.6	
Plastic	Liquid		4.6		
	Gas	480		21,685.22	
3	Metal	Liquid	32609.9	3.8	13,220,62
4	Printing	Liquid	1.2	3.6	47.3
5	Tannery	Liquid	357636.9	6.82	22,044,094
		Solid	10887.54		671,088.3
6	Textile	Liquid	207758.8	8.87	16,833,092
7	Wood works	Liquid	0.05		
		Solid	144	10	4067.021

** The unit for liquid waste is cubic meter and for solid is ton.

Source: (AAEPA, 2009)

The above AAEPA commissioned research findings is also in line with the UNIDO 2004 Report. The Report underlines that;

Available data about industrial practices and environment in Sub-Saharan Africa, incomplete as it is, shows that while the aggregate volume of industrial pollution might be small, in line with the overall size of the industry, pollution intensity is among the highest when controlling for other factors such as the level of development or size of the economy.⁶⁰⁵

The second justification as discussed in chapter 1 is due to their significant contribution to the socio-economic development; and the priority and direct support given to them in the country's development agenda. Thus, for these two reasons the research is concerned with industrial wastes from textile and leather industries.

5.3.1.1 Waste Generated from Textile Industries.

In any industrialized or industrializing country textile industries are big consumers of high water quantity. As a result of the different processes in textile industries considerable amount of polluted water is released. Thomas Bechtold et al note that;

Representative magnitudes for water consumption [in textile industries in any country] are 100-200 L of water per kilogram of textile product. Considering an annual production of 40 million tons of textile fibers, the release of wasted water can be estimated to exceed 4-8 billion cubic meters per year.⁶⁰⁶

The process in textile industries begins with the production or harvest of raw fiber. Fiber used in textiles can be harvested from natural sources (e.g., wool, cotton) or manufactured from regenerative cellulosic materials (e.g., rayon, acetate), or it can be entirely synthetic (e.g., polyester, nylon).⁶⁰⁷ After the raw natural or manufactured fibers are shipped from the farm or

⁶⁰⁵ UNIDO Industrial Development Report, 2004, supra, n.214, p. 93.

⁶⁰⁶ Thomas Bechtold, Eduard Burtscher & Yung-Tse Hung. 2006. Treatment of Textile Wastes. In: Lawrence K. Wang, Yung-Tse Hung, Howard H. Lo & Constantine Yapijakis (eds), 2009. *Waste Treatment in the Process Industries*. New York: CRC Press, p.363.

⁶⁰⁷ U.S EPA Office of Research and Development National Risk Management Laboratory Center for Environmental Research Information Cincinnati, Ohio. 1996. Manual for Best Management Practices for pollution Prevention in the Textile Industry. EPA/625/R-96/004, p.1.

the chemical plant, they pass through four main stages of processing: yarn production,⁶⁰⁸ fabric production,⁶⁰⁹ finishing,⁶¹⁰ and fabrication.⁶¹¹

In all these processes textile industries generate many waste streams: including water-based effluent, air emissions, solid wastes and hazardous wastes.⁶¹² The nature of the waste generated depends on the type of textile facility, the processes and technologies being operated, and the type of fibers and chemicals used.⁶¹³ Textile processes can potentially generate hazardous wastes as a normal routine by-product. For instance, washing and dyeing operations in the textile industry utilizes chemicals including sodium hydroxide, sodium chloride, acetic acid, and dyes.⁶¹⁴ The most significant hazardous waste is the washing and dyeing process sludge and effluents that are potentially hazardous and that may also be hazardous due to acidity and ecotoxicity.⁶¹⁵

In addition, “incidences like spills, process excursion, and failures can unexpectedly generate hazardous waste.”⁶¹⁶ Although many textile mills screen out chemicals that might potentially generate hazardous waste, abnormal events that result in hazardous waste spills can still occur.⁶¹⁷ Common sources of spills and failures in textile operations include: “dry cleaning; solvent scouring; solvent-based coating operations; shop activities.”⁶¹⁸ Chapter 6 investigates the problem of industrial waste management in one selected textile factory by way of case study.

⁶⁰⁸ In *Yarn production*, natural fibers, predominately cotton and wool, are cleaned, carded and/or combed, and then spun into yarn. While Synthetic and cellulosic fibers are shipped as staple-short fibers similar to that used for cotton-which are spun.

⁶⁰⁹ *Fabric production* which is the second stage in the textile industry involves either weaving or knitting.

⁶¹⁰ In *finishing* most broad woven fabrics retain the natural color of the fibers from which they are made. Cotton fabrics at this stage are known as *gray goods*, and the synthetics are said to be woven in the *greige*. For most uses, these fabrics must undergo further processing, which can include *bleaching, printing, dyeing, mechanical finishing, preshrinking, and shaping*.

⁶¹¹ In the *fabrication* stage, the finished cloth is fabricated into a variety of apparel and household and industrial products.

⁶¹² U.S EPA Office of Research and Development National Risk Management Laboratory Center for Environmental Research Information Cincinnati, Ohio. 1996. Manual for Best Management Practices for pollution Prevention in the Textile Industry. EPA/625/R-96/004, p.11.

⁶¹³ *Ibid.*

⁶¹⁴ AAEP, 2009, *supra*, n.603, p. 32.

⁶¹⁵ *Ibid.*

⁶¹⁶ U.S.EPA, 1996, *supra*, n.612, p. 25.

⁶¹⁷ *Ibid.*

⁶¹⁸ *Ibid.*

5.3.1.2 Waste Generated from Leather Industries

The leather industry consists of three sub-processes which are: hides and skins production, tanning and the manufacture of leather products.⁶¹⁹ Lawrence K. Wang & Donald B. Aulenbach note that;

Tanning is a chemical process that converts hides and skins into a stable material. Tanning agents are used to produce leather of different qualities and properties. Trivalent chromium is the major tanning agent, because it produces modern, thin, light leather suitable for shoe uppers, clothing, and upholstery. However, the residual chromium in the plant effluent is extremely toxic, and its effluent concentration is limited to 2 mg/L.⁶²⁰

The three main processes of production in the tanning industry are: pre-treatment (dehairing, removing flesh, pickling); tanning *per se* where the tanning agent is applied; and finishing (after-treatment: drying, dyeing, mask defects, add shine).⁶²¹ The pre-treatment is commonly referred as a Beam house process. Conventionally, all these processes have been carried out in the same production units.⁶²² However, with the current on-going specialization process there are a number of tanneries that only do the finishing.⁶²³

Normally, tanneries consume large quantities of water and generate and release corresponding amounts of wastewater with wastes due to consumption of a variety of chemicals such as: “sodium sulphide, lime, ammonium sulphate, sulphuric acid, chromium sulphate, dyes, and pigments.” Waste such as “spent salt, hide and skin residues are contaminated with chemicals and alkaline and they are potentially corrosive in nature.” The waste that contains “chromium is toxic and also forms a basic solution.” Chromium is “the major problem associated with tannery effluents.” Hexavalent chromium salts are particularly dangerous, “as they are water-soluble and potentially highly toxic and carcinogenic.” significant pollution loads with extreme pH values. Tanning industries also produce hazardous Tanning also produces toxic gases, “such as hydrogen

⁶¹⁹ Rhys Jenkins *et al*, 2002. Environmental Regulation in the New Global Economy: The Impacts on Industry and Competitiveness. UK: Edward Elgar Publishing Limited, p. 160.

⁶²⁰ Lawrence K. Wang & Donald B. Aulenbach. 2006. Implementation of Industrial Ecology for Industrial Hazardous Waste Management. In: Lawrence K. Wang, Yung-Tse Hung, Howard H. Lo & Constantine Yapijakis (eds), 2009. *Waste Treatment in the Metal Manufacturing, Forming, Coating, and Finishing Industries*. New York: CRC Press, p.9.

⁶²¹ Rhys Jenkins, *et al. supra*, n.619, p.160.

⁶²² *Ibid.*

⁶²³ *Ibid.*

sulphide, which are released to the environment when emptying the tanning drums.”⁶²⁴ Chapter 6 investigates the problem of industrial waste management in one selected leather industry by way of case study.

5.4 Industrial Pollution Problem in Ethiopia

Ever since the industrial revolution, industries have been accompanied by industrial waste problem which could be classified into hazardous and non-hazardous waste. Industrial waste if improperly managed it can pose dangerous health and environmental consequences.

The problem of Industrial waste in Ethiopia is mainly observed around urban areas.⁶²⁵ Such areas have better infrastructure and they are home to small and medium scale industries.⁶²⁶ Consequently, they are the primary areas affected by industrial pollution.⁶²⁷ For instance, the major pollutant industries in Addis Ababa include: “food and beverage, textile, tanneries, chemicals, metal, rubber and plastic, paper and paper product, metallic, non-metal mineral products and wood industries.”⁶²⁸ The majority of the industries in and around Addis Ababa discharge effluents either directly to Akaki Rivers or their tributaries since they do not have treatment plants.⁶²⁹ Waste from over 35 industrial processing plants enter Akaki Rivers to make them the most polluted rivers in the country.⁶³⁰ (See Figure 5.1 below for pollution in Akaki River)

⁶²⁴AAEPA, 2009, *supra*, n. 603, p. 31.

⁶²⁵FEPA, 2005. Review of the status of Akaki River Water Pollution (1st Draft) document prepared as Part I of the Akaki River Management Strategic Implementation Plan for 2005-2015, July 2005, p. 5.

⁶²⁶ *Ibid.*

⁶²⁷ *Ibid.*

⁶²⁸ *Ibid.*

⁶²⁹ *Ibid.*, p.8.

⁶³⁰ *Ibid.*, p.7.

Figure 5.1 Pollution in Akaki River



Source: (AAEPA, 2006)

A research commissioned by AAEPA revealed that the people using Akaki Rivers water were affected by pathogens. Most common types of symptoms regarding human health problems were “gastrointestinal disorders, diarrhea, abdominal pain, respiratory problems such as asthma, cough, wounds lesions, rashes on skin and weakness.” Among these problems “gastrointestinal disorders were the major ones that affected the dwellers.”⁶³¹ The research also underlined “abortion; child and maternal mortality are also the most common types of health problems.” The abortion and maternal mortality problems were caused not only because of drinking polluted water, but also because of the bad smell of the river.⁶³² The research further emphasized that “toxic substances in the river also affected health of animals as hazard wastes are ingested with polluted water. Sick animals showed symptoms like gastrointestinal disorders, bloat bloody diarrhea, nerves signs like tremors and paralysis. Edematous swelling, dermatitis and loss of hair were also reported.”⁶³³

⁶³¹AAEPA, 2009, *supra*, n. 603, p. 52.

⁶³²*Ibid.*

⁶³³*Ibid.*

According to the research there were six large-scale tanning facilities in Addis Ababa and all were located along the Little Akaki River catchment area.⁶³⁴ The estimates of annual solid and liquid hazardous waste generation from these six industries were 10,887.54 tons of solid and nearly 357,636.9 m³ of liquid HWs per annum respectively.⁶³⁵

In Oromiya Regional State the town of Mojo which has acquired its name from the nearby Mojo River hosts different Food, Beverage, Textile and Tanning industries. Out of these factories located around Mojo River only few of them have some form of treatment of their waste while the rest discharge their effluent without any treatment directly into Mojo River. The discharge to the river highly limits the applicability and quality of surface and ground water in the area.⁶³⁶ Textile and leather industries located around Mojo River are most responsible for releasing highly contaminated colored effluent leading to intense water pollution.⁶³⁷ Taste and turbidity of water sample collected from dug wells, springs, and boreholes in Mojo showed most but some of the ground water in the area was colourless, tasteless and clear. Physical characteristics of the samples collected from surface water showed that the Mojo River has green and dark green colour, offensive odour, high turbidity and a lot suspended material due to industrial and sewage waste.⁶³⁸

In Amhara Regional State the town of Kombolcha is one of the few towns in Ethiopia with a relatively greater number of large-scale manufacturing plants including Textile Factory, ELFORA-Meat Processing Factory, Tannery, BGI-Brewery Factory, Steel Product Industry and Flour Factory.⁶³⁹ The existing industries in Kombolcha have been discharging waste into the surrounding environment particularly to the nearby Borkena River.⁶⁴⁰ For instance, Kombolcha Tannery Factory was discharging its waste without treatment directly into the nearby river called Leyole and the report of National Urban Planning Institute reveals that due to its inadequate

⁶³⁴ *Ibid.*, p.25.

⁶³⁵ *Ibid.*

⁶³⁶ Behailu Berehanu. 2007. *Impact of Industries and Urbanization on Water Resources in Mojo River Catchment, Ethiopia*, Msc Thesis, School of Graduate studies, Addis Ababa University, at. 76-8.

⁶³⁷ *Ibid.*

⁶³⁸ *Ibid.*, p.86.

⁶³⁹ Eskinder Zinabu.2008.*Assessment of the Impact of Industrial Effluents on the Quality of Irrigation water and changes on Soil Characteristics: a Case of Kombolcha Town*, MSc.Thesis, Mekelle University, p.2.

⁶⁴⁰ *Ibid.*

waste purification and disposal mechanism, the discharged pollutant has brought adverse impacts on social, economic and environmental conditions of the nearby residents as well as the surrounding areas. As the pollution problem has started long time ago no corrective measure has been taken so far.⁶⁴¹

According to a study conducted by the Environmental Protection and Land Administration Authority of the Amhara National Regional State on Kombolcha Tannery Industries, Kombolcha Tannery Industry was condemned for its irresponsible disposal of waste. The study revealed that the Industry disposes its waste only after passing lagoons to settle some solid waste components. It further disclosed that there were solid particles that could not settle in the lagoon and virtually the soluble effluent components were flowing into the nearby river named Leyole. Since this river has been used for irrigation long time ago, it is understandable that the irrigated farmland has been potentially polluted.⁶⁴²

The health professionals in Kombolcha Meat Processing Industry (ELFORA) have also confirmed that the meat of those animals that drank water from Borkena River was infected and has shown different colour from the usual.⁶⁴³ On top of this Kombolcha town has been selected to be an industrial town by Amhara National Regional State which indicates the industrial development and its associated pollution risk will increase in the future.

With regard to Bahrdar Textile Industry which is located in Bahrdar the capital city of Amhar National Regional State, Tadesse ex-head of the Environment Protection at Amhara National Regional State remarks that “Bahrdar Textile Industry does not have any treatment plant. It simply disposes its waste into the Abay (Blue Nile) River without any treatment.”⁶⁴⁴

Abeje Yitayu the Head of Personnel Section at Bahridar textile industry also confirmed that Bahrdar textile industry does not have any waste treatment plant. All the chemicals are disposed into the Abay River. When the Factory was established 50 years ago it was designed to dump its waste into the Abay. So, it does not have waste treatment cost. The cost of the industry is limited

⁶⁴¹*Ibid.*, p.5.

⁶⁴²*Ibid.*, p. 8.

⁶⁴³*Ibid.*, p.6.

⁶⁴⁴Sintayhu Tadesse, *supra*, n.395.

to production raw materials and chemicals. As to the chemicals the industry uses in the production process it buys them all from abroad through hard currency.⁶⁴⁵ He further notes that currently the factory is in the process of introducing waste treatment plant and for this purpose the government has allocated large amount of fund and waste treatment plant is to be built.⁶⁴⁶

In Tigray Regional State, the same environmental problems from different industries are also observed. For instance as Hadush, Tsegai and Berhane experts in Tigray Regional State Land Administration, Use and Environmental Protection Agency note that the agency is quite aware of the environmental pollution from the industries in the region and this is confirmed through researches they have conducted on some selected industries such as Almeda textile industry, Mesebo cement factory and others.⁶⁴⁷ They further remarks that in the case of Almeda textile industry, in their research they consulted the community who live near the industry and they were told—due to the untreated effluent of the factory—around 26 hectares of land located near the industry were destroyed, around 500 cattle were dead, when animals were killed to be eaten their skin was found soaked with blood and no one ate their meat and those who ate were sick, plants in the surrounding were destroyed and underground water in the surrounding has also been polluted. The local government administrative organs have also confirmed to them there has been a problem. However, Almeda Textile Industry claims to have treated its effluent but in practice it does not. It also claims to have paid damage to the affected community.⁶⁴⁸ In fact, though Almeda claims to have paid compensation to the affected community members, in actual fact that is not the case. Complaints are flooding to the concerned government organs and also different court cases have been initiated. (See chapter 6 & 7)

There is an increasing concern that the situation in Addis Ababa, Oromiya, Amhara and Tigray Regional States is also now being repeated in the fast developing urban centers throughout the country particularly in regional and zonal capitals where variety of industries are being

⁶⁴⁵ Interview with Abeje Yitayu Bahridar Textile Industry Personnel Section Head (March 30, 2011)

⁶⁴⁶ *Ibid.*

⁶⁴⁷ Interview with Hadush Berhe, Tsegai G/Izgi and Berhane Berhe experts in the Land Administration, Use and Environmental Protection Agency on 26 January 2011.

⁶⁴⁸ *Ibid.*

established. In line with above facts, UNEP also notes that over 90 percent of industries in Ethiopia discharge their effluents untreated in water bodies and open land.⁶⁴⁹

From the above discussion one could observe that a major constraint in all waste management practices including industrial waste and municipal waste in Ethiopia is the low priority given to waste management services. For instance, no municipal waste disposal systems worthy of the name exist in the country, and the same is true for industrial wastes which are treated no differently from regular solid waste. The country also lacks any disposal or destruction facility (sanitary landfills, incinerators, biological or chemical treatment plants, neutralization, precipitation/separation or chemical detoxification) for industrial waste.⁶⁵⁰

However, it is important to note that at federal and regional states level there are some areas designated as landfill sites though they are far below the standard and every waste is dumped together without sorting it out based on its origin, composition and the degree of danger it poses as indicated previously in section 5.2.1. For instance, with regard to the landfill site at federal level especially in Addis Ababa, a research commissioned by AAEPA revealed that the disposal site which has been giving service since 1968 and which is located 12.5 km away from the center of Addis Ababa has been selected without giving due consideration to public health and the environment. The landfill site has not been designed properly and lacks facilities. These defects in addition to its mismanagement cause the landfill to be acknowledged as a generator of adverse effects and a hazard for both the environment and the public health.⁶⁵¹ In fast expanding city, like Addis Ababa, the location of this site may even be too close to the neighbours living around the periphery of the city. (See Figure 5.2 below for the location of the site)

⁶⁴⁹ UNEP Regional Status Report (2002-2004). *Sustainable Consumption and Production in Africa*, p. 4.

⁶⁵⁰ *Ibid.*

⁶⁵¹ AAEPA, 2009, *supra*, n. 603, p. 56.

Figure 5.2 the current location of Addis Ababa open land fill site



Source: (Reporter News Paper Vol.17, No.848, December 08, 2012)

The research further revealed that the current situation of waste management in Addis Ababa is characterized by burning waste at various locations and dumping mixed waste in unsecured landfill. Industrial waste which represents a health hazard due to its content in toxic substances such as heavy metals (lead, cadmium), pesticides, solvents and used oils are co-disposed with other municipal waste in the site. To this end the Addis Ababa land fill site is a cause to adverse impacts on the public and ecosystem.⁶⁵² Thus, one of the poorest environmental performances in Ethiopia pertains to the management of all types of wastes.

5.4.1 Major Industrial Pollutants

According to the FEPA, there are different industrial pollutants from different industries like: food and beverages; textile, clothing, tanning and leather goods; wood and wood products; chemical, rubber and plastic products; non-metallic mineral products; basic iron and steel; and machinery and equipment. For instance, major pollutants generated from industries around the Akaki Rivers include solids, organic pollutants such as: oil, pesticide, cleaning solvents, detergents and inorganic pollutants such as: nitrates, phosphates, sulphates, chloride and

⁶⁵²*Ibid.*

others.⁶⁵³ In addition heavy metals, acids and alkalis are the most pollutant substances generated from the industries.⁶⁵⁴ (See Table 5.3 below for details)

Table 5.3: Major pollutants generated from industries around Akaki Rivers

Industrial Sector	Major Pollutants
Food & Beverages	Food preservatives Cleaning chemicals, e.g. (NaOH, detergents) Air pollution from dust and fuel combustion
Textile, clothing, tanning and leather goods	Waste water from scouring, mercerizing, bleaching and dyeing (e.g. NaOH, Peroxides, aluminum compounds and dyestuffs) Wastewater from tannery, chrome, sulphides, ammonium salts. Chlorides etc. Solid wastes from dehairing, fleshing and trimming of hides and skins
Wood and wood products	Sawdust/ wood preservatives, paints, varnishes
Paper, paper products & painting	Printing chemicals, lead in granule form Trimmed papers and inorganic chemical wastes
Chemical, rubber & plastic products	Solid waste of scorched rubber, scraps of rubber and PVC, plastics, dust Organic and inorganic chemical wastes
Non-metallic mineral products	Dust and particulates, air pollution from fuel combustion
Basic iron & steel	Scrap metal, air pollution from combustion
Machinery & Equipment	Inorganic waste water, scrap metals

Source: (EPA, 1999)

From the reading of Table 5.3 above one can easily see textile and leather industries are among the industries that produce major pollutants that require proper management. Major pollutants attributed to textile, clothing, tanning and leather goods are respectively: wastewater from scouring, mercerizing, bleaching and dyeing (e.g. NaOH, Peroxides, aluminum compounds and dyestuffs), wastewater from tannery, chrome, sulphides, ammonium salts, chlorides etc. Also solid wastes from dehairing, fleshing and trimming of hide and skins.

⁶⁵³ UNEP Regional Status Report (2002-2004), supra, n.649, p. 4.

⁶⁵⁴ *Ibid.*, p. 5

5.4.2 Volume of industrial waste

According to the Ethiopian Central Statistics Agency (ECSA) different volume of waste water from different industries like: iron and steel; non-ferrous metals; food and beverages; paper and printing; petrochemicals; rubber; pharmaceuticals; soap and detergents; tobacco; textiles; leather and footwear; and wood are discharged to rivers. For instance, the volume of wastewater annually discharged to the Akaki Rivers from different industries in Addis Ababa in the year 1999 was estimated to be 4, 877, 371 m³/ yr.⁶⁵⁵(See Table 5.4 below for details)

Table 5.4: Volume of waste water annually discharged from different industries in AddisAbaba

Types of Industry	Quality of wastewater (m³/yr)
Iron and steel	146,239
Non-ferrous metals	2,217
Food and beverages	1,795,252
Paper and printing	45,967
Petrochemicals	11,421
Rubber	205,746
Pharmaceuticals	50,089
Soap and detergents	1,098
Tobacco	31,080
Textiles	1,992,597
Leather and footwear	547,860
Wood	47,805
Total	4,877,371

Source: (CSA, 1999)

From the reading of Table 5.4 above one can easily see textile industries to be the leading industries in generating waste water in the country followed by food and beverages and leather and footwear industries. Out of the total volume of wastewater annually discharged to Akaki Rivers--4,877,371 m³/ yr--indicated above, the amount attributed to leather and footwear and textile industries are 547, 860 m³/yr and 1, 992, 597 m³/yr respectively.

⁶⁵⁵*Ibid.*, p. 7.

Conclusion

Although one of the main objectives of the Ethiopian Government is the elimination of poverty through Agricultural Development Led Industrialization (ADLI) and Urbanization Process, this has resulted in environmental pollution. As the Ethiopian Rio+20 Conference Report shows, many rivers around Addis Ababa are, for example, polluted with urban and industrial waste. There is also high level of air pollution in urban areas. The landfills are not well developed and properly managed. Pollution has become health threat, for people and livestock. A substantial part of this problem is caused by industrial waste from textile and leather industries which are the subject matter of this research. This is because the magnitude and volume of industrial waste from all types of industries in general and the hazardous industrial waste from textile and leather industries in particular is on the rise.

One of the main problems is trying to define waste in general and industrial waste in particular. For example, there is no comprehensive definition of waste in the Ethiopian legal framework. What exist are different types, varieties and classifications of waste categories depending on their origin, composition, degree of their danger and modalities of their treatment in different legislation such as in the Solid Waste Management Proclamation (SWMP). What is interesting is that the Environmental Pollution Control Proclamation (EPCP) and the Solid Waste Management Proclamations (SWMP) do not provide any clarity on waste classification or provide a catalogue thereof although from a reading of the relevant laws, one can infer that Ethiopia adopts all types and approaches of waste classifications.

The relationship between waste, pollution and management is that the former is the cause and the later is an effect. However, waste management deals with the regulatory framework related to its safe collection, storage, transport, disposal and management of such waste and its impact on the environment, the people, flora and fauna. In Ethiopia, the management of “hazardous waste” including “industrial waste” from textile and leather industries is the mandate of the FEPA, although the relevant authorities are delegated to undertake such tasks at the regional level and creates the type of practical and implementation problems explained in Chapter 4.

When and where a material is considered as a waste or even hazardous waste is bound to be decided by the Ethiopian courts in future cases. This is because currently there is no court case in Ethiopia on the matter. What makes it hazardous is the quality and quantity of hazard waste released or disposed. It is important to note that Ethiopia and Tanzania do not define industrial waste, but Kenya and Uganda do. However, the Environmental Pollution Control Proclamation defines “hazardous waste” to include any unwanted material that is believed to be harmful to human safety or health or the environment but without clarifying its constituent elements and characteristics and the level of risks considered more dangerous to humans and the environment.

However, one could also argue that since Ethiopia has ratified both the Basel and the Bamako Conventions and these two Conventions are part and parcel of the Ethiopian law according to the FDRE constitution, it can be inferred and argued that Ethiopia has endorsed the basis for classification as adopted in the Basel and Bamako Conventions. However, it should be noted that even if waste streams such as household wastes, sewage and sewage sludge, residues arising from the incineration of household wastes and radioactive wastes are excluded from the Basel Convention, they are included in the Bamako Convention.

The reason why classification is relevant is because we need to know what type of waste constitute hazardous waste and what type of industrial waste is most dangerous and to know its consequences to human and environment and to know how to manage it. The findings of this research are that textile and leather industries are among the industries that produce major pollutants that require proper management. Moreover, the magnitude of the hazardous waste generated from these industries compared to other industries in Ethiopia is higher now and will continue to be much higher in the future. The problem is although some have some form of treatment of their waste the rest discharge their effluent without any treatment directly into nearby Rivers. This is particularly the case in the industries located in and around Addis Ababa, and in the Amhara, Tigray and Oromia National Regional States and is also being replicated in other areas and regions.

A major constraint in all waste management practices including industrial waste and municipal waste in Ethiopia is the low priority given to waste management services. This very much depends not only on technical, administrative, and financial constraints, as well as lack of clarity in the legal regime but above all the successful industrial waste management system in Ethiopia very much depends on political will which appears to be one of the main problems that requires an urgent solution. Lack of public awareness and intellectual debate on the relationship between industrialization and sustainable development also remains a big challenge in Ethiopia.

CHAPTER 6

TWO CASE STUDIES: ALMEDA TEXTILE FACTORY AND SHEBA LEATHER INDUSTRY

6.1 Introduction

This chapter is an extension of chapter 5 with a much more in depth focus on two selected industries. The two case study industries chosen for an in-depth analysis in this chapter are selected in order to analyse the country's development endeavour as discussed in chapter 1 and 2; to further evaluate the effectiveness of the legal and institutional framework as discussed in chapter 3 and 4; and to exemplify the impact of industrial pollution (specially solid and liquid waste from textile and leather industries) as discussed in chapter 5. In a way, these two case study industries are designed to set the context to chapter 7—the role of public participation in industrial pollution control and management in Ethiopia.

The main argument in this chapter is even if the Ethiopian government proclaims its commitment to Ecologically Sustainable Industrial Development (ESID) it is not committed to enforce the relevant laws on pollution control necessary to integrate this value into its industrial pollution control and management practices with regard to the two case study industries. In practice, as the two case study industries clearly show, there is separation or even an overt contradiction between the proclaimed priorities and goals. It also argues the case study industries clearly indicate the existence of a powerful taboo against complaining on the two case study industries poor pollution control and management system. Since both the federal and regional governments believe the two case study industries as sources of employment, means to curb social inequality and poverty alleviation in the Region; any complaint against them is considered as selfish with no concern for the poor. The chapter argues this is the very reason for failing to address the complaint of the affected communities on the poor waste management of the two case study industries.

To illustrate the arguments in this chapter, section 6.2 deals with the location and brief overview of the two case studies. Section 6.3 deals with Almeda Textile Factory. Section 6.4 deals with Sheba Leather Industry. In dealing with the two case study industries section 6.3 & 6.4 discuss

the Industries' profile, waste treatment overview and their impact on the environment respectively. The analysis in the chapter includes some conclusions.

Nonetheless, it is important to note that the investigation on the two case study industries—their production process, waste treatment process and their impacts on the nearby communities through interviews with the key informants—are all the original works of the researcher; except some important researches by the local environment agency and some scholars.

6.2 Location and Brief Overview of the Two Case Study Industries

6.2.1 Location

The two selected case study industries in this chapter, Almeda textile factory and Sheba leather industry are located in Tigray Regional State in Ethiopia. The National Regional state of Tigray is located in the northern tip of Ethiopia. As indicated in chapter 1 Map 1.1, it is bordered with the National Regional State of Afar in the East, National Regional State of Amhara in the South, Sudan in the West and Eritrea in the North. Geographically, Tigray lies between 12°15' N-14°15' N latitude and 36°27'-39°59' East longitude. It has an estimated total population of 4,314,456; out of this around 19.5 per cent live in urban centers while 80.5 percent live in rural area.⁶⁵⁶ It has an estimated area of 80,000 square kilometers. It consists six administrative zones, one special zone, 35 woredas and 74 towns.⁶⁵⁷ The State Council, the highest legislative body is made up of 152 members while the executive body in the region is composed of 16 officers.⁶⁵⁸

Almeda is located in Adewa⁶⁵⁹ town while Sheba is located in Wukro⁶⁶⁰ town in Tigray. Adewa is a market town in Northern Ethiopia with a longitude and latitude of 14° 10' N 38° 54' E, and an elevation of 1907 meters.⁶⁶¹ It is located in the Central Zone of Tigray Region.⁶⁶² It has a

⁶⁵⁶FDRE Population Census Commission, 2008. Summary and statistical report of the 2007 population and housing census-population size by age and sex, Addis Ababa, p. 10.

⁶⁵⁷*Ibid.*, p.19.

⁶⁵⁸Ethiopian Government Portal available at;

<http://www.ethiopia.gov.et/English/Information/Pages/StateTigray.aspx> (Accessed on October, 24, 2012)

⁶⁵⁹Adewa is also spelled as-Adowa, Aduwa or Adua. Near the town of Adewa the famous *Battle of Adowa* was fought between Ethiopia and Italy on 1 March 1896.

⁶⁶⁰Wurko is also spelled as-Ugro, Uucro or Ucuro. It is known for its rock-hewn churches.

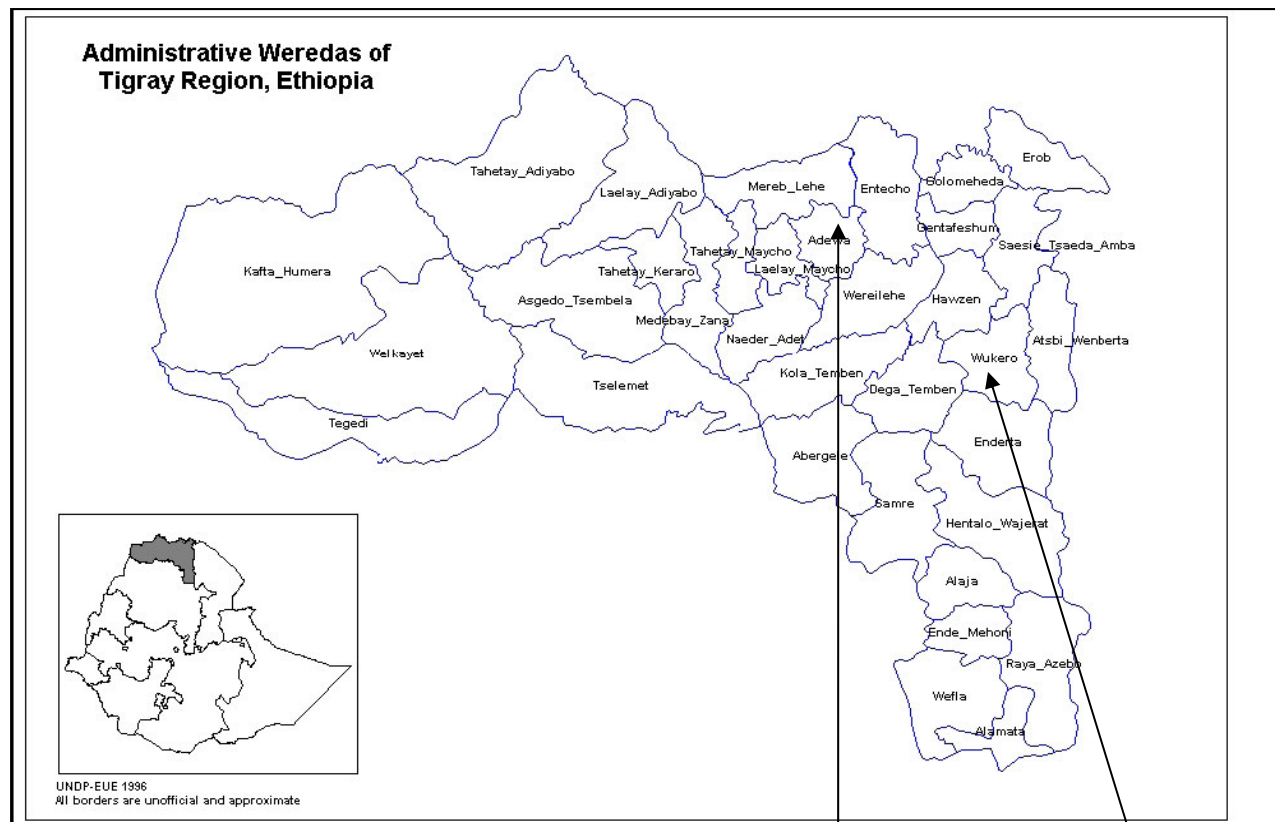
⁶⁶¹Maplandia.com googlemaps world gazetter, available at,

<http://www.maplandia.com/ethiopia/Tigray/central/adwa/> (Accessed on June, 2012)

⁶⁶²Tigray online available at <http://www.tigraionline.com/tigraistate.html> (accessed on June, 2012)

population of 46,645.⁶⁶³ Wukro is also a town in Northern Ethiopia with a longitude and latitude of 13° 47'N 39° 36'E and an elevation of 1,972 meters.⁶⁶⁴ It is Located in the Eastern Zone of the Tigray region.⁶⁶⁵ It has a population of 31, 245.⁶⁶⁶ (See figure 6.1 below for the location of the two selected cases)

Figure 6.1 Location of the two case study industries in Tigray Regional state-Ethiopia



Source: (UNDP-EUE, 1996)

Sheba leather Industry

Almeda textile factory

⁶⁶³ *Ibid.*

⁶⁶⁴ *Ibid*

⁶⁶⁵ Tigray online available at <http://www.tigraionline.com/tigraistate.html> (accessed on June, 2012)

⁶⁶⁶ *Ibid.*

6.2.2 Brief overview

Both Almeda Textile factory and Sheba Leather Industry are companies of the Endowment Fund for Re-habilitation of Tigrai (EFFORT) Group. EFFORT was established in mid-1995. It has been established as a non-profit non-governmental endowment fund in line to the Ethiopian Civil Code. The Code defines endowment as “an act whereby a person destines certain property irrevocably and perpetually to a specific objective of general interests other than the securing of profits.”⁶⁶⁷ The Charities and Societies Proclamation also defines a charitable endowment as “an organization through which certain property is perpetually and irrevocably designated by donation or will or the order of the agency for a purpose that is solely charitable.”⁶⁶⁸

EFFORT has been established in order to participate in poverty alleviation program of the Region through the establishment of different business enterprises. It was established by “twenty-five TPLF’s senior leadership, and nine other non-fighters, peasants and mass association members from different parts of Tigrai.”⁶⁶⁹ All the founding members contributed 320 USD each.⁶⁷⁰ The overwhelming bulk of the resources that made up the initial investment came from the (non-military) money and materials accumulated by the front (TPLF) during its military campaign against the Derg.⁶⁷¹

Among the objectives of EFFORT as it is indicated in its Article of Association are “to use the resources of the people of Tigrai held by the TPLF for the economic, social and cultural development of the region; and to act as an instrument *to promote the industrialization of Tigrai*, given that most investors prefer the service sector [emphasis mine].”⁶⁷² EFFORT is formally governed by a Council of 55-75 members, made up of representatives appointed from the regional government, local governments, and other associations.⁶⁷³

⁶⁶⁷Civil Code, 1960, supra, n. 549, Art. 483

⁶⁶⁸FDRE, 2002. Proclamation for the Regulation and Registration of Charities and Societies, No. 12/2009, Federal Negarit Gazeta, 15th year No. 25, Addis Ababa, pp. 4521-4567, Art. 16.

⁶⁶⁹ Sarah Vaughan, Mesfin Gebremichael, 2011. Rethinking business and politics in Ethiopia-the role of EFFORT, endowment fund for the rehabilitation of Tigrai, the African Power and Politics Programme (APPP) research report 02, p.36.

⁶⁷⁰*Ibid.*

⁶⁷¹*Ibid.*

⁶⁷²*Ibid.*

⁶⁷³*Ibid.*,p.37.

Currently EFFORT has about sixteen companies.⁶⁷⁴ Among these, the two case studies Almeda and Sheba are the focuses of this thesis. The two case study industries play important role in the development process of the country by generating hard currency and employment opportunities. They are also major tax payers. For instance, from 1997-2001 Almeda and Sheba paid 107, 548, 575 and 221, 328, 395 million of Ethiopian Birr respectively (5,875,720.05 USD and 12,091,223.63 USD respectively) in the form of income tax, profit tax, value added tax and others forms of tax.⁶⁷⁵ (See Table 5.1 below for details on the two case studies)

Table 6.1 Overview of case-study industries

Almeda textile factory		Sheba leather industry
Product	Textile & textile products	Leather & leather products
Production capacity	7,020 tonnes of yarn (annually) 16,751,100 mt. of grey fabric (annually) 15,387, 000 mt. of processed fabric (annually) About one million pcs of basic shirt equivalent garments.	Sheep skin (4000 pcs daily) Goat Skin (2000 pcs daily) Hide (600 pcs daily)
Employees	around 5,800	around 1050
Ownership	Private limited company	Private limited company
Pollution	Solid, liquid and gas waste	Solid, liquid and gas waste
Location	Tigray Regional State-Adua	Tigray Regional State-Wukro
Established	1996	1993

Source: (Almeda Textile Factory & Sheba Leather Industry, 2012)

6.3 Almeda Textile Factory

6.3.1 Factory Profile

Almeda Textile factory is one of the biggest textile manufacturing companies in the country.⁶⁷⁶ It has sales volume of 100 million Birr (5, 459, 102.07 UDS). Seventy per cent of its sales volume is in local market and thirty per cent in global market.⁶⁷⁷ The factory enjoys from complete new

⁶⁷⁴ *Ibid.*

⁶⁷⁵ *Ibid.*, p.66.

⁶⁷⁶ Interview with Almeda Textile Factory Acting Manager Getachew Siyum (Feb. 26, 2011)

⁶⁷⁷ Almeda Textile Factory, available at <http://www.effortgroup.org/almeda/index.htm> (Accessed on Jan.2011)

production lines imported from Switzerland, Italy, Germany and Japan that take up a total investment of 94 million USD. It employs expatriates to ensure efficiency, quality and low cost of production. It also has the advantage of access to top quality local cotton and favourable state policies.⁶⁷⁸

Almeda Textile Factory a private limited company with a capital of more than 368 million Birr (20,088,015 USD) is established and registered in February 1996 under the laws of the Federal Democratic Republic of Ethiopia.⁶⁷⁹ It is fully and vertically integrated textile factory with flexible and with brand new state-of the art technology.⁶⁸⁰ Geographically, it is located in Tigray Regional State at 7 kms away from the center of the Adewa town on the main road to Axum. It is 1006 kms far from Addis Ababa the capital city and 233 kms far from Mekelle the capital city of Tigray Regional State.⁶⁸¹ The Factory is located 20 kms away from Axum air port and is directly linked with the main seaport of Djibouti.⁶⁸²

Its mission is to compete in global market and make profit; generate hard currency by increasing export; to provide employment opportunity; and by practicing sustainable production to contribute to the development of the country and the region at large.⁶⁸³ Its vision is to serve as a model to Ethiopian textile and garmenting industry and create conditions that would enable it to become leader in the Ethiopian market.⁶⁸⁴ Its core values are: customer satisfaction, reliability, commitment and good governance.⁶⁸⁵ It has a work force of 5,783 and pays 5,109,573 Ethiopian Birr (285,124.84 million USD) monthly salary to its employees.⁶⁸⁶ It consumes 13,400 tons of cotton and 2,979 tons of polyesters daily.⁶⁸⁷ The factory uses locally produced cotton and mostly

⁶⁷⁸ *Ibid.*

⁶⁷⁹ Getachew Siyum, *supra*, n.676.

⁶⁸⁰ *Ibid.*

⁶⁸¹ Almeda Textile Factory, *supra*, n.677.

⁶⁸² *Ibid.*

⁶⁸³ *Ibid.*

⁶⁸⁴ *Ibid.*

⁶⁸⁵ Getachew Siyum, *supra*, n.676.

⁶⁸⁶ *Ibid.*

⁶⁸⁷ *Ibid.*

it gets cotton from Afar Regional State; Awasa and Humera towns.⁶⁸⁸ It also imports polyester from Korea and Turkey.⁶⁸⁹

The privately owned Ethiopian Financial News Paper-Fortune notes:

Almeda Textile Factory is among the more than ninety local textile companies [in Ethiopia] that are benefiting from the AGOA, which allows trade duty waivers to thirty-seven Sub-Saharan African (SSA) countries making progress in political and economic reforms. These countries enjoy the duty-free privilege to export a select basket of items to the United States.⁶⁹⁰

According to Fortune, though less than its one million dollar target, Almeda exported 400,000 dollars worth of textiles monthly to the USA.⁶⁹¹ It further notes that Almeda is falling short of its target due to internet infrastructural problem which is the factory's main link to international traders and customers on the international market.⁶⁹²

6.3.2 Process Overview

6.3.2.1 Production Overview

The three manufacturing processing in Almeda are: yarn production, fabric preparation, and fabric processing (wet processing). The first two processes involve mainly dry operations, which consumes very little water and chemicals. The third stage involves wet operations and the amount of waste generated is relatively high in this stage. Fabric processing (wet processing) in Almeda is done to improve the appearance and serviceability of the fabric. The main operations carried out in this step include pre-treatment⁶⁹³, dyeing⁶⁹⁴, printing⁶⁹⁵ and finishing.⁶⁹⁶

⁶⁸⁸ *Ibid.*

⁶⁸⁹ *Ibid.*

⁶⁹⁰ Zewdie W., (2011). Leather Institute hires Indian Firm, to boost Industry, Addis Fortune. Addis Ababa, Vol.12, No.584.

⁶⁹¹ *Ibid.*

⁶⁹² *Ibid.*

⁶⁹³ The main operations in the pre-treatment include-singeing/desizing; scouring; bleaching; and mercerizing.

⁶⁹⁴ Dyeing involves diffusion of the dye molecule into the textile fabric, which imparts the liquid color.

⁶⁹⁵ Printing is a process by which coloured patterns are produced on the fabric.

⁶⁹⁶ Finishing includes the final operations necessary for making the textile presentable and attractive. It imparts the final aesthetic, chemical and mechanical properties to the fabric as per the end use requirement.

6.3.2.2 Waste Treatment Overview

Almeda textile factory waste treatment was installed since 1997 and it is designed to treat industrial waste and sanitary wastes. The treatment plant in the factory consist preliminary treatment (which include dehydrative separation sieve, primary sedimentation, neutralization, precipitation and flocculation) and secondary treatment (which include active sludge, secondary sedimentation or clarification, and disinfection).⁶⁹⁷

The industrial waste treatment in Almeda passes through different processes. For instance, the industrial waste from weaving and knitting process first comes to the treatment plant through a canal. However, when the industry works at its full capacity there is an overflow of untreated industrial waste beyond the canal which later on joins the nearby river (emphasis mine).⁶⁹⁸

The first process in the treatment plant is to scrap the solid waste from the liquid industrial waste through scrapping machine (filter) where the solid waste is dumped in the compound. Then, the liquid waste joins the equalization (homogenisation) tank. In this tank the liquid waste is mixed through mixers and will be pumped to the neutralization tank. Then it goes to flocculation tank and then to precipitation tank. Through gravitational force (GF) it joins the pre-sedimentation tank. From Pre-sedimentation Tank through GF to the Biological Treatment Plant. From the Pre-sedimentation Tank through sludge line by the use of automatic valve (AV) it goes to the Chemical Sludge Tank. From the Chemical Sludge Tank it would be pumped to Sludge Thickening Tank.⁶⁹⁹

In Almeda there are two types of wastes: industrial waste and sanitary waste. The sanitary waste from its source through GF goes to the sanitary tank. From the sanitary tank it would be pumped to the biological treatment tank. From the biological treatment tank the liquid waste by GF goes to the final sedimentation tank. From the final sedimentation tank the biological sludge through AV goes to the biological sludge tank. From the biological sludge tank it would be pumped to sludge thickening tank where it would be mixed with chemical sludge. Both chemical & biological sludges' are sent to the sludge tank. Finally, both are pumped to the sludge drying

⁶⁹⁷ Interview with Kerahemed ex-waste treatment head at Almeda Textile Factory (On Feb. 27, 2011)

⁶⁹⁸ *Ibid*

⁶⁹⁹ *Ibid.*

space in the open field. Equally, the liquid waste from the Final Sedimentation Tank through GF goes into the Disinfection Tank where the bacteria are killed. Ultimately, the liquid waste from the disinfection tank is discharged to the open field where it joins the river downstream.⁷⁰⁰

6.3.3 Environmental Impact

As different Researches conducted on Almeda textile factory, interviews made with different key informants and a case initiated against the factory discussed below indicate the current environmental impact of Almeda is severe and alarming. Almeda uses water and various chemicals intensively and generates large volume of wastewater. More than half of the waste water is generated in wet textile process mainly from scouring/bleaching, mercerizing, dyeing and printing operations that pose environmental pollution.⁷⁰¹

At present Almeda have two major problems: there is no attention to source reduction techniques in the wet process of the textile and there is a limitation in seeking appropriate technical solution for wastewater treatment plant.⁷⁰² As a result, the effluent discharged from Almeda has severely affected the local surface water and agricultural production in the downstream areas.⁷⁰³ This creates immense problem to the society residing around it by polluting the surrounding land and river. Especially, these problems are very critical at Mydelata area where there is a river flowing near the textile industry. Around this river, there are around 200 households with an average of five family members, who are dependent on this river for drinking, washing clothes, and irrigation.⁷⁰⁴ Currently, the surrounding areas are polluted due to the discharge of partially treated or untreated waste water.⁷⁰⁵

With regard to the poor chemical management in the waste treatment plant in Almeda, sulphuric acid was supposed to be used for the neutralization purpose but on the actual yearly consumption it indicated *zero utilization* implying the effluent discharged from the treatment plant had been

⁷⁰⁰*Ibid.*

⁷⁰¹ Asfaw Mekonnen, 2008. *Industrial Wastewater Management: the case of Almeda Textile, Adua*, Msc Thesis, Addis Ababa University School of Graduate Studies College of Development Studies, p. vii.

⁷⁰²*Ibid.*

⁷⁰³*Ibid.*

⁷⁰⁴*Ibid.*

⁷⁰⁵*Ibid.*, p. 4 & 5.

alkaline (emphasis mine).⁷⁰⁶ Similarly, the sodium hypochlorinate was to be used to disinfect the pathogenic organisms but *the actual yearly consumption was zero* implying the effluent discharged from the treatment plant was toxic. The textile management group gives little attention to solve the problem and especially *workers do not have safety materials* to protect them from the dangerous chemicals (emphasis mine).⁷⁰⁷ The researcher personally visited the site and has proved the workers do not use any safety materials while working in the treatment plant.

Almeda textile factory mainly focuses on maximization of product and less emphasis is given to pollution reduction. This is due to the belief that wastewater treatment charges extra-running cost and this might lead to incompetence in global and local market. With regard to the cost, Berhane Tecele, the Utility head at Almeda and an industrial engineer by profession notes that to operate the treatment plant in Almeda is really a costly business. The chemicals used in the treatment plant are very expensive. About 2-3 million birr (about 110,502.66-165,753.99 USD) is required to treat the waste water monthly. Even in such situation we do not get all the chemicals to treat the waste.⁷⁰⁸

The untreated effluent from Almeda is potentially a source of several health hazards to people, animals and the environment.⁷⁰⁹ What is more, Almeda has no *proper scheduled maintenance*; for instance, the mercerizing machine has high leakage of caustic soda and this leakage increases the load to the wastewater treatment plant and environmental pollution (emphasis mine).⁷¹⁰

In Almeda, the sources of liquid waste are: the knit dyeing, woven processing or wet processing, municipal or urine and other liquids wastes from the factory. The liquid waste is collected in the wastewater treatment chamber and discharged through the outlet. And finally it is disposed through the center of the compound and joins My-Berber River. The wastewater and the sewage from the existing collection system are discharged untreated into the river whose water is used

⁷⁰⁶ *Ibid.*

⁷⁰⁷ *Ibid.*, p.35.

⁷⁰⁸ Interview with Berhane Tecele, utility head at Almeda textile factory (on September 06, 2012)

⁷⁰⁹ Asfaw Mekonnen, 2008, *supra*, n.701, p.43.

⁷¹⁰ *Ibid.*, p.44.

for cultivation.⁷¹¹ (See Figure 6.1 below for the quality of Almeda textile factory effluent discharged into the river)

Figure 6.1: Untreated effluent from Almeda discharged to the nearby river



Source: (Photo taken during field work, 2012)

The quality of the wastewater and the mixed wastewater with river water is found to be above the permissible limit value for irrigation. The mixed water and wastewaters were categorized as unsuitable for irrigation. Out of the checked parameters, sixty-four per cent of wastewater and fifty-five per cent of the mixed samples were found in the non-acceptable range value of the FAO 1989 standard, which means it is not suitable for irrigation purpose.⁷¹²

The Tigray Regional State Environmental Protection, Land Administration and Use Agency (EPLAUA) research⁷¹³ on Almeda also shows all industrial wastes like: solid wastes about 18 tonnes per annum, liquid wastes from processing plant and sanitary sewer about 35 liters per

⁷¹¹ Awet Arefe. 2011. Wastewater of Almeda Textile Factory, A case study on its challenges and opportunities to surface and subsurface water quality and the irrigated agriculture of the area, Msc Thesis, Mekelle University Department of Earth Science, p.7.

⁷¹² *Ibid.*, p.x.

⁷¹³ This report is prepared by the *Authority* before it was established as *Agency* as discussed in chapter-three.

hour= $35*24*365= 306,600$ liters per annum and smoke from boilers usually carbon dioxide of unknown volume is discharged to the environment.⁷¹⁴

The Authority interviewed 16 households living around Almeda, public administrative bodies in the area and examined the contaminated river where the factory discharges its liquid waste and found out different environmental impacts that did not exist before. Some of the environmental impacts the Agency discovered are high obnoxious odour, development of scabies when children wash from the river, dark diarrhoea on cattle when they drink the polluted water from the river, destruction of bees, destruction of fishes, death of sheep and goats, respiratory infection, vegetable destruction, water logging of farm lands and pollution of farm land and grazing land.⁷¹⁵

The Authority also mentioned in its research, the executive body in the study area reported that 420 allergy cases on the residents specially on children, death of 310 animals, migration of 52 boxes of bees, death of 47 bees. Moreover, 61 people were exposed to incurable diseases and one big river and three streams were polluted.⁷¹⁶ The Authority's research also concluded that Almeda lacks: appropriate waste management structure and system, necessary chemicals for waste treatment, Environmental Impact Assessment, continuous monitoring and enforcement by concerned bodies and awareness and willingness to treat its effluent.⁷¹⁷

With regard to Almeda's environmental pollution, Adua Wereda Agriculture and Development office where Almeda is located has also written a letter to Almeda on 10/10/2001 E.C/(17/6/2009 GC). The letter mentions 26 hectares of irrigated land was destroyed, there was a problem on human and animal health and on bee production.⁷¹⁸ The letter also requested the factory to pay compensation to the farmers whose farm lands were destroyed due to the untreated liquid waste discharged from the factory.⁷¹⁹

⁷¹⁴Tigrai Regional Environmental Protection, land Administration and Use Authority, 2006. *A report on the assessment of environmental impact mitigation mechanisms of manufacturing and service delivering organizations* (first draft), p.10.

⁷¹⁵*Ibid.*, p.11.

⁷¹⁶*Ibid.*

⁷¹⁷*Ibid.*, p.12.

⁷¹⁸ Adua Wereda Agriculture and Rural Development office, 2001E.C.(2004) (on file with the researcher)

⁷¹⁹*Ibid.*

After Adewa Wereda Agriculture and Development Office, Adua Wereda Administration Office also warned Almeda to stop polluting the environment and to pay compensation to the farmers in its letter written on 11/01/2002 E.C/ (21/9/2009 GC)⁷²⁰ In its letter the administration mentioned Almeda was given a warning repeatedly from the Health Office and EPLAUA but it did not take corrective measure accordingly.⁷²¹ Finally, the letter strongly warned that if the factory did not pay compensation and find a means to manage its waste until 15/1/2002 EC/ (25/9/09 GC) it would be forced to initiate a legal action.⁷²² However, so far no legal action is initiated against Almeda and the pollution still persists.

With regard to Almeda's waste water impact on the environment, in order to triangulate the researches mentioned above, the author interviewed affected community members, Wereda and Tabia council members and local government officials. One of the affected farmers, Zenebech G/yohanes who has been awarded a certificate for being a model farmer in the Region from the late Prime Minister Zenawi notes that;

Almeda created job opportunity to the poor; however, its waste water is affecting us very much. The chemicals in the waste water are destroying different ripe fruits on our farmland—like orange and papaya. Due to the waste water from Almeda, I have lost like 100,000 Birr [5,533.16 USD] and two bee hives I got from the government.⁷²³

Zenebech also notes that “when our fruits were destroyed we complained to Rural Adwa Wereda Administration. However, even if the Administrator told us he would discuss the matter with all concerned bodies still there is no solution.”⁷²⁴ According to Zenebech, all the community living around Almeda have complained. Especially, Tabia Bet-Yohannes and Bet-Tieum. Out of these two—Bet-Yohannes—which is located closer to Almeda is the one most affected.

Zenebech further notes that some community members sued Almeda in court but she did not. The reason she gave for not suing in court was, “since the government is aware of the problem I

⁷²⁰ The Government of National State of Tigray Central Zone Adua Wereda Administration Office, 2002 E.C. (on file with the researcher)

⁷²¹ *Ibid.*

⁷²² *Ibid.*

⁷²³ Interview with Zenebech G/Yohannes resident of Tabia Bet Yohannes where Almeda is located and a member of Wereda Adwa Council (on September 05/2012)

⁷²⁴ *Ibid.*

do not want to sue my government.” However, even if she did not sue, she has been complaining in every conference or meeting she has participated. She also highlighted as a member of Wereda Adwa Council she raised the issue in the Council. She further notes that considering the gravity of the problem, researchers visited them and they took samples from the waste water but so far she is not aware of any result or solution and the problem still persists.⁷²⁵

According to Zenebech and as the other key informants who testified below, the major affected areas by Almeda are three Tabiyas (districts). These are Betyohannes, Tabia Maitieum and Addis Alem. However, the effect of untreated waste water goes up to Wereileke far away from these three Tabiyas. Zenebech also states that;

During the rainy season Almeda dumps its waste water to the river daily. She further noted that in the river where Almeda dumps its waste water you cannot find a single living animal even a frog. However, the irony is the government tells us to get training on fish production.⁷²⁶

As to the effect of the waste water Zenebech states that;

When someone touches the waste water from Almeda it burns his/her skin and his/her skin breaks and incurs cost for treatment. I once had an incident and it took me some time to recover and still I carry a scar on my leg.

Zenebech also states that;

Currently in order to reduce the damage we add ash and animal shit on our land under the plants then we use the waste water. By doing this we grow onion and tomato. Using this method we saved like 38,000 Birr [2,102.23 USD] from the sale of tomato and onion.⁷²⁷

Fistum Hagos speaker of Tabiya Yohannes Council where Almeda is located also notes that;

The affected community in our Tabia repeatedly complain to our Council. Accordingly, our Council have discussed on their written application and suggested two options—one experts should evaluate the damage and compensation should be paid to the victims; two, either the victims or their children who are above the age of 18 to be employed in Almeda by way of compensation. So far land compensation is not paid and still the affected community are complaining, even some of them are suing in court. However, for those who preferred their children to be employed, the Tabiya gave them a

⁷²⁵ *Ibid.*

⁷²⁶ *Ibid.*

⁷²⁷ *Ibid.*

support letter indicating that their land is damaged and their children are above 18 and their children are hired.⁷²⁸

Fistum farther notes that;

As to me the biggest problem is the fact that the factory intentionally discharges the untreated waste water to the river and the farmers divert the polluted river to their farmlands. And the polluted waste destroys many fishes, animals and bees. Adwa Wereda Council and the Wereda Administrator have visited the polluted area but still there is no solution.

He also teased the researcher by saying; “you also have come to our Tabiya to visit the polluted area as a researcher; we will see what you will do.”⁷²⁹

Rahel Aregawi Rural Adwa Wereda Council Deputy Speaker states that;

Almeda’s pollution and its chemical effect on animals and farm lands were discussed at our Council. This is well researched and currently the Federal government is taking care of it. Since the Tabia Council were not able to solve the issue our Council discussed and reported to the Regional Council.⁷³⁰

Gebru Berhe the Wereda Adwa administrator remarks;

I received collective and private complaints from the affected communities around Almeda. The most affected Tabiyas are three. These are: Tabia Bet Yohannes, Bet Tieum, and Addis Alem. I know there are farmlands which are out of use due to the waste water from Almeda. I also know there are people who sued Almeda in court. But we always advise the affected communities not to go to court since the Factory is the fruit of our struggle.⁷³¹ I have also written a letter to EFFORT board chair person Tedros Hagos, to Wereda Land Use Administration and Environment Protection Desk and the Agency at the Region. People from the Tigray Peoples Liberation Front (TPLF)⁷³² have also visited the area. Even the former head of the Region Tsegai Berhe has visited the area. I could say there is no one who has not visited or is not aware of the problem. However, still there is no solution.⁷³³

⁷²⁸Interview with Fistum Hagos Speaker of Tabia Bet Yohannes Council where Almeda is located (on September 05/2012).

⁷²⁹*Ibid.*

⁷³⁰Interview with Rahel Aregawi Rural Adwa Wereda Council Deputy Speaker (On September 04/2012).

⁷³¹ Interview with Gebru Berhe Wereda Adwa Administrator (on September 05, 2012)

⁷³²Tigray People’s Liberation Front is one of the four political parties constituting EPRDF the current ruling Party in Ethiopia.

⁷³³Interview with Gebru Berhe, Wereda Adwa Administrator, (on September 05, 2012).

He also notes that;

Getachew Belay the head of EFFOT also knows about the problem. We discussed the case with him and he also visited the area in person and he told me in order to give a lasting solution they would build a treatment plant but still they have done nothing. So far there is no solution.

He further notes that;

Since the current Tigray Regional State Head Abay Woldu, Tedros Hagos the chair person of EFFORT Board and all officials know about the problem, I believe the solution to the problem is only to be expected from these higher officials at regional level.⁷³⁴

Tesfay G/hiwet Acting Head of Land Administration, Use and Environment Protection Desk at Wereda Adwa states;

We went to investigate the situation in Almeda and we are quite aware on the existence of the problem. Accordingly, we wrote a letter about the situation to the Agency and to the Wereda Governor. The Wereda Governor has also written a letter to the regional executive. The Agency head Kiros also visited Almeda and saw the problem in person. Assefa the pollution expert from the Agency has also visited Almeda and saw the problem.⁷³⁵

According to Tesfay, the Tabiyas (areas) mostly affected by pollution from Almeda are: Betyohanes, Maytuem and Addisalem. These three Tabiyas are very famous for irrigation and they irrigate about 600 hectares of land. Especially Betyohans and Mayteum are very famous and successful models on irrigation. He also remarks that;

If the affected farmers started to complain it would be difficult for Almeda. However, the farmers pushed on complaining and we wrote a letter to Almeda. We even told the farmers they can sue Almeda in court. Of course, the Desk did not pass decision on Almeda's waste. We felt if we pass a decision Almeda will be affected. Instead we opted to negotiate with Almeda and we also facilitated that the children of the affected farmers those who are above 18 to be employed in Almeda. The Desk's power is simply to declare Almeda should be sued in court. Once we declare this the court can pass any decision including closure of the factory. As a Desk we did not dare to say it should be closed since it employs more than 5000 employees. Our emphasis is limited to creating awareness to Almeda and the community.⁷³⁶

⁷³⁴ *Ibid.*

⁷³⁵ Interview with Tesfaye G/hiwet acting head of Land Administration, Use and Environment Protection Desk at Wereda Adwa (On September 04/2012)

⁷³⁶ *Ibid.*

6.3.3.1 The case of Berihu v Almeda Textile Factory⁷³⁷

Almeda's environmental impact is also clear from *Berihu v Almeda Textile Factory case* presented to Adua Wereda Court in Civil File No. 04832 on 23/9/02 E.C (31/5/2010 GC). In this case, Berihu alleged, Almeda, by discharging its untreated effluent which contains different chemicals has destroyed the teff (stable crop in the country) he has grown in his farm in the year 2001 E.C (2008 GC). Berihu is one of the many farmers whose farm land is located very close to Almeda and whose farmland is destroyed. He is the first to initiate a court case against Almeda. In the court case, Berihu claimed a total of 8,500 Ethiopian Birr (around 482.3 USD) in damage. According to Berihu, the amount of the damage was: 6,500 Birr (369 USD) for the destroyed 6 kuntals (600 kilograms) of teff, 1,500 Birr (85.15 USD) for the straw he could have gathered from the teff he has planted and 500 Birr (28.38 USD) for the fertilizer he used to grow teff. He also requested the court to refund him the cost of litigation.

Almeda responded it discharged its wastewater to the nearby river not to the neighbouring farmlands of which the plaintiff's farmland is one. It argued that the farmers in the area including the plaintiff willingly diverted the river water into their farmlands and used it for irrigation purposes. (See Figure 6.2 below for Almeda's effluent being diverted to the nearby farm land)

Figure 6.2: Almeda's effluent being diverted to the nearby farms



Source: (Photos taken during field work, 2012)

⁷³⁷Civil File No. 04832, Adwa Wereda Court, on 23/9/02 E.C (31/5/2010 GC) (on file with the researcher)

Almeda also argued that in order to neutralize the chemicals contained in the wastewater it pumps 700 cubic meters of pure water daily into the river. Moreover, it has also argued that the amount of damage claimed by the plaintiff is exaggerated and needs to be verified by independent expert. Finally, it responded it were not responsible for the damage and requested the court to dismiss the case.

After hearing the statement of claim and defence and the oral hearing, the court has framed two issues. The issues were—did the plaintiff divert the wastewater to his farm? Did the plaintiff incur any damage?

When the case was in progress, Almeda requested the court to settle the case through negotiation though the plaintiff was not willing. With the belief that the parties will reach into an amicable solution, the court ordered the parties to negotiate. However, the negotiation failed and the court ordered the defendant to produce his witnesses. But, the defendant failed to produce its witnesses. Acknowledging and recording this failure, the court ordered the experts in the Wereda Land Administration, Use and Environmental Protection agency to assess the amount of damage the plaintiff has sustained.

With regard to the first issue, the court decided Almeda failed to prove Berihu diverted wastewater into his farmland. As to the second issue the court by assigning experts it has proved Berihu has incurred damage and awarded him a total of 5,580 Birr (316.77 USD). The amount was paid to Berihu from Almeda's bank account through the court's execution order.

The essence of the case is that, Almeda Textile factory did not deny the fact that it has discharged its untreated effluent to the river. Rather, ironically it argued Berihu willingly diverted the polluted water into his farmland and it is not responsible for it. What is more, though Almeda argued that in order to neutralize the chemicals contained in the wastewater it has pumped 700 cubic meters of pure water daily into the river; it did not argue it has treated its effluent which is not the case. Thus, the polluting activity of Almeda is very visible from the case at hand.

From the case, it is important to note that the damage awarded to the plaintiff by the court is simply the value of the property damaged, that is, the value of the crop. It did not include the actual damage to the environment like the loss of soil fertility and future earnings. Hence, this is in line with the argument made in chapter 3 section 3.3.1 (b) that the application of the polluter pays principle is a qualified one and it does not include the potentially more far-reaching and less predictable costs of environmental damage.

6.4 Sheba Leather Industry

6.4.1 Industry Profile

Sheba is one of the leading leather industries in Ethiopia in its product mix, production capacity, or organizational set up and machinery.⁷³⁸ It employs different modern information exchange and communication facilities.⁷³⁹ The Industry has taken into account the availability of raw material, energy supply, infrastructure requirements and investment incentives to build the factory at Wurko.⁷⁴⁰ It collects raw skin from different regions in the country.

According to the Acting Manager of Sheba, the selection of Wukro as a site for the industry was not viewed from business perspective only; rather, it was also seen from political perspective—to fairly distributed industries within the Region.⁷⁴¹ Five cities in the Region competed to host Sheba Leather industry. These cities were—Mekelle, Adigrat, Wukro, Axum and Tembyen. Criteria for selection purpose like—hosting other EFFORT owned sister industries and access to port was set ahead of time. In line with the criteria Mekelle and Adigrat were eliminated from the competition in the first phase since they hosted other EFFORT owned sister companies. Thus Wurko, Tembyen and Axum remained. Axum was also eliminated due to the fact that it did not have enough water resource. Tembyen was also dropped due to lack of infrastructure (telephone, transport, and banking system) and due to the fact that it is very hot and not good for the skin. Finally, Wukro was selected as a site for the industry because it has ground water, river and good communication facilities. It was also felt Wukro was very close to Masawa port in Eritrea.⁷⁴²

⁷³⁸ Sheba Leather Industry; available at, <http://www.effortgroup.org/sheba/index.htm> (Accessed on Jan.2011)

⁷³⁹ *Ibid.*

⁷⁴⁰ Interview with Sheba Leather Industry Acting Manager Tesfit Fessehaye (Feb.09, 2011)

⁷⁴¹ *Ibid.*

⁷⁴² *Ibid.*

Sheba leather industry is legally registered and established in 1993 in accordance with the Commercial Code of Ethiopia with an authorized and paid-up capital of USD10 million for the commencement of its operation.⁷⁴³ The total investment capital has reached about USD 30 million.⁷⁴⁴ In 2009/10, the number of its employees was 1050.⁷⁴⁵ However, due to financial problems it was not operational until April 2004.⁷⁴⁶ In 2004 it started with a capacity of 4000 piece sheep and goat skins though in the mean time it has increased to 5000 piece per day.⁷⁴⁷ After two year, in May 2007 an expansion was undergone.

With regard to the expansion process in Sheba the acting manager noted that the expansion was necessary in order to add value to Sheba's products and earn hard currency, to create more employment opportunity and to encourage small industries to buy skins from Sheba. In the expansion process there was a move to shift from wet blue and pickle to crust. After the expansion Sheba started to produce 6000 piece per day. Currently it also produces 500 pairs of shoes per day but its future aim is to produce 2000 pairs. The following crust leather products are also currently produced by the industry--sheep crust--for upper, glove, garment and lining. Goat crust for—upper suede and lining.⁷⁴⁸

In its production process the Industry uses different chemicals. Almost all these chemicals are imported from abroad using hard currency though few are available in the local market. Some of the chemicals used by the Industry are--sulphuric acid, common salt and lime.⁷⁴⁹

With regard to marketing and sales activities, 95 per cent of the total production is exported to the international market in the form of crust while the remaining 5 per cent is sold to local market in the form of sheep crust.⁷⁵⁰ The major destination countries for the export products are: Italy, china, India, Pakistan, the Netherlands, Turkey, Thailand, Malaysia and

⁷⁴³ *Ibid.*

⁷⁴⁴ *Ibid.*

⁷⁴⁵ *Ibid.*

⁷⁴⁶ *Ibid*

⁷⁴⁷ *Ibid.*

⁷⁴⁸ *Ibid.*

⁷⁴⁹ Interview with Tedros Abraha Business Excellence and Innovation Department Head at Sheba Leather Industry (Feb. 08, 2011).

⁷⁵⁰ Tesfit Fessehaye Acting Manager of Sheba, *supra*, n.740.

others.⁷⁵¹ Considering the long term commitment and the Ethiopian government policy, the industry is designed to produce 100 per cent of finished leather for local and international market.⁷⁵² In the future, the industry plans to produce 1,000 pcs of cow hide, 10,000 pcs of sheep and goat skin up to finishing, 2,000 pairs of leather shoes and 1,000 pairs of gloves per day to the international market.⁷⁵³

6.4.2 Process Overview

6.4.2.1 Production Process Overview

The production process in Sheba includes—soaking;⁷⁵⁴ liming and unhairing;⁷⁵⁵ fleshing and delimiting;⁷⁵⁶ bating;⁷⁵⁷ degreasing;⁷⁵⁸ pickling;⁷⁵⁹ tanning;⁷⁶⁰ sammying and shaving;⁷⁶¹ post-tanning;⁷⁶² and drying and finishing.⁷⁶³

⁷⁵¹ *Ibid.*

⁷⁵² *Ibid.*

⁷⁵³ *Ibid.*

⁷⁵⁴ Sheba receives salted raw hides and skins which must be cleaned and rehydrated through soaking. This is done by placing the skins or hides in drums. In the process dirt, blood and dung are removed. Chemicals used in the process are 0.2-2.0 grams per liter *sodium hydroxide*, up to 1 gram per liter *sodium hypochlorite* and/or 0.5-2.0 per cent wetting agents, emulsifiers, surfactants etc.

⁷⁵⁵ In liming and unhairing the hide and skins are treated with a solution of *lime* and *sodium sulphide* or *sodium hydrogen sulphide* to remove hair and loosen the hide and skin structure. Unhairing is normally carried out by dissolving in a chemical solution. Chemicals generally used are 2-10 per cent *calcium hydroxide* (lime), 1-4 per cent *sodium sulphide* or *sodium hydrogen sulphide*. Some *caustic soda* may also be used. Enzymatic preparations have been increasingly used in the last years.

⁷⁵⁶ Fleshing is the mechanical scraping of adhering connective tissues, fat etc, from the flesh. On the other hand delimiting solubilises the absorbed *calcium hydroxide* and brings the skin and hide to the desired pH, mainly to avoid interference with the subsequent tanning stage. The process is carried out by washing and by using water combined with neutralizing chemicals. Chemicals used are *ammonium chloride* or *sulphate*, 0.5-2.0 per cent acid (*lactic, formic, boric* and mixture) *acidic salts*, *sodium bisulphate*, *hydrogen peroxide*. The use of gaseous carbon dioxide instead of ammonium salts has been increasing.

⁷⁵⁷ Bating treats the hides with proteolytic enzymes to purify the material prior to tanning. It loosens the hide structure and removes unwanted proteins, and is often carried out in the delimiting liquor. The chemical used is often 0.5 per cent bating material, which consists of 50 per cent *wood flour* (or another carrier). 30 percent delimiting agent (*ammonium chloride*) and 1-5 percent *pancreatic enzyme*.

⁷⁵⁸ Degreasing is the process of removing fats from the skin. This is especially important in sheepskin tanneries as the fat content of their raw material is large. The process uses solvent degreasing. Solvents, which are increasingly substituted or combined with surfactants and/or enzymes, include perchloroethylene, monochlorobenzene and kerosene.

⁷⁵⁹ Pickling brings the hide and skin to the desired pH for tanning. Chemicals used include *sulphuric acid* (0.2-2.0 per cent) and salt (5-10 per cent).

⁷⁶⁰ Tanning stabilizes the collagen structure of the hide and skin using natural or synthetic chemicals. The process imparts a particular feel to the leather. The most commonly used tanning agent is a basic *chromium sulphate*. Tanning is completed with a basification to bind the chromium in the leather. Chemicals used in tanning are: *chrome tanning salts* with an average of 14 per cent chrome (used in amounts of 8-12 per cent for common

6.4.2.2 Waste Treatment Process Overview

In Sheba wastes from the production process are classified into three categories: solid, liquid and gaseous wastes.

- **Solid Waste**

The major solid wastes are: raw trimming waste, preservation salt waste, fleshing waste, dry trimming waste, buffing dust, shaving waste, unusable split and sludge from the treatment plant.⁷⁶⁴ Currently, solid waste is treated through on site disposal in the very premise of the Industry. But there is a plan to build land fill disposal system about 10 kilometres from the premise of the Industry. The Industry has already secured a piece of land required for that purpose from the responsible government organ. The very rational for building land fill site is to segregate the different types of wastes and treat them accordingly. For instance, to segregate chrome bearing solid waste from fleshing waste. If wastes are mixed up like what the current practice in Sheba is, they may give noxious odour and they could be dangerous to the environment and cause bad odour.⁷⁶⁵

- **Liquid waste**

In Sheba, liquid wastes are classified into: saline waste, lime waste (sulphide (H₂S)), chrome waste and general waste.⁷⁶⁶ All these liquid wastes have their own pipe lines from the production to the treatment plant. They do not mix in their way to the treatment plant. If mixed they would be difficult for the treatment process.⁷⁶⁷

processes and 5-6 per cent for low chrome processes). 1.0 per cent *sodium bicarbonate*(basifying agent to adjust pH), 0.5 per cent masking agent (sodium formate), and up to 0.9 per cent fungicide.

⁷⁶¹ Sammying brings leather to uniform semi-dewatered state. The leather is passed through a sammying machine that squeezes surplus water out of the leather. On the other hand, shaving is a mechanical process that controls the leather thickness.

⁷⁶² Post-tanning is divided into four stages-neutralization, retanning, dyeing and fat liquoring. Neutralization de-acidifies the leather. Retanning comprises a supplementary tannage and gives the leather its final properties. Dyeing uses aniline dyestuffs, while fat liquoring softens the leather. Chemicals used include: neutralizing-1 percent mild alkali or syntan; retan-tanning agents (often syntans); dye-1-6 per cent dyestuff/aniline dyestuff; and fat liquor-3-10 per cent sulphonated fish, vegetable or animal oils, mineral and synthetic oils.

⁷⁶³ Leather is dried using vacuum drying, toggling, paste drying, microwave drying or a combination of these. Finishing of the crust leather is done in order to achieve the necessary fastness and properties demanded by the customers.

⁷⁶⁴ Interview with Engineer Hadush Tuem wastewater treatment head at Sheba Leather Industry (Feb. 08, 2011)

⁷⁶⁵ *Ibid.*

⁷⁶⁶ *Ibid.*

⁷⁶⁷ *Ibid.*

Saline waste includes preservation salt liquid waste, dung, blood, and 1st and 2nd wash of soaking. This saline waste through saline lifting pump it is pumped to saline evaporation pond. Here, the presumption is, at arid zone area (like Wukro where the industry is located) the evaporation rate is very high and it is assumed the rate of evaporation is almost equal to the daily incoming saline waste to the evaporation pond. If saline waste is not treated or regulated properly it may cause soil pollution or ground water contamination. In Shebathe evaporation pond is constructed from concrete and is lined with hard plastic material (horeyo or water harvesting plastic) to prevent leakage. Thus, there is no leakage.⁷⁶⁸

If not treated, lime waste is responsible for bad or noxious odour. This bad odour gives negative image to all tanning and leather industries. Sulphide waste or lime waste creates a rotten egg smell and it is toxic in its nature. Sulphide is treated through sulphide oxidation process. This sulphide oxidation process is introduced in Sheba leather industry for the first time in Ethiopia. It is really very expensive due to chemical and treatment cost.⁷⁶⁹

For treatment purpose raw lime waste is pumped 1st to sulphide oxidation tank. In the process magnesium sulphide is added as a catalyst to shorten the reaction time and sulphide bearing waste is oxidized to sulphate waste which is harmless waste (this is called sulphide pre-treatment). Then sulphate goes to the homogenization (equalization) tank for further treatment. The main principle here is sulphide and chrome bearing wastes should be segregated before mixing with the general waste.⁷⁷⁰

Chrome waste goes to the treatment plant through its separate pipe line to the chrome pit (tank) in the treatment plant. There is no chrome pre-treatment in Sheba. Through chrome waste pump the chrome waste is pumped and mixed to saline lifting tank. In the saline lifting tank it would be mixed and treated together with saline waste in the saline evaporation pond. Then, it goes to the evaporation pond and it evaporates to the atmosphere. The mixture of chrome and saline wastes in the evaporation pond will not have effect but if there is leak or spill it is dangerous.⁷⁷¹

⁷⁶⁸ *Ibid.*

⁷⁶⁹ *Ibid.*

⁷⁷⁰ *Ibid.*

⁷⁷¹ *Ibid.*

General waste includes every type of waste except chrome, pickling, and lime wastes. The pH of the general waste could be neutral (pH=7), acidic (PH<7) and alkaline (PH>7). General waste also contains different types of colour, odour and pH. In Sheba, regarding general wastes there are two types of treatments--primary treatment and secondary treatment.⁷⁷²

In the primary treatment, the first thing to be done is physical separation of solid and liquid waste. Then equalization—making all the wastes to have same physical characteristics in terms of colour and pH. This is done through mechanical action by diffuser and blower. Then the mixed and aerated effluent is pumped to the flocculation tank where flock formation is facilitated by means of dosing chemicals/sedimentation process facilitators which are called Aluminum sulphate (coagulant) and poly electrolyte (flocculent). The mixed and aerated effluent is pumped to Primary Sedimentation Tank where it would be retained for 4 hours. There are three zones of sedimentation namely—clear liquid zone; supernatant zone; and sludge zone. Then by head difference, the clear liquid after a retention time of four hours, it goes to the Biological Oxidation Tanks (where secondary treatment begins). In the biological oxidation by means of bacterial action and mechanical action, the organic and inorganic effect of the waste is deteriorated. For bacterial growth the following is a requirement—food (the clear liquid zone in the sedimentation process), suitable environment (PH 6-8, T=20-25 degree centigrade, no presence of sulphide), air (O₂) by membrane diffuser and blower. Finally, the biologically degraded waste goes to the final sedimentation tank (final clarifier) by head difference. In the secondary sedimentation tank clarification process would be undergone—suspended solid just coming from the biological oxidation tank (suspended solids that were unable to settle in the primary sedimentation tank) will be removed by means of gravitational force (weight difference). Then it would be pumped to the final lagoons where about 60-70 per cent removal of pollution terms are undergone (BOD, COD, TSS, TDS ...) by means of aerobic and anaerobic reaction. Then, the treated effluent could be used for irrigation purpose after analyzing and checking the basic requirements (discharge limit values). Currently, in Sheba there is a plan to establish prototype irrigation within the premise of the Industry using treated effluent waste in order to convince the nearby community to do the same in the future.⁷⁷³

⁷⁷²*Ibid.*

⁷⁷³ *Ibid.*

With regard to general wastewater treatment the excess sludge (about 90-95 percent water by mass) from the 1st and 2nd sedimentation tanks is pumped using a mohno pump to sludge thickening where about 20-25 per cent of sludge by mass is formed. This tank aims to minimize the drying rate at the sand drying beds. The dried sludge from these beds is removed manually. And the system repeats this way.

The activated sludge from the 2nd sedimentation tank is used to increase the population of bacteria in the biological oxidation tank (BIOX Tank). Waste from toilet is also injected to the biological oxidation tank as a means of enhancing bacterial population that finally consume the inorganic and organic bearing waste coming to the biological oxidation tank. If the sludge is composed of heavy metals it will not be used as fertilizer but through composting process it could be used for fertilizer. However, in Sheba there is no composting process. Rather, the heavy metals containing dried sludge are proposed for landfill within the premise of the Industry.⁷⁷⁴

- **Gaseous waste**

Normally, since measuring gaseous waste in the atmosphere requires sophisticated technology the figure is not measured at Sheba. The gaseous wastes are like ammonia (NH₃) which has bad smell and volatile organic carbons which are used in the finishing process.⁷⁷⁵ Thus, in Sheba there is no treatment for gaseous wastes.

6.4.3 Environmental Impact

Different researches by different scholars and interviews conducted by the researcher indicate Sheba leather industry's environmental impact like that of Almeda is also worrisome. For instance, Abraha Gebrekidan, Gebrekidan Gebresellasié and Afework Mulugeta Mekelle University Chemistry Department researchers by taking different samples from—the untreated tannery effluent (S₁), sedimentation pond (S₂), chromium oxidation pond (S₃), downstream river (S₄), downstream spring (S₅) and 5 kms upstream river (S₆); found out that the mean levels of hexavalent chromium in all the samples to be as: 10.54, 9.15, 7.82, 0.58, 0.54 and 0.015 mg/L

⁷⁷⁴*Ibid.*

⁷⁷⁵ *Ibid.*

respectively.⁷⁷⁶ In their research they also conclude that “the levels of hexavalent chromium in the downstream river and spring water samples exceed the World Health Organization (WHO) permissible limit of total chromium in drinking waters (0.05 mg/l) as opposed to the levels in the upstream waters.”⁷⁷⁷ This is even higher than the limits set in the standard for tanning and leather finishing industries in Ethiopia—0.1 mg/l. (See Appendix 3.4 as discussed in chapter 3)

They further conclude that the increase in the concentration of Cr (VI) indicates the treatment process in Sheba is not properly functioning and this shows the possible environmental pollution by Sheba.⁷⁷⁸ Finally they recommend that the level of the Cr (VI) from Sheba’s effluents must be reduced before it is discharged into the downstream waters that are used for domestic purpose by the nearby communities. They further warn—the release of significant untreated Cr (VI) could pose a potential damage on human or animal health and that it deserves further investigation.⁷⁷⁹

Hindeya Gebru who also made a research on the impact of Sheba Leather Industry wastewater disposal on the surface and sub-surface water on its surrounding notes that after using different chemicals in the production process Sheba produces three types of waste—gas, solid and liquid. The solid and liquid wastes are dumped in the waste disposal site along the drainage line excavated and protected by natural loose material. Since the walls of the waste disposal site are made up of loose materials the liquid waste easily infiltrates and pollutes the surface and ground waters downstream.⁷⁸⁰

By taking sample wastewaters from Sheba, upstream and downstream areas, Hindeya found out; the wastewater disposal sample taken from Sheba contained high concentrations of major cations, anions and heavy-trace elements relative to the down and up streams. The upstream water samples were characterised by nil concentrations of heavy and trace elements of Cr, As, Cd, Zn, Pb, Co, Mn, Cu, Ni, and Fe while the downstream water samples of the two nearest pits

⁷⁷⁶Abraha Gebrekidan et.al. 2009. Environmental Impacts of Sheba Tannery (Ethiopia) Effluents on the Surrounding Water Bodies, Bull. Chem. Soc.Ethiopia, 2009, 23 (2), p.269.

⁷⁷⁷*Ibid.*

⁷⁷⁸*Ibid.*

⁷⁷⁹*Ibid.*, p.273.

⁷⁸⁰ Hindeya Gebru, 2011. *The Impact of waste disposal from tannery on the surface and sub-surface waters of the surrounding area: a case study in Sheba Leather Factory, Wukro, Tigray, Northern Ethiopia*, Msc Thesis, Mekelle University Department of Earth Science, p.10.

and pond had significant concentration of heavy and trace elements next to the wastewater disposal sample and some of the elements were above the limited standards of WHO, 1984 and 1983 for water supply like chromium, cadmium/arsenic and lead. This indicates that originally the area had no concentration of toxic elements but now toxic elements are added to some part of the water points of the downstream.⁷⁸¹

Hindeya recommends that the partial and untreated wastewater should not be released from the disposal site to the open area of drainage and cultivated land, and the waste disposal site should be protected properly and sealed by concrete or cement materials. He further recommends that the disposal site should not be near the drainage and should not be prevented using loose materials which could be removed by runoff water in the rainy season and then easily contaminate the nearby water bodies, soil and crops.⁷⁸² (See Figure 6.3 for the open disposal area at Sheba leather industry below)

Figure 6.3 open disposal area at Sheba leather industry



Source: (Photo taken during field work, 2012)

Hindeya also strongly cautions since the wastewater from Sheba which is released to the drainage and currently blocked by loose material is being discharged to the Genfel River; and Genfel River also joins the big Geba River which in turn is proposed for the construction of a big

⁷⁸¹*Ibid.*, p.88.

⁷⁸²*Ibid.*, p.89.

dam to Mekelle community; as a matter of public health and safety the wastewater from Sheba needs to be treated properly.⁷⁸³

With regard to Sheba's impact on the nearby community Hagos Tesfay and Ghebreslassie Ghebreegzabihier two community members interviewed by the researcher note that the community living near the Industry specially kebele 04 residents complain from bad smell (odour) coming from the Industry. As residents of Kebele 04 (Hayelom Kebele) we also suffer from this bad smell. The smell comes always early in the morning when the residents go for church—from 05:00-07:00 a:m and in the evening from 05:00-06:30 p:m. Especially, the smell is very notorious when there is high wind moving from the industry direction to the city (Kebele 04). What is more, asthmatic people suffer a lot from the smell. The main victims of the smell are kebele 04 residents. Sometimes the smell goes to the heart of the town. Even the people in Coffee Houses in the center of Wukro town complain of the smell. The smell is very notorious when it is very hot especially during the Orthodox fasting season (Tsom Arbaa).⁷⁸⁴

When asked whether the community members have ever complained to the concerned local administrative organ or to the industry; they responded that as far as their knowledge is concerned the people do not complain about the smell, they simply live with it. It is possible that they might have complained but they have no knowledge about it. What they know is at the beginning the people of Tabiya Aynalem (the downstream people) have complained about the waste water which was freely disposed to their area. Due to this complaint the industry dug a ditch and tried to contain the waste water from flowing to the locality but even if blocked when it is full it overflows. What is more, in the rainy season since it overflows it is very problematic. Even if the wastewater is blocked the smell is still there. People were also saying some animals of Tabiya Aynalem died from drinking the wastewater.⁷⁸⁵

As to the industrial waste management both liquid (effluent) and solid at Sheba Leather Industry, Tabotu Deres notes that during the rainy season the factory discharges its effluent to the river all

⁷⁸³ *Ibid.*, p.90.

⁷⁸⁴ Interview with Hagos Tesfay and Ghebreslassie Ghebreegzabihier residents of Kebele Hayelom or Hadush Sefer (new village) situated close to Sheba Leather Industry, (Feb. 09, 2011).

⁷⁸⁵ *Ibid.*

the time, day and night. During dry season the factory discharges its effluent at night. As to the solid waste from the Industry, it is dumped in the premise of the Industry and this is what creates bad smell in our Tabiya [district] and even to the nearby big town Wukro.⁷⁸⁶

With regard to Sheba Leather Industry's pollution impact on the health of the nearby communities and damage to their properties, Tabotu also underlines that because of the smell from the Industry most of the population in her Tabiya (district) are *asthmatic* (emphasis mine). They have also lost many animals. The effect of the Industry's pollution is not limited to their Tabiya; it also affects other three neighbouring Tabiyas' as well.⁷⁸⁷ Tabotu further emphasises that in her Tabiya they had around eight wells dug for drinking water purpose but all of them were polluted with the industry's chemicals. Since she is a member of the standing committee at the Wereda Council she visited them all and all of them were polluted. When she asked the Wereda Administration why the Industry does not clean them, she was told the industry does not have financial capacity.⁷⁸⁸

Mohammed Salih a member of the Tigray Regional Council who is representing Wukro town in the Council also notes that at the beginning Sheba did not have industrial waste treatment plant. It was simply dumping its waste to the nearby river. Because of this many animals belonging to the nearby community died and the community were asking for the closure of the Industry. There was also severe odour affecting the community. The odour was even affecting the nearby town (Wukro) kebeles.⁷⁸⁹ However, it should also be stressed that as the researcher has personally experienced, the bad smell still continues to be felt by passengers who travel from Mekelle to Wukro or vice versa.

As to the complaints of the nearby community on Sheba's environmental impact, Mohammed also notes that the community through their representative in the Regional Council have complained to them (the Economic Standing Committee of the Council). The Community also

⁷⁸⁶Interview with Tabotu Derese Hadera a member of the Wereda Council and a member of the social affairs standing committee in the Wereda council (On March 2012)

⁷⁸⁷*Ibid.*

⁷⁸⁸*Ibid.*

⁷⁸⁹Interview with Mohammed Salih a member of the Tigray Regional Council representing Wukro City in the Council and Chair Person for Legal and Administrative Standing Committee (On Jan. 27, 2011).

told them all the problems when they returned to their respective areas (constituencies). As a result all the standing committees in the Regional Council visited the area where the industry is located and discussed with the manager of the industry. The manager told them the industry will invest around 10 million Birr (565, 450.50 USD) and introduce waste treatment plant. Mohamed hopes that by now the industry have introduced waste treatment plant and the problem is solved.⁷⁹⁰

Mohammed further notes that with regard to Sheba, beginning from its establishment the Aynalem Community where the industry is located was against its establishment. They were complaining that unlike other areas of their Region the Government has dumped to them a stinky leather industry. With this in mind the Aynalem People filled with stones overnight a well dug by the industry at its establishment phase. But later on an agreement was reached with the people.⁷⁹¹

Unlike Mohammed, Yirga Assefa emphasises that “Sheba Leather Industry has limited liquid waste treatment. From the three laboratory tests Sheba has performed out of its initiative at the federal level, all the results were above the standard.”⁷⁹² He also underlines that with regard to solid waste management there is no any treatment. The Industry does not even sort out the waste into hazardous and non-hazardous ones. The solid waste dumped in the premise of the industry also contains liquid waste, municipal waste, food wastes and different chemicals.⁷⁹³

Yirga Assefa further underlines that the industry *does not have a permit* to dump its waste to the nearby water body as the law prescribes (emphasis mine). What is more, recently he was informed the effluent which was collected in the premise of the industry was discharged to the river downstream and people were complaining about it.⁷⁹⁴

⁷⁹⁰ *Ibid.*

⁷⁹¹ *Ibid.*

⁷⁹² Interview with Yirga Assefa Pollution control expert at Tigray Regional Environmental Protection and Land Administration & Use Agency (On November 25, 2012).

⁷⁹³ *Ibid.*

⁷⁹⁴ *Ibid.*

However, it is good to note that even if the water pollution regulation framework is not well developed in Ethiopia, there are some policy documents and laws in place. For instance, the Ethiopian Water Resources Management Policy goal is to “enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available water resources of Ethiopia for significant socioeconomic development of sustainable basis.”⁷⁹⁵

The laws and regulations related to water pollution in Ethiopia usually have the objective of restoring and maintaining the chemical, physical, and biological integrity of water bodies. They attempt to regulate the discharge of pollutants, activities affecting inland water bodies and the use and disposal of wastes. Most of the dispersed and uncoordinated enforcement agencies in Ethiopia are given the mandate to assess administrative penalties, issue orders and initiate civil judicial actions. The laws and regulations on water resource management in Ethiopia require that any discharges into water bodies require a permit and impose strict liability on those who make discharges without authorization or in violation of the condition of a permit.

For instance, with regard to securing permit to dispose waste into nearby water bodies, Proclamation No.197/2000 clearly prescribes that "without having obtained a permit from the supervising body⁷⁹⁶ no body shall release or discharge waste into water resources unless otherwise provided for in the regulations to be issued for the implementation of this proclamation."⁷⁹⁷ Currently, in Ethiopia, environmental permits are required for collecting and disposal of solid or hazardous waste,⁷⁹⁸ for any discharge into water bodies,⁷⁹⁹ for operating businesses that cause air or water pollution,⁸⁰⁰ and for opening business or a project that has environmental impacts and requires an impact statement. The Ethiopian Water Resources Management Proclamation prescribes water quality standards.⁸⁰¹ It also anticipates a set of regulations that would lay out the details of the permitting process. These regulations were

⁷⁹⁵Ethiopian Water Resource Management Policy, (2001). Available at the Ethiopian Ministry of Foreign Affairs website; <http://www.mfa.gov.et/docs/Ethiopian%20Water%20Policy.pdf>(Accessed on January 12, 2015)

⁷⁹⁶"Supervising body" means the Ministry of Water Resource where it pertains to water resources at central level, or any organ delegated by this Ministry pursuant to Art. 8(2) of Proc.197/2000.

⁷⁹⁷FDRE, 2000. Ethiopian Water Resource Management Proclamation, Proclamation No.197/2000, Federal Negarit Gazeta, 6th year No. 25, Addis Ababa, pp. 1250-1261, Art.11 (1) (d).

⁷⁹⁸ Solid Waste Management Proclamation, supra, n.570, Art. 4 (2).

⁷⁹⁹ Ethiopian Water Resource Management Proclamation, 2000, supra, n.797, Art. 11(1).

⁸⁰⁰Prevention of Industrial Pollution Council of Ministers Regulation, 2008, supra, n. 417, Art. 5.

⁸⁰¹Ethiopian Water Resource Management Proclamation, 2000, supra, n.797, Art.8 (1) (e).

issued in 2005.⁸⁰² But, even if the regulations provide some detail on how a waste water discharge permit would be issued, they are premised on a set of water quality standards. They also anticipate a directive.⁸⁰³ However, neither the standards nor the directive have yet been issued. In this regard James Kruger et al note that “the Ministry of Water Resources exhibits the same pattern of delay on environmental protection as the federal EPA, waiting for a proclamation, then for a regulation, and then for directive, in order to control pollution.”⁸⁰⁴ They further note that “this process should be compared with the process to set up professional licensing at the ministry of water resources, which was outlined in the same proclamation of 2000 as pollution permits but was implemented more quickly and efficiently.”⁸⁰⁵ They also conclude that;

In Ethiopia, delays in implementing environmental permitting systems are apparent in several government offices and are not explained by simple lack of resources. In the few cases where environmental permitting has been implemented, the responsible offices lack the political will or bargaining power to make a clear choice in favor of the environment and deny permits on the grounds of environmental harm.⁸⁰⁶

The Ethiopian Water Resources Management Proclamation prescribes that in order an industry to release its effluent into the nearby water resource, it has to apply to the supervising body for a permit and also pay *fee*⁸⁰⁷ for the service.⁸⁰⁸ But, it should be stressed that even if the Proclamation talks about *charges* to be paid by the industries, the amount to be paid is not specified. The proclamation Schedule 2 prescribes that the amount of charges to be paid will be attached with the proclamation, but they have not been attached. Only Schedule 1 on the amount of fee is attached. In this regard James Krueger et al in their research also indicate that in practice “the Ministry of Water Resources does not issue permits for pollution discharges.”⁸⁰⁹ They also

⁸⁰²Prevention of Industrial Pollution Council of Ministers Regulation, 2008, supra, n.417.

⁸⁰³Ethiopian Water Resource Management Proclamation, 2000, supra, n.797, Art.8 (1) (f).

⁸⁰⁴James Krueger, et al. 2012, supra, n.301, p.85.

⁸⁰⁵*Ibid.*

⁸⁰⁶*Ibid.*, p.82.

⁸⁰⁷According to the annex of the FDRE, 2005. Council of Ministers Regulation No. 115/2005, Federal Negarit Gazeta, 11th Year No. 27, Addis Ababa, pp. 3057-3068; the fee to be paid for waste discharge permit is 81 Ethiopian Birr (around five US dollars) while the fee to be paid for waste discharge permit alteration or cancellation is 41 Ethiopian Birr.

⁸⁰⁸Ethiopian Water Resource Management Proclamation, supra, n.797, Arts. 20(1) (c) & 22(1).

⁸⁰⁹James Krueger, et al. 2012, supra, n.301, p.85.

stress that even if the federal EPA and REAs have legal authority to issue permits for hazardous waste⁸¹⁰ “in practice, [they] do not issue any permits or licenses at all.”⁸¹¹

Furthermore, the Proclamation prescribes that "Any person, who violates this Proclamation or Regulations issued there under, shall be punished in accordance with the provisions of the Penal Code."⁸¹² However, as far as the researcher's knowledge is concerned, as Yirga Assefa the pollution expert in Tigray Regional State has confirmed, and as discussed in detail in Chapter 3 section 3.3.1 (d) which deals with environmental crimes, Sheba Leather Industry does not have a license nor has it paid any charge. It is also not penalized for this either.

Nonetheless, if properly implemented, environmental permits are important regulatory instruments to control industrial pollution from textile and leather industries. It is also an important indicator of the type of sustainable development being implemented in Ethiopia. It also shows where Ethiopia stands between industrial pollution control and promoting economic development. As James Kruger et al. note “permitting serves the function of registration as well as control, and provides the government with a record of potential threats to the environment and a starting point for inspections.”⁸¹³ It “... places the initial cost of gathering information and the burden of proof on the regulated party rather than the government, and therefore can be relatively inexpensive for the government to operate.”⁸¹⁴ Permits are also “a great aid to government transparency, because they force public communications to and from the regulated party.”⁸¹⁵

⁸¹⁰*Ibid.*, p.83.

⁸¹¹EPCP, No. 300/2002, *supra*, n. 300, Art.4.

⁸¹²*Ibid.*, Art. 29.

⁸¹³James Krueger, et al 2012, *supra*, n.301, p.83.

⁸¹⁴*Ibid.*

⁸¹⁵*Ibid.*

Conclusion

Even though the Ethiopian government has proclaimed its commitment to Ecologically Sustainable Industrial Development (ESID), it is hard to say it is genuinely committed to enforce the relevant laws on pollution control necessary to integrate this value into its industrial pollution control and management practices as shown with the two cases study industries located in the Regional State of Tigrai.

For instance, the environmental pollution caused by Almeda Textile Factory on the people of Adua and those living around its environs has been found out to be very dangerous and hazardous. It has become a source of several health hazards to people, animals and the environment. The Factory mainly focuses on maximization of product and profit and gives less emphasis to the reduction of pollution which involves costs related to the establishment of treatment plants.

The main and principal findings with respect to the two factories that are subjects of this research are, it has become difficult to reconcile or strike a balance between the benefits of such industries in terms of generating employment and hard currency to the country on one hand and the serious hazards they cause to the people and environment of Tigrai Regional State in which they are located on the other. The problem is not only confined to delays in implementing environmental protection and permitting systems but also lack of coordination.

The fact that Almeda and Sheba factories are owned and managed by the members of EFFORT and the fact that Adua Wereda Agriculture and Development, Health and Environmental officers are also members of the Tigrai Peoples Liberation Front (TPLF), one of the powerful and most influential groups of the ruling party, has made it difficult to effectively implement the laws related to anti-pollution and the environment.

The lack of awareness related to the distinction between the government, the people, the only sole ruling party of the region that also owns and manages the profit driven factories in that region has also become a problem. It has become difficult for the innocent victims and communities suffering from the chemicals, solid wastes, effluents and hazardous wastes released and emitted by the two factories to take administrative and legal actions against the factories. Simply because, all including those working in the administrative regions of Tigray i.e. all the regional state organizations belong to one ruling party.

The main obstacles to the effective implementation of environmental laws and regulations in the Regional State is—the total absence of separation of powers between the endowment (EFFORT), the business and commercial aspect of such factories and the administrative and environmental organs.

Another problem is that there exists no clearly thought out plans related where such factories should be located and what precautions should be taken to mitigate pollution and environmental hazards caused to the people of the region, their live stock and agricultural produce as a result of the activities of such factories.

CHAPTER 7

PUBLIC PARTICIPATION IN INDUSTRIAL POLLUTION CONTROL

7.1 Introduction

Chapter 6 dealt with two selected industries and their impacts on the physical environment and human health conditions. Building on the practical evidence of these two industries discussed in chapter 6, this chapter addresses the role of the public in industrial pollution control. Based on the findings of the previous chapters, that is, in a situation where there is a problem of environmental law enforcement, no stronger and coordinated environmental agencies and where the use of market based incentives are at a nascent stage; this chapter argues that public participation has a potential to complement the traditional command-and-control system on industrial pollution control.

The concept public participation in industrial pollution control in this chapter is based on the right of those who are affected by industrial pollution from the two case study industries discussed in Chapter 6. Environmental Non-governmental Organizations (ENGOS) and Medias as discussed in this chapter are also taken as organized means of public participation in industrial pollution control from the two case study industries. Like the affected communities ENGOS and Medias are expected to compile data, seek to influence the legislator, intervene in the decisions of Environment Regulating Bodies and monitor compliance of the industries with pollution regulating laws. With these roles and due to their greater means, expertise, and organized efforts, ENGOS and Medias are expected to enhance the affected communities' right of information and participation. Since the right to information is a prerequisite to effective public participation in industrial pollution control efforts.

The argument in this chapter is that the effectiveness of public participation depends on access to information as precondition and its effectiveness needs to be scrutinized and carefully considered. Its attraction is to be found in the focus of the main interest-building local support and encouraging local initiatives. The down side is that it may not be able to act effectively against powerful political or economic entities. To realize its potential, it must be encouraged

and developed. If linked to the work of environmental agencies and international, national or local actors' its prospect for success is high.

The chapter also argues that public participation alone does not determine the effectiveness of industrial pollution regulation but it serves as a checking mechanism to the state and industries. In this regard, the chapter argues that public participation builds on the traditional understanding of state driven environmental regulation. It suggests that public participation is critical to motivate the state, environmental agencies and industries to act properly. In other words, the chapter argues that public participation advances a form of political accountability by raising issues such as: why are environmental agencies not regulating the polluting industries? Why are industries not treating their wastes properly?

To illustrate the above arguments, section 7.2 deals with the concept and significance of public participation in industrial pollution regulation. Section 7.3 deals with the main actors engaged in public participation. In this section, the analysis rests on linking public based actors with the main environmental agencies.

7.2 Public Participation: Justification and Modality

The discussion of the two industries in chapter 6 has shown that despite the existence of different schemes and strategies on pollution control as discussed in chapter 3 the level of industrial pollution and the damage from the two industries on the nearby communities and the environment has been worrisome.

Before the introduction of legal modernization in Ethiopia as discussed in chapter 3, local people used to have their own indigenous ways of justice administration no matter how non modern and traditional it might appear. In recent times, due to the failure of top down governance, there is an increasing awareness that decentralization of decision-making process to local actors and local people is becoming a very important and innovative model of administration. The same is true with environmental protection. Local people have a vested interest in protecting their health and environment. They know their problems and what they face on a daily basis. It is therefore the best way to ensure public participation. This is because it has a direct impact and effect on them

and their life and they are the right people to take decisive measures. They also have a sense of ownership of their life and their future and hence the local people are able to take responsibility for their areas.

This thesis uses the umbrella term public participation to encompass citizens, stakeholders, and community participation. It is used to cover a broad range of interactions between government and civil society to control industrial pollution. Actors as perceived in this thesis include both individual and collective. Individuals can be those affected by industrial pollution or citizens that are spokespersons or advocates of those affected ones such as neighborhoods. Stakeholders are those "socially organized groups that are or perceived themselves as being affected by a decision"⁸¹⁶ Stakeholders defined in this way "encompass communities that can range from geographically defined ones to population and risk groups."⁸¹⁷

Scharpfm also notes that "stakeholders can be collective actors such as neighborhood initiatives, social movements, or local network enterprises that are composite actors whose purposes are dependent on and guided by the preferences of their members"⁸¹⁸ Coenen also notes that stakeholders "can be incorporate actors such as unions, chambers of commerce, employer organizations who are composite actors with high degree of autonomy in defining their purposes from the participating actors."⁸¹⁹

As the practice on the ground shows, in Ethiopia, regulatory actions are initiated after the affected communities complain. For instance, with regard to the power of community complaint, Sintayhu Tadesse the ex-head of the Amhara Regional State Environmental Protection Department notes that;

Just to mention one incident, due to the public outcry the government was facing in our region, it has built a treatment plant and gave it to one private company in Dessie. However, the company does not use the treatment plant properly. It only

⁸¹⁶Frans H.J.M. Coenen, 2008. *Public Participation and Better Environmental Decisions: the Promise and Limits of Participatory Processes for the Quality of Environmentally Related Decision-making*, Netherlands: Springer, p.3.

⁸¹⁷*Ibid.*

⁸¹⁸Scharpfm F. W., 1997. *Games real actors play: actor-centred institutionalism in policy research*, Boulder, CO: Westview, p. 54.

⁸¹⁹Frans H.J.M. Coenen, 2008, *supra*, n. 816.

uses it when our inspectors go there to inspect. This is what we found out when our inspectors went for inspection.⁸²⁰

Meseret Mengiste, officer of environmental pollution inspection at the AAEPA also notes that “following the complaints from the general public, Addis Ababa Tannery SC, located in Kolfe Keranio District, was issued a warning on its pollution on April 13, 2011.”⁸²¹ According to Mesert, Addis Ababa Tannery SC does not have a treatment plant to dispose of its waste and accordingly chromium pollution is creating serious problem to the nearby community.⁸²²

Bethelehem Tegegne, officer of environmental pollution study and research in AAEPA also notes that "the Authority only acts when the health of residents and the wellbeing of the environment is seriously jeopardized."⁸²³ From the above mentioned incidents and from the two case study industries in chapter 6, one can observe how public pressure is serving as a backbone for the traditional command-and-control environmental regulation system in Ethiopia.

The idea of public participation in industrial pollution control in this thesis is introduced to complement the implementation of the poor enforcement of the traditional command-and-control environmental laws as discussed in chapter 3. Public pressure for the enforcement of the existing environmental laws also helps to establish the legitimacy and capacity building of the Regional Environmental Agency. It also serves to bring to the forefront the issue of development and environment concerns as discussed in chapter 1.

With regard to the benefit of effective participation, Delicath argues that participatory processes have the potential "not only to support good environmental decision making [including industrial pollution], but build a community's ability to engage other issues in more productive ways that support a solid civic base and higher quality of community experience and relationships."⁸²⁴ To this end, he offers a practical theory by which effective participatory processes can be assessed.

⁸²⁰Sintayhu Tadesse, *supra*, n.395.

⁸²¹ Elias Gebreselassie, 2011. Ethiopia: Addis Ababa Environmental Protection Authority Closes, Warns Eight Factories. Available at All Africa news; <http://allafrica.com/stories/201105170225.html?viewall=1> (Accessed on January 07, 2013)

⁸²²*Ibid.*

⁸²³*Ibid.*

⁸²⁴Susan L. Senecah, *The Trinity of Voice: the role of practical theory in planning and evaluating the effectiveness of environmental participatory processes*. In Stephen P. Depoe et al, 2004. *Communication and public participation in environmental decision making*, USA: State University of New York Press, p.14.

He calls this practical theory the Trinity of Voice (TOV) which includes access, standing and influence. Access refers to “sufficient and appropriate opportunities to express choices and opinions, for instance, education and information.”⁸²⁵

Standing refers to "the civic legitimacy, the respect, the esteem, and the consideration that all stakeholders' perspectives should be given."⁸²⁶ List of standing would include: "opportunities for dialogue and deliberation; active listening, courtesy, or an absence of discounting verbal and nonverbal behavior; early and ongoing voice... reflection of genuine empathy for the concerns of other perspectives, dialogue, debate, and feedback."⁸²⁷

Delicath argues that “influence is the outgrowth of access and standing.”⁸²⁸ He also argues that;

By influence, I do not exclusively mean that I was successful at motivating, strong-arming or manipulating others to achieve what I think is the ideal outcome, my position. Influence is not just getting my way, although at times I may. It means that my ideas have been respectfully considered along with those of other stakeholders and my representative or I was part of the process that, for example, determined decision criteria and measured alternatives against it. My idea may or may not be incorporated in whole, but access and standing have allowed an open consideration of what's at stake for everyone as priorities are set and solutions explored.⁸²⁹

He further underlines that “when we consider the synergistic dynamics of access, standing, and influence, it allows us not only to monitor existing processes but to design better processes as well.”⁸³⁰ He reminds us that “meaningful citizen involvement in environmental matters requires motivation, trust, and confidence on the part of the public. Informed and empowered public participation in environmental decision making requires inspiration, effort, and skills that require time to cultivate and develop.”⁸³¹

Public participation is based on the assumption that effective industrial pollution regulation involves a combination of bottom-up pressures which is the energies and actions of the affected

⁸²⁵ *Ibid.*, p.23.

⁸²⁶ *Ibid.*, p.24.

⁸²⁷ *Ibid.*, p.25.

⁸²⁸ *Ibid.*

⁸²⁹ *Ibid.*

⁸³⁰ *Ibid.*

⁸³¹ *Ibid.*, p.265.

community members and the responses of front-line environmental agencies. It is expected to put pressure to bear on environmental agencies to take immediate and concrete actions on polluting industries.

The other justification for public participation is that, though command-and-control regulation and market dynamics are critical, they are not sufficient to manage industrial pollution. It is only when the affected communities are able to effectively put pressure on the authorities of the state and the industries that industrial pollution could be properly addressed. If not, in a situation where the government's priority claims to be poverty alleviation through industrialization; it is hard to expect industrial pollution would be addressed properly.

Public participation enables the FEPA and REAs to exert influence on industries through formal (environmental inspectors and other legally prescribed pollution control schemes and strategies as discussed in chapter 3) and informal channels (community complaints and pressures). Public participation enables environmental agencies to become more like mediator and less of either a dictator or spectator. It also enables the representatives of the public to get the chance to voice their concerns at the negotiating table along with regulators and industry managers. It also plays a vital role in implementing sustainable development as envisaged in the FDRE Constitution, laws, policies and strategies as discussed in chapter 2.

Moreover, public participation helps to implement the procedural element of sustainable development—the right of the public to participate in environmental issues including industrial pollution management. This is also in line with Art.92 (4) of the FDRE Constitution which prescribes “government and citizens shall have the duty to protect the environment.”⁸³²

The Environmental Pollution Control Proclamation in its preamble also underlines that “the protection of the environment, in general, and the safeguarding of human health and well being, as well as the maintaining of the biota and the aesthetic value of nature, in particular, is the duty and responsibility of all.”⁸³³

⁸³²The Constitution of the Federal Democratic Republic of Ethiopia, *supra*, n.6.

⁸³³ EPCP, 2002, *supra*, n.300

Public participation is also in line with the Environmental Policy of Ethiopia's specific objective which aims to "ensure the empowerment and participation of the people and their organizations at all levels in environmental management activities."⁸³⁴

The Rio Declaration also incorporates public participation as one of the key principles of environmental governance. For instance, Principle 10 of the Declaration states that;

Environmental issues are best handled with the participation of all citizens at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes, States shall facilitate and encourage public awareness and participation by making information available.⁸³⁵

However, it is good to note that access to information is a *prerequisite* to effective public participation in industrial pollution control. This access to information (in general terms and access to environmental information in particular) is recognized as a right in most countries either in their constitutions or in their freedom of information legislation that covers most information held by public authorities. Laws requiring environmental Impact Assessment (EIAs) as discussed in chapter 2 section 2.3.3 have this feature by implication, since EIAs generally must be made available to the public for comments. Laws recognizing Public Interest Litigation (PIL) as discussed in chapter 3 section 3.3.1.5 and chapter 4 section 4.3 are also meant to enable citizens to obtain relevant information. Unlike the case in Ethiopia, some countries like the USA have gone as far as establishing Pollutant Release and Transfer Registries which specify toxic emissions and discharges from industries to be publicly disclosed.

In most countries, the right to information is provided for and designed to be meaningful and is usually legally enforceable. For instance, in the case of Ethiopia Proclamation No.590/2008 on Freedom of the Mass Media and Access to Information in Art.11 states as its objective:

To give effect to the right of citizens to access, receive and import information held by public bodies, subject to justifiable limits based on overriding public and private interests; to establish mechanisms and procedures to give effect to that

⁸³⁴EPE, 1997, *supra*, n.299, p.4.

⁸³⁵ The Rio Declaration on Environment and Development, June 14, 1992, UN Doc. A/CONF. 151/5/ Rev.1 (1992), reprinted in 31 874, 878 (1992)

right in a manner which enables persons to obtain information as quickly, inexpensively and effortlessly as is reasonably possible; and to encourage and promote public participation, public empowerment, to foster a culture of transparency, accountability and efficiency in the functions of public bodies and to encourage and promote good governance.⁸³⁶

The same Proclamation in Art.12 also states that: “All persons have the right to seek, obtain and communicate any information held by public bodies, except as expressly provided for by this Proclamation.”⁸³⁷ It further states that the right includes "... to be informed whether or not the public body holds a record containing the requested information and to obtain information from any public body.”⁸³⁸ The proclamation even states the means by which information is to be obtained.

With regard to human safety and environmental issues, the Proclamation in Art.17 (2) (c) states that records may not be refused in terms of;

... results of any product or environmental testing or other investigation supplied by a third party or the result of any such testing or investigation carried out by or on behalf of a third party and its disclosure reveal a serious public safety or environmental risk.⁸³⁹

However it should be noted that the Proclamation is mostly a copy of the Aarhus Convention in most of its contents.

Information rights are also widely found in international treaties be it in human rights treaties or environmental treaties. For instance, the right to information is included in the Universal Declaration of Human Rights (Art.19); the International Covenant on Civil and Political Rights (Art.19 (2)); and the African Charter on the Rights and Duties of Man (Art. 10).

Broad guarantees of public information are also found in regional environmental treaties. For instance, the 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes(Art.16); the 1992 Espoo Convention on Environmental

⁸³⁶FDRE 2008. Freedom of the Mass Media and Access to Information, Proclamation No. 590/2008, Federal Negarit Gazeta, 14th year No. 64, Addis Ababa, at. 4322-4362.

⁸³⁷*Ibid.*

⁸³⁸*Ibid.*

⁸³⁹*Ibid.*

Impact Assessment in a Transboundary Context (Art.3 (8)); the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade(Art.15 (2)); and the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to justice in Environmental Matters (Art. 4).

Principle 10 of the Rio Declaration is incorporated in the Aarhus Convention as one of its three key pillars.⁸⁴⁰ In addition to public participation, the Convention proposes“effective access to environmental information and ensuring a review procedure for decisions, acts, or omissions under the convention or in relation to other national environmental law.”⁸⁴¹

Coenen also notes that “the importance of public participation for environmental decision-making and sustainable development is also recognized by many international organizations;⁸⁴² and national, regional, and local authorities.”⁸⁴³ But Coenen argues that many of the justifications for public participation in the policy documents of these institutions are “functional—they see public participation as a means to an end.”⁸⁴⁴ He further argues that “a functional or instrumental perspective, with an emphasis on pragmatic usage, can be distinguished from normative perspective with emphasis on democratic and emancipatory values.”⁸⁴⁵ However, as far as this thesis is concerned the justifications for public participation need to be based on both functional and normative purposes.

The UN action plan for sustainable development, Agenda 21 also underlines that “one of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making.” It further underlines that;

In the more specific context of environment and development, the need for new forms of participation has emerged. This includes the need of individuals, groups and organizations to participate in environmental impact assessment procedures and to know about and participate in decisions, particularly those which potentially affect the communities in which they live and work.⁸⁴⁶

⁸⁴⁰Frans H.J.M. Coenen, 2008, *supra*, n.816, p.3.

⁸⁴¹*Ibid.*

⁸⁴²*Ibid.*

⁸⁴³*Ibid.*

⁸⁴⁴*Ibid.*

⁸⁴⁵*Ibid.*

⁸⁴⁶ Available at UN Department of Economic and Social Affairs Division for Sustainable Development (http://www.un.org/esa/dsd/agenda21/res_agenda21_23.shtml)(Accessed on March 2012)

The World Bank also notes that “abundant evidence from Asia, Latin America, and North America shows that neighboring communities can strongly influence factories' environmental performance.” It further notes that;

Where formal regulators are present, communities use the political process to influence the strictness of enforcement. Where regulators are absent or ineffective, NGOs and community groups—including religious institutions, social organizations, citizens' movements, and politicians—pursue informal regulation by pressuring polluters to conform to social norms.⁸⁴⁷

The Bank emphasizes that “although these groups vary from region to region, the pattern seem [to be] similar everywhere—factories negotiate directly with local actors in response to threats of social, political, or physical sanctions if they fail to compensate the community or reduce emissions.”⁸⁴⁸

With regard to the modalities of public participation in environmental decision making process including industrial pollution control, Delicath notes that “traditional approaches to public participation in environmental decision making emphasize citizen involvement in institutionalized settings with a specific mechanisms and forums for engagement with government officials and other stakeholders.”⁸⁴⁹ He highlights that the traditional approaches “exclude protest activities and other citizen actions as outside the scope of specifically organized formats.”⁸⁵⁰ He criticizes the traditional approaches by arguing that;

Although such conceptions of public participation have value in exploring particular mechanisms and forums for citizen involvement, they are unnecessarily narrow if one seeks a more complete account of citizen involvement in environmental decision making. More specifically, approaches that exclude protest activity and other forms of citizen advocacy leave unexplored the relationship between public participation in institutionalized contexts and the skills, knowledge, and emotions involved in citizen advocacy outside the specific forums of government. Furthermore, traditional accounts of public participation would further marginalize the cultural resources of protest and relegate to the

⁸⁴⁷World Bank Policy Research Report. 2000. *Greening Industry: New Roles for Communities, Markets, and Governments*, New York: Oxford University Press, pp.59.

⁸⁴⁸ *Ibid.*

⁸⁴⁹John W. Delicath, Art and Advocacy: Citizen Participation through Cultural Activism. In Stephen P. Depoe et al, 2004. *Communication and public participation in environmental decision making*, USA: State University of New York Press, p.255.

⁸⁵⁰ *Ibid.*

periphery of public participation citizen involvement in the form of art, theatre, music, and dance. I believe this is a mistake.⁸⁵¹

For Delicath, public participation includes participation in both institutionalized forums and advocacy activities in non-institutionalized contexts.

This thesis endorses Delicath's modalities of public participation in industrial pollution control—both institutionalized and advocacy activities in non-institutionalized contexts. The idea of public participation in this thesis is designed to be implemented primarily through pressuring the weak environment protecting organizations at federal and regional levels as discussed in chapter 4. It is also meant to be implemented through the application of public interest litigation as discussed in chapter 3 sub-section 3.3.1.5 and through a political means (through the involvement of the parliament) as discussed in chapter 4 section 4.3.

7.3 Actors in Public Participation

Though, the umbrella concept public participation as discussed in section 7.2 of this chapter includes citizens, stakeholders and community at large; for practical reasons, three sets of actors are only discussed in the sections to follow. These are: the affected communities, extra-local and local actors. The pressure of all these actors is the force that complements the effectiveness of the industrial pollution control and management processes from polluting industries.

7.3.1 Affected Community

The communities envisaged in this sub-section are those who live in the neighborhood of the polluting industries and who are directly affected by their industrial pollution. These communities have every right to organize and pressure the federal and regional environmental agencies and the polluting industries. In order for the affected communities to organize and influence the federal and regional environment agencies and the industries; conducive political and legal conditions should exist. This is very much linked to the issue of good governance and the relationship between the people and the authorities. That is why Van Rooij correctly notes that “understanding pollution regulation and seeking ways to improve it requires a thorough

⁸⁵¹*Ibid.*

understanding of the various power relations and political structures that exist [in any country].”⁸⁵²

In this regard, the FDRE Constitution clearly states that “every person has the right to freedom of association for any cause or purpose. [However,] organizations formed in violation of appropriate laws, or to illegally subvert the constitutional order, or which promote such activities are prohibited.”⁸⁵³ But, since these communities are organized to safeguard their rights to clean and healthy environment as stipulated in the Constitution,⁸⁵⁴ and has nothing to do with illegal subversion of the constitutional order, they have every right to organize and put pressure on environmental agencies and the polluting Industries. In line with the Constitution, the affected communities who live near the polluting industries have the fundamental right to speak for themselves and challenge the polluters and the authorities who take no decision to prevent industrial pollution. Nonetheless, the effectiveness of these communities to pressure the FEPA and REAs and polluting industries depend among others on three crucial factors. These factors are: *capacity*, *cohesiveness*, and *linkages* (emphasis mine).⁸⁵⁵

As O’Rourke notes capacity involves “basic knowledge of [environmental] rights and complaint procedures, as well as more sophisticated strategies for pressuring state agencies and firms.”⁸⁵⁶

With regard to community cohesion O’Rourke further notes that;

Strong social ties within the community help overcome collective action problems and aid in the mobilization of resources for action. Informal norms and networks, shared interests, shared identities, and the community's history of organization all play a role in community cohesiveness.⁸⁵⁷

Linkage is defined as "an external tie to state agencies and extra-local actors"⁸⁵⁸

However, the issue is how effective are the communities who live near the two industries in pressuring the Regional Environmental Agency and the Industries to control pollution?

⁸⁵² Benjamin Van Rooij, 2008, *supra*, n. 495, p.19.

⁸⁵³ FDRE, 1995, Constitution, *supra*, n.6.

⁸⁵⁴ *Ibid.*, Art.44.

⁸⁵⁵ Dara O’Rourke, 2004, *supra*, n. 491, p.222.

⁸⁵⁶ *Ibid.*, p.223.

⁸⁵⁷ *Ibid.*

⁸⁵⁸ *Ibid.*

To address the issue, let us try to see the three elements required for an effective community, that is, capacity, cohesion and linkage one by one with respect to the two industries. With regard to capacity Mohammed notes that;

The affected communities are not aware about their constitutionally guaranteed right to clean and healthy environment and also about the complaining procedure when this right is affected. They do not know where to go. They do not even know that they can complain to the Regional Council.⁸⁵⁹

Kahsay a resident of Tabiya Aynalem where Sheba Leather Industry is located notes that; “we are not aware that we can sue the industry for what it is doing. We also think we do not have the capacity to win a case even if we initiate one.”⁸⁶⁰

Hadush also states that; “the community is not aware about its rights and the complaint procedure. They do not have strategies and mechanisms to push environment protection organs or the polluting industries in our Region.” He also states that “when I was head of the environmental protection Authority we have tried to initiate a program with the media to create awareness but it failed.” But he underlines that “the initiation was on individual level. As a policy the emphasis of the government/media/ is on conservation of natural resource like—soil and forest conservation. For the government/media/ environmental issue is limited to conservation issues.”⁸⁶¹

Habtu also states that “taking note of the awareness gap, the Regional Council is planning to give awareness training to all community members in the Region including to those affected by the two industries on all their constitutional rights—including the right to clean and healthy environment.”⁸⁶² However, it should be stressed that, the idea that government officials and experts could give training to the affected communities on their rights to sue the Agency is very unlikely. One can even argue that it is tantamount to train the defendant by the prosecutor to win his case against the prosecutor himself. The question is how realistic is this in the current Ethiopian context? Considering the Ethiopian government’s priority on industrialization this is

⁸⁵⁹Mohammed Salih, *supra*, n.789.

⁸⁶⁰ Interview with Kahsay Melese Belay Resident of Aynalem Tabia where Sheba Leather Industry is located (On March 2012)

⁸⁶¹Hadush Berhe, *supra*, n.474.

⁸⁶² Interview with Habtu Aregawi Over Sighting Core Process Owner within Tigray Regional State Council (On Feb.2012)

less likely. What the researcher prefers is that, the awareness raising must be done by independent bodies or even by Law schools, human right and environmental organizations, media and NGOs etc. But this does not mean the training to be conducted by these non-government organs will not have a problem. (See section 7.3.2 and 7.3.3)

As to the issue of cohesion, Kibera notes that “we regularly get complaints from the affected communities. Nevertheless, the complaints are on individual basis either appearing in our Agency in person or by telephone. They are not in organized manners.” She also notes that “when we go to inspect the industries the community collectively complains to us. For instance, the community who live near Alameda Textile Factory, they did complain to us. They also complained to the Wereda (district) Administration where the factory is located.” She further notes that;

The Wereda Administrator has written a letter to the factory and he let us know through a copy. The administrator has also written a letter to the Regional government with regard to the factory’s poor pollution control and management practice and the damage incurred to the community.⁸⁶³

Again, one might rightfully ask whether writing a letter is good enough? What the affected communities badly need is concrete action not a letter of concern as the governor of Adua Wereda did.

With regard to the poor cohesion of the affected communities, Awet also notes that;

The affected community near Almeda can be classified into three. The first group are those ruling party members who believe suing Almeda means suing their party and government. So, even if Almeda is polluting the environment and damaging their property they prefer to keep quite. The second group who are not ruling party members are of the opinion that since their land is being destroyed and they are forced to migrate; they demand Almeda has to pay them compensation. Or alternatively they argue the factory has to create job opportunity to them by employing them or their children who are above the age of 18. The third group claims that the factory has to give them the leftover of its products like pieces of clothes and unused cotton to make business out of it. However, since the factory makes a lot of money out of it, it is not willing to accept their request.⁸⁶⁴

⁸⁶³Kibra Alemseged, *supra*. n. 538.

⁸⁶⁴Interview with Awet Arefe, former assistant General Manager of Almeda textile factory currently Adwa Water Supply Head. (September 10, 2012)

As to the issue of linkage, Mohammed notes that “the affected communities do not have strong linkage with state agencies; and none with extra-local actors like media or environmental NGOs both at national and international level.”⁸⁶⁵

Tabotu and Kahsay residents of Tabiya Aynalem where Sheba Leather Industry is located also note that;

We have never complained to the media and this is our problem. Nonetheless, no one prohibits us from going to media. But we felt that since our political party (wedbna) and the government is well aware about the problem, we felt complaining could be considered as opposing our political party and our government. By the way, since we believe the media is well aware about the problem it should have approached us and publicized our problem.⁸⁶⁶

They further note that;

However, we have complained to the Wereda Administration and the administration told us the industry will manage its pollution but still the problem is there. Of course, when we complain about the problem we are not being against the industry rather what we are saying is since the industry has the capacity to manage its waste properly, it has to treat it properly. We are rather against the mismanagement of the industry’s pollution.⁸⁶⁷

With regard to the role of the affected communities discussed above, one could infer, they are not quite aware of their constitutional right to clean and healthy environment and the complaining procedure when this right is affected. They are not well organized and do not have strong linkage with state agencies. They also do not have well defined strategies to pressure the two industries and the Regional Environmental Protection and Land Use and Administration Agency. Most of the time the affected communities complain on individual basis in unorganized manner and this is not a strong basis for putting pressure. They also do not have good linkage with extra-local actors like international, national and local media to put pressure to bear.

From the responses given by the interviewees above, one can also raise another fundamental issue, which is, the members of the community do not seem to make a distinction between themselves, the governing party in power, the supervising governmental Agency and industries

⁸⁶⁵ Mohammed Salih, *supra*, n.789.

⁸⁶⁶ Interview with Tabotu Derese Hadera (member of the Wereda Council and a member of the social affairs standing committee in the Wereda council) and Kahsay Melese Belay ((March 2012)

⁸⁶⁷ *Ibid.*

owned by EFFORT. They think all of them are one and the same. They believe that suing the industry amounts to suing the party and government which they claim are their own. In short, suing the industries is seen as suing oneself. This seems to be one of the paradoxes in their statements. It therefore appears that there is confusion on the relationship between the people on one hand and the agency and the industries on the other.

7.3.2 Local, National and International Media

As shown in chapter 6, the complaints of the affected community with regard to the industrial pollution may not be addressed by the Regional Council, executive body and environmental agencies. In such a situation the affected communities should look for other actors to promote their causes. Some of the prominent actors envisaged are local, national and international media.

With regard to the importance of linkage with emerging transnational networks and associations in establishing successful environmental regime [including industrial pollution control]; Richardson states that for a successful environmental regime in postcolonial societies it requires “changing the boundaries and building the linkage between local, national, and international institutions.”⁸⁶⁸ Thus, for enhancing the application of community participation as employed in this chapter; the role of local, national and international media is very important in exposing pollution scandals from industries. With regard to the role of media, Kalathil states that “it holds powerful state and non-state interests accountable, serving as a watchdog for the public interest.”⁸⁶⁹

As far as the practice of the international, national and local media in exposing industrial waste pollution is concerned they are not involved in trying to bring to the attention of the communities (at international, national or local levels) the way the two industries handle their pollution. This lack of coverage by the international media could be due to different factors, like, lack of local environmental NGOs in the Tigray region, lack of well organized community pressures and their linkage with international community.

⁸⁶⁸ Benjamin J Richardson, 2000. Environmental Law in Postcolonial Societies: Straddling the Local-Global Institutional Spectrum, 11 *Colo.J.Int'l Encl'l. & Pol'y* 1, 2000, p.3.

⁸⁶⁹ Shanthi Kalathil. 2011. *Developing Independent Media as an institution of accountable governance-A how to guide*, USA: the World Bank Washington, D.C., p.3.

This does not, however, mean there is no prospect in the future. For instance, on 21 Feb 2009, Aljazeera aired a documentary film on its program entitled “People and Power” which depicts the effect of industrial pollution of Lake Koka (which is situated 75 kilo meters South East of Addis Ababa) on its surrounding population. This was done by interviewing some of the affected community members and the alleged Industry—the Ethiopia Tannery.⁸⁷⁰ In the program Aljazeera highlighted the fact that Ethiopia is in the middle of economic boom but it also underlined this entire economic boom to be at environmental and social costs.⁸⁷¹ However, Aljazeera underlined that there is no definitive proof that Ethiopia Tannery to be the cause of the pollution. This is because there are also a number of factories and flower farms which discharge their effluent to the lake and hence, it is difficult attribute the pollution to one polluter.⁸⁷²

The lesson we learn from the Lake Koka case is that the difficulty of implementing the polluter pays principle in Ethiopia, especially, in a situation where it is difficult to identify who exactly the polluter is? The other lesson one can also draw is the role and significance of international media in bringing serious industrial pollution issues to the attention of international, national and local communities. This in a way helps to exert pressure on the environmental agencies and the potential polluting industries.

As far as this thesis is concerned all government media—at national or local level—do not give coverage on the effect of industrial pollution in general and that of the two industries in particular. Instead, their main day-to-day activity is limited to giving wide coverage to the development agenda of the country. Not to its negative impact on the public and environment. This is because their philosophy is based on *developmental journalism* (emphasis mine).

⁸⁷⁰ Aljazeera, People & Power-Green Lake, available at;
http://www.youtube.com/watch?v=eUqgUR4qI98&feature=player_embedded#! (accessed on Feb, 2011)

⁸⁷¹ *Ibid.*

⁸⁷² *Ibid.*

Developmental journalism as a concept and as practice emerged in South East Asia in the 1960s.⁸⁷³ According to Gunaratne and Hasim, “the term was coined at a Thomson Foundation workshop in the Philippines in 1968.”⁸⁷⁴

In 2008, the Ethiopian government has introduced a draft policy document which establishes developmental journalism as an official reporting strategy for the state media. The policy prescribes that “the media and journalists should play an active role in the country's development scheme.”⁸⁷⁵ In this draft policy, development journalism is defined as “a journalism that makes people understand, accept and actively participate in the implementation of appropriate development ideas that may extricate people from poverty and backwardness by bringing about rapid national change and building on *positive values of development* and democratic change (emphasis mine).”⁸⁷⁶

The justification for introducing the draft policy document on development journalism in Ethiopia has been economic poverty.⁸⁷⁷ Its goal is to make Ethiopia a middle income country in the coming 20-30 years.⁸⁷⁸ Thus, all social forces, including the media, have been expected to play their role in the development process.⁸⁷⁹ Nonetheless, the assignment of such responsibility to journalists has been criticized by different scholars. For instance Skjerdal argues that “assigning such a role to the media is controversial since it is seen to be at odds with media independence and press freedom.”⁸⁸⁰ Criticisms on developmental journalism are threefold: “ambiguity of development journalism as a concept and practice; political inclination of the state media; and lack of participation by the public.”⁸⁸¹

⁸⁷³Terje S. Skjerdal, 2011. Development journalism revived: The case of Ethiopia, *Ecquid Novi: African Journalism Studies* 32 (2),p. (Available at; <http://www.tandfonline.com/doi/abs/10.1080/02560054.2011.578879>) (Accessed on July 2013)

⁸⁷⁴Gunaratne, S. and M.S. Hasim, 1996. Social responsibility theory revisited: a comparative study of public journalism and development journalism, *Javnost--the Public* 3(3), p. 98.

⁸⁷⁵Ethiopia Press Agency, 2008.Basis and directives for an operational philosophy of our democratic and developmental media, draft policy document (Original document in Amharic.)

⁸⁷⁶*Ibid.*

⁸⁷⁷*Ibid.*

⁸⁷⁸*Ibid.*

⁸⁷⁹*Ibid.*

⁸⁸⁰Terje S. Skjerdal, 2011, *supra*, n. 873, p.1.

⁸⁸¹*Ibid.*

In line to this draft policy document, when Abraha was interviewed whether his Agency investigates industries in Tigray Regional State (including the two industries) on how they manage their industrial pollution, he states that;

Since the industries we have in Tigray are limited in number and we do not believe their waste management have serious environmental and health impact on the nearby community, we don't do any investigation on how they manage their waste. Rather, our main concern is on promoting development on agriculture, education, health coverage and promoting small and medium industries.⁸⁸²

Abraha also states that;

Even if the industries we have in our Region are limited in number, it does not mean we do not investigate if they cause any health problem on the public. For instance, in Mekelle city we have done a program on waste management and aired it on the Regional TV. What is more, we have also aired a program on the TV on how health care centers (like hospitals) manage their wastes. However, with regard to Almeda Textile Factory and Sheba Leather Industry, we have not prepared any program.⁸⁸³

Abraha further states that;

When I say we have not aired any program on the TV about Almeda Textile Factory and Sheba Leather Industry, it is only about their waste management that we did not air a program. Otherwise, with regard to their employment generation, hard currency generation and their role on the development agenda of the country; we give them wide coverage.⁸⁸⁴

Thus, what can be gathered from the national or local media practice with regard to the industrial pollution control in general and from the two industries in particular is that, the national or local media are not willing to investigate on the industries waste management practices. Rather, as a policy direction their main concern is on giving wider coverage on development issues devoid of their environmental consequences.

⁸⁸² Interview with Abraha G/Aregawi Process owner of media section at Tigray Mass Media Agency (Feb. 20, 2012)

⁸⁸³ *Ibid.*

⁸⁸⁴ *Ibid.*

7.3.3 Local, National and International NGOs

With regard to NGOs in general, Ramakrishna remarks that “at the outset NGOs have been part of the UN system since its inception, but they have focused primarily on civil, political, and economic aspects.”⁸⁸⁵ As to environmental NGOs he remarks that;

With the UN Conference on Human Environment in 1972 a new group called environmental NGOs came into existence. With the UN Conference on Environment and Development (UNCED) in Rio in 1992, the term has been broadened to include the entire civil society comprising the scientific community, the business community, women, youth, religious and indigenous groups, etc.⁸⁸⁶

But he warns us that “whether NGOs really represent public views adequately is open to debate in developed as well as in developing countries; and accountability of NGOs toward the public is not a fully solved problem.”⁸⁸⁷

Richardson also states that "the experience of postcolonial states points to the need for new institutional bridges between the central state and local organizations."⁸⁸⁸ He further states that;

NGOs tend to offer more efficient and innovative decision-making methods because of their institutional characteristics like small size, flexibility, shallow hierarchies, and short line of communication. As decentralized institutions, NGO staff members also may possess more extensive field knowledge and experience than do government officers.⁸⁸⁹

However, he cautions us that “despite these positive qualities, NGOs cannot generally be a substitute for local governments. They are self-appointed rather than elected organizations and their social origins may lie in the dominant rather than the dominated group in society.”⁸⁹⁰

Gunningham also notes that;

At a regional, national or global level, probably the biggest gains have been achieved by Environmental NGOs. These organizations, aided by advanced techniques for information gathering (from digital cameras to satellite imaging) have become increasingly sophisticated at communicating their message

⁸⁸⁵Kilaparti Ramakrishna, Citizen Participation and Developing Country Agendas. In Bernd Kasemir et al (eds.), 2003. Public Participation in Sustainability Science: A Handbook, New York: Cambridge University Press, p.231.

⁸⁸⁶*Ibid.*

⁸⁸⁷*Ibid.*

⁸⁸⁸Benjamin J Richardson, 2000, *supra*, n.868, p. 30.

⁸⁸⁹*Ibid.*, p.58.

⁸⁹⁰*Ibid.*, p.59.

(viaglobal television, international newspapers and internet) and in using the media (and sometimes courts) to amplify the impact of their campaigns.⁸⁹¹

He further notes that;

[NGOs] have not only sought to shape public opinion, to lobby governments and to pressure them to enact and enforce tougher environmental laws and regulations but also to influence consumers and markets through strategies such as orchestrating consumer boycotts or preferences for green products.⁸⁹²

As to the strategies employed by NGOs to achieve their campaigns, he notes that "some NGOs, frustrated with their limited impact on governments, or at the ineffectiveness of government in protecting the environment, have redirected their attention towards *cooperation* through strategies ranging from *confrontation and direct action to partnership and co-operation*. (emphasis mine)"⁸⁹³

As to the role of NGOs in providing help to the local communities affected by industrial pollution, Van Rooij states that;

NGOs may indirectly influence industry compliance through the shaping of law enforcement. One way they do this is by helping those directly affected file complaints to enforcement authorities. With more and better complaints filed the detection of violations become easier and less costly. Moreover, the more complaints filed the more serious each violation is taken.⁸⁹⁴

On how NGO's could be effective and exert pressure on regulatory policy-makers, Braithwaite and Drahos also note that;

NGO's do not have to be representative or to have huge budgets to be effective. They do have to be able to convince regulatory policy-makers that they might, if *push comes to shove*, be able to mobilize mass public around their concerns. *When mass public are actually stirred, major regulator change often occurs in a short space of time* [emphasis mine].⁸⁹⁵

⁸⁹¹ Neil Gunningham, 2009, *supra*, n. 336, p.9.

⁸⁹² *Ibid.*

⁸⁹³ *Ibid.*

⁸⁹⁴ Benjamin Van Rooij, 2008, *supra*, n.495, p. 19.

⁸⁹⁵ John Braithwaite & Peter Drahos, 2000, *supra*, n. 421, p. 501.

Agenda 21 of the UN action plan for sustainable development also acknowledges that “non-governmental organizations play a vital role in the shaping and implementation of participatory democracy”⁸⁹⁶ The Agenda further notes that;

Non-governmental organizations possess well-established and diverse experience, expertise and capacity in fields which will be of particular importance to the implementation and review of environmentally sound and socially responsible sustainable development. The community of non-governmental organizations, therefore, offers a global network that should be tapped, enabled and strengthened in support of efforts to achieve these common goals.⁸⁹⁷

However, it is important to stress that though NGOs could play important role as indicated above, the legal (regulative) framework in any country could constrain their establishment, growth and their effectiveness. For instance, in the case of Ethiopia, in 2009, the Ethiopian Parliament enacted a new law, Proclamation No.12/2009⁸⁹⁸ on NGOs; including those engaged on human rights, democratic rights; and environmental protection and improvement. It is Ethiopia’s first comprehensive Proclamation governing the registration and regulation of NGOs. Among other things, it restricts NGOs that receive more than 10 per cent of their fund from foreign sources from engaging in human rights and advocacy activities. The Proclamation restricts participation in activities that include promotion of: “human and democratic rights,⁸⁹⁹ equality of nations and nationalities and peoples⁹⁰⁰ gender and religion,⁹⁰¹ disabled and children’s rights,⁹⁰² and efficiency of the justice and law enforcement services,⁹⁰³ to Ethiopian charities and societies.

In the Proclamation, charities are classified as “institutions established exclusively for charitable purposes and to provide public benefit.”⁹⁰⁴ It recognizes four types of charitable organizations:

⁸⁹⁶ Available at UN Department of Economic and Social Affairs Division for Sustainable Development (http://www.un.org/esa/dsd/agenda21/res_agenda21_27.shtml) (Accessed on March 2012)

⁸⁹⁷ *Ibid.*

⁸⁹⁸ The Proclamation prohibits foreign NGOs from getting involved in any activities related to human rights, women’s rights, children’s rights, or good governance. It also defines foreign NGO as any group that receives more than 10% of its funding from abroad. See, FDRE, 2002. Proclamation for the Regulation and Registration of Charities and Societies, No. 12/2009, Federal Negarit Gazeta, 15th year No. 25, Addis Ababa, p. 4521-4567.

⁸⁹⁹ Art.14 (2) (i)

⁹⁰⁰ Art.14 (2) (k)

⁹⁰¹ *Ibid.*

⁹⁰² Art.14 (2) (l)

⁹⁰³ Art.14 (2) (n)

⁹⁰⁴ Art. 14 (1)

“a charitable endowment, charitable institutions, charitable trust and charitable society.”⁹⁰⁵ Societies are classified as “associations or persons organized on non profit making and voluntary basis formation of the rights and interests of their members and to undertake other similar lawful purposes as well as to coordinate with institutions of similar objectives.”⁹⁰⁶

Based on where the organization is established, its source of income, composition of membership, and membership residential status; charities and societies are designated as Ethiopian charities or societies, Ethiopian resident charities or societies and foreign charities. Ethiopian charities or societies are formed under the laws of Ethiopia, whose members are all Ethiopians, generate income from Ethiopia and are wholly controlled by Ethiopians. These organizations may not receive more than 10 per cent of their resources from foreign sources.⁹⁰⁷ Ethiopian resident charities or societies are those that can receive more than 10 per cent of their resources from foreign sources.⁹⁰⁸ Foreign charities are those formed under the laws of foreign countries, or whose membership includes foreigners, or foreigners who control the organization, or an organization that receives funds from foreign sources.⁹⁰⁹

With regard to this law, there are different conflicting views. For instance, Human Rights Watch claims that "the law [as] alarming [and] permits very little independent civil society activity or peaceful dissent."⁹¹⁰ Amnesty International also claims;

Since the law came into force, it has had a devastating impact on human-rights organizations in Ethiopia, and also on the promotion and protection of the rights of the Ethiopian people. The impact of the law is that today human-rights organizations barely exist in Ethiopia.⁹¹¹

The government claims "the new law is mainly intended *to ensure greater openness and financial probity on the part of non-governmental organizations* [emphasis mine]."⁹¹² The Government further claims that “it introduced the law to regulate the country's more than 3,800

⁹⁰⁵ Art. 15 (1)

⁹⁰⁶ Art. 55.

⁹⁰⁷ Art. 2 (2)

⁹⁰⁸ Art.2 (3)

⁹⁰⁹ Art. 2(4)

⁹¹⁰ Bloomberg Business week, available at <http://www.businessweek.com/printer/articles/12982?type=bloomberg> (Accessed on March, 13, 2012)

⁹¹¹ *Ibid.*

⁹¹² *Ibid.*

non-government organizations. [It also argues] it was *the role of the state, rather than foreign-backed groups, to protect human and democratic rights* [emphasis mine]"⁹¹³

With regard to NGOs in Ethiopia, Gill remarks that "the proliferation of non-government organizations represented a far greater political threat to the government."⁹¹⁴ He further remarks that "the late Prime Minister Zenawi describes them as *the opposition in disguise* [emphasis mine]."⁹¹⁵ Gill underlined that "Most of these organizations were funded by international agencies to pursue a right-based approach to development, and for the EPRDF [ruling party] that amounted to political interference."⁹¹⁶ Gill also remarks that "one member of the EPRDF politburo, himself the head of a respected semi-official development agency, described foreign charities as the *foot soldiers of neoliberalism*"⁹¹⁷ [emphasis mine]

From the above two conflicting arguments, it appears that, there is a contrasting argument on the effect of the law on NGOs engaged in human and democratic right protection. With regard to environmental protection and improvement; all NGOs established under the proclamation are allowed to function. The restriction, however, appears to be targeted against human rights NGOs. One may also ask whether financial constraints are an obstacle to domestic environmental NGOs as envisaged in the Proclamation. To some extent financial constraint could have an effect on the domestic environmental NGOs. But it can also be argued that in line with arguments of Braithwaite and Drahos discussed above, environmental NGOs in Ethiopia do not need to have huge budgets to be effective. All they need is to show to the regulators that they are able to sensitize and mobilize the affected communities around their concerns to question the legitimacy of the government and environmental organizations. Environmental NGOs can also effectively publicize their concern with as little cost as possible. In the era of information, this would not be a big deal. If they are committed there will always be a room for innovation.

The other issue one may raise is whether environmental protection is not also a human right issue? However, it can be argued that even if there is a possibility that environmental protection

⁹¹³ *Ibid.*

⁹¹⁴ Peter Gill, 2010, *supra*, n.113, p.182.

⁹¹⁵ *Ibid.*

⁹¹⁶ *Ibid.*

⁹¹⁷ *Ibid.*, p.183.

could be promoted through human right approach, it is not one and the same. As John & Sharron McEldowney correctly note “human rights may help drive environmental protection but environmental protection is not the same as human rights.”⁹¹⁸ Bosselmann also notes that “although the interdependence between human rights and environmental protection is increasingly recognized in international and domestic law. Fundamentally each area remains to be guided by its own legal regime.”⁹¹⁹ He further notes that “human rights law is concerned with the protection of individual well-being; environmental law is concerned with the protection of collective well-being. There is, at present, little penetration between both regimes although this may change over time.”⁹²⁰ But he cautions us that;

To a degree, the concern for the protection of human rights and the concern for protection of the environment are mutually reinforcing. Human rights and environmental law are both needed to provide better human living conditions. To some other degree, however, the protection of individual rights has been counterproductive to the protection of the environment.⁹²¹

From the reading of the Proclamation, it also appears that, the Proclamation distinguishes between human rights and environmental issues as well.

If we start with the role of international NGOs, in practice, there are no environmental NGOs which are directly engaged in the prevention of industrial pollution control from industries be it at national (federal) or regional state level. However, there are NGOs like International Rivers⁹²² and Survival International⁹²³ though not specifically engaged on industrial pollution but which campaign on the effect of the government’s dam building on the indigenous people.

⁹¹⁸John and Sharron McEldowney 2010, *supra*, n.377, p.359.

⁹¹⁹ Bosselman, Klaus, 2008, *supra*, n. 199, p. 111.

⁹²⁰*Ibid.*

⁹²¹*Ibid.*, p. 112.

⁹²²International rivers is a non-profit, non-governmental and human rights organization based in Berkley, California, United States. It is founded in 1985 by a host of social and environmental activists. It works with a global network of policy and financial analysts, scientists, journalists, development specialists, local citizens and volunteers to address destructive dams and their legacies in over 60 countries including Ethiopia. (Available at (<http://www.internationalrivers.org/>) (Accessed on Feb. 2012)

⁹²³ Survival International is established in 1969 to campaign for the right of indigenous tribal peoples and seeks to help them to determine their own future. Its vision is a world where tribal peoples are recognized and respected; to end the unjust treatment the tribal people are subjected to; and a world where tribal people are free to live on their own lands, safe from violence, oppression and exploitation. (Available at <http://www.survivalinternational.org/tribes/omovalley>) (Accessed on Feb. 2012)

At the national (federal) level, there are around seven environmental NGOs. Three of the prominent national (federal) NGOs are: LEM Ethiopia,⁹²⁴ Forum for Environment (FfE)⁹²⁵ and Melca-Ethiopia.⁹²⁶ It is important to note that Forum for Environment is also a member of the Environmental Council of Ethiopia which is established under the FEPA⁹²⁷ as discussed in chapter 4.

With regard to these national NGOs, the issue that merits discussion is how effective they are in industrial pollution control? In addressing the question Hadush remarks that;

As far as the national environmental NGOs are concerned, the strategy they employ is non confrontational and mostly they are limited to awareness creation. For instance, LEM Ethiopia which is chaired by the former FDRE President Girma W/Giorgis uses this non confrontational method and I do not think it is effective. What is more, the other major limitation they have is they do not work to establish branches at regional levels. Hence, I would say rather than these national environmental NGOs, international financial institutions like World Bank are more influential. At least, the WB clearly puts a precondition on the government unless there is EIA for any project (including the establishment of any industry) it will not provide any financial assistance or loan.⁹²⁸

⁹²⁴ *LEM Ethiopia* is established as: “a citizen’s movement inspired with the concepts of *sustainable development* and established in March 1992. Since its establishment LEM Ethiopia has entered into a voluntary partnership with communities, schools, civil societies, national & international NGOs, government institutions at different levels, etc. working on environment/natural resources conservation and promotion of alternative technologies to translate the noble ideas of sustainable development and livelihood security into everyday action. It has legally registered by authorized government body & renewed its license every year. More importantly, LEM Ethiopia enters into a voluntary development partnership with communities, to translate the lofty ideas of a stable environment, sustainable development and livelihood security into everyday action.” (Available at LEM Ethiopia at <http://www.lemethiopia.org.et/aboutus.htm>) (Accessed on Feb. 2012)

⁹²⁵ *Forum for Environment (FfE)* is “a non-governmental and non-profit-making environmental communication and advocacy group established in 1997 to serve as a platform for advocacy and communication among people and institutions concerned with the Ethiopian environment. It deals with environmental issues with special focus on five major thematic areas, namely, *Forests; Protected Areas; Urban Environment; Energy; and Climate Change*. It is also involved in a number of cross cutting activities, which among others, include awareness raising through public engagements; research and publications; mobilizing the public through establishing and strengthening local groups; capacity building; policy level debates and discussions; and incentive and acknowledgement schemes.” (Available at Forum for Environment Ethiopia at <http://www.lemethiopia.org.et/aboutus.htm>) (Accessed on Feb. 2012)

⁹²⁶ *Melca-Ethiopia* is “engaged in conservation of forest biodiversity, the ecosystem and culture of the community and rehabilitation of the degraded environment. It employs different strategies to work with the local community at grass root level. It also organizes awareness raising and sensitizing forums for government organs at different levels.” Available at Melca-Ethiopia http://www.melca-ethiopia.org/index.php?option=com_content&view=category&layout=blog&id=2&Itemid=6) (Accessed on Feb. 2012)

⁹²⁷ Hadush Berhe, *supra*, n.474.

⁹²⁸ *Ibid.*

As to why environmental NGOs are not effective, Hadush further remarks that;

The reason why the environmental NGOs are not successful is due to the fact that the people who establish these NGOs are mainly concerned with generating revenue for themselves. They are not genuinely concerned with protecting the environment *per se*. The fact that the government does not see the environmental NGOs as supporters and enhancing the capacity of the environmental agencies is another reason. Equally true is, the government considers the environmental NGOs as obstacles to the development agenda of the country.⁹²⁹

Tamirat, a managing editor of Fortune news paper in Addis Ababa also remarks that "[in Ethiopia] the barber shuts up shop one day, and goes off to form his own NGO. There are lots of clever students in school and all they want to do is to get into an NGO—either that or an embassy job or the UN."⁹³⁰ He argues that "the real issue is NGOs accountability. Are they accountable to the Ethiopians they are seeking to help or are they accountable to their foreign funders?"⁹³¹

With regard to the existence of local Environmental NGOs in the Region where the two industries in this research are located—Tigray Regional State—Kibra states that;

Unfortunately we do not have them in our Region. The NGOs we have are all engaged in development agenda in line with the government's emphasis. If we had them they would have helped us to build our capacity through knowledge transfer. Of course; some civil society members come to request us to give them financial help but due to the budget constraints we have we cannot afford to give them financial support. All we can do is to give them advice and moral support.⁹³²

Before winding up the discussion on sub-section 7.3.3 that deals with local, national and international NGOs, it is important to stress that in the concept of public participation discussed in this chapter, the local & extra-local actors (media and environmental NGOs) are mentioned not that they are by themselves a solution to industrial pollution problem in general and from the two industries in particular but they are mentioned under the assumption that they could serve to open a space to the affected communities in addressing industrial pollution. However, as the practice discussed above shows, the role of these actors in pollution control is almost non-existent.

⁹²⁹ *Ibid.*

⁹³⁰ Peter Gill, 2010, *supra*, n.113, p.184.

⁹³¹ *Ibid.*

⁹³² Kibra Alemseged, *supra*, n.538.

Conclusion

The type of environmental protection and anti-pollution regulatory measures and instruments that have so far been dealt in this research is part of top down strategy. The main and core argument of this thesis is to argue that environmental protection in general and the effects of hazardous industrial waste in particular are more effectively protected with the active participation and engagement of the people. Thus active, vibrant and meaningful public participation must be complemented if such protection is wanted to be viable and sustainable. This is particularly true in the case of Ethiopia where policy decision making processes is mainly top down and whatever public participation that might take place is used to merely endorse the policies of the party and the government at both Federal and regional levels.

The presence of vibrant, independent civil societies and communities as well as the independence of the judiciary that can even challenge the actions and behaviors of the executive is a precondition for promoting and building democracy, good governance as well as for promoting transparency and accountability of governments to their own people. In short, if the interests of the people are to be put first and a top priority then the active and vibrant participation of the people is a precondition for promoting sustainable development in general and for protecting the environment from hazardous industrial wastes in particular. In a world where people's power is becoming more influential, the need to involve the people whether it is organizational or advocacy or in the decision making process on all issues that matter to them is crucial where its success and effective implementation of industrial pollution control depends.

One of the main problems and challenges in the case of Ethiopia is the gap that exist between what the Constitution and other laws state on one hand and on the practice on the other. For example, the FDRE Constitution clearly states that “every person has the right to freedom of association for any cause or purpose” unless prohibited by law. However, in reality communities are discouraged and even prevented to get organized to ensure that their rights to clean and healthy environment are guaranteed. In short, the affected communities who live near the polluting industries have in principle the fundamental right to organize and put pressure on environmental agencies and the polluting industries or to speak for themselves and challenge the polluters and the authorities who take no decision to prevent industrial pollution. But in reality

this does not often happen because it is seen and perceived as a manifestation of opposition to either the Federal or Regional Governments. In short, there is confusion regarding on the relationship between the people on one hand and the environmental organizations and the polluting industries on the other.

The other weaknesses observed are that many of the communities lack the knowledge, capacity, cohesion and linkage to make a difference or a meaningful impact. A community that is not aware about its rights and the complaint procedure and that regards the policies and practices of governments as the act of God rather than manmade cannot be effective in achieving what it wants to achieve.

The idea that the government can give training to the people to oppose its policies and practices is neither realistic nor practical under the current Ethiopian political conditions. Nor can such training be given by international NGOs because they are almost barred from doing so under the Civil Societies and Charities Proclamation. The likely organizations and institutions that can offer training on awareness raising may thus include independent bodies or even by Law schools, human right and environmental organizations, media and NGOs etc. Even then this will also require financial resources, courage and independence to do it which is lacking in many of such institutions.

The reality is that national or local media are not willing to investigate on the industries waste management practices of not only the two industries that are subject of the study but also of others. It is important to stress that in 2008, the Ethiopian government has introduced a draft policy document which established developmental journalism as an official reporting style for the state media. Critics, however, argue that the Ethiopian radio and television, for example has become the propaganda arm of the government and the ruling party so much so that it will not entertain environmental activism in its media. There are not also big and independent media outlets with a focus on environmental issues.

Perhaps partnering with foreign independent media and environmental organizations as well as human rights institutions and NGOs might be an alternative solution to raise awareness on both issues. However, while both can contribute a great deal in raising awareness, it should be stressed that both the foreign media and foreign NGOs also have their own partly open and partly covert aims and objectives as well as agendas that may not be accepted by countries and governments like Ethiopia. Foreign interference does have some positive impacts, but its negative impacts cannot also be underestimated or ignored.

In a way it is a dilemma. On one hand foreign NGOs are needed to make some positive contributions. On the other hand there are concerns about their activities and practices particularly in developing countries like Ethiopia. It is due to such concerns that the Ethiopian Government passed Charities and Societies Proclamation No. 12/2009 that in a way limits activities of foreign NGOs on the ground. According to some authorities, such NGOs have been seen as “opposition in disguise” or that they are seen as “foot soldiers of neo-liberalism.”

However, it should be stressed that there are no international environmental NGOs which are directly and particularly engaged in the prevention of industrial pollution control from industries be it at national (federal) or regional state levels in Ethiopia. However, there are around seven prominent environmental NGOs at the national (federal) level. But they are not effective in industrial pollution control because their strategy is non confrontational even when there are serious violations regarding pollution. To avoid any miss-understanding with the government their activities are mostly limited to awareness creation. Ironically, it is widely alleged that the people who establish these NGOs are mainly concerned with generating revenue for themselves than protecting the environment. Moreover, the government also considers environmental NGOs as obstacles to its development agenda. Whether the foreign NGOs are accountable to the Ethiopians they claim to help or whether they are accountable to their foreign funders is also a controversial issue? This in a way is a serious problem and paradox that prevails in the country.

In principle, changes and reforms in industrial pollution control must come from within. However, as stated in the conclusion related to Chapter 6, the fact that members of the community do not seem to make a distinction between themselves, the governing party, industrial pollution control bodies and the industries owned by EFFORT remains a big problem. In a country where the people and communities believe suing the government and the industries tantamount to suing themselves, there is no way much can be done to have policies, laws and practices ensure sustainable protection of the environment in general and effective industrial pollution control in particular. One solution is for the government to take the lead to open up and offer policy choices.

Unless the people and communities have policy choices it is difficult to ensure the implementation of proper safeguards to control industrial pollution in general and hazardous waste in particular in Ethiopia. If the existing situation does not change, as the saying goes, those who make industrial pollution control reform impossible will inevitably make community revolutions to fight industrial pollution inevitable. It should however, be stressed that unless the people have a strong, dynamic and highly organized organization with clear vision and strategies that can sustain and withstand any counter reaction and actions from those in power who seek to stifle any dissent and opposition; mob and street politics alone would not bring about the desired results in industrial pollution control in Ethiopia.

CHAPTER 8

CONCLUSION

8.1 Introduction

This thesis has explored how industrial pollution is controlled and managed in Ethiopia in law and practice. Considering the current accelerated industrialization process aimed to alleviate poverty in the country, the issue of industrial pollution control and management is a very timely and pressing one. It is, in principle, at the heart of the country's politics.

By the International Monetary Fund and World Bank standards, Ethiopia is currently experiencing phenomenal economic growth and is doing very well in poverty eradication. Nonetheless, the harsh reality is that industrial pollution, especially, from textile and leather industries has been alarmingly increasing. Thus, Ethiopia could serve as an excellent case study to examine how a developing country could make a transition to industrial development, while facing the challenges to protect the impacts of industrial pollution. This clearly shows that there is conflict between the pressing need for equitable economic growth and industrial pollution control.

However, the challenge of striking the balance between industrial development and industrial pollution control has wider relevance beyond Ethiopia. Many developed and developing countries have also tried to address this conflict though they have not fully succeeded. Different theories and policies as discussed in this thesis have also failed to come up with concrete solutions to solve this conflict. Theories and policies exist to resolve this conflict but currently one could argue that there are more questions than answers. This thesis has examined the challenge of balancing industrial development and its impact on the environment through the application of two case study industries.

The main research question employed in this thesis is—‘how effective were the industrial pollution control and management frameworks?’ The specific questions are—‘how effective is the legislative framework on industrial pollution control and management?’ ‘How effective is the organizational framework on industrial pollution control and management?’ ‘How is industrial pollution controlled and managed in the two industries that are subject of the case study?’ And

‘what role, power, and influence do the public have on industrial pollution control and management?’

In order to carry out this thesis, a number of topics and arguments have been addressed. The *first* topic deals with post1991 development endeavors in Ethiopia. It began by setting out the general context for industrial pollution control including the historical, social, economic and political dimension. It has been followed by an explanation of the thesis’s objectives, questions, assumptions, methodology, originality and outline.

The *second* topic deals with sustainable development in the Ethiopian context. It has been argued that the increase in industrial pollution in the country is mainly attributed to the weak sustainable development policy the government pursues in its development agenda. It has underlined that in order to achieve meaningful and sustainable economic growth and poverty eradication, the sustainable development policy in the country need to be guided by the principle of sustainability—development through maintaining the integrity of the Earth’s eco-system. It has also argued that the development agenda in Ethiopia should not be limited to the language of mainstreaming the environment. It has been argued that the idea of mainstreaming the environment short of the principle of sustainability, is simply a rhetoric or pretext to promote economic and social development in disguise or is merely business as usual policy.

The *third* topic deals with legal framework to control industrial pollution. It is argued that the pollution control laws in general and the strategies and schemes employed in the Environmental Pollution Control Proclamation (EPCP) in particular are not effective in controlling and managing industrial pollution in the regional state of Tigray in particular and the rest of the country in general.

The *fourth* topic deals with organizational framework to control industrial pollution. It is argued that regulating industrial pollution in general and pollution from textile and leather industries in particular requires identifying or establishing implementing agencies both at federal, sectoral and regional levels; and mandating them with clear regulatory power. It has also underlined that assigning regulatory authority to these organizations require allocating adequate resources and enhancing coordination among them.

The *fifth* topic deals with industrial pollution and its magnitude. It is argued that with the aggressive industrialization process in the country, the magnitude and volume of industrial pollution problem from all types of industries in general and from textile and leather industries in particular has been on the rise. Specifically, the industrial pollution from textile and leather industries has been alarmingly increasing.

The *Sixth* topic deals with industrial pollution control and management in the two exemplary case study industries. The argument in this section is that, even if the Ethiopian government proclaims its commitment to ecologically sustainable industrial development, it is hard to say that it is genuinely committed to enforce the relevant laws on pollution control necessary to integrate this value into its industrial pollution management practices. It is stated that as the two case study industries clearly show there has been an overt contradiction between what has been proclaimed on one hand and the actual practice on the ground on the other. This in a way shows, the prevalence of a serious gap between the law and practice. A good policy and law is as good as it is implemented. Establishing regulatory and monitoring organizations without providing adequate funds and the necessary skilled man power needed to implement such policies and laws is meaningless. It has also been argued that there has been a taboo on the part of the pollution affected communities against complaining on the two factories' poor waste management system. Since both Federal and state governments believe that the two factories are sources of employment, means to curb social inequality and are intended to promote poverty alleviation; any complaint against them has been considered as selfish with no concern for the poor. It has also been stressed that this is the very reason for the failure to address the complaint of the affected communities on the poor waste management from the two case study industries.

The *last* topic deals with the role of public participation in industrial pollution control. It has been argued that industrial pollution control is not an activity of one or two environmental institutions. It rather calls for the collective efforts of all government, non-government organizations, the general public and all other stakeholders. However, it has been stressed that the effectiveness of such a community based initiative needs to be scrutinized and carefully considered. It has also been stressed that public participation alone do not determine the effectiveness of industrial pollution regulation but it has the potential to serve as a checking

mechanism or watch dog on the state and industries. It has argued that public participation is critical to motivate the state, environmental agencies and industries to act properly and to be accountable for their failures and inactions. In other words, it has argued that public participation enhances a form of political accountability by questioning why environmental agencies, industries and the concerned executive bodies are not doing their jobs? This is what public accountability and transparency is all about which is manifestly absent in the two industries that are subject of this research.

The rest of this chapter deals with summary and discussion of the research findings, reflections on the research process, concluding remarks and suggestions and proposals for future research.

8.2 Summary and Discussion of the Research Findings

In line with practice of other developing and least developed countries, this thesis revealed that aggressive industrialization and modernization in Ethiopia has resulted in minimal concern to industrial pollution in general and hazardous waste in particular. Instead, the government's main focus has been to achieve equitable economic growth first and to clean the environment later as discussed Chapter 1. For this reason, even if environmental concern is in principle embodied in different laws, policies and strategies, Chapter 3 shows that it is not enforced or implemented. In practice, the concept of environment protection is limited to resource protection (such as soil and water conservation and the planting of trees) and does not extend to industrial pollution control. Therefore, there it is concluded that there is very little political commitment to controlling industrial pollution in the Regional State of Tigray in particular and in the rest of the country in general.

What is more, as shown in Chapter 4, even if environment protection, regulation and monitoring organs are established at federal, sectoral and regional levels, they are not coordinated and they are given limited human, material and financial resources to undertake their tasks, duties and responsibilities. As a result as demonstrated in Chapter 5, pollution is alarmingly increasing in the textile and leather industries. As shown in Chapter 6, the two case study industries are not made accountable for the industrial pollution they inflict on the wider physical environment and on communities living nearby. It should be stressed that as shown in Chapter 7 some sections of

these communities have been complaining to the regional Environmental Agency and other concerned government organs about the negative impacts of the pollution but without any success.

The findings in this thesis indicate that industrial pollution is rapidly increasing in Ethiopia, especially from the textile and leather industries. Although the Almeda Textile Factory and Sheba Leather Industry are playing an important role in the development agenda of the country by creating employment opportunities and earning hard currency, the reality on the ground shows that there are some disturbing signs of environmental protection record.

This thesis has identified five major factors that are responsible for this failure to control industrial pollution. These factors are (i) lack of political will from the side of the government to address industrial pollution; (ii) lack of enforcement of the existing industrial pollution control laws (iii) lack of capacity (resource and personnel) and coordination within environment protection, regulation and monitoring bodies; (iv) lack of awareness and organization within the affected communities regarding their constitutional rights—the right to a clean and healthy environment; and (v) lack of corporate social responsibility on the part of the two industries subject of this case study.

The thesis found out that both the Federal government and the Regional government where the two case study industries are located lack a sense of urgency in controlling industrial pollution. The political neglect of this problem could be inferred from the government's failure to allocate adequate human, material and financial resources to environmental protection, regulation and monitoring bodies.

With regard to Tigray Regional State, although the environmental protection body is supposed to control the Bureau of Agriculture and Rural Development (BoARD), the fact that it established as an Agency under the Bureau is a clear indication of the regional state's minimal concern for environmental pollution in general and industrial pollution in particular. What is more, failure of the regional state to address repeated complaints from the affected communities is another indication of a reluctance to acknowledge the seriousness of the problem. The fact that the two

case study industries are also affiliated to the ruling party in power means that people will lose interest and courage to persistently bring a legal suit against the two industries.

Even if there are different industrial pollution control laws which prescribe different penalties such as the fines and cleaning-up measures as discussed in Chapter 2, in practice no polluter has been brought to court by these law enforcement bodies, nor have the environment protection, regulation and monitoring bodies taken any measure against the polluters with the exception of Addis Ababa Environment Protection Authority which has tried to take some measures. Nonetheless, if serious enforcement measures were taken properly, the industries' tendencies to pollute the environment could have been minimized. Thus, this thesis shows that the traditional command-and-control regulation system is not effective and needs to be complemented with effective state guided market instruments and community participation.

Even if low political commitment from both the federal and regional governments contributes for the poor industrial waste management in the two case study industries, the issue of resource scarcity is also a fundamental problem for the environmental protection, regulation and monitoring bodies. For instance, the limited budget allocated to the Tigray Regional State Environmental Agency makes it impossible for the Agency to employ enough professional staff to handle the technical aspects of industrial waste management. In addition to the problem of budget constraint there is also huge logistical problem as well. For instance, both FEPA and the Agency in Tigray lack their own laboratory to test the chemical content of effluent samples from the textile and leather industries. The Agency in Tigray, not only lacks trained professionals and environmental inspectors but also simple equipment for industrial pollution testing.

As shown in Chapter 1, the two case study industries are very important in the development agenda of the country for creating jobs and earning hard currency. However, they are not concerned about their impacts on the environment, on the communities living nearby such industries. The harsh reality is that their untreated solid and liquid waste is polluting local rivers, ground waters, farmlands; and also affecting the health and property of such local communities.

Due to the absence of firm political commitment, enforcement, institutional capacity and environmental concern from the two case study industries, it is concluded that the potential for

community participation to complement and support the existing command-and-control regulation in industrial pollution has so far being very low. As shown in this thesis, the affected communities' pressure on the two industries and on the Regional Environmental Agency is weak. In short, there is a need for the victims of industrial pollution to be more united, cohesive and more proactive in their demands. Thus, for the effective application of anti-pollution mechanisms, the capacity, cohesion and coordination of the affected communities should be enhanced and strengthened considerably in all aspects.

8.3 Reflections on the Thesis

Like any other thesis, this thesis also has its own positive and negative limitations. Hence, it is important to look back and reflect on the entire thesis process and indicate its strengths and limitations.

Since this is the first PhD thesis in the area in the context of the Regional State of Tigray in particular and that of Ethiopia in general, it can be considered as authentic research work that addressed a number of inter related issues. They include: identifying the problem and magnitude of industrial waste from leather and textile industries, exposing the weakness of the traditional command-and-control regulatory system and identifying community participation as a potential sustainable policy tool to complement the existing command-and-control system.

With regard to its methodology, the strength of this thesis lies in its attempt to triangulate different methods (such as informant interviews, documentary analysis, case studies and personal observations) in collecting data from different sources. The researcher has personally visited the two exemplary case study industries and has undertaken on the spot investigation. This has given the researcher a good opportunity to observe and see what was happening on the ground regarding waste treatment processes of the industries and to interview persons in charge of the two industries on spot. The semi-structured key informants interviewing technique allowed the researcher to discuss flexibly with key stakeholders involved in industrial pollution regulation and those affected by it. The researcher believes that both the number of the people interviewed and the sampling technique is adequate to arrive at a reasonable conclusion on the subject matter of the study. The triangulation system also helped the researcher to complement one data source

with the other and to cross check sources for their validity. The researcher's familiarity with the geographical locations of the two case study industries was also an advantage for this thesis.

Even if this research has been successful in collecting and analyzing data to answer the main and correlated research questions, it had some limitations. These include financial and logistical resources to conduct data collection. Due to these factors the researcher had to reduce the number of case study industries into two. The interview was also limited to a few key informants. Although these are not the only textile and leather industries in the country, the researcher believes they exemplify what is going on with the other textile and leather industries in the whole country.

Language was also another barrier in the quality of data. Since English is not the working language of Ethiopia, the researcher had to interview the key informants in Amharic, the working language of the country as well as in Tigrigna working language of Tigray Regional State, then translated into English. Hence, it is possible that difficulties in translating what the respondents actually said in the interview might have affected the quality of the information obtained.

8.4 Concluding Remarks

In Ethiopia, industrial pollution regulation is a challenging task. This is particularly the case in Tigray Regional State, where the two industries subject of the research are located and where industrial pollution control resulting from these two industries has become a serious problem. The root cause of industrial pollution problem in Ethiopia in general and in Tigray Regional State in particular is the application of weak sustainable development policy. Priority is often given to economic and social development (particularly poverty eradication) at the cost of industrial pollution control.

The application of weak sustainable development policy is reflected in: the government's lack of political commitment to address industrial pollution; failure to enforce industrial pollution control laws; problems in allocating resource and personnel and facilitating coordination within environment protection, regulation and monitoring bodies; failure to create awareness and enhancing organizational capacity of the affected communities with regard to their constitutional

right, that is, the right to a clean and healthy environment; and lack of corporate social responsibility on the side of the industries concerned.

It is important to stress that the government has passed industrial pollution control laws but it fails to enforce them, thereby postponing industrial pollution control in the interest of economic development and poverty eradication. In a way, Ethiopia is a classical example of the challenges faced by developing countries of balancing development and the environment challenges. Even if Ethiopia has endorsed green economic growth at policy level, in practice, it aspires to follow the footsteps of China where it aims to secure economic growth first and to clean environmental pollution later. As the investment laws in Ethiopia clearly show, the government's primary focus is on attracting foreign capital, supporting industrial growth (like textile and leather industries), and building a modern industrial nation. This is a typical example of weaker version of sustainable development. However, with this strong development bias, Ethiopia has experienced serious industrial pollution problems.

Thus there is an ambiguity in the interpretation of the principle of sustainable development in Ethiopia. The principle is used to alternatively justify economic development (poverty eradication policies) and conservationist agendas (environment protection). However, poverty eradication and environment protection are not one and the same. Nevertheless, this is not to say that in Ethiopia the links between environment and development have not been made in the country's environmental policy. However, where the links are made, it has often been in the context which privileges an understanding of development as focusing on economic development (poverty eradication). In other words, despite mentioning the link between development and environment at policy level, still the practice indicates a significant bias in favour of growth and economic development as the core measure of development. Overall, much work remains to be done to ensure that the development discourse does not use environmental arguments as a pretext to foster further economic activities that are environmentally unsustainable. Hence, a much broader effort must be made to ensure that development projects (like poverty eradication) are effectively coupled with large-scale application of basic principles of environmental law such as the prevention and precautionary principles. If such a broad

framework is adopted environmental protection will stop being in some cases an excuse for the promotion of certain economic agendas, as is the case with poverty eradication in Ethiopia.

In Ethiopia, the prospect of an autonomous and coordinated environment protection, regulation and monitoring organs seem to be very difficult under the existing circumstances. The presence of a single party dominated developmental state rule making process in the country enables the government to focus on the expansion of economic growth and disregard the environmental impacts of the industrialization process. What is more, lack of funds, trained personnel, and indirect political influence seriously undermines the effectiveness of the environmental agencies. State regulators are not able to control the adverse impacts of industrial pollution in the country in general and in the regional state of Tigray where the two industries are located.

Of course, it is good to note that with regard to sustainable industrial waste management in the country at large and in the two case study industries in particular, the global factor (production for export) has also skewed both the economy and the industrial waste management systems. For example, an underlying reason for the poor treatment of pollutants in the two case study industries is the cost of treatment. Paying the cost would make the products uncompetitive for the export market. Thus the underlying issue for industrial waste management in Ethiopia is as much the global constraints on the environmental policies as Ethiopian laws, policies and implementation.

With regard to actors that might contribute to sustainable industrial pollution control in Ethiopia, the role of the affected community, NGOs and media also seems to be limited. For instance, the affected communities lack capacity, organizational cohesiveness and coordination. The affected communities cannot, for example, count on competitive electoral politics to give them leverage in demanding action from the state. But, essentially, protests against industrial pollution are not illegal. The affected community members, especially in the two case study industries have different interests and incentives regarding industrial development and pollution. Some members are directly impacted by pollution, losing crops and experiencing illness. Others make their living working in the industries that are the sources of local pollution. These divided interests make it difficult for them to forge collective responses to solve the different impacts of industrial

pollution. As O'Rourke correctly notes, these conflicting interests and incentives often lead to accept the status quo of what he calls "degrading development" instead of advancing collective or state strategies for pollution control and prevention. He argues that in such a situation "pollution is simply accepted as a price of development."⁹³³ Nonetheless, this thesis has identified a pattern of success that deserves further examination even if there are a number of contingent elements in community actions like their capacity, organization and coordination that require further theorization and study.

As far as this thesis is concerned, even if there is a government mistrust of the NGOs in general, environmental NGOs have no problem to work on environmental issues, specifically, on industrial pollution control. Nevertheless, the ability of environmental NGOs to influence industrial pollution control in Ethiopia is still very limited, partly because some environmental NGOs tend to compromise their principles and keep quite in order to avoid confrontation with the government. On the other hand, in the context of the government's limited financial and expert resources, efforts should at least have to be made to make use of the limited environmental NGOs in the country. Despite all difficulties, strengthening government-environment NGOs partnerships should be enhanced in order to improve the weak environmental organs implementation capacity in the country. What is more, environmental NGOs could also have multiple roles in industrial pollution control, ranging from education and policy dialogue to environmental works on the ground. The role of genuine environmental NGOs could also be very critical when the affected communities come up against powerful government affiliated industries like the two case study industries discussed in this thesis. This is particularly the case where federal and local environmental organizations are not responsive to the needs and demands of the affected local communities.

With regard to NGOs, it should be noted that while the Ethiopian government critique and justification of control of such NGOs is that they introduce neo-liberalism; it is arguable that such NGOs bear responsibility on behalf of Western consumers of products for the pollution which is caused in developing countries by their modes of consumption. Responsible global

⁹³³ Dara O'Rourke, 2004, *supra*, n. 491, p.16.

NGOs take this seriously. It would be therefore useful to have a careful consideration of cosmopolitan roles and responsibilities in relation to sustainable pollution control management in developing countries like Ethiopia.

However, despite the general positive role of NGOs in developing countries, there has been relatively little research on the roles of environmental NGOs in Ethiopia. It is important to stress that there is a need to undertake further research on the work of environmental NGOs in Ethiopia within the environmental policy framework. This thesis proposes two issues that warrant such further investigation and research. These are: to what extent could environmental NGOs help in industrial pollution control *vis-a-vis* other environmental protection, regulation and monitoring bodies? How could the role of environmental NGOs be linked with the actions of the affected community members' in industrial pollution control?

In Ethiopia, media reports about industrial pollution are the only possible sources of information that the public at large can access. However, very little industrial pollution information is made public by the government. Reports made by the government agencies on pollution and environmental hazards have remained confidential. National as well as international media rarely reports on industrial pollution in the country, except in some cases as was the case with Aljazeera in the Koka Lake case discussed in Chapter 7.

The media's (national or local) main concern in the nation as well as regional states in Ethiopia are confined to reporting progress in development endeavors in the country, otherwise known as developmental journalism. If properly utilized, the media could apply pressure directly on industries since most companies seek to foster a positive public image or avoid negative publicity. Media reports can easily stain a company's reputation, particularly for name-brand industries. Such reports could also serve to trigger debates about industrial pollution control. For instance, knowledgeable media reporting can elevate a story about industrial pollution from a local concern into national and international concern.

As things stand, one can conclude that though the current existing modes of industrial pollution regulation in Ethiopia contains some rudimentary elements of market instruments and community participation on paper, the dominant one is too top down, too rigid, too demanding of expensive technological solutions and ignorant of appropriate relationships between industry and people.

Finally, one of the main challenges that appear to continue to undermine environmental protection and effective anti-pollution mechanisms is the close inter-relationship between the ruling party, the government and various organizations that are mandated to promote environmental protection and take anti-pollution measures. In short, this lack of separation of powers in almost all industrial pollution regulating organizations remains one of the major challenges.

Thus, Ethiopia clearly offers a difficult test for policies or programmes to promote more effective industrial pollution and sustainable development.

8.5 The Way Forward to Industrial Pollution Control in Ethiopia: A Move towards Stronger Sustainable Development

As stated earlier, there is no effective legislative and organizational framework to control industrial pollution from textile and leather industries in Ethiopia. Different limitations discussed above hinder sustainable industrial pollution control and management. Considering these limitations, this thesis proposes a move towards a stronger version of sustainable development in the government's development policy. The move towards strong version of sustainable development could be expressed in five ways: federal and regional environment protection, regulation and monitoring organs capacity, coordination and autonomy enhancement. Although the federal and regional environmental bodies are supposed to control industrial pollution, as is shown in this thesis, they do not have the required capacity, coordination and autonomy. In the absence of these three fundamental elements, it would be naive to expect the environment protection, regulation and monitoring bodies to be competent and effective. Thus, allocating Sufficient and adequate budget, enhancing their staff members and establishing them as autonomous bodies are all mandatory steps.

Industrial pollution control policy should be developed at federal level. Local communities should also be given training and financial support to tackle industrial pollution. Currently, public participation is in its embryonic stage in Ethiopia, specifically in Tigray Regional state where the two case study industries are located. As it has been shown in this thesis, public participation has the potential to complement the traditional command-and-control environmental regulation in industrial pollution control. However, the awareness level of the affected community members; the role of environment protection, regulation and monitoring organs; the establishment of environmental NGOs; and the role of media in supporting the community members are all minimal. Accordingly, to enhance public participation in regulating industrial pollution, support from the federal government at policy level would be very useful. At policy level, the training and financial support from different stakeholders (government, industries, environmental NGOs and media) could be provided to the community members and their interactions should be clearly specified. Supporting public participation through the application of policy could serve to regulate industrial pollution at a modest cost.

A code of practice on industries environmental and social impacts should be introduced at a federal level. This code of conduct could include the issuance of certification system (bronze, silver and gold) to determine the level of compliance with the requirements of environmental and social responsibility. However, the objective of the code should be to realize environmental and social sustainability and to improve the performance and adherence to corporate social responsibility and the market competitiveness of industries. Rating industries via this certification system could empower communities to identify polluting industries and force the industries to manage their waste properly. If the industries are international market oriented like the two case study industries discussed in this thesis, this code of practice could be even more effective. In this regard, the Code of Practice prepared for the Floriculture Sector by the Council of Ministers⁹³⁴ could be a model to follow.

⁹³⁴FDRE, 2011. Code of Practice of the Floriculture Sector Council of Ministers Regulation No. 207/2011 Federal Negarit Gazeta, 17th Year, No. 74. Addis Ababa.

Industrial pollution cleaning-up fund (both at federal and regional levels) should be established. The main reason for recommending a cleaning-up fund is that, the traditionally recognized form of compensation in the country has not been effective to address the environmental harm that ensues from industrial pollution. The traditional liability system (tort) covers only damage to persons or goods and the contamination of privately, or sometimes publicly, owned properties. It does not cover damage to the environment per se. This is due to the fact that the environment is seen as a public good which is freely accessible to everyone so no one can be held responsible for damaging it. However, the scheme should clearly specify who should pay for the cost involved in industrial waste clean-up and the restoration of the damaged environment, as well as on deciding acceptable cleaning-up standards. The scheme should also empower the regional environment protection and regulating bodies to identify the parties responsible for industrial pollution and force them to clean up the polluted sites. In cases where it is difficult to identify the polluter or the polluter is insolvent, the federal or regional environment protection and regulating bodies should clean-up the polluted sites using this fund. As to how this fund is to be established and for its effective implementation further research is mandatory.

The federal and regional governments should also effectively enforce all the criminal provisions with regard to industrial pollution control. As discussed in this thesis, the FDRE Criminal Code, the Environmental Pollution Control Proclamation, the Environmental Impact Assessment Proclamation and other relevant laws in the country clearly prescribe that criminal penalty should be imposed on all polluters including industries. However, as this thesis found out, so far there is no criminal case initiated against any industry (including the textile and leather industries) with regard to industrial pollution. Thus, to establish effective industrial pollution control system, the strict application of the criminal provisions prescribed in the law of the country is necessary. This is also in line with Art. 1 of the object and purpose of the FDRE Criminal Code which states:

Prevention of crimes [industrial pollution crimes] by giving due notice of the crimes and penalties prescribed by law and should this be ineffective by providing for the punishment of criminals in order to deter them from committing another crime and make them a lesson to others, or by providing for their reform and measures to prevent the commission of further crimes.⁹³⁵

⁹³⁵ The Criminal Code of the Federal Democratic Republic of Ethiopia, supra, n.451.

The above also might imply the need to establish environmental tribunals and courts staffed with competent arbitrators and judges to adjudicate environmental disputes as quickly as possible. In addition to such ideas, the thesis also advocates the need to establish a special environmental police force that can monitor and supervises any violations related to pollution by any industry or even urban based environmental hazards. But such special police force must be accountable to organizations other than the executive organs of the government or the party. It should also work closely with the grass root communities and the legislative and judicial organs of the government. Thus, without the presence of sanctions in the background, social responsibility concerns of industries would not take root in Ethiopia.

This thesis also proposes three strategies for non-state actors as a way forward towards a stronger version of sustainable development in industrial pollution control. These strategies as O'Rourke notes are: "*information politics, accountability politics and direct pressures* (emphasis mine)."⁹³⁶

Information politics, as Keck and Sikkink explain, involves at its base, "promoting change by reporting facts."⁹³⁷ Or in other words "Simply by gathering and dissemination [industrial pollution] information; NGOs, academics, and the media can play an important role in providing a voice to local demands, and in breaking state monopolies over information."⁹³⁸ These actors can also help to "amplify local voices, giving them more credibility and legitimacy, and to reframe debates on industrial pollution."⁹³⁹

The second strategy, accountability politics, seeks to "expose the distance between discourse and practice of state agencies and firms."⁹⁴⁰ Employing this strategy, NGOs and the media can question the effectiveness and commitment of the federal and regional environmental agencies to enforce the established pollution control laws in the country. This strategy helps to broaden pressures by "exposing irresponsible actions or hypocrisies to the public at large, thereby

⁹³⁶ Dara O'Rourke, 2004, *supra*, n.491, p.189.

⁹³⁷ *Ibid.*

⁹³⁸ *Ibid.*

⁹³⁹ *Ibid.*

⁹⁴⁰ Keck, Margaret, and Kathryn Sikkink, 1998. *Activists Beyond Borders-Advocacy Networks in International Politics*. Ithaca: Cornell University Press, p.19.

creating greater pressure on state agencies to resolve problems.”⁹⁴¹ This strategy is more likely to be very effective in big industries like the two exemplary case study industries in this thesis since they export their products to environment sensitive foreign markets.

Third, national and international environmental NGOs and other extra-local actors should also employ direct pressure politics. For instance they can organize “letter-writing campaigns, protests, and boycotts, which demand specific changes in firm practices.”⁹⁴² Academics and media can also use their influence to “redirect accountability onto state agencies or corporate offices that are not targeted by community members.” In this way pressure can be applied to different decision makers.

Finally, having a well informed, educated and dynamic, organized and united public conscious of the negative consequences of the negative impacts of industrialization on environment and the public is a precondition for a modest and meaningful success in an anti-pollution strategy in any country. In such a case, the role of having an independent media is very crucial without which any anti-pollution initiative or strategy can be successful. However, one of the major challenges of an environment friendly independent media is to convince those in power that striking a balance between industrialization and the protection of the environment is the only way to bring about sustainable development. The long term strategy to have an environmentally conscious society is to start introducing environmental courses at all schools with the hope of raising the awareness of the youth to be sensitized. The need to provide awareness raising training to all industries and the corporate world is also a step in the right direction to combat pollution and to minimize the emission of industrial hazardous wastes.

This is to stress that considering the complex nature of pollution and its negative consequences, the way to tackle such a complex problem is not on a piece meal basis but in a systematically integrated manners involving multidisciplinary approach, strategies and experts. However, having a visionary leadership genuinely committed not only to initiate a sound environmentally friendly and anti-pollution legal and administrative measures but also that is dedicated to implement its anti-pollution and environmental policies is a precondition for success of such a

⁹⁴¹ Dara O’Rourke, 2004, *supra*, n.491, p.189.

⁹⁴² *Ibid.*

complex venture. That is also the only way to reduce the gap between rhetoric and practice. Measures taken along the above recommended lines in this thesis will certainly go a long way towards a healthier and peaceful society and less polluted environment both in the regional state of Tigray and in the rest of Ethiopia.

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http://www.waltainfo.com/index.php?option=com_content&view=article&id=1672:ethiopia-earns-close-to-44-mln-usd-from-textile-sector-&catid=52:national-news&Itemid=291

Walta information center, available at;

http://www.waltainfo.com/index.php?option=com_content&task=view&id=22009

APPENDICES

Appendix 1.1 Distribution of large & medium scale manufacturing industries by regional states and industrial group-public & private 2009/2010

	REGIONAL STATES											Total	%
	Tigray	Afar	Amhara	Oromiya	Somalia	Benshangul	S.N.N.P	Gambella	Harari	A/A	Diredawa		
Manufacture of food products & Beverages	34	-	46	160	6	-	61	1	6	219	39	572	26.34
Manufacture of tobacco products	-	-	-	-	-	-	-	-	-	1	-	1	.05
Manufacture of textiles	3	2	4	8	-	-	5	-	-	17	1	40	1.84
Manufacture of wearing apparel except fur apparel	1	-	-	8	-	-	-	-	-	41	1	51	2.35
Tanning and dressing of leather; manufacture of footwear, luggage and handbags	9	-	6	27	-	-	2	-	1	69	1	114	5.25
Manufacture of wood and of products of wood and cork, except furniture	2	-	3	22	-	-	14	-	-	13	-	54	2.49
Manufacture of paper, paper products and printing	6	-	3	11	-	-	3	-	2	94	4	123	5.66
Manufacture of chemicals and chemical products	4	-	-	35	-	-	1	-	-	55	1	96	4.42
Manufacture of rubber and plastic products	3	-	2	43	-	-	-	-	-	89	2	139	6.40
Manufacture of non-metallic mineral products	82	10	108	66	3	-	105	1	7	95	5	482	22.19
Manufacture of basic iron and steel	15	-	2	12	-	-	1	-	-	7	2	39	1.80
Manufacture of fabricated metal products except machinery and equipment N.E.C	23	1	14	18	1	-	11	-	1	83	2	154	7.09
Manufacture of machinery & equipment N.E.C	-	-	-	4	-	-	-	-	-	10	1	15	.69
Manufacture of motor vehicles, trailers & semi-trailers	2	-	-	3	-	-	1	-	1	4	-	11	.51
Manufacture of furniture; manufacturing N.E.C	15	1	44	34	3	-	88	2	10	78	3	281	12.94
Total	199	14	232	451	13	3	292	4	28	875	61	2,172	100
%	9.16	.64	10.64	20.76	.60	.14	13.44	.18	1.29	40.29	2.81	100	

Source: (FDRE Central Statistics Agency, 2011)

Appendix 3.1 Priority in pollution concern in Ethiopia

Nature of the Problem	Scale of the problem	Level of concern	Ability to control problems	Availability of statistical data	Specific chemicals Creating concern	Priority rank
Air pollution	National	Medium	Low	insufficient	CFC, dust particles, oxides of nitrogen, oxides of carbon, sulphur tetraethyl lead	2
Pollution of inland waters	National	High	low	Insufficient	Detergents, dyes, pesticides, nitrates, phosphates, cyanides, inorganic salts, mercury, organic pollutant	1
Ground water pollution	Local	Medium	Low	Insufficient	Nitrates, phosphates, pesticides residues, metallic, inorganic salts	3
Soil contamination	Local	Medium	Low	Insufficient	Heavy metals, chlorides, arsenates, chromium, lead	3
Chemical residues in food	National	Medium	Low	Insufficient	Heavy metals, pesticides residue	1
Hazardous waste treatment disposal	National	High	Low	Insufficient	PCBs, heavy metals, industrial waste, medical waste, pesticides	1
Occupational health in industry	Local	Medium	Low	No data	Acids, explosives, alkyls, inflammable chemicals, cadmium, lead, mercury	2
Public health	National	High	Medium	Insufficient	DDT, Clinical wastes	3
Chemical accident: industrial	Local	Medium	Low	No data	Acids, ammonia, alkalis, chlorine, acetylene	3
Storage disposal of obsolete chemicals	National	High	Low	Insufficient	Agricultural chemicals, industrial chemicals, expired drugs	1
Unknown chemical imports	National	Medium	Low	Insufficient	Industrial chemicals, pesticides, hazardous wastes	3
Drinking water contamination	National	High	Low	Insufficient	Heavy metals, pesticides residues	3

Source: (FEPAE: National chemicals management profile of Ethiopia as modified in 2010)

Appendix 3.2 Some problem areas with regard to chemical pollution in Ethiopia

Nature of problem	Region	Brief Description of problem	Chemicals (s)/Pollutants
Public Health	National	Contamination of drinking water and food	DDT, Clinical wastes
Air Pollution	National	Uncontrolled emission of dust, toxic gases and hazardous chemical effluents from industrial process, from vehicles and open air incineration of solid wastes	Dust particles, carbon dioxide, carbon mono oxide, heavy metals, polyaromatic and hydrocarbons
Pollution of inland waterways	National	Uncontrolled dumping of untreated industrial effluent and domestic waste from urban centers	Dyes, heavy metals, phosphates, nitrates, pesticides
Contamination of drinking water	National	Percolation of chemical pollutants into water distribution networks, insufficient removal of heavy metals in treatment plants, inadequate treatment facilities	Phosphates, heavy metals, Pesticides residue nitrates
Soil contamination	Local	Uncontrolled disposal of industrial and municipal solid and liquid wastes	Heavy metals, dyes, crude oil, pesticide residues
Storage & disposal of obsolete chemicals	National	Uncontrolled storage and disposal of industrial and agricultural chemicals and clinical solid and liquid wastes	POPs, industrial chemicals, obsolete pharmaceuticals
Ground water pollution	National	Infiltration of contaminated water	Nitrates, phosphates, pesticides residues, metallic and inorganic salt
Hazardous waste treatment disposal	National	Lack of proper disposal facilities and awareness	PCBs, heavy metals, industrial waste, medical waste, radioactive waste, pesticides
Occupational health in industry	Local	Lack of knowledge of proper storage, use and disposal, lack of awareness	Acids, ammonia, alkalis, chlorine, acetylene
Chemical accidents: industry	Local	Lack of guidance in appropriate use & safety equipment	Acids, ammonia, alkalis, chlorine, acetylene
Unknown chemical imports	National	Poor laboratory capability to determine quality and act on it	Industrial chemicals, hazardous wastes

Source: (EPA, National chemicals management profile of Ethiopia as modified in 2010)

Appendix 3.3 Levels of government and responsibilities in Ethiopia

Levels of government	Hierarchy of government	Responsibilities in environmental affairs
Federal	House of Peoples Representatives (Standing Committee for Natural Resources & Environment)	Approval of Laws, Federal Policies, Establishment of Agencies
	House of Federation	Approval of regional subsidies, amendment of constitutional provisions.
	Council of ministers and various line ministers	Implementation of policies, enactment of regulations
	Environmental Protection Authority	Preparation of policies, coordination and regulation, as well as some implementation of policies, legislation, EIA, public awareness.
Regional	Regional Council	Approval of regional laws and regulations.
	Regional Administration and various line bureaux	Implementation of policies; Preparation and implementation of development plans.
	Environment Protection Agency	Preparation, coordination & regulation, as well as some implementation of regional conservation strategies, public awareness, EIA
Zonal	Zonal Council	Coordination of Weredas
Wereda	Woreda Council	Approval of Woreda development plans
	Woreda Administration	Preparation and implementation of Woreda Development plans
Kebelle	Kebelle Council & Kebelle Administration	Community level actions
Sub/Kebelle	Community Associations	Social affairs
Community	Community representatives	Development activities

Source: (Gedion Asfaw, Kifle Lemma & Sebsebe Demissew, 2007)

Appendix 3.4 Tanning and leather finishing emission standards

(a). Limit Values for Discharges to Water	
Parameter	Limit Value
Temperature	40 °C
pH	6 – 9
BOD5 at 20°C	200 mg/l
COD	500 mg/l
Suspended solids	50 mg/l
Total ammonia (as N)	30 mg/l
Total nitrogen (as N)	60 mg/l
Total phosphorus (as P)	10 mg/l
Oils, fats, and grease	15 mg/l
Mineral oils at oil trap or interceptors	20 mg/l
Chromium (as total Cr)	2 mg/l
Chromium (as Cr VI)	0.1 mg/l
Chlorides (as Cl)	1000 mg/l
Sulphides (as S)	1 mg/l
Phenols	1 mg/l

(b).Limit Values for Emissions to Air	
Parameter	Limit value
Total particulates	50 mg/Nm ³
Volatile organic carbons produced	75 g/m ² product
Total hydrogen sulphide, sulphides and mercaptans (as S)	5 ppm v/v
Ammonia	40 ppm v/v
Acid vapours (as HCl)	30 mg/Nm ³

Source: (EPA, as modified in 2011)

Appendix 3.5 Manufacture and finishing of textiles emission standards

(a). Limit Values for Discharges to Water

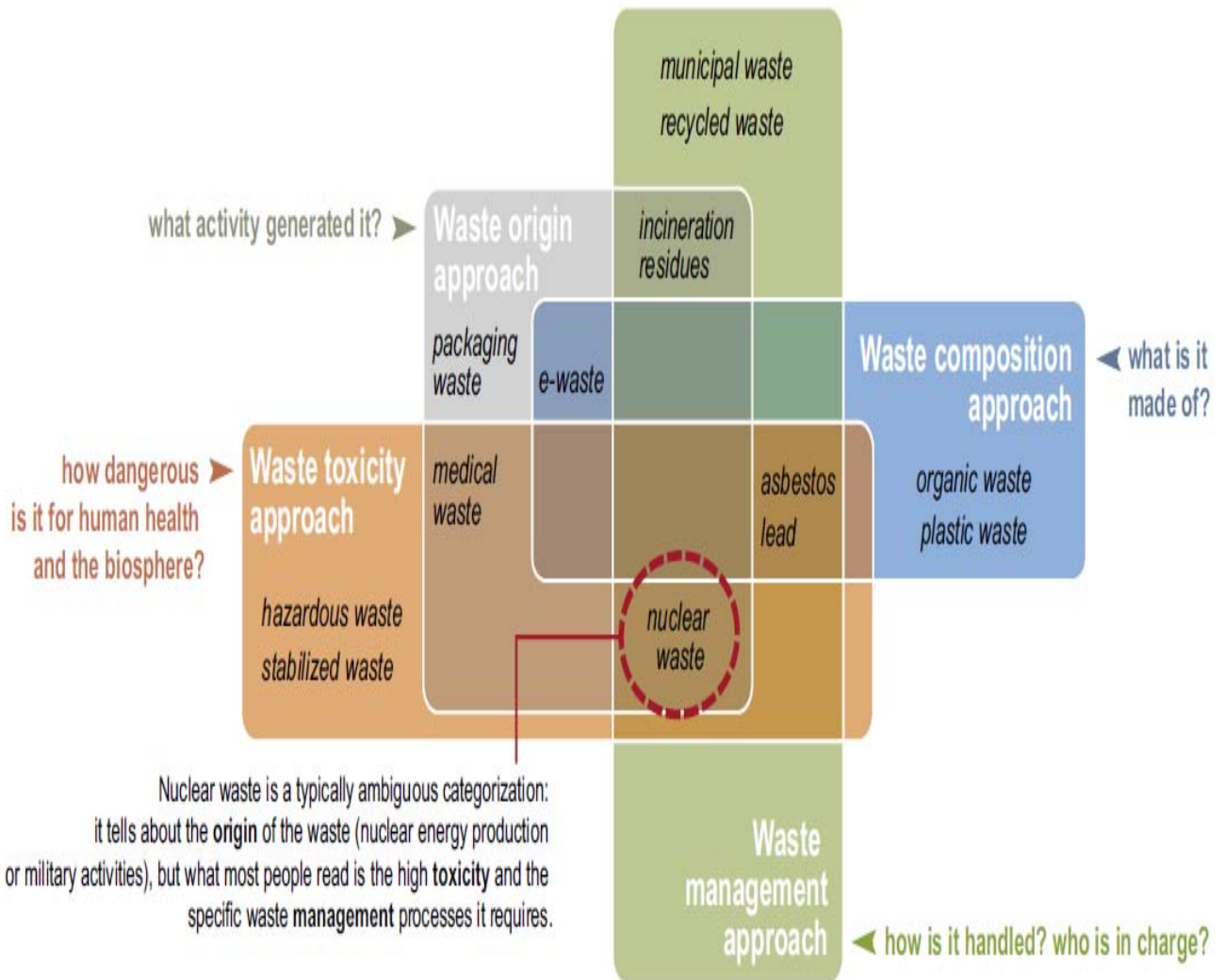
Parameter	Limit Values
Temperature	40 °C
pH	6 – 9
BOD5 at 20°C	50 mg/l
Total nitrogen (as N)	40 mg/l
COD (mg O2 /l)	150 mg/l
Total phosphorus (as P)	10 mg/l
Suspended solids	30 mg/l
Total ammonia (as N)	20 mg/l
Oils, fats & grease	20 mg/l
Phenols	1 mg/l
Mercury (as Hg)	0.001 mg/l
Nickel (as Ni)	2 mg/l
Cobalt (as Co)	1 mg/l
Lead (as Pb)	0.5 mg/l
Antimony (as Sb)	2 mg/l
Tin (as Sn)	5 mg/l
Chromium (as Cr VI)	0.1 mg/l
Chromium (as total Cr)	1 mg/l
Arsenic (as AS)	0.25 mg/l
Cadmium (as Cd)	1 mg/l
Zinc (as Zn)	5 mg/l
Copper (as Cu)	2 mg/l
Mineral oils (Interceptors)	20 mg/l
Benzene, toluene & xylene (combined)	1 mg/l
Mineral oils (Biological Treatment)	5 mg/l
Organochlorine pesticides (as Cl)	0.03 mg/l
Mothproofing agents (as Cl)	0.003 mg/l
Organophosphorus pesticides (as P)	0.003 mg/l
Absorbable organic halogen compounds (AOX)	5 mg/l
Sulphide (as S)	2 mg/l

(b). Limit Values for Emissions to Air

Parameter	Limit value (mg/Nm ³)
Particulate matter	50
Volatile organic carbons (as C) (excluding formaldehyde)	50
Formaldehyde	20
Isocyanates (as NCO)	0.1

Source: (EPA, as modified in 2011)

Appendix 5.1 Classification of waste



Source: (www.grida.no/_res/site/File/.../vital-waste2/VWG2_p40and41.pdf)

Appendix 6.1 Letter of cooperation

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MEKELLE UNIVERSITY

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School of Law

Ref. N^o: SL/0245/ 2010

Date: 18/04/2010

To whom it may concern

Subject: - Request for cooperation

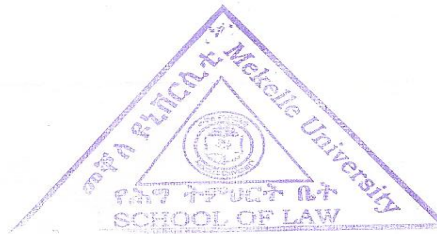
Tsegai Berhane Ghebretেকে is an assistance Professor at Mekelle University College of Law and Governance, Dpartment of Law. Currently, he is doing his PhD at Warwick University in UK on the title“Industrial Pollution Control & Management in Ethiopia: the case of Almeda Textile Factory and Sheba Leather Industry in Tigray Regional State.”

Hence, we kindly request your good office to Assist Tsegay in collecting and supplying relevant information for his research.

With all enormous appreciation for your support in Advance!

A handwritten signature in blue ink, appearing to read 'Mekonnen Fisseha'.

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የሕግ ትምህርት ቤት ኃላፊ
Mekonnen Fisseha,
Head, School of Law



☒ 451
☎ 251-0344-408379/407600

መቐለ - ኢትዮጵያ
Mekelle, Ethiopia

ፋክስ/Fax 251-0344-409260
E-mail: mekelleLaw@telecom.net.et



Appendix 6.2 Key Informants semi-structured qualitative interview guide

The purpose of this interview is to collect first hand information about the role government, industries, the public and courts play in managing industrial hazardous waste from selected leather and textile industries. The interview is supposed to shade light: on the magnitude of the problem of industrial hazardous waste; how different stakeholders address the problem; what the practice looks like on the ground; and to find out if there is any integration among these stakeholders.

The type of interview envisaged is semi-structured qualitative interview, where the researcher prepares initial questions which serve as interview guide and the interviewee has a great deal of leeway in answering the questions. Unlike in quantitative research interview here there is more flexibility for both the researcher and the interviewee. For instance, in semi-structured qualitative interview the interview guide questions may not be asked in their sequential order though they have to be asked all. What is more, while the interview is in progress the researcher can pick up any issue from what the interviewee said and pose it as a question.

Semi-structured interview is preferred here due to the fact that the researcher wants to direct the interview to industrial hazardous waste from the selected industries. The other point for preferring semi-structured qualitative interview is that, since the research employed multiple case study research, it helps cross-case comparability.

While performing semi-structured interview all key informants have been informed: their contribution was sought exclusively for academic purpose only; their rights to refuse the interview at any stage for whatever reason and to withdraw every data they supplied within the research period is respected; their interview would be recorded and used only by the researcher; and they would be fully informed about the research process and its findings.

I. Interview guide questions related to key informants from the Legal and Administration Affairs Standing Committee of the Tigray Regional State council.

Q1. What is the mandate of the Regional Council with regard to environmental protection in general and industrial hazardous waste in particular? And how is it done?

Q2. Do environmental agencies report on the state of the environment in general and industrial hazardous waste management in particular?

Q3. Is industrial hazardous waste a problem in Ethiopia in general and in your Region in particular?

Q4. How do you explain industrial hazardous waste from leather and textile industries?

Q5. What does the practice of preventing industrial hazardous waste in Ethiopia or in your Region look like?

Q6. What is your role in preventing environmental pollution in general & hazardous waste from industries in particular?

Q7. Does the Council have complaint handling mechanism with regard to environment management issues in general and industrial hazardous waste management in particular?

Q7. Can the Council pass political solution with regard to environmental issues in general and industrial hazardous waste in particular? In what situation and how?

Q8. Is industrial hazardous waste management mainstreamed in the country's development agenda?

II. Interview guide questions related to key informants from the government sectors like: Federal Environmental Protection Authority; Addis Ababa Environment Protection Authority; Amhara Land and Environmental Protection Bureau; and Tigray Land Administration, Use and Environmental protection Agency.

Q1. Is industrial hazardous waste a problem in Ethiopia in general or in your Region in Particular?

Q2. Do you classify wastes into hazardous and non-hazardous ones? How?

Q3. What chemicals do the industries use in their production process? How are these chemicals classified? How do industries manage them? What are the effects of these chemicals?

Q4. Have you ever done a research on how the industries manage hazardous waste?

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- Q5.** What are the types of hazardous wastes and which ones are more problematic in leather& textile industries in Ethiopia?
- Q6.** What does the practice of preventing industrial hazardous waste in Ethiopia or in your Region look like?
- Q7.** How does your office manage industrial hazardous waste from leather and textile industries? Have you prepared safety policies, laws and directives with regard to hazardous waste on their production, importation, management and utilization as specified in your mandate?
- Q9.** Do you involve stakeholders in managing industrial hazardous wastes from leather& textile industries? How?
- Q10.** Do you have any standards with regard to tanning and textile industries?
- Q11.** Do industries periodically report to your office on the type and nature of hazardous waste they produce?
- Q12.** Does your office periodically report on the state of industrial hazardous waste management in the country? To whom? And how often?
- Q13.** How do you monitor industrial hazardous waste from leather and textile industries?
- Q14.** Are there any impediments with regard to industrial hazardous waste management from leather and textile industries?
- Q15.** How is industrial hazardous waste management law & practice coordinated at Federal and Regional level?

III. Interview guide questions related to key informants from the selected leather& textile industries.

- Q1.** When was your industry established?
- Q2.** What is the total investment capital of your industry?
- Q3.** How many employees do you have?
- Q4.** Why is the industry located where it is?
- Q5.** Did your company conduct EIA before it was established?
- Q6.** Where do you get your raw materials for your production?
- Q7.** What products do you produce and what is your current production capacity?
- Q8.** Where do you market your products?

-
- Q9.** What chemicals do you use in your production process? How do you get these chemicals? How are the chemicals classified and managed?
- Q10.** Does your industry produce hazardous waste in its production process?
- Q11.** What type of hazardous waste does it produce? At which production stage? And what is its magnitude? Do you keep record of the wastes?
- Q12.** How does your industry manage hazardous waste?
- Q13.** Do you have waste treatment plant? How does it function?
- Q14.** What does your corporate social responsibility record look like?

IV. Interview guide questions related to key informants from the affected community members living in the neighborhoods of the leather and textile industries.

- Q1.** How does the leather/textile industry in your neighborhood treat its waste?
- Q2.** Is there any problem in your area due to the discharge of wastes from leather& textile industries? How serious is the problem?
- Q3.** What is your role in the prevention of industrial hazardous waste from leather and textile industries?
- Q4.** Do you have access to participate in decision making process with regard to industrial hazardous waste?
- Q5.** Do you have access to information with regard to hazardous waste from industries?
- Q6.** Are there any impediments for your participation in industrial hazardous waste management?
- Q7.** Do you have any mechanism where you could force industries to manage properly their hazardous wastes?
- Q8.** Is there a mechanism through which the victims of environmental pollution could protect their rights if environmental agencies fail to perform their statutory obligations like setting standards and approving standards?

Appendix 7.3: List of key informants

No.	Interviewee	Position	Date
1	Abeje Yitayu	Bahridar Textile Industry Personnel Section Head	March 30, 2011.
2	Abrha G/Aregawi	Process owner of media section at Tigray Mass Media Agency	February 20, 2012.
3	Awet Arefe	Former Assistant General Manager of Almeda Textile Factory, currently Adwa Wereda Water supply Head	September 10, 2012.
4	Berhane Tecele	Utility Head at Almeda Textile Factory	September 06, 2012.
5	Berhane Berhe	Expert in the Tigray Land Administration, Use and Environmental Protection Agency	January 27, 2012.
6	Dereje Taye	Communication affairs process leader in AAEP	September 25, 2012
7	Hadush Teum	Wastewater treatment Head at Sheba Leather Industry	February 08, 2011
8	Fistum Hagos	Speaker of Tabia Bet Yohannes where Almeda Textile Factory is located	September 05, 2012.
8	Gebru Berhe	Wereda Adwa Administrator	September 05, 2012
9	Getachew Siyum	Almeda Textile Factory Acting Manager	February 26, 2011.
10	Ghebreegzabihir Gebreslassie	Resident of Kebele Hayelom or Hadush Sefer (new village) situated close to Sheba Leather Industry	February 09, 2011
11	Habtu Aregawi	Over Sighting Core Process Owner within Tigray Regional State Council	February 09, 2012.
12	Berhe	Former head of Environmental Protection Department within Tigray Land Administration and Environmental Protection Agency, on	January 27, 2012.
13	Hagos Tesfay	Resident of Kebele Hayelom or Hadush Sefer (new village) situated close to Sheba Leather Industry,	February 09, 2011.
15	Kahsay Zenawi	Resident of Aynalem Tabia where Sheba Leather Industry is located	March 2012

16	Ker Ahemed	Ex-waste treatment head at Almeda Textile Factory,	February 27, 2011.
17	Kibera Alemseged	Head of Environment Protection within Tigrai Regional State Environmental Protection and Land Administration & Use Agency	February 05, 2012
18	Kiflie Mahari	Legal Research, Drafting and Training Directorate Director at the Ministry of Justice (MoJ),	April 27, 2012.
19	Mohammed Salih	a member of the Tigrai Regional Council representing Wukro City in the Council and Chair Person for Legal and Administrative Standing Committee	January 27, 2011.
20	Rahel Aregawi	Rural Adwa Wereda Council Deputy Speaker	September 04, 2012.
21	Selam Kidane	FEPA expert	March, 20, 2011.
22	Sintayehu Tadesse	Ex-head of the Environmental Protection section in the Environmental Protection, Land Administration and Use Bureau of Amhar Regional State,	March 29, 2011.
23	Solomon Kebede	Head of EIA Department at FEPA	June 12, 2012
24	Tabotu Derese	A member of the Wereda Council and a member of the social affairs standing committee in the Wereda council	March 2012
25	Tedros Abraha	Business Excellence and Innovation Department Head at Sheba Leather Industry	February 08, 2011.
26	Tesfaye G/Hiwet	Head of Land Administration, Use and Environment Protection Desk at Wereda Adwa	September 04, 2012
27	Tesfit Fessehaye	Sheba Leather Industry Acting Manager,	February 09, 2011.
28	Wendwesen Sentayehu	Legal section head at FEPA,	January 20, 2012
29	Yerga Assefa	Pollution control expert at Tigrai Regional Environmental Protection and Land Administration & Use Agency, on	November 25, 2012.
30	Zenebech G/Yohannes	Resident of Tabia Bet Yohannes where Almeda Textile Factory is located and member of Wereda Adwa Council	September 05, 2012