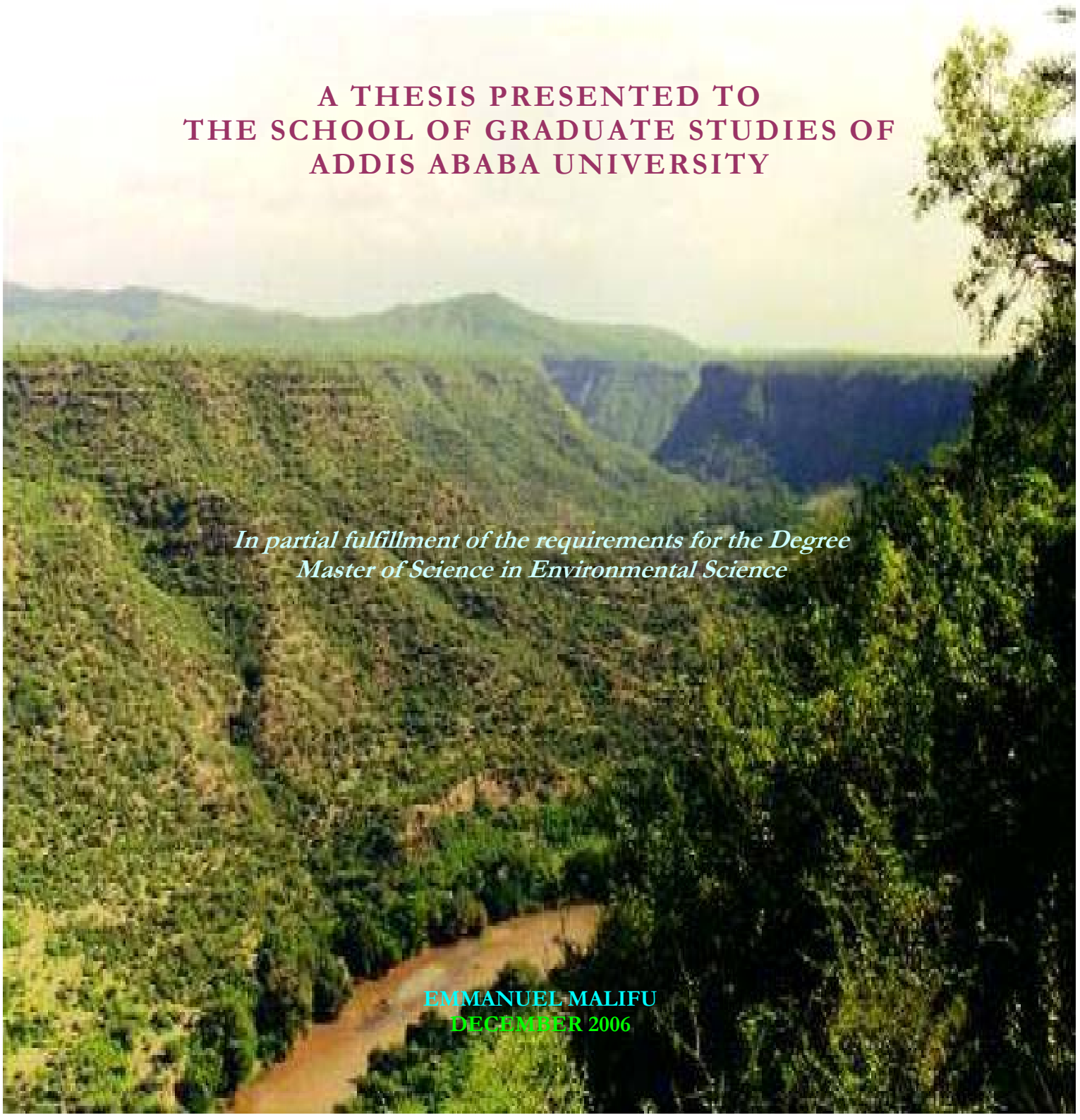
THE ENVIRONMENTAL CONSEQUENCES OF DEPENDENT DEVELOPMENT IN THE UPPER AWASH VALLEY AND THE PREDICAMENTS OF THE KEREYU



A THESIS PRESENTED TO
THE SCHOOL OF GRADUATE STUDIES OF
ADDIS ABABA UNIVERSITY

In partial fulfillment of the requirements for the Degree
Master of Science in Environmental Science

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DECEMBER 2006

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

THE ENVIRONMENTAL CONSEQUENCES OF DEPENDENT DEVELOPMENT IN THE UPPER AWASH VALLEY AND THE PREDICAMENTS OF THE KEREYU

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DEDICATION

This paper, I dedicate to my Amharic professor, the late Ato Yohannes Admassu, Alemaya College of Agriculture, HaileSelassie I University, for enabling me appreciate the terse and yet flamboyant prose and the rare and genuine national ardor exuding from the works of *Negadras* GebreHywot Baykedagn.

Emmanuel Malifu

December 2006

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ACKNOWLEDGMENT

I would like to express my indebtedness to my advisors Dr. Fisseha Itanna, Faculty of Science, AAU, and Dr. Tesfaye Taffesse, Institute of Development Research, AAU, for the invaluable scholastic support and other assistances they provided me in the conception and orchestration of the ideas and findings that appear in this paper.

My lovely niece, Lili Malifu, I have to thank with all my soul for the invaluable camaraderie she bestowed on me by providing me, in particular, with the gadgetry that enabled me form or capture, develop and finally word-process the ideas making this thesis.

Yoseph Negassa, an old friend of mine, deserves my special thanks for sparking in me the idea that the plight of the Kereyu deserves a holistic and serious study.

Two colleagues of mine, Belete Geda and Solomon Kebede, I have to hail as they devoted their time to go through and comment on an initial draft of this paper.

My gratitude goes to my colleagues in the Environmental Pollution Control Department of FEPA, Dr. Aynalem Abebe, Mehari Wondmagegne, Mohammad Ali, Mskr Tesfaye, Tewodros Nega and Zeru Grmay, who, in more ways than one, made my field work facile and successful. I also owe my colleagues in the Environmental Laboratory Service of FEPA, Habtamu Wodajo, Shimels Tadesse, Yazew Teferi and Yohannes Assefa, many thanks for the indefatigable field assistance that they kept coming and, above all, for the laboratory results that made this paper possible.

Hirut Abeje, a former colleague at FEPA, Yodit Teferi, a dear friend of mine, need special mention here for the good work they put in producing some of the maps figuring in this paper.

My dear wife, Emebet Asfaw, my son, Malifu, and my daughter, Yomiyu, I need to acclaim for the constant support they blessed me with in their own different and lovable fashions. I would also like to express my heartfelt apologies for the time, both that of leisure and edification, I, wittingly or unwittingly, stole from us.

Emmanuel Malifu

ACRONYMS

AAU :	Addis Ababa University
AU :	Animal Unit
AESM :	All Ethiopia Student Movement
ANP :	Awash National Park
COPWE :	Commission to Organize the Party of the Workers of Ethiopia
CPE :	Communist Party of Ethiopia
DEQ :	Department of Environmental Quality
EPDRF :	Ethiopian Peoples Democratic Revolutionary Front
EPRP :	Ethiopian Peoples' Revolutionary Party
EVDSA :	Ethiopian Valleys Development and Study Authority
FEPA :	Federal Environmental Protection Authority
GDP :	Gross Domestic Product
HVA :	Hendels-Vereeniging Amsterdam
masl :	meter above sea level
MEAs :	multilateral environmental agreements
MoFED :	Ministry of Finance and Economic Development
MoWR :	Ministry of Water Resources
MSF :	Metahara Sugar Factory
NA :	Not Available
NGOs :	Non-Governmental Organizations
NOPA :	Network of Pastoralist Associations
PASDEP :	Plan for Accelerated and Sustained Development to End Poverty
PRSP :	Poverty Reduction Strategic Paper

QSEA :	Quality and Standards Authority of Ethiopia
RRC :	Relief and Rehabilitation Commission
SAP :	Structural Adjustment Program
TOT :	Terms of Trade
TLU :	Tropical Livestock Unit
UN :	United Nations
UNCSD :	United Nations Commission on Sustainable Development
UNDP :	United Nations Development Program
UNCCD:	United Nations Convention to Combat Desertification
WHO :	World Health Organization
WTO :	World Trade Organization
WWD&SE :	Water Works Design and Supervision Enterprise

ABSTRACT

Traditional Ethiopian thought, which, on the main, was either limited to religious themes or confined to materials befitting chronicles, started to cede ground to thinking in modern lines with the coming onto the scene of the writing of Aleka Zeneb Etiopia. Subsequent developments, among others, ushered in a body of development thought that attained its apogee in the works of Negadras GebreHywot Baykedagn in the first quarter of the last century. In his two works, Atse Menelik-na Ithiopia (1912) and Mengst-na Ye-hzb Astedader (1924), GebreHywot, grappled with the trio: development, environment and international trade, concerns which are not only of universal in appeal and, consequently, relevant to this date, but to a certain extent unsurpassed. This study takes its cue as well as draws its inspirations from these works of GebreHywot to investigate the type of development path subscribed to in this country and the environmental, social and economic consequences thereof with focus on the Awash Valley and, in particular, with a close-up look in the fate of a local community there, the Kereyu.

Such phrases as 'sustainable development', 'the rights to development', 'community rights', 'self-determination' or 'benefit sharing' appear, on the one hand, as though they are domesticated household items, while, on the other, they are rarely understood for what they are and instead tend to be either baffling or rarely properly appreciated, leave alone, inform or mother a worthwhile body of action for anyone to change the world or assert one's rights in any meaningful way. The main objective of this study is to assess the environmental consequences of the development that the country came to subscribe to or to discern the impacts ensuing from integration in the world market with the following four specific objectives: capture the thought development and, in particular, the development thought as well as trace the development measures that transpired in the country and weight their present-day plausibility and significance; bring out the environmental, social and economic transformations and the various fortunes and misfortunes pastoralist communities inhabiting the Upper Awash Valley are undergoing; compare and contrast the various policy measures, institutional developments, legislative achievements, etc. garnered all along with the precepts of sustainable development, and indicate all possible areas of intervention that may foment positive environmental improvement in the study area.

The study was preponderantly designed to portray the environmental history of the study area; it was so designed as to rely on records and other documentations available as well as generate primary data involving measurements of relevant physico-chemical environmental parameters analyzed in accredited laboratories. The first of these measurements pertains to the environmental quality of the Awash River based on sample sites extending from Addis Ababa to the Awash Station. The second physico-chemical measurement regards soil analysis to possibly characterize the degree of range transformation in the study area. In addition, unstructured interviews have been utilized to generate other relevant primary data.

The results of the sudy have indicated that the development that transpired in the valley over the years severed the Kereyu from the resources, which constituted their sole lifeline. Actually, it ended up with untoward impacts, which, inter alia, confined the Kereyu within less and less space in mostly marginal land characterized with less and less carrying capacity, perpetrating, in turn, a situation of where the land remaining to the Kereyu is alarmingly devegetated and the soil compacted and the Awash River polluted. The environmental disruption had both distant and proximate causes. The former is attributed to the global climate change fawning desertification while the latter owes itself to the various development activities that came into the valley or impinged upon it. The Awash River and its affluents suffered in terms of pollution. The level of some cations and anions in this river are well above standard either seasonally or throughout the year vis-à-vis various environmental standards, owing to either natural or anthropogenic causes. Fluoride is a good example of the first type and its level was above 4 mg/L (more than 2.5 mg/L above standard) in the dry season. The level of land degradation, in terms of devegetation manifested itself in a variety of range conditions, consisting of either bare ground cover, grass or non-grass species. The difference in range condition evident was neither due to variation in soil nutrients nor due to change in such physical parameters as soil bulk density, but owes itself to overgrazing and other forms of devegetation.

The major policy implications of the study constitute: putting a stop to any further alienation of natural resources pastoralist communities are entitled to and the restoration of what was lost to them in the past in accordance to the Constitution of the land. The latter can best be accomplished, among others, by instituting benefit-sharing mechanisms with developments projects already in full swing in the area.

CHAPTER 1

INTRODUCTION

> "It might be supposed a self-evident truth that alterations to the existing allocation of land and water resources by an external agency (whether government or a commercial company) would affect, for better or worse, the welfare of the population formerly using those resources. Nevertheless, until very recently, this simple cause-and-effect relationship appears not to have been tackled or resolved by those responsible for planning and implementing schemes in the (*Awash*) Valley, most of which were in any case designed to benefit the national economy rather than the local population (Halcrow, 1989: 2)."

Before the onset of so-called development projects, the first of which started at the turn of the last century, the inhabitants of the Awash Valley, almost all of whom were transhumant pastoralists, lived, virtually untrammeled, on the bounty that nature willed to provide them with, i.e. pasture and water, almost all of which are the gift of the Awash River (Bahru, 1984). "Before their fertile land was taken away by the Awash National Park and the Sugar Plantation and other development schemes, the pastoralists in the Upper Awash Valley had their own traditional way of resource management that enabled them to exploit the spatially and temporally variable resources" (Care-Ethiopia, 2004: 15).

While the first edition of development activities that swept on the Kereyu, such as roads, rails and related built-up areas, invariably brought about alienation from their land, the latter editions included water as well, denying or curtailing their hitherto free access to the Awash River. Consequently, displacement, the crowding of people and livestock, poverty and famine, disease, pestilence, conflict and starvation became their lot. Land degradation, pollution and other forms of environmental disturbances, as we shall see, became frequent phenomena in the study area.

This state of affairs has continued to this very date essentially unaltered (if not happening with added vigor and venom) in spite of the many changes in the political complexion of the country, regimes and the accompanying ideological clamor and rhetoric. The socio-economic observations made by Bondestam (1974) regarding 'dependent development' that was evident in the valley in the imperial period continued more or less unaltered during the military-cum-socialist regime as well as now although the differences between these political

arrangements in nomenclature, ideology, self-glorification and image appear no where to be straddled.

What had appeared as a benign beginning in the form of the construction of infrastructure, i.e. an interstate highway and a rail line connecting the country with the rest of the world via the Port of Djibouti, proceeded, concentrating on converting more land to irrigated agriculture in the name of food security and, more recently, in order to earn more and more foreign exchange. Recently, however, one observes major shifts in the environmental sphere and these embrace advances in legislation, institutional set-up and popular awareness. In fact, developments in the latter outstrip things that have been realized on the ground, leaving conspicuous gap between action and words.

The constitution enthrones important environmental rights. Municipal laws informing environmental protection have been elaborated both at the federal and regional levels. Moreover, the country is a party to almost all the major multilateral environmental agreements. The country, furthermore, has enunciated an environmental policy and an environmental strategy (ECA, 2005).

Institutions apparently dedicated to environmental concerns have seen the light of day both at the federal and regional levels. A sizeable number of universities are offering environmental courses at the graduate and postgraduate levels. School syllabi have been made to integrate environmental subjects. What is even more spectacular is the fact that environmental NGOs and clubs keen on environmental matters have mushroomed, brandishing diverse environmental predilections, including advocacy. The press and mass media frequently devote columns and airtime that address environmental concerns and programs. Farmers and other community groups championing environmental cares are also on the rise (Ibid.).

However, these developments are not matched with real and corresponding activity on the ground, most particularly in the public sphere. The foot-dragging observable in the implementation of the Environmental Pollution Control Proclamation and the Environmental Impact Assessment Proclamation are worth mentioning here. The latter, in particular, is an instrument that is meant, among others, to realize such essential and hallmark stipulations of the Constitution as embodied in Article 92/3 and Article 40/5. The first one primarily makes it clear that local communities of concern, as of right, be consulted and allowed to express

their will before any development project is planned and implemented. This stands in sharp contrast to the erstwhile sole concern of making sure if projects only "benefited the national economy" irrespective of what happened to the relevant communities. The second one, which has to be read and implemented in tandem with the first one, distinctly refers to pastoralist communities as repositories of community rights to the natural resource in their ambit (Ibid.).

The so-called development that has transpired in the Upper Awash Valley in the last six decades and its impact on local communities and the environment is the subject of this study. The study takes its cue from environmental science which is a holistic science where to be anthropocentric is at the same time to go beyond mankind to include all, animate or inanimate, near or far, future or past phenomena. It is holistic in the sense that all the sciences, natural and social, cohere in perpetual matrimony, depicting whatever is measurable with the minutest precision and describing the non-measurable with unflagging and uncompromising accuracy. Holistic, once again, in the sense of closer scrutiny to ferret out the actual tradeoff holding sway between environment and development, as well as spelling out the tautness in the tug-of-war dwelling in the so far unholy alliance between economics, politics and human well being, and in so doing, bestowing pride of place on the local than onto the national and even less on the international. Had it not been for the severely constricting limitations, mainly lack of resource and, above all time, this paper, indeed, is a serious attempt in this direction.

Accordingly, the paper is divided into six parts. Chpater 1, the introduction, consists of a background, a problem statement, research questions, hypothesis, objectives and a methodology. Chapter 2, as the theoretical and conceptual component of the study, discusses major development thoughts and measures that have transpired in the country as a whole. By so doing, the chapter dwells on the thought development and, in particular, on the development thoughts that tried to find foothold in the country and on the heels of which the discussion zeros on the development-environment-trade nexus that for the first time found expression in the thought of *Negadras* GebreHywot Baykedagn to be used as the principal model of enquiry in the rest of the paper. Chapter 3 is devoted to considering the place of development in the various policy measures that happened to see the light of day in this country. Of the four sub-sections, the first tries to trace the type of development or underdevelopment the country was attempting to pursue and in the next sub-section a facet of this development is brought into focus from the angle of the various social forces alleged to

have been orchestrating this development; the third sub-section closely looks at the development that has been taking place in the Awash Valley while the last sub-section draws out ten points as the main conclusion of the chapter. Chapter 4 grapples with the environmental consequence of development; the first sub-section peers down at a local community in the Upper Awash Valley, the Kereyu, in particular, the fate they had to endure because of a battery of development measures that visited their area and the second sub-section with the study of environmental changes wrought in the area utilizing the relevant measurements. In here, assessment of changes in the environmental quality of water is considered followed by an attempt to assess range conditions. Chapter 5 attempts to bring together and develop the nexus between the quintet (i.e. development thoughts and measures, GebreHywot's thought, developments in the Awash and the fate of the Kereyu and their environment) which were earlier treated separately. Chapter 6 offers the conclusions and recommendations emanating from the study.

1.1 BACKGROUND

Two pertinent ideas cropped up in the minds of the author while thinking to undertake this research. The first one revolved around the investigation of GebreHywot's cardinal contention, i.e. 'It is an environmental disaster to partake in international trade as a developing country', with respect to the thoughts and actions (principles and leitmotivs) of the prominent international organizations presently active on the international trade arena, viz. the Breton Wood Institutions and WTO. These were occasioned, in particular, by Ethiopia's rather glib commitment to the recent edition of the SAP, i.e. Plan for Accelerated and Sustained Development to End Poverty (PASDEP for short), emanating from the World Bank, and, more pointedly, the fact that Ethiopia is very much flirting with the questionable resolve to join WTO as a full-fledged member.

The second area/idea of amplification of the paper pertained to studying the hold, direct or indirect, that international trade managed to assume on communities here and its bearing on the environment and other ramifications thereof as it evolved across time leading to the present and possibly spilling into the future.

For reasons to be clarified as this research unfolds, the author opted for the second one with the Kereyu constituting the center of gravity as a local community of focus. Therefore, the

first part of the study, after sketching briefly the development thought discernable in this country, would attempt to portray the major ideas, including that of GebreHywot, bandied about concerning development, international trade and environment in the course of the country's alleged attempt to 'develop' as one of the actors, albeit a minor one, on the international trade arena. The second part is devoted to the recording of the actual trajectory traversed and the sum total of achievements netted in pursuing 'development' on the ground in this country by taking into focus an alleged 'most representative and affected local community and environment', not only to distill a lesson or two for future thought and action, but to discern the plausibility or even worth of the body of thought developed in the first part.

Consequently, the task at hand not only aspires to be holistic in approach but also attempts to be keen on environmental history. More precisely, therefore, the main thrust of the study, in its first two chapters, in particular, would be the recapitulation of the on-going relevance and, perhaps, the enduring nature of GebreHywot's concerns on the significance and the ways out of environmental degradation and dependency in underdeveloped countries. This is going to be accomplished, within the confines of the paper's empirical part, with the investigation of what befell an Oromo community, the Kereyu, in the alleged attempt to 'develop' Ethiopia in general.

1.2 STATEMENT OF THE PROBLEM

Such words and phrases as 'development', 'environmental governance', 'sustainable development', 'the rights to development', 'community rights', 'community participation', 'self-determination', 'transparency', 'benefit sharing', 'consultation', 'prior informed consent', 'environmental protection', have become, on the one hand, domesticated household *cliché*, while, on the other, they tend to be either baffling or rarely properly appreciated, leave alone, inform or mother a worthwhile body of activities for anyone to change the world or assert one's rights in any meaningful way.

The transition from traditional thinking to thinking in modern lines was a graduated one and not that haphazard. This thought development at the very outset concerned itself with development thinking that found its succinct expression not that later on in the works of Negara GebreHywot Baykedagn who managed to treat the question of underdevelopment in close intimacy with environmental change and international trade, which were making fresh

inroads in the country at the period. This, mostly a homebred body of thought, which was intelligently and comprehensively cast in such a way that it may measure up to Ethiopian problems, was not only unique but also presaged or even prefigured some of the theories of development that some four decades later started to be ushered in. Although, in some regards it is still unsurpassed in its insights and theoretical potentials (for instance, in demonstrating the organic link between international trade and environmental degradation whether the exchange is equal or unequal), not only went unrecognized and unappreciated (even among development pundits or other similar esoteric circles) but for some 'quirk reasons' failed to spawn a body of policy and action capable of changing the country's developmental and environmental fortune for the better. It is now time to resuscitate this body of thought and, among others, radiate its logic and major contentions and so doing bring to mind both its promises and warnings.

This is all the more in order as the relations between the state (federal and regional), corporate groups (national and international), local communities and interest groups, and citizens in their interaction with respect to the trio – development, environment and community rights and well being – have not been ideal, to say the least. Consequently, development, environment and social welfare in the Awash Valley, where the development effort is relatively more concentrated and advanced than in other parts of the country, betray conspicuous cracks and strains that have to be studied and attended to. This is the gap that the author would like to fill in by elucidating GebreHywots' 'model' first.

The outward oriented agricultural development in the Awash Valley, dished out in an attempt to fast track the modernization of the country, attaining its climax in the late sixities without slackening ever since, transpired at the cost of the environment and livelihood of the pastoralist community dependent on the bounty of the Awash River along with the pasture that it mostly occasioned. "What is development and who is it for?" are some of the long overdue questions the answers of which brook no delay.

The change in the environment, which is evident in the valley, is going on multi-faceted in its cast, unrelenting in its spite and snowballing in its momentum in spite of changes in the political, legal, institutional realms both in the country and in the world at large. The underpinning rationale has to be captured and reckoned with if any virtuous turn around is to be made possible in the area. In particular, the various expressions of land degradation and

river quality vitiations merit qualification and quantification, *inter alia*, to sound the degree of the environmental problem, its effect on the local communities and decide possibly what to do next, how and why.

1.3 OBJECTIVES OF THE STUDY

1.3.1 General Objective

The seminal objective of the study is to assess the environmental consequences of the development that the country came to subscribe to or to discern the impacts ensuing from integration in the world market (as a purveyor of primary goods). The study was preponderantly designed to capture the environmental history of the study area in the context of the country's development effort juxtaposed with causations involved, direct or indirect.

1.3.2 Specific Objectives

The list below constitutes the specific objectives of the study:

a. Trace the development thoughts and measures that transpired in the country and enumerate and test the plausibility/verity of major contentions regarding the relationship between development, environment and internationsal trade.

b. Bring out the environmental, social and economic transformations and the various fortunes or misfortunes pastoralist communities inhabiting the Upper Awash Valley are undergoing consequent to a century of development effort that happened to be forced on them or onto their area;

c. Compare and contrast the various policy measures, institutional developments, legislative achievements, etc. garnered all along with the precepts of sustainable development currently in vogue, and;

d. Indicate all possible areas of intervention that may foment positive environmental improvement in the study area, including further studies that need to be undertaken in order to fill knowledge gaps discernable in the study area and perhaps in the country as a whole.

1.4 RESEARCH QUESTIONS

The study addresses a welter of research questions and sub-questions, as enumerated hereunder, arising, among others, from the holistic and/or multidisciplinary nature of the subjects constituting the study, namely, development, environment and international trade:

1) What are the salient features of the thought development in this country and the place development, environment and international trade had in this?
    a) What is the thought trajectory traced?
    b) What were the glaring issues that occupied the most attention?
    c) In whom did these find their succinct expression or attain their apotheosis?
    d) Can any of these be distilled as a model and find use to grasp present-day reality in the country?
2) What are the peculiarities, significance and relevance of the model to the realities and problems of present-day Ethiopia?
    a) How does this body of thought relate to or get along with the different policy instruments propounded and the institutional developments witnessed at different times in the country and why? Is there a break or continuity?
    b) Is there an area or a people in the country where this body of thought may best be tasted against the development measures transpiring therein?
    c) What is the environmental, social, economic, cultural, etc. fate of the people and the causations? What are the major milestones in the livelihood of the same people? What is the change wrought to their environment (How do, for instance, pollution and land degradation manifest themselves)?
3) What can be said as to the level of environmental deterioration of the receiving environment in the study area?
4) What are the policy recommendations that may emanate from the study?

1.5 WORKING HYPOTHESES

1) The development discourse in developing countries radiated variations across time and space, such as development or underdevelopment or sustainable development.
2) The development discourse in Ethiopia gradually shifted from development as breaking away from underdevelopment/dependency to development as sustainable development quite early on compared with other countries, including developed ones.
3) The development thinking rightly pinned down the ultimate cause for this state of

affairs on international trade than anything else, e.g. overpopulation.

4) The development effort resorted to, complete with the policy elements, lagged behind the development thinking to the detriment of environmental quality and social well-being.
5) The latter are vividly discernible in the Awash Basin where the development effort is relatively more concentrated, resulting in environmental quality deterioration and the exacerbation of social ills.
6) The physico-chemical parameters employed in water analysis and range transformation indicate the level of anthropogenic intervention and consequent environmental deterioration inflicted against the receiving environments of concern.

1.6 RESEARCH DESIGN AND METHODOLOGIES

The study is premised on one of the fundamental environmental rights, i.e. community rights, as enshrined, for instance, in the Constitution of the land (cf. Article 40/1) and international agreements that the country is a party to, e.g. the African Charter on Human and Peoples' Rights (cf. Article 21/1), the UNCBD (Article 8/j) and the International Covenant on Civil and Political Rights (cf. Article 2/1). It is so designed as to rely on records and other documentations available in English and in Amharic, as a source of secondary data (the sources in Amharic shall be rendered into English by the author).

1. 6.1 The Fate of a People: The Kereyu amid Underdevelopment

The Kereyu are a pastoralist group inhabiting the upper reaches of the Awash River, a valley that after the Second World War has been, among others, the focus of modern agricultural development effort in the country. Fentale Woreda, where the Kereyu are the indigenous people, is located in the East Shoa Administrative Zone in the middle of the Ethiopian rift, forming the better part of the Awash Basin. It is bounded by Awash Fentale Woreda to the northeast, Shenkora-Minjar to the west, Boset Woreda to the south and Arsi to the southwest. More precisely, according to Assefa (2000), 'Kereyuland' sprawls between Kessem (Bulga) in the north and the Awash River in the south, Dagaga Awash (the present day Awash National Park) in the east and the Hora Sama (Doni Town in Boset Woreda) in the west (Belete, 2004).

In terms of neighboring communities, the Kereyu inhabit the upper valley of the Awash River bounded by the Afar in the north, the Argoba in the west, the Jille and Arsi Oromo groups in

the east and the Cora Oromo in the South (Bizuwork, 1985). Wilding (1983) reported that the Kereyu first came to the area from the highlands in the west some 200 years ago. It is believed that the Kereyu are indigenous to the area. The Kereyu live in the "Savanna land between Kessem (the Kereyu prefer to call it Bulga) and the Awash River" (Kloos, 1982: 26), which "ranges in altitude from 780 to 1,500 meters" (Bizuwork, 1985: iii) and "where the temperature is hot and water is scarce" (Fekadu et al., 1984: 14-19).

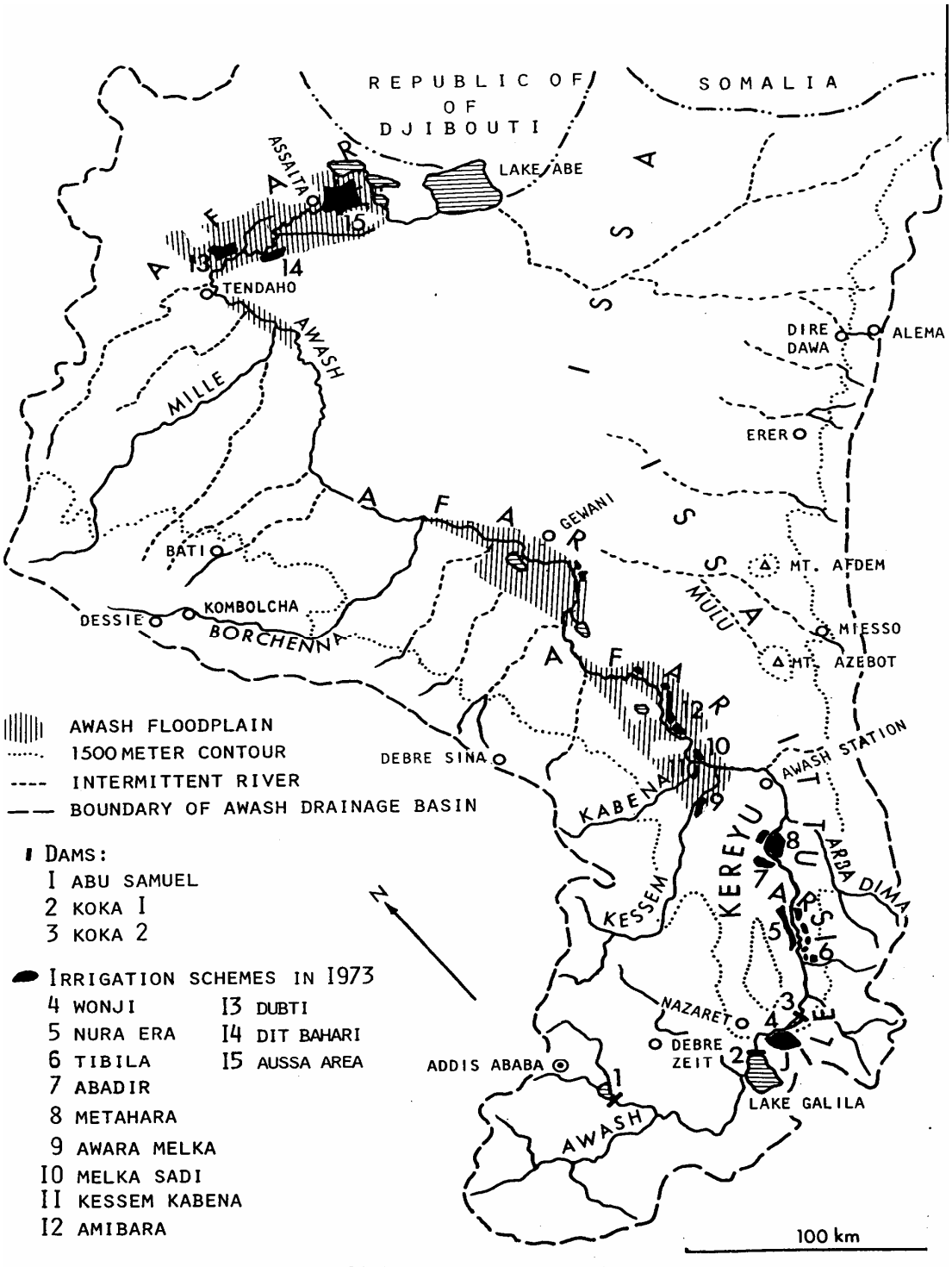

Fig. 1: The distribution of (agro-)pastoralist groups in the Awash Valley (Kloos, 1982)

The other major ethnic group in the Fentale Woreda are the Itu. The Itu are one of the Oromo groups, which lived, historically in western Hararge for a long period. During the 1974 drought and the subsequent famine, the Itu found themselves in armed conflict with the Issa (a Somali group) and the Afar for pastureland and access to water. Vanquished and losing their land consequent to these conflicts, they migrated to the present Fentale Woreda, east of Metahara Town, occupying the land adjoining the Metahara Sugar Factory to settle on the already overstocked (if not similarly overpopulated) lands of the Kereyu (Belete, 2004).

Another ethnocultural group in the purview of this study are the Afar. Genealogically, the Afar are grouped in the Cushitic line of decent, occupying the eastern part of Ethiopia for a long period. The Afar pastoralists who live adjacent to the Awash National Park nowadays are completely dependant on the Awash Park for grazing ground and watering site. They penetrate the park from the northeast part up to the Fentale Mountain, including the hot spring and the lands northeast of the Kessem River (Care-Ethiopia, 2004).

The Awash River flows in an apparently purposeless loop across hot and dry country, only to vanish in the burning sands of the Afar plains after traversing an inland distance of some 1,200 km. In terms of geology, the greater part of the Awash Basin lies within the Rift Valley. The lowlands, however, are divided into three main sectors: (i) the Upper Valley, with a medium rainfall and inhabited by pastoralists and agro-pastoralists; (ii) the Middle Valley, with low rainfall, which before the onset of the so-called development projects was solely occupied by pastoralists; and (iii) the Lower Valley, with very low rainfall, originally inhabited by pastoralists and some agriculturalists, i.e. the former Sultanate of Awsa (Bondestam, 1974). Unlike the other river systems in the country, the Awash River does not cross international boundaries, but disappears in the Afar Region, in the series of lakes Gamari, Afambo and Abe at an elevation of about 250 m above sea level. Here, its water is lost owing to the rather high degree of evaporation and seepage. Consequently, the Awash has been called “the most Ethiopian” of all rivers, as it “does not carry Ethiopian soil outside the country” (Bahru, 1984).

The Awash River Basin is divided into the following four major spatial stretches on the basis of altitudinal variation (Halcrow, 1989):

1. The Upper Basin - from its head water up to Koka Dam (>1,500 masl);
2. The Upper Awash Valley - from Koka Dam up to Awash Station (1,500 – 1,000 masl);

3. The Middle Awash Valley - from Awash Station up to Gewane (1,000 – 500 masl), and;
4. The Lower Awash Valley - from Gewane up to Lake Abe (<500 masl).

1.6.2 Sampling Method

Observations (i.e. primary data in the form of facts and figures) involving measurements of relevant physico-chemical environmental parameters were analyzed in accredited laboratories. The first of these measurements pertains to the environmental quality of the Awash River involving sample sites (altogether thirteen of them) extending from the head waters in Addis Ababa to the Awash Station, which marks the terminus of the Upper Awash Valley. The caveat here is that the study does not necessarily mean that it is capable of establishing the 'pollution level' of the river, since, firstly, this is **not**, strictly speaking, in the scope of the paper and, secondly, to accomplish this one would need to undertake some sort of environmental auditing of the basin, especially with regard to all anthropogenic activities implicated as generating effluents[1]. Accordingly, four sampling sprees were planned to be staged corresponding to the four 'seasons' of highland Ethiopia in order to reflect variations in the flow, level and the assimilative capacity of the receiving environment to discern the seasonal variation of the different parameters. The second physico-chemical measurement regards soil analysis to possibly characterize the degree of range transformation in the study area. In addition, unstructured interviews have been utilized to generate relevant primary information.

[1] Technically speaking, this is to say 'the study precluded source attribution analysis' and as pollution is not only a scientific concept but also a juridical one. This state of affairs suffered from the following shortfall. Unlike the first one, i.e. scientific concept, the latter requires, beyond establishing the level or concentration of a certain suspected pollutant to be above a certain environmental limit or standard to qualify as pollutant, that it is also the result of an anthropogenic activity (viz. Proclamation No. 300/2002, Art. 2/12). Because this study, by design, did not involve studying effluent or other discharges issuing from establishments, households, or any other human activity in the study area or upstream to decide if it is responsible for the pollution of the receiving water or river, it was unable to establish whether an alleged 'pollution' is anthropogenic or not. Usually, when the latter is for some reason impossible to accomplish, the precautionary principle is resorted to in order to refer to the suspect as pollutant and the phenomenon as pollution (Please consult footnote 27 as to the UNCSD's definition of the latter).

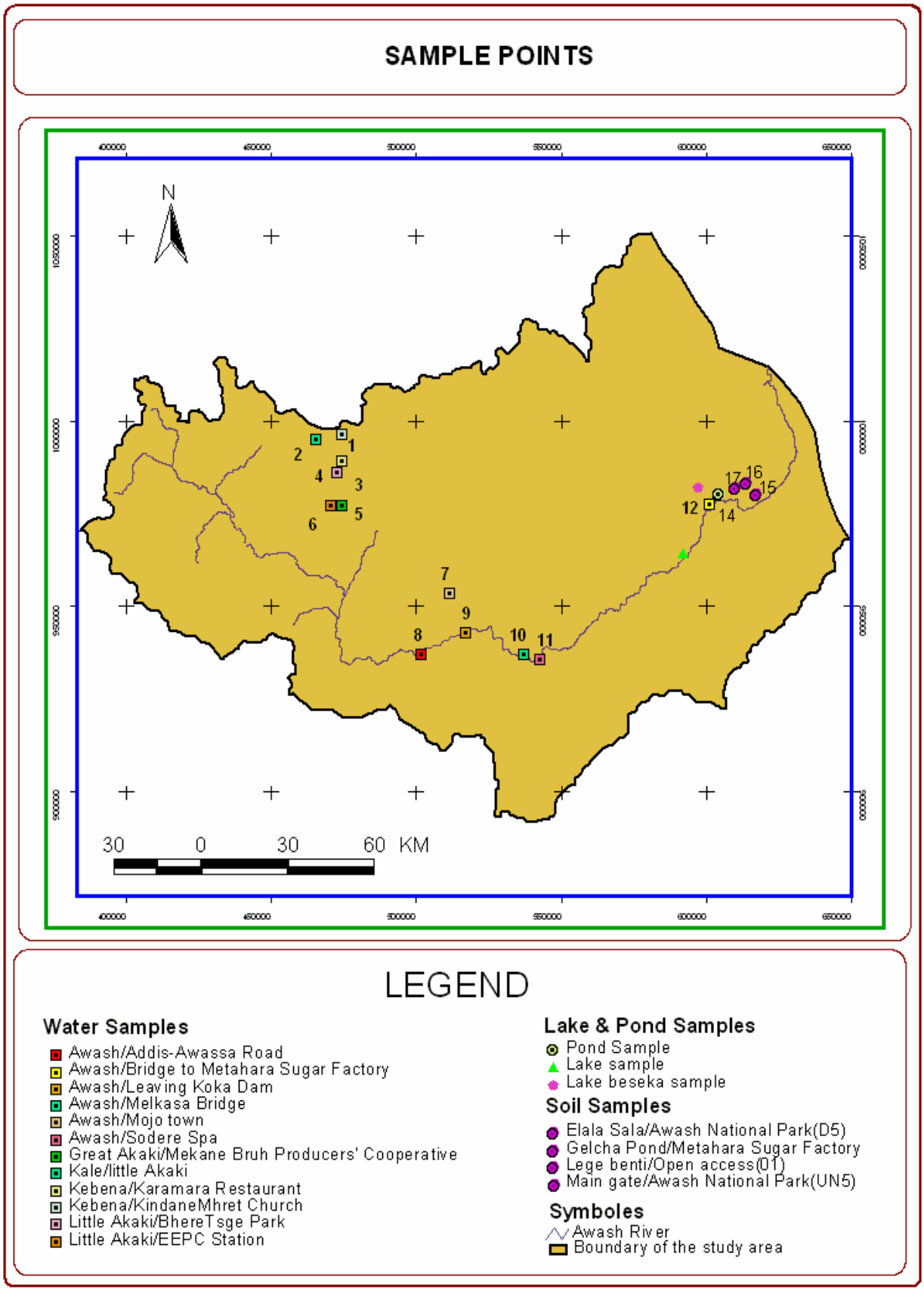

Fig. 2: Map showing water and soil sampling points in the Upper Basin and Upper Awash Valley (For details, please consult Annex VI).

1.6.2.1 Water sampling and analysis

a) Temporal considerations of the study

Initially, the temporal span of the field investigations was meant to cover 12 consecutive months, executed on quarterly basis, i.e. July – September, October – December, January – March and April - June. However, the lack of resources and other expediencies (e.g. problems in logistics and transport) limited the investigation to only 9 months, from October 2004 to June 2005 in order for the study to take variations on board due to the changes in the seasonality of flow of the Awash River and tributaries occasioned by variations in rainfall both in the highlands and lowlands, *Kiremt* and *Belg*, for the former, and *Dadaa, Karma* and *Sugum* rains[2], for the latter.

b) Spatial considerations of the study

Essentially, site selection decision with regard to diffuse sources of pollution is based on the potential of the assortment of sample sites to yield a fair picture of the environmental performance of a river body at different points in its progress downstream. This is based on the peculiarities that the water body may manifest at different points in space arising from the variation in the individual characteristics of the sites in terms of hydrology, physico-chemical and biological features, owing to difference in climatic factors, geomorphology and geo-chemical conditions within the drainage basin. This also takes note of difference stemming from the nature of the underlying aquifer, the land use pattern frequented and the level of human intervention. In addition to suitability and appropriateness in terms of yield requirements of the study, site selection was based on ease of accessibility of any of the sample sites. Decisions regarding the spacing between sample sites considered both in terms of adequacy in representation of the sites as well as the resources available to the study. The sample sites are indicated on the map next page. Also, see Annex V for the absolute locations and the elevations of these sites.

[2] *Dadaa, Karma and Sugum* rains: are all Afar words. The first depicts the few days of shower which normally occur between either in November or December. The second stands for the long rains, which usually occur between June and September and are comparable to the long *kiremt* rains in the neighboring regions. The last describes the short rains, which usually occur between March and April in the Afar Region of Ethiopia. The latter can be compared to the short *belg* rains in the neighboring highlands.

c) Sampling and field measurement

A field kit was employed to capture data on selected physical and chemical parameters, i.e. pH, electrical conductivity, temperature, dissolved oxygen and salinity. These measurements were taken from all the selected sites. The collection of water samples was accomplished using clean polyethylene bottles of a liter capacity, two for each sample site in which one of the pair was made to be preserved with 0.1N HCl for heavy metal analysis. The samples were analyzed in the FEPA Environmental Analysis Laboratory by the personnel of the laboratory using standard methods for analysis of water and wastewater adopted by FEPA for the particular selected parameters, i.e.:

- Fe, Mn, Cr, and Pb were determined using AAS Viro 6 in acetylene flame.
- Al was determined using AAS Viro 6 in Nitrous oxide acetylene flame.
- Total Alkalinity, HCO_3^-, CO_3^{2-}, Cl^- were determined using titrimetric method.
- Others were done using Hatch Spectrophotometer Model 2010.
- All results are in mg/L except for EC and pH.

Accordingly, the results of analyses and direct readings are annexed herewith as Annexes I, II and III for seasons Oct-O4, Feb-O5 and May-05, respectively.

d) Sources of Errors

- The fact that attempts to take samples from the center of the river and, as much as possible, at a point where the river water seems completely mixed, fast and deep were almost always defeated such that this could be a possible source of error.
- Since flow velocity and flow level at the sample sites were not taken for the want of adequate equipment, this may sneak in errors, in particular, during interpretation of seasonal data obtained.

1.6.2.2 Soil sampling and analysis

Selection of sample sites was made on the basis of presumption, field observation and inquiry; these together were to provide sample sites with differing level of human intrusion or intervention; accordingly, four sample sites, mostly for mutual comparison, were selected:

1. **ANP Site**: The sample site inside ANP by the main park gate was selected on the contention that it is the least disturbed of all, as both wildlife and livestock had to avoid

the place due to the 'unfortunate' permanent presence of park personnel (N: $08^0$55.095'; E: $40^0$02.521' and elevation 1038 m).

Site description: This is an area with a good deal of vegetation cover consisting of unbroken patches of grassland with a predominantly acacia studded surrounding. Except for a kraal that is used for keeping impounded livestock some 45 – 50 m from the central sample point, there is no evidence human induced disturbance. Park personnel are unanimous as to the verity of this statement, thus bolstering the presumption that the site is the least disturbed in comparison with the other three. The study confirmed that the soil class of this site to be sandy loam with 63, 26 and 11%, sand, silt and clay, respectively.

2. **IllalaSala Site**: The sample site at IllalaSala in ANP, which is highly frequented by both wildlife in the park and livestock illegally grazed by intruding pastoralists, was selected as a site considered from slightly to moderately disturbed (N: $08^0$53.509'; E: $40^0$04.661'and elevation 1042 m).

Site description: This site consists of extensive flat grassland but with some 50 – 75% of it devoid of vegetation other than acacia nubica and other acacia species indicating bush encroachment. Besides the likelihood of being overgrazed, the fertility of the site is likely to be enhanced owing to animal droppings and similar wastes. The study confirmed that the soil class of this site to be loam with 43, 36 and 21%, sand, silt and clay, respectively.

3. **LegeBenti Site**: The sample site at LegeBenti, a site considered highly disturbed, as it is open access (N: $08^0$54.456'; E: $40^0$00.725' and elevation 974 m).

Site Description: This site is one of the spots in the study area that is used freely by the local pastoralist community for grazing/browsing their livestock and possibly, for other purposes like, for example, felling trees for charcoal making. When it comes to vegetation cover, it bare as it is highly denuded/devegetated some 70 m off to the right hand side of the road when driving from Addis to DireDawa. A windstorm carrying soil was apparent at the time of sampling. The study confirmed that the soil class of this site to be sandy loam with 55, 34 and 11%, sand, silt and clay, respectively.

4. **MSF Site**: The cane field by Gelcha Pond inside MSF is part of the plantation, which is subject to intensive agriculture (N: $08^0$53.402'; E: $39^0$57.463' and elevation 953m).

Site Description: It is part of the cane field with rows of sugarcane standing as high as the waist. It is subject to intensive agriculture where, among others, agrochemicals and mechanization find frequent use. Part of the irrigation water in use here comes from the oxidation pond referred to as Gelcha, the water of which consists of household and sanitary effluent coming from the sugar estate.

a) Sampling and field measurement

Augur sampler was used to obtain soil samples at a depth of 20 cm. Each of these sample sites, except for the sample site in MSF, consisted of five sampling points each radiating a distance of 30 m from a centre in the four directions: northwest, northeast, southwest and southeast and each yielded a soil sample of roughly 300 g. Three samples for bulk density using a core sampler were taken for the first three sample-points indicated above.

b) Sources of Errors

- One possible source of error here consists of mistakes made in presumption, site observation and inquiry when deciding on the selection of sample sites (For instance, is what has been presumed as undisturbed really so?)
- Other possible sources of errors might arise in the selection of parameters, which may not be too good as to correlate with visual observation of range condition, i.e. the combination of parameters used may not be adequate to establish the level of land degradation with any certainty.

1.6.3 Data Analyses and Presentations

When it comes to the analysis and presentation of data generated, the facility provided by the computer software, excel, was put to use.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1 THE STATE OF DEVELOPMENT THOUGHT IN ETHIOPIA

Theodros' chronicler, *Aleka* Zenebe Etiopia, went into history as the first author to write in Amharic, when he wrote his only work "*Mets'haffe Chawata We'sgawi We'menfesawi*" which may be translated as "A Book of Worldly and Heavenly Musings". This book, unwittingly, marked the transition from the bedridden and liturgical language, Geez, to the nascent and would-be working language of the country, the vernacular, Amharic. This work sounded the twilight, if not the death knell, of religious thought that dominated cerebration hitherto in this country.

Chronologically speaking, next came *Negadras* Afework GebreEyesus, the first man to author a work of fiction, "*Tobia"*, in the country's literary scene, which he wrote in Amharic. In this work, not only did he manage to set the highest standard for Amharic prose, but also set Amharic literature on the path of wider currency and, to some degree, on the stage of popularity. Actually, a book that he devoted to Amharic grammar, the first of its type, preceded this work of his. Subsequently, he tried his hands on a topic much more serious than any of the previous two when he wrote his book, *Atse Menilik* (1909). In this work, he mostly lauded the Monarch in a sycophant/kowtowing manner (in order to ingratiate himself with Menelik) for putting the country onto the path of development (Bahru, 2002). When it comes to fresh ideas, he had virtually none to offer.

Fresh ideas, actually, had to await the arrival of *Negadras* GebreHywot Baykedagn onto the Ethiopian literary scene. In a span of twelve years, GebreHywot's two works went into print, the first in 1912 and the second and last one in 1924. Although we shall have a lot to hear about these works in subsequent pages devoted for this purpose, the following reviews about GebreHywot, however, are worth putting forward at this stage to serve as an afore test of what is to come.

Bahru (2002), for instance, showers GebreHywot with a liberal dose of praise when writing about the depth of analysis that GebreHywot demonstrated; in comparison with other

Ethiopian writers, he maintained that GebreHywot (and TekleHawariat) "had the capacity to go deeper into structural considerations". Elsewhere in the same work, Bahru observes that when GebreHywot writes about his country's backwardness that he did it from a cosmopolitan perspective in which the achievement in the rest of the world is compared to or contrasted with that of his country. Caulk (1978), another writer with a generalist and even eclectic cast, writing about GebreHywot, contends that he allotted pride of place to the dangers inherent in dependent development as opposed to a self-reliant one.

Another important early figure is *Bejrond* TekleHawaryat TekleMariam. As one of the first mayors of Addis, he is reputed to have tried to inject the city administration with such reforms as the introduction of a master cadastral survey, zonal divisions, the naming of city streets and house numbering. At one time, he even drafted and presented to Menelik's heir, *Lij* Eyasu, an administrative manual that unfortunately went unheeded (Bahru, 2002). Agriculture being one of his pet areas, he published a book on agronomy in 1923, allegedly, in order to boost the country's agricultural performance; however, he never touched upon the question of land tenure, which in latter days, reaching as far as the present, snowballing to attain a rather sensitive and seemingly implacable niche in the development discourse of the country. In this regard, TekleHawaryat's contributions never went beyond the introduction of a fixed land tax. He is also reputed for being the principal architect of the first ever constitution of the land, i.e. the Constitution of 1933, which obviously had borrowed substantially from the Japanese constitution and, among others, managed to usher in the first parliament, albeit without a modicum of pluralism or popular participation, the last, in particular, during its elaboration and the first after it saw the light of day (Ibid.).

Blata Deresa Amente is another important figure in the development discourse that transpired before the 'successful' onset of the short-lived Italian designs on Ethiopia. He wrote a sizable number of newspaper articles propounding on various development measures that need to be realized if the country is to extricate itself from the pitiable state of backwardness that it finally found itself embroiled in (Ibid.).

An important notion that appears to be commonly shared by the aforementioned writers is their sense of what may be called 'lost grandeur' that has somehow to be 'urgently' restored. Except perhaps for Afework, all the other authors were loud about emulating the Japanese to catapult the country onto industrial progress. Although none of them provided a blueprint to

this effect, the lure that the Japanese exploit provided, not only with its monarchial trappings apparently intact, but actually the monarch himself assuming the center stage of the development drama that is to unfold, kept them busy looking for one to assume this lofty task in this country (i.e. first Menelik, then his heir Eyasu, and not much later Teferi). In the case of Afework, this appears to have been taken too far when he pinned his hopes on the Italian monarch[3].

Mention, however, shall be made of another contributor to Berhanena Selam, namely, one, HaileGiorgis HabteMariam, who in a brief travelogue, took the matter a step farther when, after enumerating the factors[4] that he alleged to have been responsible for the phenomenal success of the Japanese, challenged his countrymen, in general, and the Japanisers, in particular. He noted that "… all those of us who truly cherish this verdant land of ours shall take after the Japanese in earnest than merely writing about Japan as being a fitting model to be imitated by Ethiopia" (Berhanena Selam, 9 January 1930).Yet, out of the eight attributes HaileGiorgis ascribed to the developmental success of the Japanese, six of them pertained to the psychological makeup of the Japanese in clear contrast with other authors that underlined equal significance to other factors, i.e. economic and political. For instance, Smith (1987: 201) contended that if a backward country, such as Japan was in 1850, is to modernize as rapidly as Japan did, it is necessary that it satisfies a minimum of four conditions:

- a leadership with a vision of a future radically different from the past;
- the leadership must enjoy control over a government with a high degree of authority and stability lasting for decades (otherwise, it will be unable to channel income into investment on the necessary scale, to overhaul or abolish traditional institutions that impede change and to bring people to the pitch of effort required to become something they are not);
- the economy must afford the means of investing on a significant scale, and;
- Industry must have a satisfactory supply of labor.

[3] A notion that seems to have enjoyed a wider acceptance then, even among the communists of the second international, that colonizers were, among others, enlighteners; see, for example, Marx's work, 'For Briton'.

[4] Namely, HaileGiorgis advanced the contentions that " ... what enabled the Japanese most to accomplish their present success is (First) their oneness of spirit, (Second) their love of the fatherland, (Third) their absolute fidelity to the state, (Fourth) the fact that their country is girdled with harbors, (Fifth) their universal, mutual and unstinting support for one another, (Sixth) the immense effort they invested in building themselves a large fleet of ships, (Seventh) temperamentally, they are unwavering in their resolve, and (Eighth) the fact that they apply themselves day and night indefatigably" (Berhanena Selam, 9 January 1930).

Smith (1987: 201) further argued that ‘‘these conditions could be satisfied in Japan in the second half of the nineteenth century was in no small part due to agrarian changes of the preceding century and a half".

The development thought evident after the ousting of the Italians radiated a change not only in ideas but also in terms of promoters and patrons. Before the war, it was exclusively individuals that tended to air their views (of development) but after the war corporate bodies and organized groups, the state inclusive, increasingly started to come to the fore.[5]

In the 1960s, HaileSellasie's regime tried to chart its path of development in terms of five years development plans when the first of these was unfurled at the end of 1956, i.e. the First Five Years Plan, which lasted between 1957 and 1961. Another two editions of the plan served their full terms and the fourth went under with its sponsors when members of his own army toppled HaileSellasie in 1974. No matter the differences in orientation between these plans, namely, the first two emphasizing on import substitution industrialization and the third on agriculture, the general development trend that was foisted by these plans was that of a neo-colony or that of underdevelopment. More specifically, Duri (1984: 9) depicts this development in the following words:

> ... Development occurred as a result of a stimulus generated from abroad with little or no impetus from indigenous sectors. Ethiopia's export trade and foreign investment were the pacesetters for economic activity on the domestic side. The incomes from the handful of primary commodities, which make Ethiopia’s export list - coffee, hides and skins - so far produced with no fundamental change in the structure of agricultural sector - provided the necessary market forces for the growing demand of imported manufactured goods. The whole stress in the development of the economy has been on import substitution of these goods in a manner that has neglected the most vital segments of the national economy.

The Ethiopian student movement which had its beginning in the 1960s, attempted, albeit haphazard, to table the alternative to the imperial regime, and stepped up its activities gradually but surely to increasingly adhere to Marxian precepts that revolved around two main slogans allegedly tailored to provide the rostrum to the country's age-old ills: ‘land to

[5] This development perhaps may be explained, first, by the fact that most, if not all, of those individuals that did the thinking perished in the hands of the Italian colonizers, and second, the onset of censorship and other forms of censure that tended to grow evermore implacable as time advanced managed with a certain measure of success to gag those who opted not to conform.

the tiller' and 'the right of nations and nationalities to self-determination up to and including secession'. The Ethiopian student movement, however, saliently lacked agreement on how these goals were to be arrived at, secured, consummated or carried beyond or transcended. This exactly proved not only its Achilles' heels but also its undoing.

The military junta that assumed the helm of state power in 1974, riding the crust of the mass movement that toppled HaileSellasie when it exploded into life in the wake of the first oil shock of 1973 and a famine that sent hundred thousands of compatriots to their demise, by and by transformed itself into an avowed proletarian party complete with the befitting socialist rhetoric and logos. It managed to spawn a radical land reform, the nationalization of private enterprises and the establishment of a planning commission (MoFED, 2002). Nothing substantial, however, changed in terms of the structure of international trade, neither in terms of trading partners (excepting arms) nor in the items traded. The country kept treading on the same old path: a dependent state before and a dependent state after, except for an apparent change of masters. Like the regime before it, the military junta also met its demise plagued with secular double deficits, i.e. trade and budget. Many more also died from famine under the tutelage of this regime.

The junta-cum-workers party was finally shown out from the blow of a guerrilla army coming mainly from the north of the country. Land remained still state property, some of the state enterprises were auctioned off into private hands; the market was deregulated and except for the absence of a land market and a third sector that might be dubbed 'a party sector' (as the business organizations here belonged to EPDRF or its sister political organization active in the different regional states), all the biddings of neo-classical economics patronized by such organizations as the World Bank and the IMF were adhered to (Ibid.). In terms of international trade, the country kept plodding on the same old rut that had its beginning at the turn of the last century that Caulk (1987) depicted as change from high valued, luxury and unsustainable goods (gold, ivory and slaves [sic]) to low valued, low priced ones (coffee, skin and hides, oilseeds). International trade is very much the same as in the past. The double deficits have still refused to budge and food security proved to be a phenomenon that is very much illusive, in spite of the unprecedented consumption of imported agrochemicals.

Between the resounding victory at Adwa, enabling Ethiopians to stave of colonialism for nearly another four decades, and the Maichew defeat at the hands of Fascist Italy was a period to 'decide' which path to steer: that of an ultimate neo-colony (or even a colony) or a development as a truly sovereign polity with a self-reliant economy (EPRDF, 1989). Neither HaileSellasie nor the military regime nor the EPDRF appear to have scaled up to this task. The political groups that issued from the student movement, however many[6] and variegated with respect to a number of scores, were not that different *vis-à-vis* their position regarding the shaking off of the yoke ensuing from international trade both in terms of cause and effect. We surely know now on which path we are trudging despite the various half-hearted attempts to parry off this eventuality.

2.2 GEBREHYWOT'S POINEERING THOUGHT: INTERNATIONAL TRADE, DEVELOPMENT, AND ENVIRONMENT

2.2.1 Preamble

The first few decades of the last century gave birth to the first generation of modern Ethiopian intellectuals. GebreHywot Baykedagn came to attain the pinnacle of this development with his two seminal works: *Atse Menelik-na Ithiopia* (1912) and *Mengst-na Yehzb Astedader* (1924). The first, which may be translated into English as 'Emperor Menelik and Ethiopia', dealt with the method informing history as a discipline, in general, and modern Ethiopian history, in particular. In the second, which literally renders into English as "State and Public Administration", the author mostly grappled with dependency, development as well as environmental or land degradation, emanating from partaking in international trade as an underdeveloped country.

Although GebreHywot appeared to be disadvantaged or even ill-suited to the task he devoted himself to, in these two works of his, his achievements, in more ways than one, not only proved him to be the brightest star of his generation, but his concerns and achievements remain to this date relevant, of universal appeal and to a certain extent unsurpassed (Bahru, 2002). In spite of his training as a physician, he figured best in political economy, which it is said he devoted himself to assiduously and with characteristics élan. According to Alemayehu Geda (2002), he did not only master it, but managed to flaunt novelties.

[6] EPRP, COPWE, CPE, AESM, EPDRF, etc.

Even though environment mostly came to elicit attention very recently, viz. after the 70s of the last century, GebreHywot dwelt on it, as we shall see, at some depth to bless it with some original ideas. Small wonder why the environmental aspect of GebreHywot's contributions remains the least recognized of his achievements.

2.2.2 GebreHywot's *Oeuvre*

GebreHywot had two works to his name. The first of the two, *Atse Menelik-na Ithiopia*, an article on Ethiopian modern history, appeared for the first time on an annual magazine published in Asmara by the Swedish mission, Sia la Luce, in 1912. The second one, a modest book of some 163 pages, *Mengst-na Ye-hzb Astedader*, saw the light of day posthumously, in 1924, with money provided by *Atse* HaileSellasie under the editorial pen of an acquaintance, Paulos Menameno.

As the first one was devoted to the history of the times, it was more of a work of politics or, better still, praxis than history proper. The second one was actually comprehensive in reach, dealing with a motley collection of subjects, including history. We find a good dose of political economy, sociology and environment treated as a harmonious whole, each blending gracefully with the rest as aspects of the same one subject. The two works, however separate in time, essentially deal with one and the same theme: overcoming underdevelopment. In fact, one stumbles upon a paragraph or two in his second work imported wholesale from the first. Here, a brief, yet a closer look, at each of these two works is in order.

2.2.2.1 Atse Menelik-na Ithiopia

In this work, what first catches the eyes of a reader most is the methodology that has to hold sway in grappling with history as a subject matter. GebreHywot, here, posits the following three requirements that have to come into play in this regard (GebreHywot, 1912: 337 - 338):

1. An observing spirit to discern the deeds unfolding;
2. An impartial mind to judge the deeds transpiring, and;
3. A commendable language command to ferry across one's observations and judgment.

Three of them together basically constitute the scientific method in which the first two cater to the so-called method of enquiry while the last one to method of presentation. Essentially, this is the methodology we see cruising through the second and major work of the author. The salient preoccupation of GebreHywot in this work, however, is development in which he

spurs the monarch and his compatriots no less to embrace European ways as the only and lasting way to progress and national sovereignty (Ibid: 345). To this end, GebreHywot prescribes, somewhere near the end of his discourse (Ibid. 350 - 354), the measures, ten of them, which he claims would extricate the country from the impending doom or from the problems that the country was contending with:

1. The establishment of a national treasury;
2. The institution of fixed and prorated tax;
3. The foisting of tax in cash, a census and a register of civil status;
4. Donning Amharic with grammar;
5. The codification of laws;
6. Limiting the number of and the offering of training to members of the national army;
7. Replacing the Austrian currency, the *Martreza*[*], and other traditional mediums of exchange from a national mint;
8. The erection of a uniform custom duties to facilitate internal trade;
9. Putting up the office of the Inspector General to facilitate a centralized administration, and;
10. Fostering freedom of worship (or the separation of state and religion).

2.2.2.2 Mengst-na Ye-hzb Astedader

This book, which was published posthumously thanks to the good work put in by the author's bosom friend, Paulos Menameno, reminds one of the collaborations of similar nature that transpired between, say, Frank Kafka and Max Brod and between Karl Marx and Fredrick Engles. When the book went into print, the author was dead four or five years, having completed the book before 1916, according to Caulk (1978). Paulos, in a letter he wrote to *Atse* HaileSellasie, soliciting the finance for its publication, says that he found the manuscripts in some disorder, partly written in ink and partly in pencil, which he finally managed to coax into its present architecture. He also speaks of his conviction that if this work was to be published, it would greatly benefit, above the fame of its author, the edification of the Ethiopian people (GebreHywot, 1924).

The book, although small in pages, is quite comprehensive in content. In its historiography part, history is treated, albeit too briefly, all the way from prehistory to modern Ethiopian

[*] A corrupted form of the name of the Austro-Hungarian Empress, Maria Theresa (1717 – 1780).

history, the latter in a down to earth manner free from any form of sycophancy, which in effect, was the modus operandi then.

Political economy, however, claimed the lion's share of the pages, being treated from the vantage point of dependency and environmental degradation, amongst others. Theory of value, exchange, international trade, tax, tariff protection, debt, balance of payment deficit, import and export, markets, wealth, medium of exchange, division of labor/specialization, accumulation, innovation, currency, banks, etc. punctuated the pages with a healthy dose of empirical material. The environmental component, as we shall see, brings to the fore, perhaps for the first time, land degradation and desertification at a time when this subject matter was quaint or far from hackneyed even on the international plane. The few 'treatise' that we find around preceding GebreHywot dealt with this subject either at the level of high theory (e.g. Karl Marx writings on alienation, 1864) or only indirectly (e.g. Thomas Malthus', what came to be called, the law of diminishing returns) and all of them only in passing.

Furthermore, the original thinking that we see GebreHywot exude in this *magnum opus* of his is not limited to the environment only. As pointed out by Alemayehu Geda (2002), he prefigured the dependency theory of Latin American economists such as Raul Prebisch, H. W. Singer and even Andre Gunder Frank and the unequal exchange theory of Arghiri Emmanuel and Samir Amin, which collectively sired Development Economics. GebreHywot was not limited only to pointing out problems, but also floated solutions as appropriate, such as the crucial role of human capital formation, the need for self-sufficiency and, unlike the classical economists, the appropriateness of protectionism.

Although he is not as explicit as the ones already enumerated, the place he allotted to the middle class, mostly by way of lament for its saliently short supply or senile nature in Ethiopia, prefigures Fanon (1963). He, like Fanon[7], speaking of the characteristics of the middle class in developing countries, castigated with heroic fury the consumerism of the

[7] "Neither financiers nor industrial magnates are to be found within this national middle class. The national bourgeoisie of underdeveloped countries is not engaged in production, nor in invention, nor building, nor labor; it is completely canalized into activities of the intermediary type (Fanon 1963: 120)". Elsewhere Fanon (1963: 122-123) almost repeats himself, "But this lucrative role, the cheap jacks function, this meanness of outlook and this absence of all ambitions symbolizes the incapability of the national middle class to fulfill its historic role of bourgeoisie. Here the dynamic, pioneer aspect, the characteristics of the inventor and of the discoverer of new worlds, which are found in all national bourgeoisies, are lamentably absent".

(political) authorities and the parasitic nature of the expatriates making then a larger part of the commercial class in Ethiopia (GebreHywot, 1924: 82). To this effect, he wrote:

> Looking around us, we can see, on the one hand, expatriates involved in business and the parasitic, thieving and good-for-nothing officials, living off the people, leading a life of luxury and comfort in plush buildings they put up for themselves (Ibid: 78).

2.2.3 Dependency and Environmental Degradation

The first and foremost concern assailing GebreHywot is the phenomenon of uneven development. He asks, why some people are developed and others not. In an attempt to answer this question, he maintained that the answer is to be sought in the history of the different nations and, in particular, in the fortunes, or better still, in the misfortunes that they were forced to undergo. On this score, he held forth that "Had it not been for the impediments faced by people, all people would have attained to the highest level of knowledge and technical skills (Ibid: 78)."

Writing with focus on his country, he argued that the most unrelenting stumbling block, which Ethiopia had to contend with was war, which in its sequel invariably brought the abandonment of fertile land until this state of play attained its terminus with Menelik, ushering in better days in which once again wealth started to thrive in the country. He wrote:

> Each time the Ethiopian people made a head start to accomplish in terms of knowledge and wealth, the country ran into fresh conflict and war. Hence, in order to defend themselves, the Ethiopian people used to abandon the fertile lands they claimed and return to inferior lands that they left a while back (GebreHywot, 1924: 40 - 41).

War, according to GebreHywot, was the principal culprit responsible for the state of underdevelopment or dependency the country found itself embroiled in and giving rise, among others, to environmental degradation. All peoples underwent one or another mishap and depending on the sort of hurdle they faced, the knowledge and wealth, they managed to muster increased or decreased, he maintained (Ibid: 78). Furthermore, GebreHywot, writing on war, did not restrict himself to merely hot or cold wars; he also considered its socio-political implications, especially when discussing the economic significance of the soldiery. In particular, he stressed the excrescence aspect and the parasitic nature of its members:

> Many of our compatriots parade themselves for soldiers; in public places, they lounge their time away gadding about and live off the travails of the unfortunate farmers. In all the developed countries, the soldiery means nothing but the bulwark of the people and taxpayers, their protector from harm. But in our country, we are justified to call it the sworn enemy of the people. For this very reason, our bountiful land lies relegated to waste for the want of people to work it; hence, we languish in poverty (GebreHywot, 1912: 348 - 349).

2.2.3.1 The political economy underlying dependency and environmental degradation

GebreHywot made substantial use of the concepts of political economy to underpin his thought on the way out of dependency that was then making its inroads in the country glaringly.

Ethiopians, which hitherto depended very little on the long distance trade they indulged in[8], had to give way with the coming of the railway. The latter marked the integration of the country into the malignant hold of the world market when it facilitated the export of such primary goods as coffee and hide characterized with high volume and low price (Caulk, 1978).

Value found the most frequent use by GebreHywot in his analysis. He contended, in the same way as the classical economists did, labor underlay the value of all goods ultimately finding expression in price whenever the economy is a monetized one (GebreHywot, 1924: 45). He further maintained that the bulk of the material the merchandise is made of, irrespective of the nature of the matter constituting it, virtually counted for nothing aside of the quality and quantity of labor congealed in it. Quality, he said, is determined in the skill, and quantity in the socially necessary labor time expended in the course of its production. Explaining the latter with the help of a hypothetical case, he wrote:

> …If we observe a tailor trading with a farmer, the tailor who whiled away six days on his produce, burnoose, would require from the farmer a quantity of grain costing six days of labor. Hence, the sale of the burnoose, which taxed the tailor six days of shearing, spinning and weaving wool, would require from the farmer grains to the tune of a six days of tilling, smoothening, weeding, harvesting and winnowing. Thus, price is a measure of value. Otherwise, if the tailor were forced to exchange grain involving six days of

[8] In the 19th century, this was mainly constituted of firearms, powder and lead that they paid for in depletable high valued luxury goods, such as gold, civet, slaves (sic) and ivory (Caulk, 1975).

> labor for burnoose costing him ten days of labor, then finding that his labor is waste would turn himself into a farmer (Ibid.: 46).

To explain the qualitative aspect of labor, which is assumed away in the case supra, he offers the following:

> … A day's labor of a carpenter is worth more than that of a lumberjack's, and a thatcher's than that of a thatch purveyor, in keeping with the superiority in skills in the labor of one than the other (Ibid.: 52).

Bringing these to bear on exchange transpiring between goods in which one is the product of skilled labor and the other unskilled, GebreHywot maintained that if parity is to prevail, the relative quantity of the good with unskilled labor has to be quantitatively (or in terms of labor time) large, i.e. quality is to be setoff by quantity.

He then goes to treat the implications of this state of affairs in international trade, especially in transactions occurring between countries marked with separate skills, namely, between people with skills (i.e. developed countries) and people without (i.e. underdeveloped countries). He propounds first that:

> … People entering in an exchange do so on the basis of the parity of the skills that went into the making of their respective produces. But, whenever this is not so, prices, underlying exchange, would be far from commensurate (GebreHywot, 1924: 67).

This is in essence what Emmanuel (1973) meant to capture by the rubric "unequal exchange[9]", whereby in the exchange occurring between the developed and the developing countries, the former invariably plunder the latter. Moreover, GebreHywot's realization of this lopsided state of play came to be confirmed nearly some three decades later in the famous study undertaken by no other international organization than the United Nations (Emmanuel, 1972). GebreHywot elaborates this contention of his in the following terms:

> In the same way as a smith takes for a pittance the labor of the forger and the carpenter that of the lumberjack, people with skills plunder the labor of those without (GebreHywot, 1924: 53).

[9] Emmanuel (1972) depicts unequal exchange to exist when "…when a certain category of countries that, whatever they undertake and whatever they produce, always exchange a larger amount of their national labor for a small amount of foreign labor".

He does not stop at this and spares no words to further elaborate the unfair trade existing between the two worlds, viz. developed and developing countries long before others did when most of the latter countries were languishing under the direct colonial pillage of the North:

> …As price is a measure of value, people entering in an exchange of their produces need to establish the parity in skills in the labor that went into their respective efforts. This is to say that if one producing burnoose with machinery is exchanging it with a farmer not utilizing the same level of technique, the latter sustains loss while the former benefits. And in the case where they trade places, it is the producer of the burnoose that suffers the loss and the farmer that enjoys the benefit. This is the reason why people with skills enjoy advantage against those without whenever the two indulge in trade (Ibid.: 52).

GebreHywot, with his characteristics purpose and earnestness, focuses on the Ethiopia of his times *vis-à-vis* its performance in the realm of international trade:

> In our country, at present, the manufacturing of glasses, bottles, jugs and plates is impossible. In Europe, these are produced without considerable strain. But, in Ethiopia, people surrender a lot of goods costing them many days of labor in exchange for them. A fellow farmer, for instance, pays between six and 10 *thalers* for a bale of calico he uses for clothing. But here 6 *thalers* is worth a *daula* and 4 *qunnas* of *teff* while a bale of calico in Europe is made in no time; but to produce a *daula* and four *qunnas* of teff, it takes an Ethiopian farmer a number of days' labor. Consequently, for the lack of know-how to make calico, we give away a labor of many days for a produce that took only an instant to make (Ibid.).

We shall see next how GebreHywot puts to good use the concepts of classical economics he adopted so far to show the damage inflicted against developing countries on the environmental arena.

2.2.3.2 Accounting for environmental degradation

The pitfalls involved in partaking in international trade, in particular from the position of a developing country, are legion and highly intertwined. Environmental degradation finds expression in an intimate concert with the rest; the economic, political, social and environmental consequences of indulging in the world market ensued ultimately from the same starting point, according to GebreHywot, from the lack of skills or knowledge, which, in turn, emanated from some form of national debacle, in the case of Ethiopia, of course, war.

GebreHywot's analysis offers the rationale as to why the environment of developing countries has to suffer from involving in international trade with developed countries, which he opts to call the latter as "knowledgeable people" or "people with skills". He, once more resorts to the labor theory of value, arguing that since the labor endowment of the underdeveloped countries is unskilled, whenever it is equated with skilled labor, it has to be plenty in terms of quantity so that equality may be established. We shall start with the following observations of GebreHywot:

> Our land, …, flees abroad every year in the guise of ivory, civet, hide, coffee, cereals, oxen, cows, horses, donkeys and mules; although it is not being felt as such at the moment, it is bound to impact painfully when the population multiplies and land becomes scarce. Had the people been entitled to advance in terms of skills and adequate division of labor, producing at home all that they consume, the manure (natural resource) of the country would have stayed in the country. But, unfortunately, when people lacking in skills indulge in trade with people imbued with it, first they cede extra labor to the latter and then their land follows suit. Moreover, when the number of people lacking know-how increases in number, the fruit of the land fails to satiate their needs (Ibid.: 70).

Responding to the protest of an imaginary interlocutor, in which the latter argues that the loss of natural resources due to export would be reciprocated by that contained in what is imported, GebreHywot replies that although the protest is plausible, it is, however, untenable, as the bulk of the material in the import is incomparable with that of the export. He provides the following to elaborate his point:

> Let us consider, for example, the difference in the amount of resources contained in a cubit of calico and a cubit of hide. The natural resource in a cubit of hide is much larger in both quality and quantity. A bale of calico costs up to 120 thalers. But the cost of a fattened bull is at most 40 thalers. This means, therefore, a bale of calico is commensurate with nearly three oxen. This is because the only effort and skill devoted to raise an ox is taking care that it does not perish from disease or gobbled up by predators. But in the case of calico, the cotton undergoes a series of transformations under the hands of a number of skilled workers and machinery. Even the cost of oxen there is substantial, as the availability of land is limited and the population size large, stall-feeding employed in cattle raising involves sowing, cutting and storing of hay for feed. Furthermore, since grazing is not practiced, cattle are kept indoors and the stalls used for this purpose cost plenty. Anything obtained costing less effort fetches less in return. For anyone who lives off gathering fruit form the wild, the effort he is required to expend is only limited to traveling to and fro. But, if one wants to consume the same gathered by another, one will be required to foot the bill (Ibid.).

A few pages down, he conveys the same message in a slightly different language; "When people lacking in know-how buy goods from people with skills, they are actually entering into debt, which is to be paid back in part in their labor and in part in their land" (Ibid.). He provides the following analysis based on the import and export data of his country at the turn of the last century:

> From January 1903 to January 1904, i.e. the year 1912 in Gregorian calendar, the value of goods imported from Europe to Ethiopia was to the tune of 7 million 777 thousand 344 *thalers*. For the same period, the export of Ethiopia to Europe amounted to 7 million 585 thousand 499 *thalers*. When we reckon the difference, import surpassed export by 194 thousand and 950 *thalers*. We get *thalers* from overseas, for the exchange of which we pay the proceeds from the sale of produce obtained from our land. How did we, therefore, manage to pay for the import well above the money from our export and from where did we get it? Can one give away what is not his? Of course, only if one borrows! Surely, money borrowed shall be paid back later on with interest (Ibid.: 72).

From the foregoing lines, we may appreciate that even trade deficit and for that matter any other form of debt, at the end of the day, has to be paid in our land, i.e. at the cost of our natural resource or, which is the same thing, land degradation. At the risk of repeating himself *ad nauseam*, he offers the following to demonstrate the loss of domestic market to foreign goods in addition to increased strain on the land:

> … Discarding their locally produced fabrics for blankets and calico, as well as shunning their garments and fine burnoose, for shoddy blankets, the Ethiopian people buy from them even shields and swords. After paying for all these baubles, even when left with a *thaler*, it is spent on booth. The owner of the booth, in turn, to get a headscarf, surrenders that *thaler* back to the foreigner from whom it originated. The ultimate reward, for the Ethiopian people, after sweating so hard, is wasted labor and loss of their bountiful land, providing them with sweets and fruits …Since labor would not be enough to settle the debt, Ethiopian people shall be forced to winkle more from the land and pay. For the time being, even if the land may not press the people to make due the loan it hitherto extended, posterity will be held responsible for the debt of its ancestors (Ibid.: 74).

Most analyses pertaining to land degradation in developing countries have as their point of departure, unlike GebreHywot, population growth whenever their treatment tries to provide the ultimate cause. In other cases, they simply deal with the mechanisms of land degradation (erosion, tree felling, improper irrigation, etc.) or allege some other causes (e.g., lack of awareness, absence of well-elaborated land tenure, and lack of land uses plans). Most give

blind eye to the world market as the principal cause to environmental degradation in developing countries to such an extent that the real question is evaded at the end of the day.

Consequently, the solutions sprung up end up, more often than not, by being wide of the mark. A publication of the Centre for Our Common Future exposes this position in the following words:

> They[10] (*the industrialized countries*) have sought to tackle over-cultivation, overgrazing, deforestation, and faulty irrigation, but without addressing the underlying social and economic pressure that have produced them. This has often resulted, in effect, in blaming the victims of desertification for causing it, without making a serious attempt to understand the forces outside their control which are driving them to overexploit the land (Ibid.: 172).

2.2.3.3 Consequences of land degradation and skills deficit

The effects of land degradation are multifarious, ranging from displacement to famine-induced death. In the political sphere, dependency becomes the lot of developing countries in which these countries would be forced to tow the line against their own interest and to their ultimate doom. GebreHywot depicts the first in the following words:

> Unless the earth is paid back the loans it has extended, it relents to comply with further request. If what the earth has already loaned out is too much, it flatly refuses to acquiesce any more. Woe to a people that has borrowed from the earth and failed to payback, the earth would surely see to the demise of such a people from famine and pestilence. Any farmer would vouch for the verity of this statement (GebreHywot, 1924: 69).

When it comes to the diminishing productive capacity of the soil, GebreHywot tells us, "A land exhausted, yielding a harvest offers less and less output in subsequent years unless it is honored with soil conditioners. If tilled repeatedly without receiving manure, it ends up by declining to offer any produce at all" (Ibid: 70).

The same author also addresses the social consequences of land degradation stemming from the underdog position assumed by developing countries due to their want of skills from the angle of debt and land degradation, arguing that:

[10] The causes of desertification have been the subject of furious debates during UNCCD negotiations, with industrialized countries unwilling to accept the effect of international trade practices on land quality (Agrawal, 1999).

> …The building of roads left and right and the construction of railways, unless the skill of the people is boosted and improved, would only perpetrate more indebtedness, entailing from the people more strain in order to pay the debt and interest to the benefit of foreigners. Since labor would not be enough to settle the debt, the people shall be forced to winkle more from the land and pay. For the time being, even if the land may not press the people to make due the loan it hitherto extended, posterity will be held responsible for the debt of its ancestors. When unable to acquire the skills to pay back the debt, people are given to suffer from poverty, misery, morbidity and mortality. To dodge ultimate doom, the people shall flee to the lands where their ancestors sold their land to or to some place else (Ibid: 74).

From the above, i.e. the construction of transport infrastructures, we understand that measures which, as we shall see, GebreHywot himself prescribes as one of the nostrums that may bring about a turnaround in the development effort, when done in isolation, turn into their opposite and perpetrate more dependency.

GebreHywot also wrote about desertification, nowadays understood as land degradation in arid, semi-arid and dry sub-humid areas (UNCCD, 1992), as essentially emanating from the same causes and inflicting harms, in the following comprehensive manner:

> In a state where skills are lacking, trade and war tend to spread and renew while crafts are scorned upon and dwindle. Because of this, desertification is whipped up and the land under agriculture shrinks, losing importance more than anything else. Owing to the smallness in the number of those tilling the land, the size of the productive members diminishes compared with the mouths to be fed, triggering of food scarcity, a situation that goads the state into importing food from abroad. Thus, such a state loses in terms of power and wealth (GebreHywot, 1924: 99 - 100).

In the international negotiation that led to the signing of the United Nations Convention to Combat Desertification (UNCCD), one recalls that a schism occurred as to the cause of desertification; the North maintained population growth while the South ascribed it to the international economic order. GebreHywot rightly diagnosed the latter some seven decades earlier. The reluctance on the part of the North to recognize the international trade as the principal cause shows the former's resolve to maintain its vested interest, which it has been enjoying for centuries (Agarwal, 1999).

GebreHywot, furthermore, reminded that the effort to be exerted is bound to be quite an uphill for developing countries to change this state of affairs for the reasons he stated below:

> As knowledge, skill and technique over the years became a second nature to these peoples (*of the North*), it would be a formidable task for other peoples to catch up with them. In fact, the rest of the world is already obsequious towards them. Except for Japan, Turkey, China, Siam and Ethiopia, the rest of the world is their colony. Of those peoples that have hitherto maintained their sovereignty, except for that of Japan, the rest are but of nominal nature (GebreHywot, 1924: 79).

GebreHywot once again draws attention to the difficulty awaiting those with resolve to shake off the yoke of dependency, which he claims the state has to spearhead, in particular, when the people, or to be precise, the elite in tutelage, are not ready for the task, suffering from unwarranted sense of euphoria stemming from an easy life instilled in them as victims and not as free beings. To this end, he wrote:

> If the state fails to guide and lead the people on the right path, a people married to luxury and comfort is invariably doomed. Such a people would simply flop to sheer consumerism but without the requisite wherewithal. Furthermore, items of consumption produced in countries with skilled labor, using machinery and equipment, are cheaper compared with those produced domestically and for this reason people of these countries are bound to opt for the foreign produced goods as against that of their own. Consequently, the producers in these countries, lacking buyers for their produce, will be forced to give up the occupations they are skilled in only to end up with any job offering a daily bread. Because of this, people are bound to lose their skills completely and succumb to the servility of foreigners (Ibid: 99).

One of GebreHywot's many ideas heaped up in the paragraph just quoted is the danger international trade poses for developing countries, owing to the un-competitiveness of their domestic (or infant) industry and, consequently, vulnerability, entailing loss of the little skills they have, unemployment and further dependency. In the next quote, GebreHywot writes on the same fate awaiting capital accumulation efforts that is to be realized at the cost of the iterative degradation of land with all its pitiable consequences:

> …The ultimate fate of a people that, instead of laboring, simply accumulates a lot of money from the sale of what it borrows (i.e. extracts) from the land, is disaster. Actually, in so doing, what it achieves is the fast aging of the land, due to loss of its fertility, expediting the situation where the land refuses to yield anymore. At long last, it is certain that its children and grandchildren will perish from famine. If people lacking in know-how deposit in banks, instead of letting it to idle, the gold and silver that citizens keep as horde at home and manage to draw interest on it, this will serve them no good. Even if for the time being it yields interest, it would only add a few *thalers* and nothing more. After all, where does the interest end up? Is not the loan they

> take for this purpose from the land to increase in comparison to that of the previous year (Ibid: 115)?

Pursuing the same subject, i.e. capital accumulation, GebreHywot emphasized the ephemeral nature of the undertaking and what it does to the depredation of land. He said, "…If peoples of underdeveloped countries make extra money from selling primary commodities they wrest from their land, it is only bound to be short-lived and unsustainable. When, at long last, the land gets exhausted and is unable to yield any more harvest, the people will have nothing to offer for sale and lacking food and money for clothing, they will be forced to emigrate abroad, envisaging plenty" (Ibid: 118). GebreHywot keeps on hammering on the hopelessness of the situation where the little that can be saved and stashed in banks ultimately precipitates plunder by foreigners and instill unpatriotic traits within the members of the wobbly national middle class:

> If the money first earned by such people begets interest when deposited in bank, this is only an expression of the harm inflicted and not a profit earned abroad. Since such people are bereft of skills and power, those who borrow money from bank to indulge in business and make money are foreigners. Even when they are fellow citizens, it makes no difference. The farmers grow poor and the merchants rich, which means that the wealth of the country ends up accumulating in the hands of the few. And the latter, when they discern that their native soil is incapable of yielding enough anymore, they take flight to other countries in pursuit of better life, taking along the gold and silver with them. Because a person of sufficient wealth finds comfort easily anywhere in the world, the love of the motherland preoccupies him not (Ibid: 118).

Writing, as it were, on the rather self-proliferating nature of the malady of dependency, GebreHywot laments that the ensuing income inequality nips in the bud even the patriotism that is naturally lurking in the masses, a situation that forebodes bad for the state and the polity in general. He wrote:

> Because a pauper without food and clothing has no reason to develop the love of his homeland, he would not mind whether the state is strong or weak. Hence, the concentration of wealth in the hands of a minority is not in the best interest of any state, but only when distributed amongst all citizens. In a country where income inequality or difference in living standard between the poor and the rich is considerable, it is clear that the state in question is on the brink of doom. When we consider the state of affairs reigning in Ethiopia, the probability of this threat is quite alarming. Looking around us, we can see, on the one hand, expatriates involved in business and the parasitic, thieving and good-for-nothing officials, living off the people, leading a life of luxury and comfort in plush buildings they built themselves (Ibid: 120).

GebreHywot makes it his purpose to expatiate at length on the increasing social differentiation, breeding, in its wake, social antagonism between the different social groups that may ultimately undermine the welfare of everyone in general and the state in particular. He wrote:

> We stumble, for instance, upon lavish buildings made of cut stones standing side by side with tiny cottages. While in these buildings, the filthy rich squander, in conspicuous consumption, the wealth that the people sweated on, the poor, in the cottages, wallow in the quagmire of hunger, nakedness, lacking light, freezing from cold, amid dung smoke and in filth. When in one, the wealth increases, in the other, the misery deepens. Comparing the sizes of the cottages and the buildings, we perceive clearly the increase in the country the gap between the poor and the rich. This portends bad for the state (Ibid: 119).

We also see GebreHywot allot space to discus the price implications of both land degradation and dependency and he maintained "for two reasons the price of food grains hikes. The first due to population increase while the second owing to the lack of adequate tools and expertise such that the land gets exhausted yielding not any more as it did in the past. Hence, food grain is barely enough to meet the needs of the producers themselves such that grain becomes scarce as well as expensive (Ibid: 90)".

Finally, GebreHywot discusses one of the most important negative impacts ensuing from dependency, and this is nothing other than the "whither of the sovereignty of the Ethiopian people". He looked at this concern from the perspective of self-sufficiency, which, as we shall see, is the cornerstone of his policy prescription. He starts with the question "Can we Ethiopians really claim to be a sovereign people, since the true meaning of sovereignty is not merely to have one's own state, but to be self-sufficient?" (Ibid: 79) and he replied:

> The Ethiopian people are still far from self-sufficient. Just look at what we wear, who made it and supplied us? Wherefrom did we get our household wares? The cloth we put on, the entire cutlery, the crockery and equipment we use, are not all these imported? Losing our skills of yore with which we produced for ourselves, didn't we resign ourselves to the cheap blankets and fabrics manufactured overseas that engulfed and ousted from our markets the fine *bulukos*, *gabis* and the exquisite hand-made cotton textiles of fine yarn spun by our womenfolk? What can we any more say about the pick and the axe today? In the markets of Addis, DireDawa and Harrar, we no more see our traditional pick and axe. What is worse, in Tigrai farmers even make use of ploughshares imported from overseas. This is simply to say that since the arrival of Europeans here, leave alone making further gains in knowledge, we

> have already lost half of the skills bequeathed us by our ancestors. The remaining half we are bound to lose in no time because of the railway connecting Addis Ababa with Djibouti. Incidentally, the most prized yearning nowadays in each one of us in Ethiopia is to live in comfort and adorn ourselves and our dwellings, a preoccupation which if discerned in other peoples, testifies to the fact that they are pining for knowledge, which is of course very commendable. If the state, taking this cue, manages to guide it in the right direction, such unstinting people are surely to attain to the highest level of knowledge and wealth (Ibid: 79).

2.2.3.4 The way out of dependency and environmental degradation

GebreHywot wrote, "Capital is nothing but accumulated labor. People are sovereign and better of when the fruit of their labor accumulates at their own discretion and to their benefits. People lacking in skills, however, are incapable of accumulating their labor. What they produce is immediately consumed and the utility they derive from their labor is always meager. Hence, people without skills are miserable and live in servitude. Moreover, if they keep on multiplying without advance in know-how, their penury and servitude will only grow and persist." He then asked, "What shall a people do to avoid such perdition (Ibid: 72)?" GebreHywot tells us that the task consists of a trio of measures: the first one of which is to "erect transport infrastructure to facilitate further transaction among citizens"; the second, to "open up schools offering training in various skills", and, the third and last one, to "foster self-sufficiency which enables people to meet their needs aided by protective tariffs emanating from public authorities" (Ibid: 72).

GebreHywot then expounds on each one of the three making the due emphasis on the need for them to reinforce each other. Elaborating on the synergy that would be thriving between the first two, he wrote:

> But, roads and railways if only one is smart and quick, are of immense benefits. The establishment of schools fast enough, providing various trainings in skills of various trades, is indispensable. When people acquire know-how, they can produce for themselves the items that they consume. The division of labor intensifies and people will be living close knit. They would be facing no hardship to transport their produce from place to place. Consequently, they get more time to be productive in their respective trades. For this reason, they tend to be more creative and able to come out with inventions, from time to time, by dint of their own effort and research. They are bound to reap more gains from earlier ones. In time, the people get rich and the government more powerful. An aspect of wealth is power. But, roads and railways without skills are there to relegate a country into poverty and, therefore, are no good. A government, therefore, wishing its people well, shall

> not treat the two as isolated but promote them as mutually inseparable (Ibid: 75–76).

GebreHywot spares no words to show what a boon roads and railways are for national development, for example, from the perspective of the farmer. He wrote:

> Many of them will come out with innovations such as the arresting of the washing away or the soaking of fertile soil. Because the markets where one can sell one's grains, oxen or hide are close by, the humus needed by farmers would reach them with considerable ease using carts and trains. The land, receiving back the fertility it lost when cultivated for grain or hay, hastens to yield once again, instead of balking. In fact, if handled wisely and fertilized duly, it is bound to yield more and more (Ibid.: 87).

He continued:

> In a country capable of producing everything that it requires for its own consumption, building roads enables a large number of people to be productive: smiths would work to sell picks and levers; carpenters would build carts to move soils around; weavers would strive to produce and sell fabrics to clothe the labor force; shepherds would fleece enough to provide workers with blankets and warm clothing; in a word, in a country where citizens are skilled, the building of roads occasions the productivity of a large multitude. Farmers, as suppliers of the public, tend to be industrious, just to make more money. The landowners, on their part, strive hard to garner more harvest (Ibid: 87).

GebreHywot also dwells on tax and tariff as macroeconomic policy elements. He does not condone the imposition of tax on internal trade and, in particular, on domestic produces. He delineates the harms involved in the following words:

> A government, when levying taxes, may benefit or harm its people. If it taxes markets dealing in goods produced at home, it is like severely hurting the producers exchanging them. It would give them additional strain on that of the one they braved seeking one another. Hence, they lose the time that would have enabled them to produce more. Moreover, when also the effort it takes them to look for the other party in exchange becomes excessive, they will stop looking for each other unless there is something that forces them to do so. If the farmer obtains the cloth to last him a year, then he would not go looking for the weaver for more. Similarly, a weaver possessing food grains that may last him a year would not go searching for the farmer to reap additional gain (Ibid: 76).

Regarding protective tariff, in a clear departure from classical economics, in particular, from that of David Ricardo, who unconditionally upheld free trade, claiming that none of the

parties would, at the end of the day, suffer from it, GebreHywot maintained, apparently, an ambivalent but a studied position, which he explains after asking the question "…how is import to be handled? Shall it be taxed or left un-tampered with?"

> To answer this question adequately, it is worth to note that a heated debate between authorities on the matter, which has lasted to this date, after more than one hundred years, produced neither a victor nor a vanquished. Many governments enact their tax regulations, alternating between one and the other school of thought, depending on the specific purpose they desire to achieve in any particular period. Moreover, when they find it agreeable, adhering to both schools of thoughts, there are governments that have promulgated regulations taxing some items of import while leaving others alone. According to the author, …the third method of taxation is the one most befitting countries like Ethiopia (Ibid: 78).

What is worthy of note here is the fact that what GebreHywot detailed above as individual solutions are part and parcel of his overarching solution, namely, emulating the Japanese, which, essentially, is a political solution. GebreHywot goes even further to indicate the flavor of this radical solution of his, using an anecdote in which *Ras* Sbhat and *Dejazmatch* Syum[11] attempted to bar the export of local produce in order to stabilize domestic prices. Although the measure ended up in a fiasco, the lesson it provided is of immense import. GebreHywot wrote:

> Three years back it was disclosed that the Ethiopian people are badly in need of foreign produced goods. Because their armies suffered from an increase in food prices, *Ras* Sbhat and *Dejazmatch* Syum consulted and barred the shipment of food grains to Hamasen. In retaliation, the ruler of Hamasen forbade the transit of imported goods through Hamasen to Tigrai. After a brief period, however, seeing that their armies are feeling the pinch from the retaliation, *Ras* Sbhat and *Dejazmatch* Syum decided to bring the embargo to a quick end. The Ethiopian government, therefore, if ever it resolves not to lose its sovereignty and the freedom of its people, has to prepare the means of defense to this end. The institution and smooth running of stable custom regulations and the provision of education to its people are the best line of defense in this regard (Ibid: 81).

The most important lesson from this singular experience comes more from what it failed to achieve than what it actually did. According to GebreHywot, the decision of the two warlords was initiated by the contingency to stabilize domestic prices and nothing else, but it precipitated retaliation from the colonial authorities in Eritrea that the people of the region

[11] *Raps* Sbhat and *Dejazmatch* Syum were regional warlords ruling Tigrai at the turn of the last century, the first Agame and the second a substantial part of the rest of Tigrai (Heruy, 1923).

were for some reason unable to brave. The Italians embargoed the transit of foreign goods through their occupied territory into Tigrai. This embargo would have certainly failed had the Tigrian people stood steadfast behind their rulers and paid all the sacrifices required of them, in particular, had they withstood the lure or foregone the 'satisfaction' or 'joy' of consuming imported goods. The Japanese succeeded simply because their polity in chorus managed to flaunt the fortitude to surmount such eventualities.

Furthermore, from what has been said so far, one can easily distil the fact that GebreHywot has nothing to prescribe as a magic potion to heal Ethiopia's environmental ills as something separate from the solution offered to the problem of underdevelopment. Indeed, since the environmental problem is a derivative (i.e. the dependent variable) of the larger picture, namely, the dependency problem (i.e. the independent variable), seeking the solution for the latter is at the same time to submit the appropriate answer to the environmental question. In sum, according to GebreHywot, offering a lasting solution to underdevelopment is synonymous with solving the question of land degradation in Ethiopia.

In this chapter, the theoretical and conceptual part of the paper, attempt was made to elucidate the major thoughts on development (and/or their context) that happened to see the light of day in the country's march to 'development'. In the following chapter, this will be followed up with the discussion of major development projects or measures that chanced to touch ground at various periods in the country's history set within their socio-political backdrop.

CHAPTER 3

DEVELOPMENT AS A POLICY MEASURE

Theories commonly forwarded to capture the essence of underdevelopment are: (1) ‘‘Dualistic’’ Theory that characterizes the economy of developing countries as one consisting of a weak modern sector but a preponderant traditional sector, holding the latter responsible for the underdevelopment. (2) "Circulationist" Theory that alleges the cause for underdevelopment to the unequal exchange existing between developed and developing countries (3) "Productionist" Theory that attributes underdevelopment to the structure of production in developing countries, in particular, with reference to international capitals' domination of the economic structure, thus subordinating and underdeveloping the productive structure of developing countries (Frank, 1979).

There are still a few others that attempt to capture underdevelopment from this or that angle. For instance, underdevelopment defined from the angle of the pattern of production and consumption of countries, is assigned to those countries that “do not produce what” they “consume,’’ or “do not consume what” they “produce” (Mamdani, 1976). When defined from the vantage point of the technology of production, underdevelopment manifests itself with the structural inability to produce capital goods, or to be specific, the failure to produce machines that may be used to make machines (Shivji, 1976).

With respect to social classes, underdevelopment refers to such a class that Fanon (1963) opts to call the “savage bourgeoisie” to refer to the African middle class that he says:

> … follows the Western bourgeoisie along its path of negation and decadence without ever having emulated it in its first stages of exploration and invention, stages that are an acquisition of that Western bourgeoisie whatever the circumstances. In its beginnings, the national bourgeoisie of the colonial countries identifies itself with the decadence of the bourgeoisie of the West. We need not think that it is jumping ahead; it is in fact beginning at the end. It is already senile before it had come to know the petulance, the fearlessness or the will to succeed of youth (Fanon, 1963: 123).

3.1 DEVELOPMENT INDUCED UNDERDEVELOPMENT IN ETHIOPIA

The history of development in Ethiopia is simply the development of underdevelopment as depicted, jointly or severally, in the various definitions supra. Focusing on the definition with predilection on trade, for example, the Ethiopian Economy, which at the turn of the last century depended very little on the long distance trade[12], had to completely give way with the arrival of the railway. The latter starkly marked the integration of the country into the malignant hold of the world market when it facilitated the export of such primary goods as coffee and hide characterized with high volume and yet low price (Caulk, 1978; GebreHywot, 1924). In fact, the traditional technology that existed in the country, which in some regards was remarkable, started to crumble under the blow of foreign competition to the chagrin of such keen observers of their country's progress as GebreHywot.

Actually, long before attaining this quasi-climax, when the Portuguese made it to Ethiopia in the mid 16th century, on the pretext of military aid, Bekure (1984) writes, they produced gunpowder in the country, but the skill appears not to have been passed onto Ethiopians, a situation nowadays called technology transfer and we find rather baffling than fruitful. Conversely, what is all the more strange in this development, however, is the fact that the iconography that existed till then, which was at home depicting national complexions, changed strangely and for good to depict Caucasian complexions instead (Tadesse, 1974).

In the third quarter of the 19th century, Emperor Theodros, having in vain tried to muster through assistance additional firepower from the British Monarch of the period, Queen Victory, decided to produce it on his own coercing the 'expertise' of expatriates available in the country. The foundry he put up in Gafat produced at least two cannons and one of these, Sevastopol, exploded itself in the battle that ensued between him and the British and with it dashing the Ethiopian 'illusion' to self-determination and truly independent development. The development pathway the country came to subscribe to since, in spite of the resounding Ethiopian victory at the Battle of Adowa, which delayed direct colonialism until the second quarter of the next century, assumed underdevelopment (Ibid.).

[12] In the 19th century, this mainly involved firearms, powder and lead that was paid for in depletable high valued luxury goods, such as gold, civet, slaves (sic) and ivory (Cualk, 1978).

The end of the 19th century marked the introduction of commercial and industrial capitalism in Ethiopia. This development, according to Aleme (1984), was the result of European encirclement of Ethiopia and the final demarcation of the Ethiopian borders after the Battle of Adowa, frustrating Italian colonial ambitions on Ethiopia, and, instead, Ethiopia became a free market for the free competition of the three neighboring colonial powers: Britain, France and Italy. This brought about the transformation of the purely feudal structure thriving then in favor of the development of commercial and industrial capitalism, and the formation of a feudo-bourgeois system.

According to the same author, towards the end of the 19th century, but mainly at the beginning of the twentieth, a number of industrial works started to crop up in Ethiopia. These were of construction and industrial cohesions. The construction works consisted of the following four major types:

1. Railway construction
    - Djibouti - DireDawa - Addis Ababa
2. Post and telegraph constructions
    - Djibouti - Addis Ababa
    - Asmara - Addis Ababa
    - Addis Ababa to provincial centers
3. Road Constructions:
    - Addis Ababa - Addis Alem
    - Addis Ababa to provincial centers
4. Bridge constructions

Some of the major agricultural and mining concessions that were active between the period 1889 and 1935 are indicated in the table below (Table 1) with their ownership and their regional distribution in the country. All were devoted to the production of primary products.

The construction works and the mining interests as well as modern capitalist agricultural concessions between them covered areas extending from Harar in the east to Gambella in the west and from Tigrai in the north to Kaffa and Arusi in the south.

Table 1: Agricultural and Mining Concessions that Thrived in the Country in the Period 1889 – 1935

PRODUCT	DURATION	NAME	NATIONALITY	LOCALITY
INDUSTRIAL CONCESSIONS				
Gold	1899-1900	Mine d'or de Wellega	Ilg - Swiss but Belgian Co.	Nejjo (Wellega)
Gold and Platinum	1899-1900s	.....	Prasso - Italian but French Co.	Birbir-Yubdo (Wollega)
AGRUCULTURAL CONCESSIONS				
Rubber	1905	Ethiopian Rainproof Monopoly		
	1907-1916	Imperial Ethiopian Rubber Company	Habib Ydlbi Syrian - but British Co.	Kaffa, Wellega, Baro
Rubber, coffee, cotton, sugarcane	1908	Habib Ydlbi	Syrian	Gembella
Fibre plantation	1900	Savoure-Guignony	French	Harar
Coffee plantation	1912-1927	Société Générale de Culture	Belgian	Arussi
		Société Générale de Plantation d'Etiopie		
Cotton	1920s	.....	French, Belgian	Harar
Fruits/Coffee	1927-1935	Ras Tafari	Ethiopian	Errer (Harar)
Fruits, eggs, cheese	1930s	Mullu Farm	Sanford (British)	Mullu
Fruits, pork	1920s	Modjo Farm	Ehm, German	Shoa
Ostrich, cattle, fruits	c. 1916	Adami Tullu	Goetz, German	Adami Tullu

Source: Aleme, 1984

Other smaller gold concessions were also there. Among them was the Yubdo concession given by Teferi to *Fitawrari* Deressa (of Wellega) and Dr. Martin Worqneh in the 1920s. This concession granted to the first Ethiopian capitalist entrepreneurs in this field was run by a British, J. Bartlett, and employed some three hundred workers as well as ten overseers (Ibid.).

When it comes to modern capitalist agricultural concessions, the one attributed to Habib Ydlbi, a Syrian Ottoman subject and British protégé, needs special mention here as it was among the major concessions granted early in the century by Emperor Menelik. This was the 1905 rubber concession and monopoly given to Habib Ydlbi who then represented various British capitalists, but was particularly the agent representative in Ethiopia of the British firm

the Kordofan Trading Co. (Sudan). In this capacity, he proposed to export the rubber production from Gambela via the Sobat (Baro) to Khartoum by means of river transport belonging to the Kordofan Trading Co. In April 1908, Ydlbi was given another very important concession by the Ethiopian government, the so-called "Baro Concession", for the exploitation of rubber, but also coffee, cotton, sugarcane, etc. for a period of 25 years. By this concession, a strip of land about 1.25 km broad on each side of the River Baro, i.e. a total of 2.5 km was granted to the concessionaire[13], as well as the permission to use the Baro for irrigation. But, Ydlbi having failed to raise the necessary capital for the Baro Syndicate, he managed to establish the company with a large Ethiopian share of 5,000 (half of the total 10,000) bought by Emperor Menelik (later taken over by *Lej* Eyassu), while another 20% of the shares were acquired by other chiefs, notably *Negadras* HaileGhiorghis. The plantation was managed by Ydlbi who was appointed by Lej Eyassu in 1912, as governor of the Anuak of the Baro region with his seat at the Ethiopian Gambella. In February 1913, it was said that the rubber plantation under the Baro syndicate amounted to 77,000 two-year old 'Ura' rubber trees (which bear in three years) and 10,000 two-year old 'Para' trees (which bear in five years). Besides, the syndicate possessed 200 acres of sugarcane plantation and even proposed to establish a sugar factory. The production of rubber for export lasted only until the First Word War when world prices were inflated. Since then, in addition to the declines in prices because of the great economic depression, the departure of Ydlbi from Ethiopia, following the deposition of Eyassu, deterred the export of rubber from Ethiopia until 1935 (Ibid.).

Among the other modern capitalist agricultural enterprises during the period, discussed in some details elsewhere in this paper, was Ras Teferi's farm at Errer extending over 80 km and administered by an Italian named Patorelli (Ibid.).

According to Aleme (1984), there was also a number of European owned plantations in southeastern part of Ethiopia, mainly in the Arussi and Harar provinces. Among these, the most conspicuous planters and farmers were Germans who formerly owned farms or plantations in German East Africa (i.e. Tanganyika) and were expelled from there following British take-over in the wake of the First World War. Many of them had returned to Africa to initiate German plantations in Ethiopia. Besides the famous Herr Ehm, who is also mentioned elsewhere in this paper, there was the farm at Adami Tullu (Arussi) run by another German,

[13] This included the Ethiopian Gambella, the result of the 1902 Anglo-Ethiopian border agreement.

Herman Gotze, who settled there just after the First World War. He devoted himself to cattle breeding and by 1935, he owned in his village (called Gotzeburg!) some three hundred heads of cattle, a herd of ostriches and a fruit farm. The German ex-chemist had also started coffee and cotton plantations using the river Bulbula for irrigation (Ibid.).

The coffee plantations of the "Societe Generale de Cuture" and "Societe Generale des Plantaions d'Abysyssinie" - two Belgian enterprises set up in 1912 in the former Arussi province – deserve also mention here. These plantations were founded in the vicinity of the Gugu Mountains, along the valley of the Bakaksa, Chiulul, Minne and Golocha tributaries of the rivers Shenon and Ejersa, feeders of the Wabi Shebelle River. After the First World War, the two companies merged and formed one plant with a capital of 30 million Francs and a plantation area of 1,464 ha, of which 400 was in the valley of Bakaksa, 180 in Chiulul, 590 in Minne, and 429 in Gololcha. On the average, 1,000 – 1,500 coffee trees were planted on each ha, and each plant was said to produce 500 - 600 rams of coffee every year (Ibid.).

When it comes to manufacturing, an item that used to be produced in Addis Ababa, first by the French Trouillet, then by Greeks and finally by *Fitawrari* Dressa, was soap. The factory under the latter's proprietorship, in particular, produced soap that competed well with cheaper imported ones. On the other hand, due to mainly the agency of the railway from Djibouti to Addis Ababa, there was a surge in imported European and American goods of all sorts, which affected and ultimately interred local Ethiopian artisanal production (pottery, weaving industry, ironwork, woodwork, leatherwork, etc.). In the years preceding the Second World War, the Ethiopian market is said to have been covered with imported Japanese goods, particularly textiles, sold at dumping prices. Textiles were gradually becoming a Japanese monopoly, as it happened in all the Asian and African colonies. Japan was said to have cogitated to use Ethiopia as a base for her trade expansion in Africa, had it not been to the opposition of the old colonial powers, viz. Britain, France, and Italy, who until then controlled the Ethiopian market directly or indirectly (Ibid.).

Bekure (1984: 198), writing on the parallel development that occurred regarding manufacturing, tells us that:

> Some food factories such as flourmills, bakeries, alcohol distilleries, as well as one printing press were established in Addis Ababa in the 1890s. However, it

> is the first decade of the 20th century that witnessed an accelerated industrial activity. A minting machine was installed in the Ghibi in 1903. Food factories consisting of some bakeries, two oil mills (1906 and 1912), and several flourmills were opened. The Tobacco Monopoly started in 1905. For the production of construction materials two saw mills - one at Menagesha (1904) and another at Holeta (1906), and two or three brick factories (1904 onwards) were established. Two bullet factories were started in 1907 and 1911 but were soon discontinued. A tannery was opened in 1908.

The aforementioned author further noted that between 1913 (the death of Menelik) and 1936 (the occupation of the country by Italy) only a few establishments came into being. Two of these were printing presses - Berhanina Selam (1921) and Artistic (1934). The rest were St. George Brewery (1927), Darmar Tannery and a knitting factory, both opened in 1928. Of these, only Berhanina Selam was government owned, while the rest were properties of individuals, and non-Ethiopians at that. The Italian achievement in the industrial sector was limited. Excluding the numerous workshops that might have been opened to facilitate the construction activities they were intensively undertaking in Ethiopia, only four factories dating back to their occupation are known to date. These were the Kality Food Factory, two factories producing construction materials and one printing press. The Fiber Factory of Ethiopia was initiated by them but completed only after the Italians were defeated and left the country. In Dire Dawa, cement factory and cotton factory may be cited. However, the latter was put into operation two years after Italy's defeat.

All in all, expatriates owned about 77% of the factories with the remaining 13% being under government control. However, a number of the factories classified as government owned had foreign interests in them. In addition, expatriates administered all the factories that were foreign owned and most of those owned by the government.

3.2 RISE OF THE BOURGEOISIE

The development traced in the preceding sub-sections is nothing but the development of the lumpen bourgeoisie, according Frank (1979), and the savage bourgeoisie[14], according to Fanon (1963). According to Aleme (1984), Emperor Menelik himself led the new class as the

[14] Fanon (1963: 122 - 123) characterizes the members of this class as, "… this lucrative role, the cheap jacks function, this meanness of outlook and this absence of all ambitions symbolizes the incapability of the national middle class to fulfill its historic role of bourgeoisie. Here the dynamic, pioneer aspect, the characteristics of the inventor and of the discoverer of new worlds, which are found in all national bourgeoisies, are lamentably absent."

principal capitalist. He wrote:

> On one side the development of capitalism under the pressure of imperialism was promoting proletarisation and pauperism of the Ethiopian peasantry, the same process was also responsible for the rise of an Ethiopian - albeit a dependent 'comprador' bourgeoisie, unusually a 'bureaucratic bourgeoisies'. The Emperor Menelik himself led the new class as the principal 'capitalist'. He was not contented with large feudal tribute, market dues, and customs duty he collected in the feudal empire. He has become a trader, a usurer, and an entrepreneur (Ibid: 118).

Indeed Ciccodicola, the Italian representative, called him, *'It solo evero commeriante in Etiopia*'. The Emperor had the monopoly, until early in the 20th century of the export of ivory and gold, and commissioned imperial caravans to the coast. As the demand of imperialist concessions increased suddenly at the turn of the century, not only did he farm out monopolies and concessions in return for a large compensation in cash, but also Menelik himself often became one of the biggest shareholders. Under him, the new class of Ethiopian bourgeoisie imitated the Sovereign (Ibid.).

Aleme (1884) continued that this new class did not depend like the old feudal class on noblement and would not reply to the common question of 'Who is your father?', nor does it depend on skill in arms, and particularly not on *gult* (fief), the power basis of the feudal class. The power basis of the new bourgeoisie, comprador and bureaucratic, was capital - capital in trade, in mining and agricultural concessions, and in banks. For this purpose and more, the Bank of Abyssinia and the Bank for the Development of Agriculture were established in March 1905 and May 1908, respectively. Leading among these were the *negadrases* – the regional heads of trade responsible for collecting market due and custom duty. And, naturally, the two leading and rival *negadrases* in this respect were the *Negadras* of Addis Ababa, HaileGhiorghis, and the *Negadras* of Harar - Dire Dawa, Behabte, and after him his son *Negadras* Yegezu Behebte (until 1909) and then *Negadras* Atsbe Behabte. But as with Menelik in Addis Ababa, in Harar *Ras* Mekonen (who was to be "ever richer than Menelik") took keen interest in capitalist transactions. After him, his son Teferi Mekonen who occupied the latter's post as governor of Harar in February 1910, became a major capitalist entrepreneur. This rising new class did not have scruples on ways of earning money, and very readily sold itself to foreign governments, concession hunters, and fraudulent adventurers (Ibid.).

Focusing on *Negadras* HaileGhiorghis of Addis Ababa, Aleme (1984) discusses at length the following story of financial aggrandizement and corruption. The said *Negadras* rising from a rather humble origin makes it to the richest and the most powerful of his class. Son of *Debtera* WoldeMikael, HaileGhiorghis started as a clerk of *Negadras* Agdew of Addis Ababa, won Menelik's favor, and replaced Agdew upon his death in 1900. With such a modest beginning, he rose to become a millionaire and a prime minister as *Ras* Bitweded of *Lej* Eyassu, by all sorts of unscrupulous methods. As a *negadras* of Addis Ababa, HaileGhiorghis was responsible for collecting market dues, import and export custom duties, arbitrating in trade disputes for which a judicial fee was paid, and in general, he acted in all matters concerning trade, internal and foreign affairs of the empire. That is how the *negadras* of Addis Ababa grew to wield decisive influence in granting monopolies and concessions to foreign entrepreneurs. And his influence was bought expensively, given as *gursha* (gift) or an outright *gubbo* (bribe). "HaileGhiorghis will squeeze the merchants on all possible occasions, putting every obstacle... unless his palms were plentifully oiled" (Aleme, 1984: 120). HaileGhiorghis was instrumental in the granting of the rubber concession to Ydlbi in 1905, a concession that was described as a joint swindle between the *Negadras* and Ydlbi, and for which the former was said to have been compensated lavishly. When Menelik established his first cabinet in October 1907, HaileGhiorghis was appointed Minister of Commerce and Minister of Foreign Affairs, which gave him tremendous power in the commercial, industrial and financial transactions going on in the country. His decisive influence was now sought for by all who wanted to establish a lucrative business in Ethiopia. In October 1909, he is said to have been paid 45,000 thalers by the group (notably Ochs), opposed to the newly established French railway company under Dr. Vitalien. HaileGhiorghis was soon growing up as the biggest money churner in the country. The money was made to make more money either by the purchase of shares in concessions and monopolies or by lending or by purchase of land in Addis Ababa and construction of houses for rent. In October 1909, Brice, the French representative, wrote:

> It is common knowledge here that he has invested in an Austrian bank, some time ago, about 1,250,000 francs; that last year he has collected in Wellega tribute of at least 6,000 *weqette* of gold (1 *weqette* = 28 grams) which was immediately sent to the coast; as head of elephant hunters, he has in store a quantity of ivory estimated at 300,000 francs; that he was the landlord to numerous buildings in Addis Ababa, that he had a share in most of the business run by Indian and Armenian traders, and that, to sum up, his fortune pegged at more than 3 million (Ibid.: 121).

Aleme (1984) has the following to add regarding the performance of other parvenus of those days. After HaileGhiorghis, there were other less important figures like *Negadras* Yegezu Behabte, son of *Negadras* Behabte of Harar, a rival of the negadras of Addis Ababa. *Negadras* Yegezu replaces him as Minister of Commerce, while *Negadras* Atsbe, Yegezu's brother becomes the *negadras* of Harar. *Negadras* Behabte, the father of Yegezu, was the director of the new Bank for the Development of Agriculture. With the fall of Taytu in 1910, *Negadras* HaileGhiorghis became once again the Minister of Commerce and Foreign Affairs, a post that he occupied until the fall of Eyassu in 1916. Traditional feudal chiefs like *Ras* Tessema, *Ras* WoldeGhiorghis, *Bejrond* (later *Ras*) Mulugeta, *Dejach* (later *Ras*) Abate, etc. were receiving invitation to share and undergo a class transformation. Foreign-educated Ethiopians, largely employed by foreign mining, plantation and banking concessions, the Railway Company and major construction and trading concessions, as well as by European legations, often developed as 'comprador' bourgeoisie and the nationalist circles considered them as sold to foreign influence. Some, among the foreign educated Ethiopians, had established themselves as independent capitalist entrepreneurs, as exemplified by Dr. Martin Worqneh who as we have seen, in a joint venture with *Fitawrari* Deressa, had established a gold mining concession at Yubdo.

As observed by Aleme (1984), the new class, as well as the old feudal class in transition, was now adopting a new way of life, more and more oriented towards the western way of life. It was fast developing a test for modern housing, modern living conditions and modern clothing, etc. Big two-storeyed houses were cropping up here and there in Addis Ababa equipped, quite often, with telephones. Between 1915 and 1932, the number of telephone subscribers in Addis Ababa grew from 100 to 200. In transportation, cars were replacing mules. With the first automobile imported in 1907, the number of cars grew to 1,000 in 1935. Types of food, clothing, etc. of the old and new ruling classes were getting more and more Europeanized. The aristocracy, the 'comprador' bourgeoisie, and petit-bourgeoisie were members of the Imperial Club enjoying distractions and sports organized by and for Europeans. Big hotels (in Addis Ababa - Hotel Imperial or Itegue Hotel, Hotel Gleyze, Hotel Majestic, etc. and in Dire Dawa - Hotel Continental, Hotel d'Italie, Hotel de Paris, Hotel Dervis, etc.) as well as big modern restaurants (St. James, Omonia, etc. in Addis Ababa) dancing halls (Perroquet and others in Addis Ababa) and cinemas (Addis Ababa had three halls by 1935) had opened their doors to those few who could afford the *dolce vita* or the good life. Commercialization and moneyterization of the profession of prostitutes had not

lagged behind. In Addis Ababa and Dire Dawa modern cash-oriented prostitutes had taken up corners, dubbed *maison-close* or closed houses.

Further down, Aleme (1984: 125) tells us that the development of the bourgeoisie did not lack critical observers; Aleqa Taye, for one, captured the tragicomic spectacle unfolding before his eyes in a poignant verse with a biblical smack (cf. Ecclesiasts chapter 10, number 16):

> *Woyeulish lehagre, hitsan ngussh;*
> *Maldew yemitetu, mekuan'ntochsh;*
> *Betgab beskar, eyaschenekush;*
> *Mechem mech mechem mech, medagna yellesh*.
>
> Woe, motherland, thy toddler king,
> For thy *mequanents*[*], besotting since dawn,
> For the gluttons and Dionysians, pelting thee with anguish,
> Merely, merely, merely thy future is sealed!

This trend continued essentially unchanged through the imperial period. When the military junta finally replaced the feudo-bourgeoisie regime in the mid 70s, however, a shakeup and reordering of the alliance in the bourgeoisie, which was until then a loose coalition of the comprador bourgeoisie and the bureaucratic bourgeoisie took place. With the statization of land, commercial and industrial establishments, especially, the helm of power devolved, more or less as a whole, into the hands of the bureaucratic bourgeoisie, this time with a socialist masquerade.

The demise of the *Dergue* in 1991 once again brought in its train another shuffling in the ranks of the bourgeoisie where, via, mostly, the privatization of formerly statized enterprises, the comprador bourgeoisie appears to have managed to stage a gradual comeback, apparently phoenix like, from its own ashes. Conversion from the bureaucratic to the comprador bourgeoisie is not something unheard of or anything surprising in this development. In particular, with regard to commodities and services bought and sold on the international market (except perhaps for firearms) as well as country trading partners, the list, except for minor changes here and there, remained the same as that of a century earlier.

[*] political elites

3.3 THE FACES OF UNDERDEVELOPMENT IN THE AWASH VALLEY

Seeing the trees for the forest, the blinkered vision of those who prefer to see the Awash Valley for one or two of its resources and disregard the rest, has been the myopia most afflicting old-fashioned development planners at home and abroad with incalculable damage to the environment and the well-being of the many local communities in the Valley. For instance, those suffering from the monomania of seeing the "agricultural development" of the valley only, tend to see the Awash Valley from the vantage point of the table infra (Table 2), i.e. Awash Valley as nothing but agricultural land for grab, thanks to its immense irrigation potential. The well-being of local communities, the livestock, the forest, the wildlife, the archeological sites, desertification, etc. that the valley is either imbued or threatened with, more often than not, eluded their cerebrations.

Table 2: Irrigation Development and Potential in the Awash Valley (in ha)

	Developed during 1970-71	**Projected by 1980**	**Estimated Irrigable Area**
Upper Valley	17,500	31,000	50,000
Middle Valley	3,000	32,000	80,000
Lower Valley	28,400	50,000	70,000
Total	48,900	113,000	200,000

Source: Bondestam, 1974

The same goes with the water resource of the Valley. They simply look at the table next page (Table 3) and astounded forget that the Awash and the other rivers crisscrossing the valley are the only lifeline for the communities, livestock, wildlife, riverine vegetation, etc. in the valley and that this resource is scarce, pollute-able and deplete-able.

Development or underdevelopment first visited the Awash Valley in the form of the construction of an interstate highway and a railway line connecting the country with the rest of the world through the Port of Djibouti on the Gulf of Aden in the years 1897-1917, i.e. in a span of twenty years. In its wake, the birth of major towns, such as DireDawa, Nazareth, Metahara and Awash, dotting the study area as well as along the railway, occurred (Aleme, 1982).

The first modern agricultural undertaking utilizing irrigation made its appearance in the valley in 1905 when a Frenchman by the name Saboret founded a fruit farm in Awar Melka

area (WWDSE, 2005)[15]. It was reputed for its excellent performance in the growing of banana and cotton in spite of an apparently indomitable malaria presence. This farm is still extant as a state farm, Awara Melka State Farm, after nationalization in the mid-seventies from its last private owner, an Italian national.

Table 3: Awash Basin Yearly Distribution of Runoff Water (in million m^3)

Designation	Source	Sink	Balance
UPPER VALLEY			
Awash source	1750	-	1750
Evaporation and consumption Koka	-	170	1580
Tributaries Upper Valley West	1400	-	2980
Evaporation and Consumption Wonji	-	380	2600
Tributaries Upper Valley East	1130	-	3730
Springs around Awash Station	10	-	3740
Evaporation and Consumption Upper Valley East	-	140	3600
MIDDLE VALLEY			
Tributaries Middle Valley	460	-	4060
Evaporation and Consumption M.V.	-	1225	3835
Springs Matabuki	70	-	3905
LOWER VALLEY			
Tributaries Lower Valley West	1915	-	5820
Evaporation and Consumption L.V. West	-	1325	4495
Evaporation and Consumption L.V. East	-	1440	3055
Tributaries at Lake Abbe	10	-	3065
Evaporation at Lake Abbe	-	2060	1005
Seepage at Lake Abbe	-	1005	0

Source: Bahru, 1984

Another modern agricultural undertaking (i.e. run on capitalist lines) that appeared on the scene was *Ras* Teferi's farm at Errer, extending over 80 km and administered by an Italian named Pastorelli. The farm had an aqueduct as well as a long canal of 2 meters wide and 2,400 m long for irrigation. In 1929, 200,000 orange and mandarin trees, 60,000 coffee trees and 100,000 grapes stood on the farm. Under the management of Angelo Pastorelli, malaria was finally brought to heal and the farm was joined by road with the railway and thus fruits as well as vegetables found their way every day to Djibouti and Addis Ababa (Aleme, 1982).

Coming closer to the capital, an European owned and run farm established between the wars was that of Herr Ehm, a German who settled in Modjo (about 70 km from Addis Ababa) where he took to cattle breeding and dairy farm as well as growing fruit (papayas,

[15] According to Aleme [1982], the owner's name was Savoure and the place Sidimalca.

pomegranates, oranges, and lemons), cotton, and coffee plantations with several European and hundreds of Ethiopian workers. By collecting milk from the surrounding Oromo population, Ehm manufactured dairy products such as butter, which he sold to the European residents of Addis Ababa. Finally, Ehm became famous for his pork products, which he tinned and sent to Addis Ababa in various forms (Ibid.).

The first major development on a similar line during the Italian occupation (1936 - 41) was a sugarcane plantation established by an Italian company, Agricoltura Industriale del Etiopia, the forerunner of the present Wonji Sugar Estate. The company started a sugarcane plantation over an area of some 1,600 ha. It boasted of a dike, 8 km long, built along the Awash, and a canal, 4 km long. Preparations were underway for a sugar mill, including the laying down of a rail line for wagon transport, when the Italians were suddenly ousted. The final transfer of this property to Dutch proprietorship occurred through a Greek, Lazarides, when he obtained 1,560 ha of land along the Awash River and started a plantation that at long last was acquired by Hendels-Vereeniging Amsterdam (HVA for short). The latter augmented the size of the farm by another 500 ha leased from the government as per an agreement entered with the Ethiopian government in 1951. Bahru (1984) attributes this takeover to a propitious government policy that promoted import-substitution industrialization. Be that as it may, the official inauguration of this first sugar growing estate and mill in the country took place on 20 March 1954 (Aleme, 1984). Nowadays, this establishment is famous as the cash cow of the Federal Government by virtue of being prolific in terms of production and profit during the last decade.

By the end of the World War II, a major developmental venture that transpired in the country was the construction of Koka Dam on the Awash River by Norwegian engineers. The Koka Dam has been in use since 1961 with a net available capacity of 1,660 km^2 and a concrete dam that is 42 m high. This was the second hydroelectric power generator following the installation of Aba Samuel in Akaki in 1911-1912. The Italian government financed it as one of the two war reparation awards Ethiopia received from the Paris Peace Conference of 1946 (the other one being the only bridge on the Blue Nile connecting the former Shoa and Gojjam). The maximum rate of outflow through its turbines is 360 m^3s^{-1}, and the normal annual outflow is about 120,000 m^3. Losses by evaporation are about 31,500 m^3yr^{-1} and by percolation about 38,000 m^3yr^{-1} (Kibru, 1999). According to Bondestam (1974), the construction of the dam entailed the eviction of a number of Itu villages (according to Bahru

[1984], Jille not Itu), one of a number of Oromo groups that have repeatedly been driven away from their land with the growth of large-scale sugar plantations in the Upper Awash Valley. Another, no less adverse impact of the construction of this big dam is the change in the flow and level of the river water such that substantial grazing lands have stopped being over flooded seasonally, resulting in the alteration of the vegetation, particularly in the Upper Valley, in such a way that they are no more ideal for grazing (Ibid.).

The construction of the dam, which, among others, facilitated the regulation of flow of the river, further spurred up the establishment of additional agricultural and/or agro-industrial interests in the rest of the valley as well, a process which has continued without the slightest abatement to this date. This was facilitated by a series of national development plans[16] enunciated starting in the late fifties of the last century, in particular, by the Third Five Year Development Plan and by the establishment of the Awash Valley Authority[17], which was created in 1962 as an autonomous public body (Ibid.).

The Metahara Sugar Factory (MSF) came into existence as per the agreement entered between the Imperial Ethiopian Government and HVA in 1967. The factory was actually built on a dry season grazing land of the Kereyu pastoralists. The contract instrument stipulated that 10,000 ha of such land be put aside for the use of the company in spite of the dogged protest of the Kereyu**.** "At the inauguration of the Metahara Sugar Estate, Emperor HaileSellasie I was present, and the Kereyu took the opportunity to appeal to the Emperor on the loss of their land without compensation. Thus the Emperor granted 200 *gasha* (8,000 ha) from NuraEra Region as compensation and he also ordered the Itu and the Issa to return to their former area." This is how Regassa (1993: 36-37) captured the height scaled by the Kereyu in quest for justice and the actual justice they were meted with by the celestial authority of the day, the Sovereign, and a 'justice' that never materialized then or since.

[16] It is to be recalled that the First Five Year Plan, from 1957 to1961, gave priority to infrastructures, while the Second Five Year Plan, from 1962 to 1967, allotted pride of place to directly productive undertakings, particularly manufacturing industry, mining, electricity, etc. and the Third Five Year Plan, 1968-1973, introduced a substantial shift of emphasis from the preceding plans by placing high priority on agriculture. The last, i.e. the Fourth Five Year Plan perished with the demise of its major proponent, the Imperial Ethiopian Government, toppled in a popular coup d'etat in 1974.

[17] This body was established with the mandates to: (i) conduct surveys of the local resources (ii) to prepare plans and programs for their utilization and development (iii) coordinate the activities of the various ministries and authorities concerned (iv) authorize third parties to construct and manage the necessary infrastructure (v) promote and organize agricultural and industrial enterprises, and (vi) administer and control the waters of the Awash River and its affluent.

Immediately after, the sugar plantation was followed by the installation of a sugar mill. The mill went into operation on 9 November 1969 with a crushing capacity of 17,000 quintals of sugarcane, producing 1,700 quintals of sugar per day. This brought the number of sugar estates/factories in the country to three, namely, Wonji, Wonji-Shoa and Metahara, established in 1954, 1960 and 1968, respectively. In the establishment of MSF, the Kereyu were once again cheated as the promise of compensation melted into thin air and according to Regassa (1993: 37), "the Kereyu left the plain and inhabited the surrounding dry hills from where they observed the flourishing sugar plantation in the Metahara plain which once used to sustain their cattle for years". Currently, MSF is the cash-churner of the Federal Government as demonstrated by the table below (Table 4).

Table 4: Growth of Production and Profit in the Metahara Sugar Factory

Year	Production (Tons)	Profit (in birr)	Growth (in %)
1998/99	111,500	100,000,000	-
1999/00	112,000	160,000,000	60
2000/01	112,500	209,000,000	30
2001/02	112,500	90,000,000	-57
2002/03	113,000	103,000,000	14
2003/04	113,500	N.A.	-

Source: Metahara Sugar Factory, 2005

Virtually, the Kereyu benefited little or none from the establishment of the factory. Only a handful of Kereyu are employed in the factory mainly as guards. In fact, the factory denigrates the Kereyu as unfortunate stumbling blocks for its virtually insatiable expansion. It can as well be said that virtually no schools, no health services, no amenities of significance have been sponsored by the sugar estate to the benefit of the Kereyu. The only item the factory has ever willed the Kereyu to use, of course, grudgingly, is cane top. Other by-products, like baggasse and molasses, which the Kereyu would have happily and grateful used, especially in scarce years, they were denied; the latter, in particular, is dumped in the Awash River, thus either afflicting or threatening the river with eutrophication. The promised social security for Kereyu elders and employment for the rest failed to transpire in spite of the Kereyu's loss of their dry season grazing land and access to the waters of the Awash River at an incalculable cost to their health, prosperity and well-being and the animals that nurture them[18].

[18] The four pastoralist kebeles (Gelcha Ajitoure, Koba Asmelo, Benti Magassa and Aca Adu) are forced to use the Gelcha Aji Toure pond, which is completely spoiled by the sugar factory wastewater and waste coming from

The establishment of the Awash National Park followed next by dint of an imperial order, Negarit Gazetta No. 54 of 1969. The Park, some 752 km^2 in area[19], was substantially a grazing land in the possession of the Kereyu. The Kereyu were neither consulted nor compensated then or since and all that they were told was to decamp the area. They, of course, protested and the powers that be tried to push them out of the would-be park forcefully but force did not work and the Imperial Government finally chose to dupe them, a measure in which it actually 'succeeded'. In relation to this, the last Emperor gave an order for his authorities to buy land from the NuraEra area (about 60 km^2) with Birr 60,000 as compensation, according to the promise he made to Kereyu elders, which, unfortunately, never materialized. No type of benefit-sharing arrangement or community participation mechanisms have ever been instituted to allay the fears and to ameliorate the losses sustained by the communities that suffered from the loss of such a prized grazing land as the Awash National Park. This has perpetrated a situation where neither the inhabitants of the park, nor the wildlife, nor the communities with their livestock are beneficiaries of the park for quite the same reasons (Assefa, 2000; Ayalew, 2001; Belete, 2003). According to Care-Ethiopia (2004: 6), ever since the park's establishment, "the indigenous communities in the area have long contested the status of the park, and today members of the pastoral community occupy around two-third of the park, where different types of land use are in operation, ranging from permanent settlement to farming and livestock grazing".

Table 5: Cultivated Area and Crop Production in the Awash Valley (1970)

Item	Cultivated Area (ha)	Value of Production (1,000 Birr)
Cotton	29,000 (60%)	25,500 (27%)
Sugar	10,800 (22%)	58,500 (63%)
Cereals	6,000 (12%)	c. 4,000 (5%)
Fruit and vegetables	3,100 (6%)	c. 4,000 (5%)
Total	48,900 (100%)	c. 92,000 (100%)

Source: Bondestam, 1974

The table above (Table 5) has in display one of the land uses that was very salient in the valley in the early 70s, namely, capitalist agriculture. Much of the irrigated land was devoted to raise cash crop for export.

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the plantation residence. The water of the pond is stagnant and has a pungent foul smell. The Kereyu pastoralists once owners of the area cannot access and use the waters of the Awash River, which is only three or 4 km far from this deadly water (Ayalew, 2001).

[19] According to Ali (1997), the area of ANP is 830 km^2.

In the Lower Awash Valley, in addition to the 'traditional' irrigated farmlands owned and run by the Awsa Sultanate, the Tendaho Plantations Share Company came into existence as the largest farm in 1961, which by 1971 sprawled over 8,000 ha of former grazing land. It was administered and managed by the British firm, Michell Cotts, with 51 percent of the share capital, followed by 38 percent of the Imperial Government, 7 percent of Sultan Ali Mira, while various local and foreign private interests shared the balance, 4 percent. The company was engaged in such a lucrative business that by 1971 its commercial profits – after taxes, rents, interests and re-investments - amounted to over 20 percent of the value of production, which was at least Birr 2 million (Ibid.).

Table 6: Area, Production, and Ownership of the Largest Plantations, 1970

	Cultivated land (ha)	**Ownership**	**Percentage of foreign ownership**
Awsa	14,000	Sultan Ali Mira	-
TPSC	8,000	British	51
HVA Wonji & Shoa	6,000	Dutch	80
HVA Metahara	4,000	Dutch	51
Abadir	2,800	Israeli	n.a.
NuraEra	2,000	Italian	n.a.
Total	**36,040**	-	-

Source: Bondestam, 1974

By the time the Imperial Government met its demise, the grazing land alienated from the pastoralist communities and converted to commercial farms amounted to over 65,000 ha. The table above (Table 6), for example, shows the share between the six major agricultural interests that were thriving in the valley by 1970. What makes this state of affairs all the more harsh and grotesque is the fact that the land lost to the pastoralists was invariably the low lying flatlands that Awash inundated easily, making them highly productive and offering the best carrying capacity. The resultant damage inflicted against these communities, which are not nomads, but most of the year lived in close proximity to the river, in particular, during the dry season lasting some 9 months of the year, i.e. from September to May, tended to be irreparable. They have to face drastic ecological changes in their respective environments, suffering from severe overgrazing, erosion, secularly dwindling herds and subsequent pestilence, famine and death. For instance, hundred of thousands of the Afar perished in the famine that visited the valley in the mid 1970s (Ibid.).

Nothing, other than rhetoric, changed in the fortunes of the pastoralist communities inhabiting the Awash Valley as a result of subsequent changes in government. During the military regime, eviction in favor of state farms was further whipped up. The Amibara and MelkaSedi pastures, for example, were lost to the Afar pastoralists while the older farms elsewhere kept on grabbing more land and expanding (Assefa, 2000; Regassa, 1993).

With the regionalization/decentralization that came to be enthroned after the downfall of the Dergue, nothing substantial changed in the relationship between the pastoralist communities and the state, be it at federal or regional levels. More land is being wrested away from the pastoralists to the benefit of large mechanized farms although there are provisions in the Constitution that make such turn of events impossible (cf. Article 41/5). Had these provisions been truly implemented, the Kesem-Kebena Dam and Irrigation Project[20] right now unfolding in the Kesem-Kebena plains, threatening the livelihood of between 17,000 to 60,000 Afar souls, and some 30,000 ha of pastoralist land of which a substantial portion is pristine, would have not been there (WWD&SE, 2005). Likewise, the slated expansion by the Metahara Sugar Factory, involving an additional 10,000 ha of pastureland to be coaxed or wrested from the possession of an already hemmed and virtually strangled Kereyu would have been unthinkable (The Ethiopian Herald, 13 October, 2004).

3.4 SUMMARY

Traditionally, the Ethiopian environment, in particular, the pristine forestlands along with the wildlife that they served as a sanctuary or habitat, was protected from human intrusion, use and abuse, especially in the lowlands, by the shielding effect of such vector-transmitted diseases as malaria and trypanosomiasis (Kloos, 1982). With the onset and gradual expansion of modern medicine, however, this, hitherto impenetrable shield, started to crumble and with it, of course, the environment, i.e. land, forest and wildlife, among others.

Development projects, such as the ones unfolding in the Awash Valley, took advantage of this turn of events to the detriment of the pastoral communities that were thriving there from time immemorial and the healthy but delicate balance they have managed to strike with the

[20] Another controversial but a major project presently unfolding in the Awash Valley is the "Tendaho Dam and Sugar Project" which is slated to impound the Awash River in order to irrigate some 60 hectares of pastoralist grazing land (MoWR, 2005).

environment. Consequently, the development effort that visited the Awash Valley had the following prominent features:

- It regarded the pastoralist communities as non-entities and never deigned to consult them or elicit their consent, leave alone benefit them in anyways;
- The pastoralist communities were reduced, most of the times, to a state of powerlessness, hopelessness, helplessness and haplessness; whenever they deigned to react, their reaction tended to be unstructured and, therefore, futile if at all it did not boomerang;
- The change in regimes across the period starting from the Second World War showed no substantial change in the fortunes of the pastoralist communities, especially with regard to the alienation of their pastureland and the consequent deterioration in their well being;
- The two previous regimes lacked explicit policy to this effect while the present suffered from the want of implementation of 'good policies' that exist only on paper;
- The environmental impact of the development process went either totally unappreciated or lacked genuine commitment;
- Feasibility studies preceding the onset of projects, whenever they existed, tended to be lopsided in favor of technical considerations only, thus ignoring or eclipsing social ones. Consequently, the projects became unpopular and/or unacceptable on the part of the people they immediately affect, at times inciting their undisguised animosity in one or another form;
- The land use pattern in the study area, which before the inception of 'development' was limited to either pastoralism or agro-pastoralism, broadened to include built-up areas, plantation farms and conservation areas with at times cut-throat competition either brewing or simmering between them;
- The ever-increasing scarcity in land resources ensuing from the so-called development enterprises unfolding in the study area fanned and exacerbated competition among communities thus lending a new lease on life as well as virulence to traditional hostilities or giving birth to new ones;
- Food security, which the various governments drummed ad infinitum as their sole objective of development, is, in actual fact, histrionics in the service of its exacerbation when the phrase is rightly understood as producing one's own food consumption needs at home, for an agricultural economy, and not necessarily attaining the purchasing power for food (Action Aid, 1999), and;

- Modern agriculture as we have it going in the Awash Valley for nearly half a century now is outward oriented in that the markets for its products are mainly overseas (e.g. cotton) or whenever it is import substitution oriented (e.g. sugar), all modern inputs are imports to the degree that the domestic economy benefited little or none at all. Bondestam (1974: 427), commenting on the latter, wrote that "The capital-intensive investments have only benefited the industrialists in Europe (who exported the machinery and technology) and have contributed to the outflow of capital - at the expense of increased employment opportunities in Ethiopia". Had the accounting included the environmental damage inflicted, the result would have been much more grim and staggering. Please note the unbroken continuity in this process in spite of the apparently unbridgeable political and ideological differences in the three regimes that presided over this development in the period under consideration.

So far, we considered the development thoughts and measures that transpired in the country. The chapter afoot grapples with the relationship between the development efforts exerted and their environmental consequences with focus on the Upper Awash Valley.

CHAPTER 4

LAND ALIENATION, ENTITLEMENT FAILURE AND ENVIRONMENTAL CONSEQUENCES OF DEVELOPMENT AND ENVIRONMENATAL ASSESSMENT

4.1 LAND ALIENATION, ENTITLEMENT FAILURE AND ENVIRONMENTAL CONSEQUENCES OF DEVELOPMENT

4.1.1 The Kereyu in the Context of Alleged Development

According to Kereyu elders, the Kereyu being genealogically related directly to the Barentu Oromo, are divided into two main sub-groups: Dulcha and Basso (Kloos, 1982). The former occupy 'Kereyuland' to the north of Hara River and the latter to the south of it. This river is very close to Metahara town and it has now submerged under Lake Baseqa, which got its name, according to oral sources, because of the diversion of the Awash River for irrigation purposes (Belete, 2004).

Some scholars, such as Jacobs and Schroeder (1993), take the migration of the Itu to Kereyuland as far back as early the 1950s. According to these sources, the Itu crossed the Awash River, after receiving the consent of the Kereyu, primarily, in search of a place where they did not have to fear being attacked by the Issa. Nowadays, the Itu have largely given up their old ways of life, i.e. pastoralism for agropastoralism after they occupied the fertile eastern part adjoining the Metahara Sugar Plantation and the Awash River Plains. Due to the expansion of both the Metahara Sugar Plantation and Itu's agricultural land, the animal population of the Kereyu happened to be left without grazing land, which precipitated the situation in which the Itu have to grab additional land to graze their cattle from the Kereyu grazing land (Belete, Ibid.). Consequently, according to a report of the Fentale Woreda Agriculture and Rural Development Office (2004), the Kereyu pastoralists nowadays go on *Godantu* (seasonal moving of animals for grazing) before the actual time of *Godantu* as practiced hitherto. This is because the agro-pastoralist societies (especially the Itu) came to share the Kereyu grazing land, which was consequently reduced to such an extent that the grazing land is no more adequate to support their herds.

Apart from these pastoralist groups, people engaged in other vocation other than pastoralism inhabit Fentale Woreda. These people came to the Woreda in search of employment, trade and land for agriculture some of which affected the environment negatively, and a good

example is the felling of trees to make charcoal.

4.1.1.1 Economic conditions of the Kereyu

Prior to the change that managed to engulf drastically their ecosystems, altering their livelihood significantly, the Kereyu pastoralists were considered more sedentary than nomadic, as "they seldom moved more than fifty km away from their watering places" (Haberson, 1978: 478-479) between their permanent neighborhoods (*onnetesso*) and migration area (*beke dida*) (Ayalew, 2001). In the past, they used to be seasonally semi-nomadic, moving all their possessions to two distinctly separate seasonal residence sites. For this purpose, actually, the Kereyu made use of three ecologically differentiated zones, namely, *Ona Ganna* (wet season grazing zone from the beginning of June to mid September), *Ona Bona* (moderately dry season grazing land from mid September to December) and *Ona Birra* (dry season grazing land from January to April) (Care-Ethiopia, 2004). The maximum distance possible in any one direction was no greater than 40 km, a distance which any healthy herd could cross in just one or two weeks (Jacobs and Schroeder, 1993; Ayalew, 2001). But today this has changed mainly because they had to move up to Shashmane, Ziway and Bishooftuu towns with their herd in search of pasture and water.

In the economic life of this pastoralist society, camels and cows are rated very high in their economic values. Small stocks, such as goats and sheep, are also very important. They are used to maintain large herds, especially cows and camels. Goats are sold to cover miscellaneous family expenses such as the purchase of food crops, clothes, drugs, and for the payment of government taxes, small debts, etc. which otherwise would have required the sale of either cattle or camel (Assefa, 2000).

In all pastoral societies, the possession of animal capital constitutes the central element of the social economic and religious life of each individual. Pastoralists always try to diversify their livestock to meet their needs and to adapt to the environment (Niamir, 1991). Furthermore, livestock are invested with multiple values, such as insurance, social links, bride price, inheritance, and ritual objects (NOPA, 1992). In Kereyu society, the number of livestock one owns spells a member's wealth and prestige. Besides, Niamir (1991: 2) contends, “large animals (cattle and camels) are raised not so much for their meat as for their milk, but they are also the 'bank account' and 'security deposit' to the pastoralists”.

Statistics from the Fentale Woreda Agriculture and Rural Development Office (See Annex V for details regarding human, livestock and poultry population of Fentale Woreda) shows that there are more cattle than camels in the Kereyuland. The percentage of cattle, goat, sheep, camel, donkey, horse and mule in 2004 was 25.6, 26.6, 23.5, 21.9, 2.0, 0.42 and 0.0, respectively, while six years earlier, it was 32.9, 25.2, 20.6, 19.4, 1.8, 0.002 and 0.001, respectively. Camels are becoming economically more important among the Kereyu nowadays and the overall trend is in favor of browsers (goats and camels) than grazers, i.e. the rest of the livestock put together. This change is to be explained by the drastic change in range condition and vegetation cover occurring due to the disruption in the traditional range management system perpetrated by the various development projects apace in the area.

According to Assefa (2000), this does not at all mean that it gives a high social status to someone who has a large herd of camels than another person who has a lesser herd of cattle. It is simply if someone has more herds of camels than cattle, the village is called *'qe'e warra gaalaa*' (literally, the village of camel herders). According to the Kereyu elders, camels were adopted much recently, not more than five generations back. Baxter (1990), to underscore the importance of cattle commented, "Cattle have genealogies as well as pedigrees".

The staple food of the Kereyu is predominantly milk supported with maize and millet. The latter two are obtained from the market. Recently, in addition to herding livestock, some members of the Kereyu have started cultivating vegetables and crops like maize on small-scale irrigated fields on mostly niches and interstices on the banks of the Awash River apparently taking their lesson from the Itu.

Table 7: Temporal Comparison of Herd Size by Wealth Status

Wealth Status	Type of Livestock					
	Past			Current		
	Cattle	Camel	Small ruminants	Cattle	Camel	Small ruminants
Rich	100	15	200	30 - 40	40 - 50	70 – 80
Poor	15	-	15 - 20	5	2 - 3	5

Source: Assefa, 2000

N.B
(a) The number of cattle and camel refers to milk cows and camels or *gur'o* locally and calves, bullocks, heifers and oxen are not included as the Kereyu count only milked cows and other animals;

(b) The dividing line between past and current is the introduction of mechanized farms in the area.

According to Assefa (2000), the herd size has substantially declined and the breeding rate of livestock has shown significant decline. He gives us the above figures (Table 7) to drive his message home. Moreover, "elders report that the number of cattle today is only half of what it once was" (Jacobs and Schroeder, 1993: 241).

When it comes to the Itu, mixed agriculture characterizes their economy. They practice agriculture, especially horticulture on the banks of the Awash River, using the wastewater issuing from the Metahara Sugar Factory. They grow onions, tomatoes, potatoes, cabbage, etc. They also keep livestock, including camels. On the other hand, the Afar, living adjacent to the Awash National Park, are pure pastoralists. Their three kebeles, i.e. Dudub, Deho and Sabure, own a total livestock population of 17,000 with an economy totally dependent on these animals.

4.1.1.2 Problems encountered by pastoralist groups in the vicinity of the Awash National Park

Because of the continuous expansion of the neighboring communities, such as the Afar, Argoba, Itu and the Arsi, Kereyuland has become smaller today (Assefa, 2002). The plantation agriculture rife in the area has also exacerbated this situation[21].

According to Ayalew (2001), in the past, 'Kereyuland' was between Kessem in the North and Awash in the south, Daggaga Hawas in the east and Hora Sama in the west, with an area estimated at 150,113 ha. This has now contracted to an area amounting to 60,013 ha sandwiched between Awash in the south (excluding all the floodplains of the Awash, which have been taken up by the state enterprises active there) and the Fentale Mountain on the north, Tulu Dimtu in the west and Awash National Park (with the exclusion of the park) in the east. Although the Kereyu claim their land to have extended to Awash in the south, in effect, they do not have access to all the river-watered areas of the Awash River Bank anymore. This dwindling of Kereyu pastureland seems to be going unabated as the following news item in the Government owned newspaper, the Ethiopian Herald of 13 Oct. 2004, stated:

[21] "The Kereyu, who have been the indigenous inhabitants of the Metahara Plain and Mount Fentale area are Oromo-speaking transhumant pastoralists. Apart from livestock herding, the Kereyu who inhabit certain home neighborhoods, have also started practicing both rain-fed and irrigated agriculture. This is a recent but growing tendency, which emerged in the early 1980s and has continued to develop since. It began mainly as a response to the expropriation of their pastoral land and the subsequent weakening of their pastoral means of livelihood" (Ayalew, 2001: 83).

> The Metahara Sugar Factory said it is undertaking a study that would enable it to double its production capacity by carrying out expansion works on close to 10.000 ha of land. ...The factory has already signed a memorandum of understanding with representatives of the local community and other associations to launch sugarcane cultivation.

Moreover, the ever-expanding old Metahara Town (built in 1897 with the construction of the Djibouti-Addis railways) and the new Addis Ketema Town, which came into existence with the construction of the Metahara Sugar Factory in 1967, have further consumed an additional grazing land of the Kereyu. The expansion of the two towns forcefully displaced the Kereyu and forced them to move more and more to the confines of the foothills of the Fentale Mountain. One may also question the benefits enjoyed from or the harms inflicted against the Kereyu from the stretch of tarmac and railway passing through 'Kereyuland' besides the expanse of space eaten up from the otherwise precious pastureland in addition to the frequent traffic accident or damage or loss occasioned against the local inhabitants, livestock or even wildlife.

According to Assefa (2000), another source of threat to the Kereyu is the Afar and Argoba encroachment. Both communities very often raid Kereyu livestock on the pretext that the latter intruded into their territory. According to an informant, i.e. Dafa Gudina of Care-Awash, potential conflicts come to pass between the Kereyu and the Afar on pastureland and watering sites every time. The Awash National Park was also historically 'Kereyuland' according to a Kereyu informant. The Argoba and the Afar in particular are the most effective in steadily grabbing land, which the Kereyu used to move upon. Both have been responsible for the steady loss of grazing lands since the Kereyu's response to these attacks has been to slowly withdraw from these areas, both seasonally and permanently (Jacobs and Schroeder, 1993).

This problem was further exacerbated by the settlement of the Itu on the already overstocked lands of the Kereyu. According to Kloos (1982: 32-33), "The displaced Itu settled on already overstocked lands of the Kereyu, who had lost all their floodplain pastures to the Metahara and Abadir schemes, and their best dry season areas to the 80,000 ha Awash National Park."

The Kereyu pastureland, which was once, a potential grazing land, was taken up especially by the Afar and the Itu. The open grassland on the north side of the Fentale Mountain, a place

called Dekaade, which had seen many conflicts characterized by bloodbath between the two pastoralist groups now is in the hands of the Afar. Therefore, this influence of neighboring communities pushed the Kereyu pastoralists, the Afar and the Itu to bring their animals to the only open grassland, namely the IllalaSala Park (which is a small area of the Awash Park).

In all pastoral societies, the socio-economic causes of the current crises, according to NOPA (1992), are almost similar and their interconnecting links are strong. These are demographic growth of the pastoral population, agricultural impasse, incorporation of pastoral economies in the market economy, general insecurity arising from civil wars and conflicts; faulty national and international policies and factors arising from climate and ecology. These factors, mostly acting in tandem, have affected pastoral societies, the Kereyu inclusive, in multiple ways, among others, leading to: rapid sedenterization and urbanization of large segments of the population; breakdown of traditional social structures; transformation of gender relations; the degradation of natural resources and deterioration in their condition of use; and growing poverty and vulnerability to ecological and economic stresses. In spite of these complex and changing forces to which they are subjected to, pastoral societies show resistance, resilience and adaptation in their search for survival, however the latter may be tenuous and haphazard.

4.1.2 Circumstances of Land Alienation in the Upper Awash Valley

The source of all evils for the Kereyu can be pinned down to the interminable land alienation forced on them[22]. The land loss against the Kereyu assumed various forms both anthropogenic and (apparently) geogenic, i.e. in the form of agroindustrial projects, communal incursions, conservation projects, built-up areas and a number of ostensible environmental changes (lake expansion, bush encroachment, devegetation, erosion, etc.).

Perhaps, here, the objection might be raised that the measures that perpetrated the land grabs are justifiable from the national point of view. But this is not acceptable, firstly, as the latter has never been proved to any credible degree (in fact, studies so far conducted prove the otherwise, witness Bondestam's study in the case of developments in the Lower Awash Valley). Consequently, no national interest of development of whatever scale can ever

[22] Care-Ethiopia (2004: 11) after bringing to mind that "One of the primary causes of livelihood insecurity of the local communities is loss of prime grazing land", urges that "benefit sharing mechanisms that support the livelihood of pastoral communities" ... "be established not only with the park but other stakeholders as well".

override community rights. In the following lines the history of some of the significant land grabs are sketched:

4.1.2.1 The establishment of the Awash National Park

The Awash National Park was incorporated in 1969 as a strict conservation area, which is of limits to all types of human activity, be it settlement, grazing, hunting, gathering or farming. The land was in the hands of the Kereyu and they were never consulted when the transfer occurred. All that they were told was to get lost. For the Kereyu, this was a net loss of some 752 km^2 of prized grazing land.

Care-Ethiopia (2000) states, according to UNESCO, the justification for the Awash National Park rested on its extra ordinary interesting features in terms of both physiography and geology. It is also regarded as one of the high potential tourist areas in the central Rift Valley of Ethiopia given its close proximity to Addis Ababa and road access to tourists. It is also widely held that the diverse culture of the people, abundance of wildlife and plant varieties, scenic value and the availability of arecheological sites close by are additional assets to the park. However, the establishment of the park never allotted due consideration to the benefits of the local pastoralist communities, neither at its establishment nor at any time subsequently, such that, like all the other development projects in the study area, it is bereft of benefit sharing mechanisms. Consequently, it is not people-centered, a situation which does not only put it into conflict with the said communities, but also jeopardizes the park's and its wards, i.e. the wildlife's welfare such that some two-third of the park is currently either occupied or has been put to use in one way or another by these communities.

The coming of the Awash Park, along with agricultural developments in the area, perpetrated a situation in which the Kereyu were denied access to the Awash River as well. According to Jacob and Schroeder (1993: 243), "The result had been that the Kereyu are worse of today socially, economically, politically and culturally, than they were 40 years ago".

4.1.2.2 The birth of Metahara Sugar Factory

The factory was actually built on a dry season grazing land of the Kereyu. In the same way as the establishment of the Awash National Park, the Kereyu were told to vacate the land now occupied by the sugar estate. They fiercely opposed and resisted the establishment of the sugar estate until the last Monarch promised to give the Kereyu other land in replacement.

In addition to the above, the elders and youth were promised social security in old age and employment opportunity while able-bodied, respectively. Government officials also proposed that the Itu and Issa who had moved into the Kereyu territory leave the area, the place the Kereyu call Degaga Hawas, now in the Awash National Park, in order to make the latter return to their previous places in the east (Assefa, 2000). Mostly, the Kereyu opposed the offer and if they are not given the land promised as compensation by the Emperor, swore to fight to death than leave the area.

But, finally, an agreement was arrived at between the Kereyu representatives and the Government to deliver what was promised. Unfortunately, according to Assefa (2000), during the agreement what the elders were told verbally failed to materialize in the document agreed upon, which the representatives of the Kereyu were made to sign. The Kereyu were simply duped and as the result of which "the Kereyu left the plain and inhabited the surrounding dry hills from where they observed the flourishing sugar plantation in the Metahara plain which used to sustain their cattle for years" (Regassa, 1993: 37). Besides, "Irrigation of several old dry season foraging sites for sugar production has increased the salinity of the soils over the years to such a level that it is now affecting the quality of groundwater in many locales" (Jacobs and Schroeder 1993: 71).

In subsequent years, the sugar plantation continued to expand. Three major phases of expansions have taken place. The first was in 1973 giving the factory a crushing capacity of 24,500 quintals of sugarcane or 2,450 quintals of sugar per day. The second transpired in 1976 raising the production of sugar to 3,000 quintals or a crushing power of 30,000 quintals. The last one occurred in 1980 taking the crushing capacity to 50,000 quintals of sugarcane or 5,000 quintals of sugar. Yet, another expansion is presently in the pipeline amounting to some 10,000 ha of additional land (The Ethiopian Herald of 13 October 2004) to be wrested once again from the hapless Kereyu.

In the 2000/1 fiscal year, it was reported that the factory earned a profit of Birr 209,000,000. Virtually, the Kereyu benefited little or none from this achievement of the factory, viz. no benefit sharing arrangement either in kind or in monetary terms whatever. Except for a handful of Kereyu employed in the factory (and even these mostly as guards) and the offer of free cane top in times of drought as animal feed for which the Kereyu are very grateful, the antinomy existing between these two entities is scarcely disguised. Of course, the factory

could have done more in this regard costing it little or no effort. The molasses, for instance, which the factory mostly disposes of in the Awash River, causing all sorts of ecological harm and the hue and cry raised by interests thriving downstream (the Awash National Park, for example), this could have been used to build synergy and, therefore, an amicable relationship with the Kereyu had this been made to be used as feed for their livestock perhaps and possibly expediting their voluntary sedentrization through stall feeding. Otherwise, the promised social security for Kereyu elders and employment for the rest failed to transpire in spite of the Kereyu's loss of their dry season grazing land and access to their lifeline, the Awash River, at an incalculable cost to the health, prosperity and well-being of the Kereyu together with the animals that nurture them and keep them going as Kereyu pastoralists.

4.1.2.3 Expansion of Lake Beseqa

This lake now borders Metahara Town to the north. It is some 180 km by road from Addis. The considerable rise in the level of the lake water in recent years had previously made it necessary to raise the road and the railway line repeatedly. The continuing rise of the lake level is again threatening the important lines of communication to the coastal ports and the encroachment it is relentlessly posing to the pastureland is another serious and significant problem.

The present Lake Beseqa occupies the center of huge Pleistocene lake basin, which extends for a considerable distance to the northeast. The basis of an older flow of Fentale is buried beneath the lake sediments, but later flows are seen to lie upon the lacusterine sediments, which here are predominantly tuffaceous and pumiceous (Halcrow, 1978).

It appears that at some stage, River Awash flowed through Lake Beseqa and an old river course can be seen leading towards the lake through Abadir Farm and leaving the lake between DebreSelam and Metahara Village. It is likely that the Awash assumed its present course when the original river channel was blocked by tectonic activity. Lava from the latest, 1820, eruption of Fentale has reached the lake and now forms part of the northern shore. Besides, it is interesting to note that aerial photographs taken in the two years 1957 and 1964 show that the lake area was the same, namely, 3 km^2. This shows that before the establishment of Abadir Farm (in 1966), the lake was in equilibrium, with evaporation balancing inflow from rainfall and the warm springs issuing from the ground. In the intervening years, there were probably some fluctuations but they went unrecorded (Belete,

2002). Table 8 depicts the level and area of the lake over nearly three decades along with other influencing factors such as rainfall and pan evaporation. It can be seen that level of the lake increased by a wee bit more than 3 m between the years 1976 and 1998 and the area by some 37 km^2 in four decades since 1957. As the lake has no use whatever, i.e. as potable water for humans and livestock or source of fish, one can see what a sheer loss it is to the Kereyu, mostly, in terms of lost grazing land.

Table 8: Beseqa Lake Level Increase from 1970 to 1998

Year	Rainfall (mm)	Level (m)	Area (km^2)	Pan evaporation (mm)
1970	-	-	-	**3057**
1971	-	-	-	**3143**
1972	-	-	12.8	**2818**
1973	-	-	13.9	**3019**
1974	-	-	18.1	**2716**
1975	-	-	22.3	**2502**
1976	-	0.91	24.5	**2508**
1977	826	1.48	28.7	**2384**
1978	442	1.56	29.9	**2542**
1979	513	1.40	26.9	**2452**
1980	475	1.30	25.1	**2638**
1981	643	1.55	29.8	**2378**
1982	863	1.95	37.5	**2341**
1983	590	2.02	38.0	**2406**
1984	323	1.91	36.1	**2868**
1985	550	2.14	39.0	**2678**
1986	436	2.05	38.5	**2706**
1987	377	2.12	-	**2778**
1988	538	2.28	-	**2570**
1989	547	2.39	-	**2458**
1990	739	2.63	-	**2530**
1991	537	2.82	-	**2449**
1992	557	3.01	-	**2368**
1993	652	3.06	-	**2334**
1994	558	3.36	-	**2421**
1995	414	3.50	-	**2455**
1996	631	3.78	39.7	**2291**
1997	-	4.10	41.0	**2316**
1998	**-**	**4.00**	**40.02**	**2403**

Source: Tenalem, 2004

Slightly varying explanations are provided as to the possible secular increase of the lake. Belete (Ibid.) attributes it to drainage from the Abadir and NuraEra farms and some warm springs, as well as from the Metahara Sugar Factory draining during the wet seasons. Tenalem (2004: 14), more pointedly, argues as to the anthropogenic causation of the increase:

> The main changes in the water balance of Lake Beseqa came from groundwater input, which is related to the recent increase in recharge from the irrigation fields and the rise in the level of the River Awash after the construction of the Koka Dam, located some 152 km upstream. Prior to the construction of the Koka Dam, the River Awash could sometimes dry up between December and March. However, the regulated flow has become a source of continuous recharge to groundwater, ultimately feeding the lake.

This is a contention shared by the pastoralists in the vicinity of the lake (Assefa, 2000). The progressive increase in the lake area forced the Kereyu to continuously withdraw their herds from the potential dry season grazing ground to dry-wet time grazing land in the vicinity of Fentale Mountain. Consequently, not only did they lose substantial grazing area but also watering sites consisting of springs and a river, River Hara, which have all been submerged under the lake with its highly mineralized and brackish water which is not potable to both humans and livestock.

4.1.3 Environmental Problems Braved by the Kereyu

A lion's share of the various development measures that came to see the light of day after the Second World War in the river valleys of this country happened in the Awash Valley of which a sizable number is situated in 'Kereyuland'. The developments, in turn, brought various environmental ills and travails mostly stemming from the hemming of the Kereyu into an ever-shrinking pastureland, entailing, among others, the drastic degradation of natural resources. These are mostly land alienations in the form of built up areas (Metahara and Addis Ketema towns as well as stretches of an interstate highway and a narrow gauged railway line), agroindustrial interests (Nura Era State Farm, Metahara Sugar Factory, Abadir Farm), conservation schemes (i.e. the Awash National Park, etc.), and an expanding lake (Lake Beseqa). In terms of capitalist farms, this development has its beginning with the occupation of the country by Fascist Italy when an Italian company started the first commercial farm on the land that forms the Wonji Sugar Estate currently. After the Second World War others followed. According to Jacobs and Schroeder (1993), the establishment of the Metahara Sugar Factory, the Nura Era State Farm and the Awash National Park contracted the Kereyu pastureland. Each of these interests has contributed to a decline in the Kereyu's land holdings, and has also failed to include them in the development decisions and/or to effectively compensate them for their losses. Bahru (1984: 2) depicts this state of play in the following words:

> Capital seized opportunity with alacrity. With characteristic vigour and recklessness, and with the connivance and collaboration of Government, it appropriated tens of thousand of hectares for the above objective (i.e. *intensive commercial agriculture*). In the process, the Afar and Oromo, ancestral inhabitants of the valley, were shunted off to less fertile areas. Hanging onto the slopes of nearby hills and eking out miserable existence, they looked on at sugar and cotton (sponsored by Dutch and British capital, respectively) dominate the scene. By 1970-71, 25% of the irrigable land in the Awash Valley was utilized for the two commodities.

What is most quizzical about these confiscations inflicted against the Kereyu, owing to the activities enumerated above, is the fact that they all basked in the legality of their days. According to Ayalew (2001), the Constitution of 1955 (cf. Articles 130) and the Ethiopian Civil Code (Article 1194 for instance) vested land rights in the state as against the pastoralist communities by ruling that:

> All property not held and possessed in the name of any person, natural or legal, including all land in escheat, and all abandoned properties, whether real or personal, as well as all products of the subsoil, all forests and all grazing lands, water resources, lakes and territorial waters, are State Domain (Article 130/d of the Revised Constitution).

In spite of little variations, mostly in rhetoric, more or less the same held true for the two succeeding regimes that came one after the other following the demise of the imperial rule. First, the Military Regime nationalized all lands in the country by dint of the Agrarian Reform Proclamation of 1975, which, among others, reads, "...nomadic people shall have possessory rights over the lands they customarily use for grazing or other purposes related to agriculture". This has in no way ushered in better days for pastoralists, say, by donning them with security of tenure with regard to land grazed or claimed by them. In fact, a fresh spate of pastoralist land alienations, this time mostly favoring state farms, came into vogue. The regime in power presently, the Federal Democratic Republic of Ethiopia (FDRE), in the Constitution it managed to author in 1995, in all essentials imitated the Dergue by championing that all natural resources, be it land, mineral, water or forest is under the ownership of the state (Article 13). This is so in spite of such stipulation as "Ethiopian pastoralists have a right to free land for grazing and cultivation as well as a ***right not to be displaced*** from their own lands" (Article 40/5) (Ayalew, 2001). It rather sounds more vacuous or hypocritical than real when juxtaposed with such projects as Kesem-Kebena Dam and Irrigation Project right now unfolding in the Middle Awash.

4.1.3.1 Dwindling carrying capacity

The FEPA, writing in the State of the Environment Report (2003: 57), cites a publication of 1989 to indicate some of the travails the pastoralist community had to brave owing to the various development projects unleashed in the range lands:

> In some of the arid areas the encroachment of irrigation into range lands had reduced the land area used for grazing by pastoralist communities. It is in this manner that Afar and Kereyu pastoralists have lost 35,400 and 22,000 ha of pastureland, respectively. In addition, 19,767 km^2 for parks, 28,100 km^2 for wildlife protected areas, 9,536 km^2 for bird and wildlife sanctuaries hand been taken away earlier from the range lands. The encroachment has forced the pastoralist communities to overgraze by confining their movement to marginal lands, thus exposing their areas to degradation.

Such losses in grazing land brought, *inter alia*, decrease in the carrying capacity of the available land. In the rangelands surrounding the Awash National Park, for instance, the carrying capacity had to plummet from time to time for a number of reasons. Land degradation, continuous periods of drought, bush-encroachment, expansion of state or commercial farms and Lake Beseqa, growth in built up areas (in the form of roads, a rail line and towns) decreased the pastoral ground available to the Kereyu, the Itu and the Afar. As rangelands decreased in size and diminished in productivity, the number of livestock in the area decreased in absolute terms and increased in relative terms rather rapidly. For instance, in the Fentale Woreda, of a total of 133,963.33 ha of land, the grazing land shrunk to only 11,397.44 ha for a total population of about 471,634 animals. This, therefore, indicates that a hectare of land supports 41.4 animals while the acceptable number per ha is only 2.5 animals. This testifies to the fact that in this woreda the acceptable carrying capacity was exceeded by over 16 folds! Consequently, this state of play has perpetrated in the surrounding areas competition for rangeland and accompanying resources, leading, among others, to communal conflict, as well as intrusion into the Park (Care-Ethiopia, 2004).

4.1.3.2 Loss of access to the Awash River

Unlike other pastoralist groups elsewhere in the country, the Borena in the southwest for example, pastoralism in the Awash Valley very much relies on surface water, i.e. on the Awash River and affluents in the dry season and rainwater in the wet season. The change in the land use pattern in the Awash Valley, as indicated above, brought in its wake loss of access to the Awash River, a resource very much cherished by the pastoralist communities. The loss of access was either caused by the actual unavailablity of the water course due to

occupation and use of the land making its banks, or, in some cases, due to the blockage of the traditional passageways to the river.

In terms of domestic use of the Awash River, this loss meant significant compromise in the health of the pastoralist community and their livestock. For lack of better alternatives, the pastoralists were forced to subsist on unsafe or unhealthy sources, namely, factory effluent and wellwater. For instance, the four pastoralist kebeles (Gelcha Ajitoure, Koba Asmelo, Benti Magassa and Aca Adu) in the Fentale Woreda have to use the Gelcha Aji Toure pond, which is completely spoiled by the sugar factory wastewater and waste coming from the plantation residences. The users of this water for domestic use are exposed to various health hazards such as kidney infection, gastiritis, diarrhea and even mortality (Care-Ethiopia, 2004). The Kereyu pastoralists once owners of the area cannot access and use the waters of the Awash River which is only three or four kilometers far from this deadly water (Ayalew, 2001). According to Ayalew (Ibid: 201), a Kereyu Gada leader vented this plight of his people in the following verse:

> *Nu bishaan hiqabnu bitti teenya makarrdhaaa,*
> *Jaalannetiimitii rakkannet dhunye sagaraadha,*
> *Achirraa jaalqabatti nu fixi dhukkbni garaadhaa*.
>
> Water is a serious problem in our land,
> Our livestock and we have become forced to drink the undrinkable,
> Consequently, we are suffering from diarrhoea and intestinal diseases.

When it comes to well water, which is one area of activity for some of the NGOs active in the area (Gudina Tumsa Foundation, for instance), the groundwater in the valley as a whole is marked with excess fluoride levels, which makes the population 'thriving' on these wells vulnerable to all forms of fluorisis (bone and crippling fluorosis and mottling of teeth) which is quite evident in the Awash basin due to ingested fluoride from untreated water from such sources as depicted in Table 9 below.

The table shows that most of the water sources, over 86 percent of them, both of surface and well origins, in the Awash Valley are unfit for human and livestock consumption. However, the fluoride level on average, for river water (2.44 mg/L) is nearly by 50 percent less than that of groundwater (4.80 mg/L). Had unpiped water supply been in the ambit of the Drinking Water Specifications of the QSEA, i.e. universally applicable, with fluoride level at a

maximum of 1.5 mg/L, nineteen out of the twenty-two sources figuring below would have been automatically closed down as most of them are flagrantly unqualified for drinking water. Otherwise, if water from these sources were to be rendered up to standard, some sort of defluoridation process would have been a *sine qua non* (Gelabo, 1988).

Table 9: Fluoride Content of Water Samples Collected from the Awash Valley

No.	Source	Date of analysis	Fluoride content (mg/L)
UPPER AWASH			
1	Mojo River near Mojo Town	1971	2.0
2	Awash River near Koka Dam	7/3/1977	0.3
3	Awash River at Wonji off-take	7/3/1977	1.8
4	Well at Wonji Estate	24/12/76	8.4
5	Well at Shewa Estate	24/12/76	6.3
6	Awash River below Sodere	10/2/77	1.9
7	Well at Nazareth Hotel	1971	2.0
8	Awash River at Abadir off-take	18/1/77	5.0
9	Well at Abadir Farm	25/2/77	3.2
10	Well at Metahara Estate	24/12/76	4.7
11	Awash River at Metahara Bridge	7/3/77	2.4
12	Well near Metahara Town	6/12/76	8.7
13	Arba Camp well	18/7/77	6.7
MIDDLE AWASH			
14	Kessem River at Melka Sedi	7/3/77	1.0
15	Melka Sedi well	18/1/77	6.7
16	Kessem River at Kessem Kebena	8/1/77	5.1
17	Amibara Town well	8/1/77	5.5
18	Gewane Town well	8/1/77	6.0
LOWER AWASH			
Mille			
19	Deep well/estate farm H.Q.	7/11/85	0.86
Dubti area			
20	Deep well near H.Q.	7/11/85	2.5
21	Deep well near mosque	8/11/85	3.5
22	Deep well near Boyahle	8/11/85	2.6

Source : Halcrow, 1989

4.1.3.3 Pollution

Due to a motley collection of activities involving and/or transpiring close to the river, Awash has been subject to various forms and degrees of pollution (Ayalew, 2001; Bahru, 1984; Bondestam, 1974; Halcrow, 1989). Pollutants from household sources, industry and agriculture are the ones that loom large most, depending on the type and nature of human activity most discernable as the river progresses from its source in the central highlands to its terminus in the series of lakes in the Lower Awash Valley. In the Upper Basin, for instance,

the most salient sources are households and industry while it is agriculture in the rest of the Awash Valley. This is made even more worse as most of the industrial establishments are bereft of treatment plants and/or are not subject to enforced environmental standards. In the Upper Awash Valley this is, for instance, very true for MSF where effluent from the sugar mill finds its way into the Awash River directly without any sort of treatment. Regarding agricultural pollution, for example, due to the extensive use of agrochemicals in the valley, reaching on the average 4 to 5 liters per ha for pesticides, among others, "toxicity to people, fish and animals drinking canal water immediately after spraying is very common" (Halcrow, 1989: 21 [Annex N]).

Salinity is another environmental pollution problem becoming rife in the study area due to irrigation schemes (Kloos, 1982). All types of salinity have been identified in the Awash Valley and the problem is evident to varying degrees in virtually all the irrigations schemes, entailing, among others, the abandonment of irrigated land. Where surface or sub-surface drainage systems are used to reclaim land affected by salinity (Melka Sedi, for instance), an expensive undertaking costing some Birr 7,605 per ha, of which 42 percent is in foreign currency, the leached out salt is drained into the Awash River, thus polluting and threatening downstream users even more (Ali, 1997). The fact that the brackish water of Lake Beseqa is being pumped (allegedly in a controlled manner) into the Awash River in order to forestall its jumping its brinks is bound to aggravate the problem of salinity downstream.

4.1.3.4 Recurrent drought

One of the root causes of environmental crises in pastoral areas, in general, and the Kereyu pastoral communities, in particular, is drought. Caused by rainfall deficit, drought has a tendency to be a shortage of water crises in vegetation cycle in conjunction with other meteorological parameters. Drought reduces rangeland production and affects nutritive quality and species diversity in trees, grasses and shrubs, which in turn alter the structure and size of herds (NOPA, 1992). But the consideration of drought in terms of mere lack of rainfall is inadequate as a measure of the consequent changes in pasture and livestock productivity. The force of socio-political factors has often been neglected.

Table 10: Monthly Total Rainfall (mm) in the Upper Awash Valley

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1966	0.0	114.0	3.0	61.0	11.0	44.0	128.0	169.0	93.0	30.0	4.0	0.0	**657.0**
1967	0.0	0.0	68.0	58.0	51.0	52.0	119.0	231.0	51.0	44.0	110.0	0.0	**784.0**
1968	0.0	99.0	3.0	54.5	5.5	41.0	150.1	80.0	43.5	10.5	31.0	14.0	**532.1**
1969	65.0	122.5	34.0	36.5	44.5	25.0	144.0	177.0	21.0	0.0	5.5	0.0	**675.0**
1970	24.0	24.0	89.0	9.5	6.0	1.0	127.0	171.0	39.2	32.0	0.0	0.0	**522.7**
1971	0.0	0.0	1.5	21.5	27.5	39.0	159.5	186.0	22.5	0.0	24.0	16.5	**498.0**
1972	0.0	75.0	45.0	19.5	59.0	31.0	57.0	82.5	25.5	10.0	0.0	0.0	**404.5**
1973	0.0	0.0	0.0	7.2	22.4	25.4	112.6	95.8	52.0	9.1	0.0	0.0	**324.5**
1974	0.0	0.0	70.8	4.2	46.9	35.9	52.5	52.1	100.9	1.1	0.0	0.0	**364.4**
1975	0.5	31.9	52.1	49.8	51.0	58.1	186.4	195.4	49.6	2.8	0.0	0.5	**677.6**
1976	0.0	0.0	57.2	53.5	52.3	8.9	122.5	146.6	30.5	7.9	30.3	2.7	**512.4**
1977	110.0	46.4	6.7	68.4	87.6	102.5	74.8	70.0	18.2	223.4	18.2	0.3	**826.5**
1978	0.0	105.9	0.0	5.9	16.1	3.7	98.7	89.6	51.2	33.7	5.0	29.8	**439.9**
1979	75.9	0.0	51.4	4.5	59.0	42.0	135.0	74.7	53.2	13.5	0.0	3.0	**512.2**
1980	9.8	0.0	4.9	46.7	15.4	29.7	131.9	182.9	33.5	6.9	12.0	0.0	**473.7**
1981	0.0	1.4	129.9	72.1	2.7	0.0	173.6	189.5	61.8	11.1	0.0	0.0	**642.1**
1982	32.0	67.1	68.1	21.2	101.4	3.1	101.2	304.3	35.9	92.2	36.0	1.0	**863.5**
1983	6.2	49.2	63.5	49.4	93.0	21.2	139.1	142.6	18.2	8.2	0.0	0.0	**590.6**
1984	0.0	0.0	13.4	0.0	62.6	33.0	66.3	69.4	70.8	0.0	0.0	7.7	**323.2**
1985	5.7	0.0	19.5	89.7	71.8	4.6	173.4	131.2	44.2	8.6	0.0	0.0	**548.7**
1986	0.0	55.9	49.2	26.1	4.7	78.3	75.2	85.4	52.6	5.4	0.0	4.0	**436.8**
1987	0.0	11.1	70.4	45.5	75.0	0.0	35.6	123.7	9.5	5.0	0.0	0.0	**375.8**
1988	19.9	19.3	19.1	41.4	7.1	10.9	158.6	131.2	83.6	36.6	0.0	11.2	**538.9**
1989	0.0	27.9	89.0	102.3	2.6	62.7	54.8	163.3	24.7	0.0	0.0	18.8	**546.1**
1990	0.5	221.7	97.7	67.9	3.8	1.9	181.6	82.2	73.6	3.5	0.0	1.6	**736.0**
1991	0.0	54.2	64.6	27.0	51.7	13.8	171.1	108.7	80.7	0.0	0.0	0.0	**571.8**
1992	22.1	0.0	1.7	77.9	17.3	41.4	97.7	163.7	79.6	49.7	1.9	2.6	**555.6**
1993	39.9	38.3	0.0	142.1	99.9	24.9	93.9	94.4	46.2	31.3	0.0	49.6	**660.5**
1994	0.0	0.0	3.0	33.1	44.0	41.1	246.9	115.4	60.6	0.0	11.1	1.5	**556.7**
1995	0.0	43.6	66.0	42.0	10.9	17.9	74.2	129.9	72.7	0.9	0.0	0.0	**458.1**
1996	25.3	0.8	92.3	41.0	112.4	30.9	137.5	105.8	69.0	11.9	13.7	0.0	**640.6**
1997	35.5	0.0	16.0	27.3	12.5	37.6	167.9	49.4	49.0	114.6	9.8	0.0	**519.6**
1998	39.9	44.5	56.5	34.3	12.5	7.8	77.8	138.6	37.0	79.7	0.0	0.0	**522.0**
1999	1.0	0.0	76.3	16.0	24.0	47.8	121.9	137.7	16.4	86.9	2.3	0.0	**530.3**
2000	0.0	0.0	9.0	22.9	41.7	26.7	116.8	166.7	34.2	49.0	5.0	9.7	**481.7**
2001	0.0	7.6	106.3	19.1	12.2	13.8	152.4	66.7	30.5	7.0	0.0	0.0	**415.6**
2002	0.0	0.0	61.1	17.5	8.5	18.0	44.9	105.1	25.5	1.3	0.0	26.8	**308.7**
2003	30.0	12.8	68.7	31.4	0.8	28.8	157.3	232.9	33.4	0.0	1.9	17.2	**615.2**
2004	42.4	3.5	112.4	116.8	0.0	14.9	95.2	108.3	33.0	7.3	2.3	0.0	**536.1**
Aver.	**15.0**	**32.8**	**47.2**	**42.7**	**36.6**	**28.7**	**120.9**	**132.0**	**46.9**	**26.5**	**8.3**	**5.6**	**543.0**

Source: Metahara Sugar Factory, 2005

The area of concern, including the western middle basin of the Awash River, by its very nature is moisture deficient. Rains do not come consistently and in time and the total

precipitation is low although bimodal[23]. The first season lasts for three months from February to April to be followed by a dry spell lasting for two months, from May to June. Timely rains are very critical for the regeneration of grasses and for adequate supply of water for livestock as well as human beings. In the 1988/89 production year, 34,000 heads of livestock (about a fifth of the total livestock of population of the zone) perished due to the prolonged dry season, consequent to the late arrival of the rains (K.N.N.S. Nair and Aduna Libsework, 1989).

According to Table 10, the year with the highest moisture for four decades was 1982 with 863.5 mm and the least was 2002 with 308.7 mm. In critical seasons, the pastoralist communities of the area are compelled to move their animals to distant water sites, a situation that more often than not sparks communal conflict. The Awash River (the only potentially sustainable water site) nowadays is not available for the pastoralists for many reasons. Therefore, water is one of the main problems of the area.

The 1973 - 1974 drought in the country affected very seriously the Awash Valley and, particularly, the Upper Awash Valley. Many animal and plant species were affected by the drought. The dry season grazing lands, which are otherwise moisture deficit due to the ecological nature, lost the most valuable grasses and shrubs. According to information from Gudina Tumsa Foundation, from the 36 species of grasses and shrubs recorded in 1999, many are lost now and unseen for some time recently. According to Kereyu elders, the most abundant and useful grass family in the area, enteropogon macrostachyus (*deremo* in *Afan* Oromo), has totally disappeared. Due to the radical decrease in pastoral rangelands, the old ways of movement from one area to another to circumvent stresses from drought years have become virtually impossible (Belete, 2002).

4.1.3.5 Bush encroachment

Most of the bush and trees are used as browse in the pastoral areas of Fentale Woreda and the neighboring pastoral communities. The importance allotted to browse in natural grazing lands varies according to where the browse is available. Some ligneous species are not useful as livestock feed and many are considered as pests, particularly in the tropical savannah, where competition from woody species reduces the production of grazing land. In fact, palatable

[23] Rainfall is highly seasonal, confined to the periods of the "small rains" (February – March) and "big rains" (July – September), resulting in marked fluctuations in river discharge (Kloos, 1982).

grazing and browsing species are being severely reduced as non-palatable species increasingly dominate. Even though many of these species are browsed or are lopped as dry-season feed, some ligneous species also have an important effect on the quality, seasonality and productivity of the grass cover growing beneath their shade (Ali, 1997).

One of the major existing problems faced by the Awash National Park and surrounding pastoral communities is the ever increase of bush encroachment in the open grasslands that are the potential grazing lands of the area. Acacia species, which are common in the area, and nowadays, their encroachment, has increased from time to time on the surrounding rangelands as indicated in the table below (Table 10).

Table 11: Threatening Acacia Species in Fentale Woreda

No.	Species Name	Common Name
1	Acacia orfata	Ajo (in Afan Oromo)
2	Acacia mellifera	Adedi (in Afar), Kontir (in Amharic)
3	Acacia nilotica	Adiatu (in Afar)
4	Acacia senegal	Keselto (in Afar)
5	Acacia tortolis	Aebi (in Afar)
6	Acacia brevispica	Kwanta (in Amharic)

Source: Belete, 2003

These and other species of acacia are a threat to the Awash National Park and the surrounding rangelands. The bush encroachment reduces the grazing lands of the area and this leads the pastoralists to compete for open grasslands. This is one of the situations that forced the Kereyu, the Itu and the Afar pastoralists to bring their herds to the only open grassland of the park, namely, EllalaSala.

Acacia mellifera, a thick shrubby acacia species, now totally dominates and has encroached upon the north-eastern part of the park and the south-western part of Awash Town about 4 km in length and 5 to 6 km in width to the right and left sides of the main road. It has destroyed the grasses and has also changed the land into a thicket of bush. On the other hand, another acacia species, acacia orfata, has completely encroached the northern and northwestern part of the Metahara Town, including the park. The two most affected kebeles are Arole and Ajitoure.

Unless bush encroachment is duly controlled, it would be a serious problem for the sustainable management of the rangelands. The reasons for the encroachment are many and include land degradation, overgrazing, drought, and unwise use of rangelands.

4.1.3.6 Resource competition and conflict

As the resource base available to the pastoralist communities declined due to the various land alienations and degradations occurring in the study area, the competition for natural resources, mainly pasture and water, increased in both frequency and magnitude. It, moreover, assumed spatial and temporal dimension. Communal conflict, as one outgrowth of this competition, which traditionally was limited to a sort of 'sport' where male members tasted and demonstrated their virility and courage, or, to be exact, a rite of passage through the social hierarchy, nowadays, has transformed itself into something much more virulent in which it more and more involved looting and the raiding of animals, and the latter for ultimate conversion to cash (Care-Ethiopia, 2004).

4.1.3.7 Increase in livestock population

The carrying capacity of the rangelands surrounding the Awash National Park dwindled from time to time for a number of reasons. Land degradation, continuous periods of drought, influx of additional pastoral groups, bush encroachment, the expansion of farms and Lake Beseqa are some of the reasons that have decreased the pastoral ground available to the Kereyu, the Itu and the Afar. As rangelands contracted in size and diminished in productivity from time to time, the number of livestock in the area surged in absolute terms and dwindled in relative terms rather rapidly. For instance, in a survey conducted on 90 households revealed that the mean number of livestock per household plummeted from 59.4 TLU (Tropical Livestock Unit, a unit amounting to 250 kg of live weight with the conversion factor 1, 0.7, 0.5 and 0.1 TLU for camel, cattle, equine and sheep/goat, respectively) in 1977 to 14.5 in 1997, a decline of 76 percent in a matter of only two decades (cited in Ayalew, 2001).

Therefore, in the surrounding areas there is always competition for rangeland and accompanying resources depredation, leading, among others, to communal bloodshed as well as uninterrupted intrusion into the Awash National Park. This development is in spite of the drastic fall in the breeding rate of livestock occasioned by the plethora of environmental harms that befell the pasture and water of the study area. Table 12 shows the decline in fecundity. The maximum decline in fecundity for cattle, camel and goat was 50, 47 and 33, respectively.

Table 12: Decline in Livestock Fecundity in 'Kereyuland'

Type of livestock	Fecundity rate		Decline (%)
	Past	Present	
Cattle	12 - 13	6 - 7	44 - 50
Camel	15	8 - 9	40 - 47
Goat	Thrice a year	Twice a year	33

Source: Assefa, 2000

4.1.3.8 Problems of environmental health

In the wake of development projects (dam and irrigation schemes, especially) came also problems of environmental health. The consequent ecological changes, in particular, resulted in the introduction and propagation of different diseases such as malaria and schistosomasis. Other communicable diseases such as diarrhea, dysentery, and heliminthiasis have also managed to spread wide. The outpatient morbidity due to these afflictions and more in the year 1988 are indicated in Table 13 below.

Table 13: Leading Causes of Out-patient Morbidity in the Awash Basin Agricultural Development Areas (1988)

No.	Diagnosis	No. of cases	Percentage
1	All forms of Malaria	26,174	11.3
2	Respiratory Diseases	17,576	7.6
3	Dysenteries	9,207	4.0
4	Helminthiasis	6,717	2.9
5	Diarrheal Diseases	5,652	2.4
6	Other Infections	5,537	2.4
7	Ear and Eye Infections, Trachoma Inclusive	5,297	2.3
8	Accidents	4,263	1.8
9	Gastirits and Duodenitis	3,538	1.5
10	Malnutrition and Anemia	2,713	1.2
11	Poisoning	993	0.4
12	Total Visits	40,558	

Source: Halcrow, 1989

Excessive use of biocides is reported to have caused the death of animals as well as the poor health of pastoralists. The irrigation canals which find use also as water source for the pastoral communities are contaminated with biocides (herbicides, insecticides, etc.) that are sprayed, causing increased poisoning (Ali, 1997).

4.1.3.9 Desertification

The environmental vitiations so far accounted are due mainly to local causation, viz. basin limited human intervention. According to Kinfe (1999), global change in environmental

quality, especially owing to climate change poses a major climatic disaster in the study area. He predicts that the Awash River Basin would be significantly affected by change in climate in the form of considerable water deficit and, therefore, increases in dryness such that the decrease in runoff would range from 10 to 34%. From this, it does not tax one much foresight to predict that the travail of the pastoralist communities in the Awash Valley due to the increased frequency and intensity of drought-cum-famine, i.e. desertification is to grow formidable in the coming years.

In this chapter, the various plights of the Kereyu and other pastoralist groups incident on the alleged development measures that unfolded in this part of the Awash Valley were closely scrutinized. In the coming chapter, what mainly awaits the reader is the natural science part of the study, dealing with the environmental quality of water and soil.

4.2 ENVIRONMENTAL ASSESSMENT

On the world scale, the attempt to solve the antinomy that flourished between development, or, to be exact, environmental resource utilization, on the one hand, and environmental resource conservation, on the other, has to await the seventies of the last century when the concept of sustainable development was first coined and subsequently started to find currency in the rest of the world. The idea, even more so, the practice, informed by sustainable development took quite a time to make it to such backwaters of the international polity like Ethiopia.

The first ever national document with direct reference to this concept is the principal document of the country, i.e. the Constitution of the Federal Democratic Republic of Ethiopia (cf. Article 43/1) adopted in 1995. The Environmental Policy of Ethiopia that saw the light of day in 1997 followed suit. It is nearly four years since Ethiopia authored a proclamation catering for environmental impact assessment via Proclamation No. 299/2002. In spite of these commendable developments, the old ways are still with us unscathed and, therefore, much has still to be done in order to reverse the situation and actually realize sustainable development on the ground, well above and past the usual rhetoric.

Consequently, for much of the period leading to the present, the development effort unfurled in the country impacted negatively on the environment. This state of affairs glared large in

the Awash Valley to such an extent, for example, that a "…visitor to the Middle and Lower Awash Valley is left with an unmistakable impression of a very unbalanced development effort" (Halcrow, 1989: 19). Various forms of land degradation and environmental pollution are in evidence in the valley with multifarious and detrimental social consequences, including displacement, communal conflict, and famine.

In subsequent pages, the assessment of changes in environmental quality occasioned by development activities whipped up in the study area and up stream is considered. The focus here is the environmental quality of the Awash River (all the way from its headwaters to the study area) and the range condition in the study area.

4.2.1 Assessment of Water Pollution

4.2.1.1 Background

One obvious change attributable to the development exercise that has transpired in the study area is change in environmental quality of which one is water quality (and no less quantity). Not only that the pastoralist communities lost some of their traditional access to the Awash River (including its tributaries), owing to the various development projects that have been triggered of in the area, but other changes in the quality and quantity of water resources occurred, impacting, more often than not, adversely on the traditional means of livelihood of the said communities. Due to impoundment for various purposes (mainly for electricity in the case Koka Dam, irrigation schemes and abstraction in the service of potable water) the Awash River lost its irregularity of flow along with a drastic decrease in its volume, of which one important and alarming consequence has been the almost complete cessation of the periodic inundation and/or fertilization of dry season grazing lands that used to account for the substantial carrying capacity of the valley. When it comes to quality, the Awash River fell victim to the unimpeded emptying of various pollution loads (originating from households, industrial enterprises, agricultural establishments, etc.) starting virtually from its head waters all the way to its terminus in a series of lakes downstream.

The following pages are devoted to assess the change in the quality of the Awash River and this report consists of the result of a series of samplings and field observations covering some 9 months, extending from October 2004 to May 2005. Actually, the first sampling spree took place from 6 to 11 October 2004, the second from 25 January to 1 February 2005, and the third and last one, from 8 to 14 May 2005. Altogether, the study involved twelve sampling

points on the Awash River, out of which eight are situated in the Upper Basin and the rest in the Upper Awash Valley.

The main objective of this undertaking was to discern where the pollution load impacting on the water resources of the study area is actually perpetrating a significant change in the quality of the Awash River. As pollution is an anthropogenic (as against geogenic or natural geological origin) and a juridical concept, as much as it is a scientific one, i.e. measurable with the precision of natural science, such an undertaking requires juxtaposition with environmental standards of acceptable source or pedigree, as well as pinning down the actual causes or sources.

4.2.1.2 The Awash River

The Awash River Valley lies between approximately 8^0 and 12^0 North latitude and 38^0 and 42^0 East longitude and its catchment area is 113,700 km^2. Starting in the cool mountains of Mecha, in the high plateau to the west of Addis Ababa, at an elevation of some 3,000 m above sea level.

The Awash River, its tributaries inclusive, has been intensively utilized for nearly a century now. Its waters find use for water supply, power, irrigation, construction and industry. Many people in the Awash Basin depend on the Awash River for domestic water use and livestock watering. Addis Ababa and other towns, such as Bishooftuu, Modjo, Adama, Metahara and Awash, either located along the course of the river or in its vicinity utilize the river as a municipal water source and for the discharge of effluent and other wastes to such an extent that downstream from the point of discharge, beneficial use of the river is highly impaired (Bondestam, 1974; Bahru, 1984).

The majority of industrial activities in the Awash Basin are concentrated in and around Addis Ababa. A few reports have addressed the problems of industrial pollution within the Awash Valley as a whole and usually they are limited to the upper basin and upper valley. Almost all of the industries in the basin draw their water directly from the Awash River and empty most of their liquid waste into it with little or no treatment. Some of the industries found in the basin consist of tanneries, textile mills, distilleries, breweries, food-processing agro-industries, dairies, beverage, chemicals, metal and paper processing or manufacturing industries.

The main pollution load contributing to the vitiation of the riverine environment is black or gray wastewater issuing from households, industrial establishments, hotels and hospitals. Visual inspection of the river from its headwater to Koka Dam reveals a turbidity level and deposits of fecal and other obnoxious materials that have rendered the Awash River poor in terms of fish yield (Halcrow, 1989). Strangely enough, the River finds use in livestock watering, irrigation, washing and for domestic purposes.

Consequently, the health status of the majority of the population in the Awash Basin is generally poor. Waterborne, water-based, water-vectored and sanitary diseases are prevalent and ubiquitous in the study area. Much of these owe their being to the lack of access to safe drinking water and disregard to sanitation essentials (Ibid.).

e) Literature description of some of the major parameters

1. Total Hardness (as $CaCO_3$): Hardness is mainly attributed to multivalent ions owing to minerals dissolved in water. Hardness is reckoned based on the ability of the said ions to react with soap to precipitate a soap scum. In fresh water, the primary ions are calcium and magnesium while iron and manganese may have their contributions. An important impact of hardness in general on aquatic life and especially fish is the effect that these ions have on the other more toxic metals, i.e. cadmium, chromium, lead, and zinc. Generally, the harder the water, the lower the toxicity of other metals to aquatic life. Large amounts of hardness are not desirable for economic and aesthetic reasons. Total hardness should not exceed 300 mg/L as $CaCO_3$ (FEPA, 2002).

- QSEA's Ethiopian drinking water standard = unspecified
- FEPA's water quality limit = 300
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = unspecified
- EEC's guideline concerning the quality of water for human consumption = unspecified

2. Chemical Oxygen Demand (COD): This parameter is based on the fact that most organic compounds can be oxidized by the action of strong chemical oxidizing agents under acid condition and the usual choice in this regard is dichromate. COD is used as a measure indicating the commensurate amount of oxygen required to totally oxidize both biologically

degradable and non-degradable organic matter in sewage, industrial waste and polluted waters. Compared with BOD, COD yields results in a shorter period without sacrificing accuracy (Rump & Krist, 1992). No COD limits are available:

- QSAE's Ethiopian drinking water standard = unspecified
- FEPA's water quality limit = unspecified
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = unspecified
- EEC's guideline concerning the quality of water for human consumption = unspecified

3. Chloride: Chloride is an anion that is found in all natural waters, although the concentration may vary widely with the maximum in brackish water reaching up to 350 mg/L. Soil and rock formations, sea spray and waste discharges (i.e. through faecal introduction) constitute some of the sources in freshwaters. Especially with regard to the last one, chloride can serve as a pollution indicator when considered in tandem with other parameters and when a natural geological origin does not apply. Due to considerable amount of chlorides contained in both domestic and some industrial wastes (such as from tanneries), the measure of chloride in receiving waters indicates the level of salt pollution and thus the degree by which the beneficial use of water for agriculture can be affected (FEPA, 2002; Rump & Krist, 1992). The QSEA and WHO have pegged the chloride limit for drinking water at 250 mg/L:

- QSAE's Ethiopian drinking water standard = 250
- FEPA's water quality limit = unspecified
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = 250
- EEC's guideline concerning the quality of water for human consumption = unspecified

4. Fluoride: Fluoride in natural water normally owes its being to the weathering or dissolution of fluorite and fluoraptite and exists in the form of uncomplexed fluoride ions or as aqua-complexes. When in small quantities, fluoride is vital for humans and animals, as it is an essential component of the bones and teeth. Tooth tissue, for instance, contains about 0.02

percent of fluorine mostly in the enamel with the composition of $Ca_5F(PO_4)_3$. Excess fluorine, however, is poisonous, causing the loss of appetite, cachexia, structural changes in the bones and teeth. It also affects the joints, kidneys, liver, heart and the adrenal and thyroid glands and causes destruction to the enzymes involved in metabolism, possibly, owing to combination with metals such as Cu, Fe, Mn and Zn, which constitute these enzymes. Consequently, the fluoride content in potable water is supposed not to exceed 1.5 and fall below 0.7 Mg/L (Gelabo, 1988). Actually, the standard may vary for different institutions:

- QSAE's Ethiopian drinking water standard = 1.5
- FEPA's water quality limit = 1.5
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = 1.5
- EEC's guideline concerning the quality of water for human consumption = 1.5 (8-12^{0}c) or 0.7 (25-30^{0}c)

5. Dissolved Oxygen (DO): The existence of an adequate concentration of DO is indispensable for the survival and the proper functioning of an aquatic biota as it is required for respiration by all aerobic organisms. DO is a major parameter oft used in the assessment of the natural oxygenation capacity of a water body. The solubility of atmospheric oxygen in fresh water is dependent on the temperature, varying from 14.6 mg/l at 0^{0}C to about 7 mg/L at 35^{0}C. Streams or rivers having low DO are characterized with limited natural purification capacity for waste discharges entering them; in such situations adequate treatment is a requirement if aerobic conditions favorable for the growth and reproduction of fish and other aquatic organisms are to be available (FEPA, 2002). The only limit available for DO is that of FEPA at 5.0 mg/L:

- QSAE's Ethiopian drinking water standard = unspecified
- FEPA's water quality limit = 5.0
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = unspecified
- EEC's guideline concerning the quality of water for human consumption = unspecified

6. Electrical Conductivity (EC): EC is a total parameter for solutes stemming from dissociated substances. Consequently, the conductivity of water is the expression of the ability to conduct an electric current the value of which depends on the concentration and degree of dissociation of the ions as well as the temperature (i.e. expediting dissolution at the rate of some 2 percent for each degree Celsius increase) and migration velocity of the ions in an electric field. From EC alone, however, no conclusion can be arrived at regarding the type of ions present. Nonetheless, exact conclusion can be formed about the concentration and degree of dissociation of dissolved electrolytes from the electrical conductivity when the ionic composition and equivalent conductivities are known (FEPA, 2002). The two limits that are available are that of FEPA and EEC at 300 and 400 mg/L, respectively:

- QSEA's Ethiopian drinking water standard = unspecified
- FEPA's water quality limit = 300
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = unspecified
- EEC's guideline concerning the quality of water for human consumption = 400

7. Trace elements: Aluminum, chromium and lead are potentially toxic to humans and animals at low concentrations. The maximum allowable concentration in river water should not exceed 0.15, 0.05 and 0.01 mg/l, respectively (FEPA, 2002; Rump & Krist, 1992). National and international limits available are in display in the table below (Table 14):

Table 14: Standards/Limits for Some of the Trace Elements

Standard	Aluminum	Chromium	Lead
QSEA	unspecified	0.05	0.01
FEPA	0.15	0.05	0.01
FAO	unspecified	0.05 (1.00)	0.10
WHO	0.20	0.05	0.01(0.05)
EEC	0.20	0.05	0.05

8. Manganese: Manganese is often found in even clean surface waters at concentrations of several tenths of mg/L. However, levels exceeding 1 mg/L can occur under anaerobic conditions. As is the case with iron (together with which this element is often found), the presence of manganese is generally undesirable in drinking water as a small concentration can be detrimental to taste. The limit in river water is 0.05 mg/L according to Rump & Krist,

(1992) while it is either 0.5 or 0.05 mg/L in a number of available international and national water standards apropos various uses:

- QSAE's Ethiopian drinking water standard = 0.5,
- FEPA's water quality limit = 0.05,
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified,
- WHO's drinking water standard = 0.5, and
- EEC's guideline concerning the quality of water for human consumption = 0.05.

9. Nitrate: Nitrate is found in many natural waters at concentrations between 1 and 10 mg/L. Higher concentrations often indicate the effects of nitrogen-containing fertilizers since the NO_3^- ion is badly absorbed in soil that it easily finds its way into groundwater. Nitrate, besides, is one of the principal constituents responsible for the amount of plant growth in rivers and lakes. It is one of the main causes for the development of algae, of which some are poisonous to livestock. Decay of algae causes fish kills, high turbidity, change in color and taste for water. The discharge of nitrate bearing wastes from both domestic and industrial sources into lakes and impounded reservoirs usually induces biological productivity in water bodies entailing ageing. Furthermore, the parameter is of great importance in assessing the self-purification properties of water systems and the nutrient balance in surface waters and soil (FEPA, 2002; Rump & Krist, 1992). No specified limits are available:

- QSEA's Ethiopian drinking water standard = unspecified
- FEPA's water quality limit = unspecified
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified
- WHO's drinking water standard = unspecified
- EEC's guideline concerning the quality of water for human consumption = unspecified

10. pH-Value: The pH value is a measure of the hydrogen ion activity in a water sample. As the concentration of hydrogen ions $[H^+]$ increases, pH decreases, the solution becoming more acidic. As $[H^+]$ decreases, pH increases and the solution becomes more basic. In general, acidity is the number of OH^- ions that have reacted over a given pH range during a base titration. Similarly, alkalinity is a measure of the number of H^+ ions that have reacted over a given pH range during an acid titration. The pH-value of fresh waters usually lies between

6.5 and 7.5 and lower values are results of free carbon dioxide. Biogenic decalcification in surface waters can cause the pH value to hit a value of 9.5 (FEPA, 2002).

11. Total Iron: Iron is present at different concentrations in many waters and wastewaters. Under anaerobic conditions, several mg/L iron in the form of Fe^{2+} can be present while concentrations in aerobic surface waters seldom exceed 0.3 mg/L. Fe^{2+} ions can be fairly rapidly oxidized by atmospheric oxygen to Fe^{3+}. First, a yellowish brown colloidal ferric hydroxide is formed, subsequently precipitating as brown hydroxide. Iron is an undesirable component of drinking and industrial water because iron hydroxide can form deposits in pipes or cause problems in usage (e.g. metallic taste, stains in textiles after washing). In determining iron, a distinction is usually made between total iron and ferrous iron. Total iron is the sum of dissolved and un-dissolved iron and is distinguished from the total dissolved iron, which is the sum of ferrous and ferric compounds (Rump & Krist, 1992). Some of the limits for total iron are depicted below and vary between 0.1 and 0.3 mg/L.

- QSEA's Ethiopian drinking water standard = 0.3,
- FEPA's water quality limit = 0.1,
- FAO's recommendations for levels of toxic substances in drinking water for livestock = unspecified,
- WHO's drinking water standard = 0.3, and
- EEC's guideline concerning the quality of water for human consumption = 0.2.

f) Findings and discussion pertaining to river water quality

A. Level of Total Fe

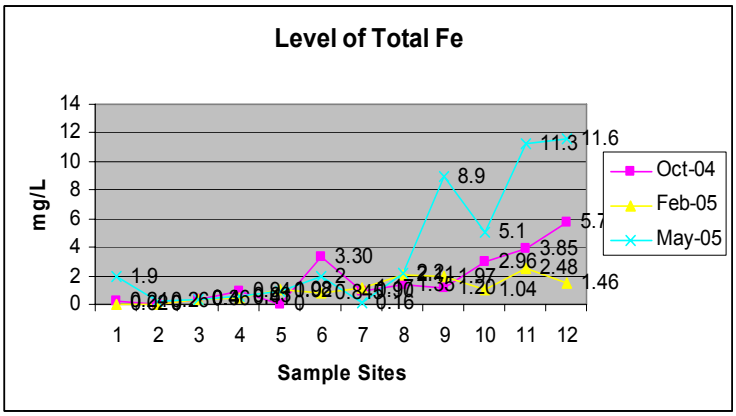

Fig. 3: Three-season Total Fe level variation

In general, the level of total Fe is lower in the Upper Basin and shows, except for sample site 10, a steady increase in the Upper Valley. When discriminating between seasons, the level in total Fe is the largest in Season May-05, i.e. the dry season followed by Season Oct-04. According to the QSEA's Ethiopian water quality standard (which, in the case of total Fe, is exactly the same as that of WHO's drinking water standard) and FEPA's water quality limit, the level set for total Fe is 0.3 and 0.1 mg/L, respectively. Consequently, the sample sites from Modjo downstream for all the three seasons exceed these levels very significantly, more so in the dry season. However, why this has to be, for geogenic or anthropogenic reasons or both was not determined from the data at hand alone, as data on discharges that find their way into the river body have to be obtained, analyzed and correlated. This, surely, requires further study.

B. Level of Manganese

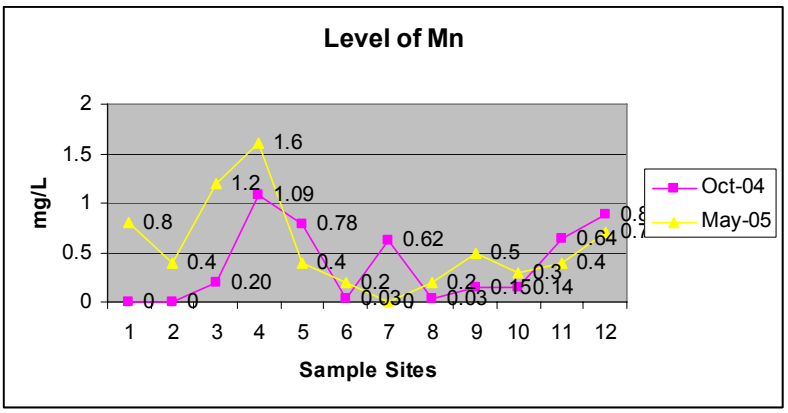

Fig. 4: Two-season manganese level variation

The manganese level in display here is of two seasons, namely, that of Oct-04 and May-05. The temporal trend, except for minor differences here and there, is more or less the same. For example, the highest level of manganese for both seasons is that of site 4, i.e. BhereTsege. In comparison with FEPA's Guideline, which is 0.05 mg/L for manganese, only 4 out of the 12 sites qualify for Season Oct-04 and only one (viz. Site 7) for Season May-05. When it comes to the QSEA Guideline, which is set at 0.5 mg/L, all, except for two sample points, are up to standard.

C. Level of Total Cr

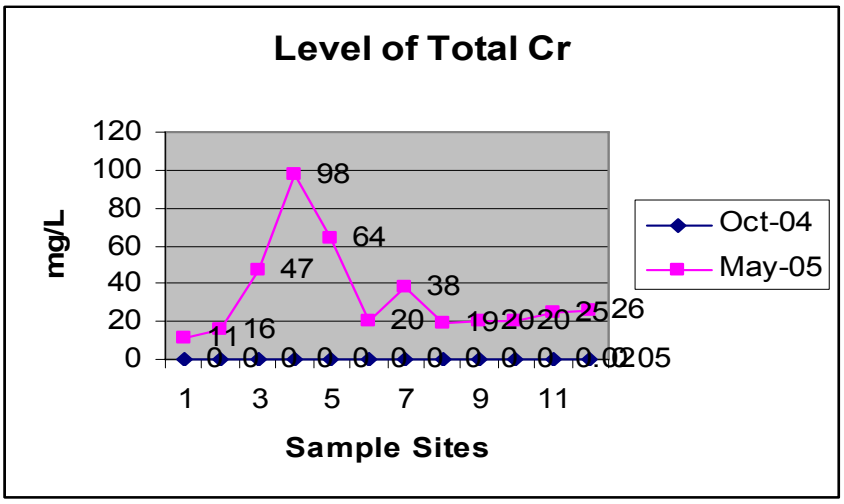

Fig. 5: Two-season total chromium level variation

The level of total chromium is nil for Season Oct-04 except for the last two sampling sites, even then the level is at or below the standard limit, 0.05 mg/L. This state of affairs, however, changes very significantly in the dry season, i.e. Season May-05. Consequently, Awash River is unfit for both livestock and human consumption in this season. Here, the minimum value is at 11 and the maximum is 96 mg/L, for Site 1 and Site 4, respectively. The fact that no tannery exists at Site 1 (KidaneMhret) while one finds rather close by in the case of Site 4, i.e. BhereTsge along with a number of them upstream, baffles one to proffer any explanation other than anomalous or geogenic.

D. Level of Pb

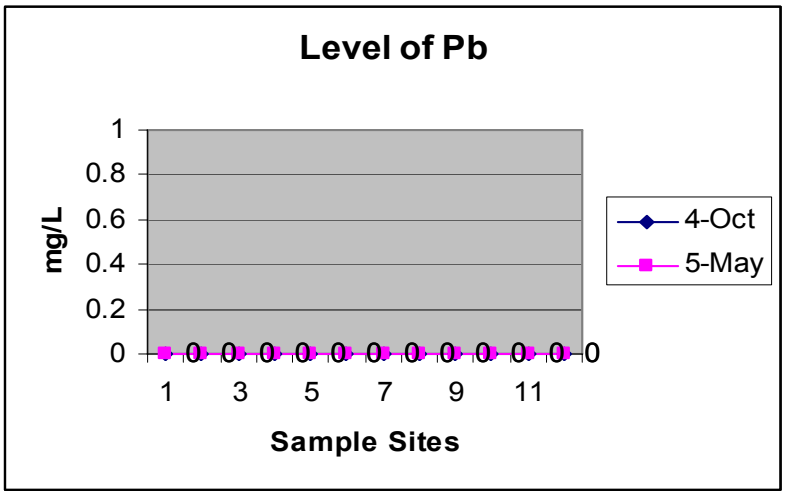

Fig. 6: Two-season lead level variation

The level of lead for both seasons as well as for all sample sites indicated is identical, invariably with a value of nil. From this result, one can deduce that both human activity and the geologic formation along the valley are bereft of lead. If otherwise, the assimilative capacity of the River must be responsible for the result. Which of the two possibilities explains this fact requires additional data pertaining to the discharges entering the river course.

E. Level of Al

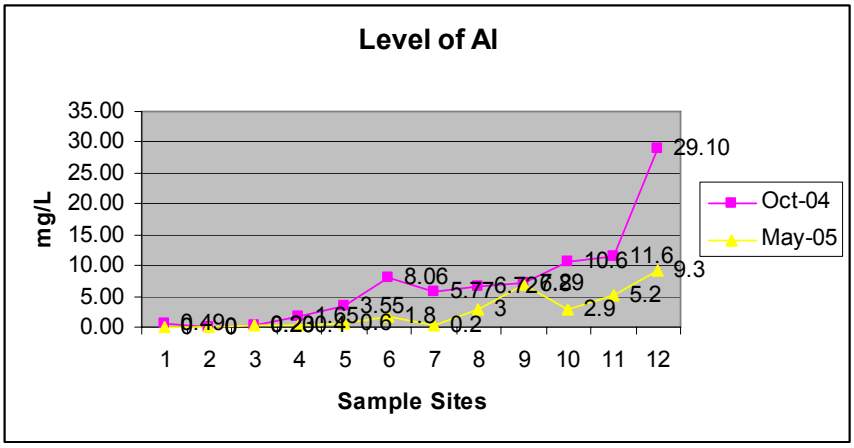

Fig. 7: Two-season aluminum level variation

The level of aluminum is higher in Season Oct-04 than in Season May-05 for all sample sites. The spatial trend for both seasons, in general, is an increase when moving down from the highland into the valley. From Site 4, i.e. AbaSamuel the level of aluminum for all sites and seasons is above the limit, 0.15 (FEPA's) or 0.2 mg/L (that of both WHO and EEC).

F. Level of $C0_3^{2-}$

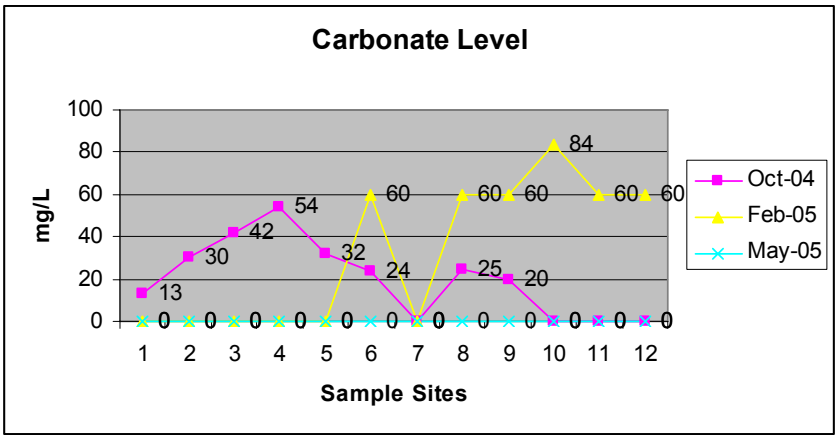

Fig. 8: Three-season carbonate level variation

The level of carbonate ion stayed at nil for all sample sites in the dry season but started to fluctuate in the other two seasons. In the Season Oct-04, the fluctuation was a steady increase for the first four sample sites followed by a steady decrease for the next three sample sites. Almost the same trend repeats it for the remaining four sample sites. The fluctuation in Season Feb-05 was rather wild; the level which was nil for almost all the first six sample sites suddenly hits a high at Site 7, 60 mg/L, and plummets to nil at the next sample site to again pick up at the next site and even attain the highest point afterwards, 84 mg/L. As there is no standard limit, neither national nor international, the result was not amenable to comparison.

G. Level of Fluoride

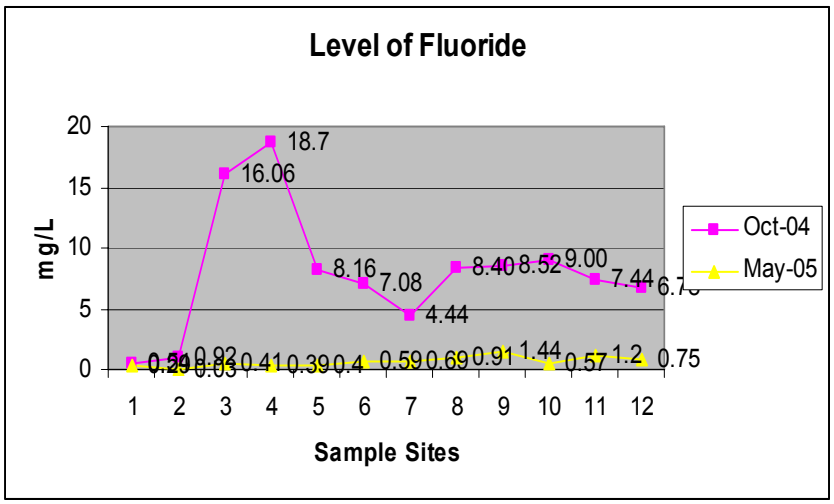

Fig. 9: Two-season fluoride level variation

The fluoride level for the two seasons indicated behaved distinctly. In the Oct-04 Season, it fluctuated from as low as 0.4 mg/L, for Site 2, to as much as 19 mg/L, for Site 5. From Site 3 onwards the level of fluoride stayed well above 4 mg/L. In Season May-05, except for Sites 10 and 12, the level stayed below 1 mg/L with a spatial trend displaying a slight increase down the river course. Given the standard value of fluoride, which is 1.5 mg/L for both WHO and Draft Ethiopian guidelines, the level in the dry season is acceptable while the level in the other season is not. Although lithologic features in the valley favor above standard showing for fluoride, why this is not so in the summer, where evaporation and low river flow level encourage higher concentrations, sounds rather anomalous.

H. Level of Total Dissolved Oxygen (DO)

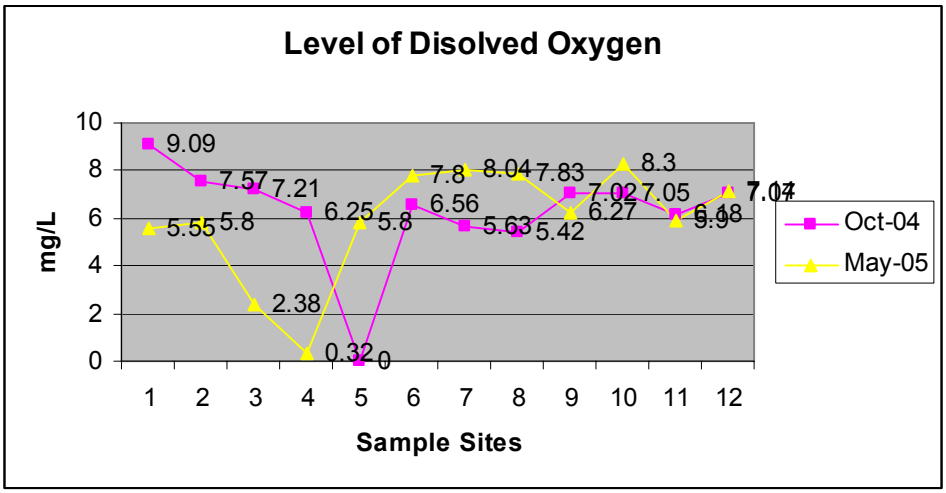

Fig. 10: Two-season DO variation

The trend in DO level for the two seasons in display is mostly similar; first, one discerns an increase, and then a decrease followed by an increase that maintains itself at a certain level of fluctuation. According to the Draft Water Quality Standard of FEPA, however, all the sample sites are above the level indicated as adequate, i.e. 5 mg/L. Accordingly, Site 4 and Site 5, for Seasons May-05 and Oct-04, respectively, are dead when it comes to the oxygen level required to support any aquatic life.

I. Level of Electrical Conductivity

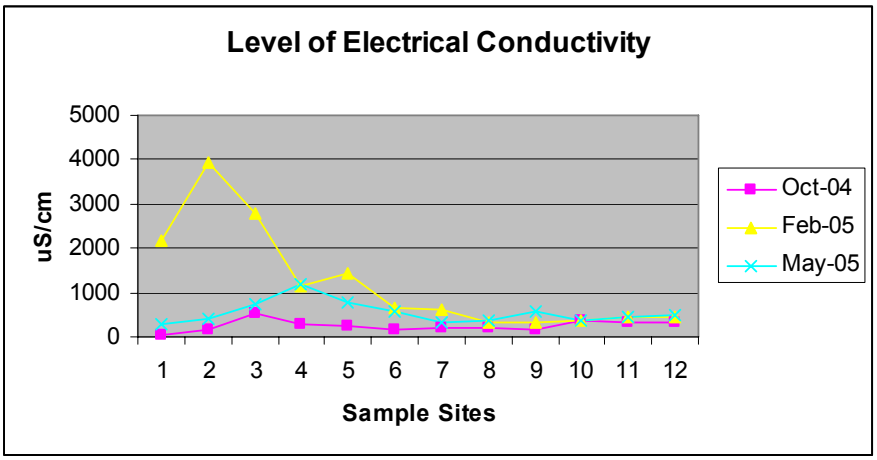

Fig. 11: Three-season electrical conductivity variation

In general, electrical conductivity decreases going down the river course. Season Feb-05 has the highest conductivity for the first seven sites. The dry season level, May-05, is the next

highest for the first seven sites and becomes either equal with or even grows the highest for next five sample points. In contrast, Season Oct-04 radiates the least conductivity except for Site 10, where the level remains almost the same for all three seasons. Rather high levels of conductivity were observed only for Season Feb-05 and even this was limited to the first four sites, as they all exceeded the standard level, i.e. 300 uS/cm. The highest value was that of Site 2 at 3920 uS/cm, which is well above the standard. As there is nothing in the vicinity that makes this type of showing plausible or acceptable, one is lead to doubt the measurement as to its accuracy.

J. Level of Chemical Oxygen Demand (COD)

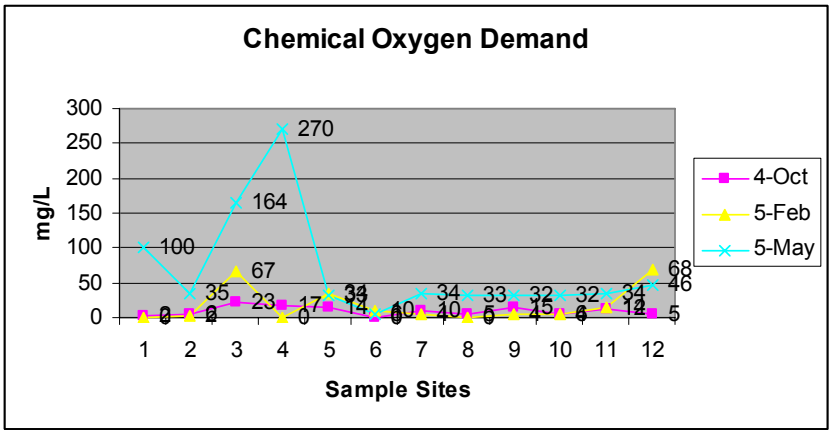

Fig. 12. Three-season COD variation

Of the three seasons in consideration, the highest level of COD, except for the last sampling site, is that of the dry season, namely, Season May-05. The highest range in variation also belongs to this season at nearly 270 mg/L. Although the range in the other two seasons is smaller than for the dry season, the number of rises and falls is relatively higher. In comparison with Season Oct-04, for instance, Season Feb-05 has more picks and through, i.e. the latter season displays more variability. No standard is available for COD, national or international, to discuss the results any further.

K. Level of Bicarbonate (HCO_3^-)

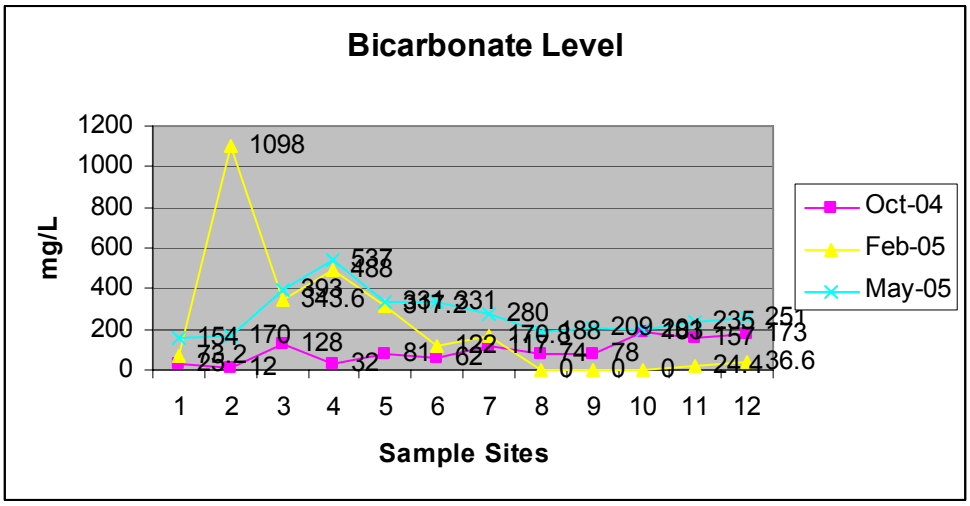

Fig. 13: Three-season variation in the level of bicarbonate

Except for the first two sample sites, the bicarbonate level of the dry season is the highest when compared with the other two seasons. For Season Feb-05, from a pick value of 1,098 mg/L at Site 2, the level haphazardly decreases to zero at three sample sites (8, 9 and 10) to pick steadily in the remaining two sites. A more or less steady increase in bicarbonate level is observed along the river in Season Oct-04. If the cation that goes with it is calcium, the river water is certainly hard water at some of the sample site as the level is well above the standard value, 300 mg/L (Ethiopian standard for drinking water as per QSEA).

L. Level of Chloride

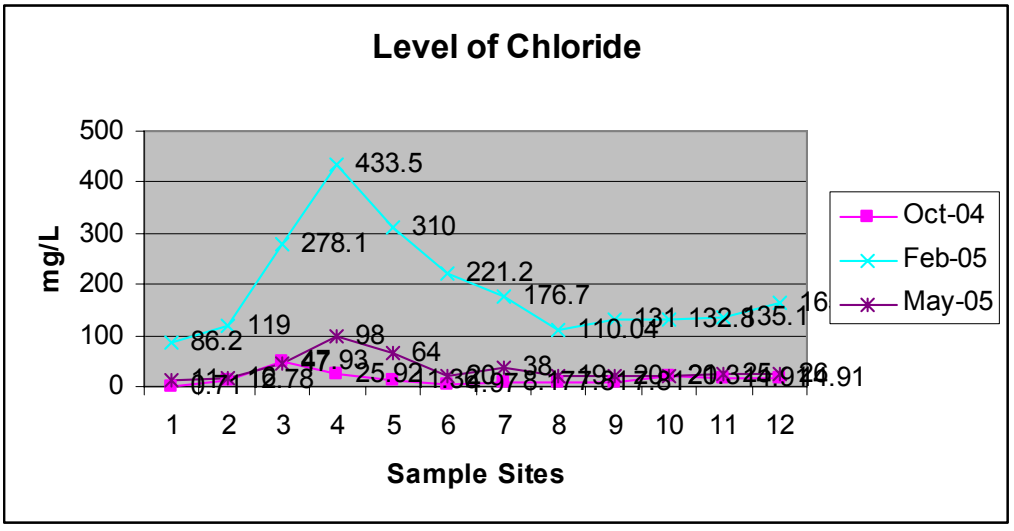

Fig. 14: Three-season variation in concentration of Chloride

Generally, a higher concentration of chloride was observed in Season Feb-05 than in the other two seasons across the River Valley. A sharp increase was observed at Site 4 with a value of 433.5 mg/L followed by a steady decline all the way until Site 8 where subsequent steady rise in value occurs. The range was the highest also for this season, at nearly 350 mg/L. The chloride level was at its smallest for all the sample sites in Season Oct-04 to be followed by the dry season. The levels in these two seasons are acceptable as they are well below the WHO and the Ethiopian guidelines as per QSEA, which are pegged at 250 mg/L for both.

M. Level of Nitrate (NO^-_3)

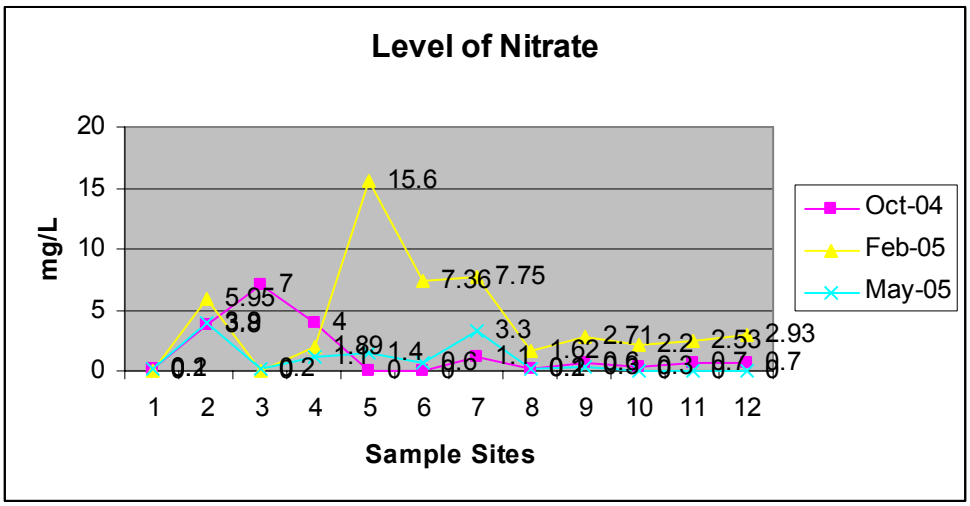

Fig. 15: Three-season variations in nitrate concentration

The first five sample sites display a random fluctuation in their level of nitrate for all three seasons. The nitrate level becomes the highest for Season Feb-05 at Site 5 even though the trend is basically a decrease. Compared with the WHO, EEC and the Ethiopian guidelines, the latter that of QSEA, which are all set at 50 mg/L, however, all these values fall within the acceptable limit.

Summary of Findings

In general, traveling downstream the level of some parameters showed decline, e.g. NO_3^-, Cl^-, HCO_3^{2-} and EC while that of others displayed a rise, e.g. Al and Total Fe, irrespective of season. Perhaps, a number of factors, of which one is the assimilative capacity of the River Awash can explain this. Seasonal variation were observable for some of the parameters (over

75%); for instance, in the dry season the parameters for HCO_3^{2-} and COD recorded the highest value while for Season Feb-05 the parameters Cl and EC displayed the highest level.

The fact that this study 'failed' take on board the environmental impacts, through environmental audits, targeting each and every developmental activities thriving both in the study area and its upper reaches (in particular, with respect to their effluent releases), proved to be a formidable handicap in the discussion of the water assessment results obtained. Even where the level of the different parameters are above standard, it was found difficult to Christian these results as pollution or otherwise. This was due to the fact that one can only deem such results as pollution when one is only sure that their sources are anthropogenic activities.

4.2.2 Assessment of Land Degradation

4.2.2.1 By way of introduction

Soil health is a function of factors governing its capability or behavior with regard to infiltration, permeability, fertility, biological function, chemical function, physical function, erosion, litter, crusting-biological, crusting-physical, ground cover, compaction, structure, vegetation diversity and root depth. For instance, the existence of adequate soil cover protects the soil from accelerated erosion, improves seed germination, reduces crusting and expedites infiltration. When earth is disturbed of its natural ability, say, to absorb and infiltrate, then rainwater needs to be collected, channeled, stored or filtered (DEQ Northwest Region, 2001).

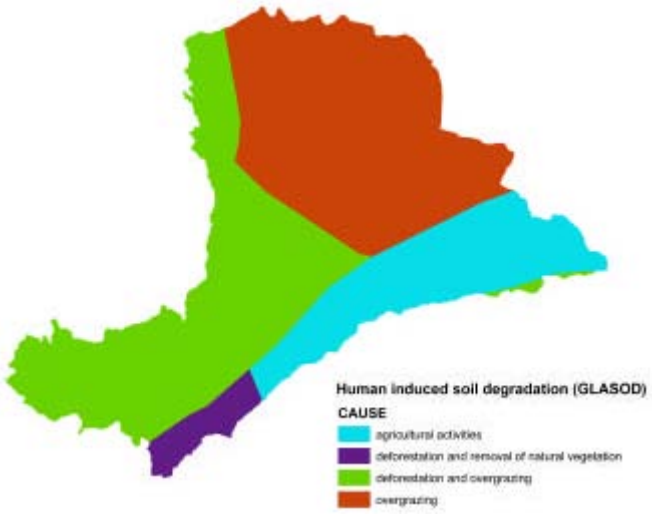

Fig. 16: Human induced soil degradation in the Awash Valley (Source: ISRIC, UNEP GRID, as quoted in Girma et al., 2005).

The land use in the Awash Valley, which a century and a quarter earlier was mostly limited to grazing land, changed seemingly inexorably to accommodate other uses like agriculture, conservation and built-up areas as per the calling of so-called development. In tandem with this came land degradation manifesting itself in a legion of ways of which some are:

- Vegetation (which once served as habitat for wildlife or provided people with fuel and fodder) became increasingly scarce.
- Water bodies grew more and more turbid.
- Water courses dried up.
- Grazing lands and river courses disappeared under brackish waters.
- Unpalatable thorny weeds predominated once-rich pastures.
- Footpaths disappeared into gullies.
- Soils became thin and stony.

For instance, the main human activities responsible for soil degradation in the Awash Valley, as displayed in the map above (Fig. 16), are deforestation/devegtation, overgrazing and agricultural activities, the first two being the most predominant in the study area.

4.2.2.3 Soil's physical and chemical changes

According to Baker (1993), the physical and chemical changes that soil may undergo, owing to undue anthropogenic intervention are many. The first one, for instance, includes: (A) Surface compaction (B) Crusting and surface seal formation (C) Reduction in pore space and infiltration rate (D) Increase in bulk density (E) Reduction of available water-holding capacity (F) Increased susceptibility of soil splash and rain drop impact (G) Increased run-off and erosion leading to gully formation and surface loss of soil and soil fertility, and (H) Overall deterioration of soil structure and productivity. When it comes to chemical change, these changes affect the nutrient content of the soil and related chemical reactions and processes and include: (A) Decline in pH and increase in exchangeable aluminium and hydrogen content resulting in aluminium toxicity (B) Depletion of bases or exchangeable bases which is one cause of reduced pH (C) Multiple nutrient deficiencies especially in highly weathered soils (D) Phosphate fixation and reduced nutrient availability, and (E) Loss of organic carbon and organic matter with decline in total nitrogen and phosphorus.

4.2.2.4 Literature description of some of the major parameters

A. **pH (Acidity and Alkalinity):** soil's pH value is a measure of the hydrogen ion activity in a soil solution. As the concentration of hydrogen ions [H^+] increases, pH decreases and the solution becomes more acidic. As [H^+] decreases, pH increases and the paste or soil solution becomes more basic. In general, acidity is the number of OH^- ions that have reacted over a given pH range during a base titration, that is, a measure of the ability to neutralize base. Similarly, alkalinity is measures of the number of H^+ ions that have reacted over a given pH range during an acid titration, that is, a measure of the paste's or the soil solution's ability to neutralize acid. Alkalinity is primarily controlled by carbonate species and, therefore, usually expressed in terms of equivalence to Calcium Carbonate ($CaCO_3$). Briefly, carbon dioxide in the air dissolves in rain to form carbonic acid (H_2CO_3) which, depending on pH, dissociates to form carbonate, bicarbonate and hydrogen ions (FEPA, 2002; Wild, 1993):

$$CO_2 + H_2O \Rightarrow H_2CO_3 \Rightarrow HCO^-_3 + H^+ \Rightarrow CO_3^{2-} + 2H^+$$

A change in pH from that normally encountered in soil may have severe effects upon soil biota. The extent of acidification or alkalinization is important in determining the severity of the effects, which do not vary linearly either with pH or over time.

B. Total Nitrogen: Nitrogen is taken up as NH_4^+ and NO_3^- and it is one of the macronutrients obtained by higher plants from the soil. Nitrogen, like potassium, is usually taken up in the largest amount, which can exceed 100 $kgha^{-1}a^{-1}$. Replenishment of soil with nitrogen can be obtained by the application of fertilizers and manures, mineralization of leaf litter or biological fixation of nitrogen. 1.5% of the dry matter concentration of nitrogen in plants in the form of nutrient element absorbed from soil is considered adequate (Wild, 1993).

C. Organic Carbon: the content of organic carbon in the soil is the resultant of two factors, namely, the quantity of organic matter entering the soil and the rate of decomposition of the soil organic matter. In practice, organic matter is added from the aboveground parts of plants and trees and also from roots. Normally, therefore, the content of organic carbon is the highest near the soil surface and decreases with depth (Ibid.).

D. Carbon-Nitrogen Ratio and Available Phosphorous: The plant nutrient elements nitrogen, phosphorous and sulphur are contained in organic compounds. In the top 10-15 cm

of soils, the ratio of percentage of organic carbon to percentage N, the C/N ratio, is usually between 10 and 14, the organic C to P ratio is about 100, but differs between soils; the C to organic S ratio is usually about 80-100. When organic compounds are mineralized by the activity of microorganisms, these three elements are released as inorganic ions, which may then be taken up by plants (Ibid.).

E. Available Potassium: Potassium along with nitrogen, phosphorous, calcium, magnesium and sulphur constitutes soil macronutrient. Leafy crops and fruit crops can remove over 100 kg ha^{-1} of potassium when they are harvested, thus depleting reserve potassium in the soil. Concentration of potassium in plants, as nutrient element absorbed from soil, that is considered adequate is 1.0% of dry matter (Ibid.).

F. Bulk density: One of the physical parameters that come in handy as indicators of degradative changes is bulk density. Bulk density (more precisely, the dry bulk density) is defined as the ratio of the mass of dry soil to its volume. It is a variable property because of the effects of weather, cultivation and compression by animals; it varies over small distances and generally increases with depth in profile. Commonly, its value ranges between 1.0 and 1.6 gcm^{-3}. Increase in bulk density, along with surface crusting and other physical effects of soil degradation, prevents seed germination and disrupts early plant development. For example, cotton roots cannot penetrate soil with a bulk density greater than 1.8 gcm^{-3} (Ibid.).

G. Electrical Conductivity: The conductivity of a soil paste is an expression of its ability to conduct an electric current. As this property is related to the ionic content of the paste, which is in turn a function of the ionizable fraction's concentration, the relevance of easily performed conductivity measurement is apparent.

4.2.2.5 Findings and discussion apropos soil analysis results

The soil type for EllalaSala was loam consisting of 43% and 36% silt and the balance, clay, while for the other two sample sites, i.e. at ANP main gate and LegeBenti, the soil type was sandy loam with a composition of 63% sand, 26% silt and 11% clay, 55% sand, 34% and 11% clay, respectively. In spite of its better fertility, which may be explained by a larger presence of animal population (both domestic and wild), EllalaSala's vegetation is less verdant than at the park gate which may be explained by the same reason but this time owing to intense grazing.

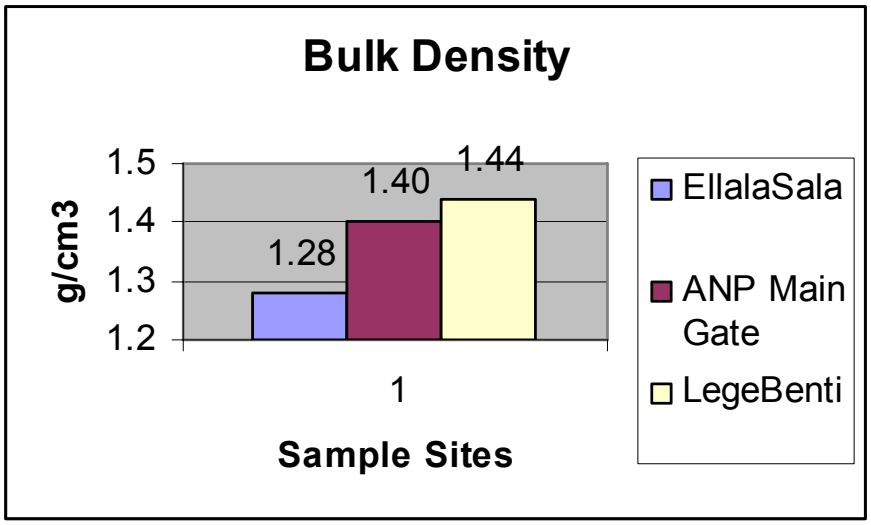

Fig. 17: Soil bulk density

The bulk density of the three sample sites, which is between 1.2 and 1.5 g/cm^3, is in the desirable range where severe cultivation, compression, etc. cannot be implicated. Moreover, had the assumption held that the least disturbed of the soil sites is ANP Main Gate, the least bulk density should have been that of it, but for some 'explicable reason' (that, of course, deserves further study) this expectation is dismally betrayed as the least bulk density is that of EllalaSala at 1.28 g/m^3.

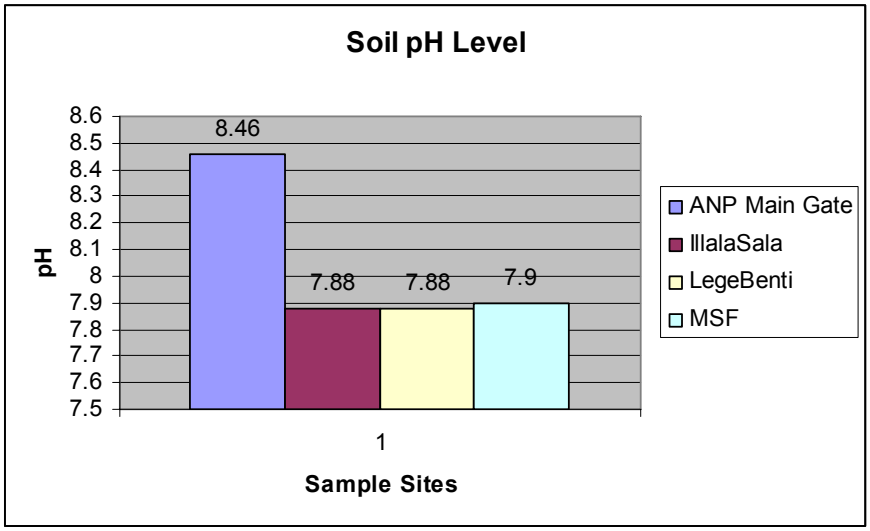

Fig. 18: Soil pH level

The pH level, i.e. 8.4 for the sample site near the main gate of ANP was the highest for the group; for the other three sample sites, including that of MSF, the pH is relatively closer to

neutral. The difference, whether anthropogenic or geogenic, is hard to tell given the data at hand.

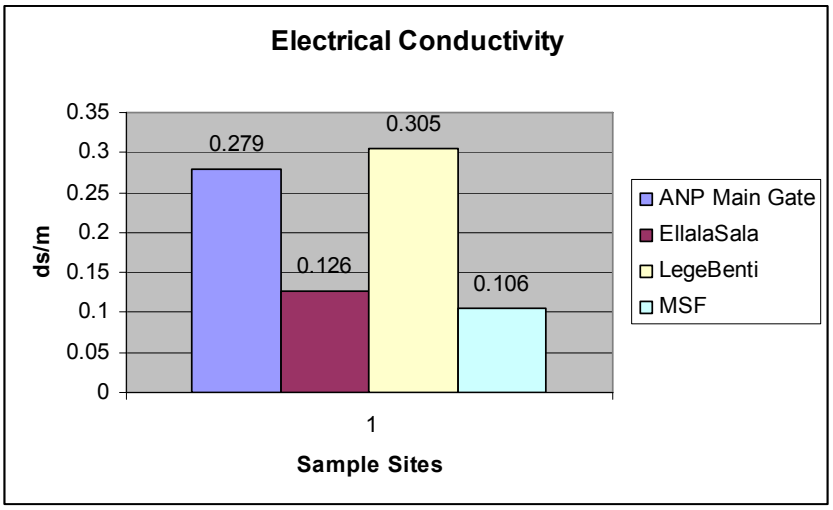

Fig. 19: Variation in soil electrical conductivity

The highest level of EC (i.e. 0.305 ds/m) is that of LegeBenti, a site that was presumed to be the most disturbed next to the sample site in MSF. Had there been a strong correlation between level of EC and land degradation, the next highest value should have been that of EllalaSala, but this is not the case, as the next EC level is attributed to the Park's main gate at 0.219 ds/m.

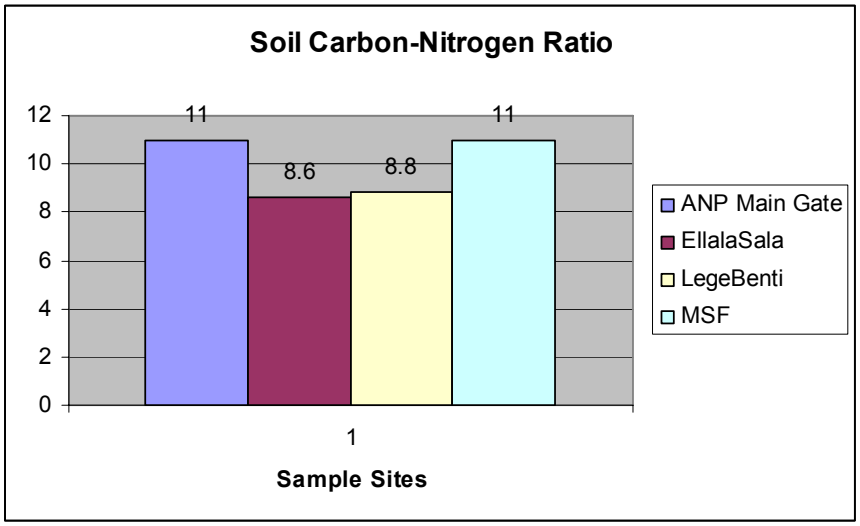

Fig. 20: Soil carbon-nitrogen ratio

The carbon-nitrogen ratio for soils samples taken at a depth of 10 – 15 cm is usually between 10 and 15. The fact that the result in display above is for samples taken at 20 cm depth makes it usual or acceptable, as the level of carbon plummets with depth.

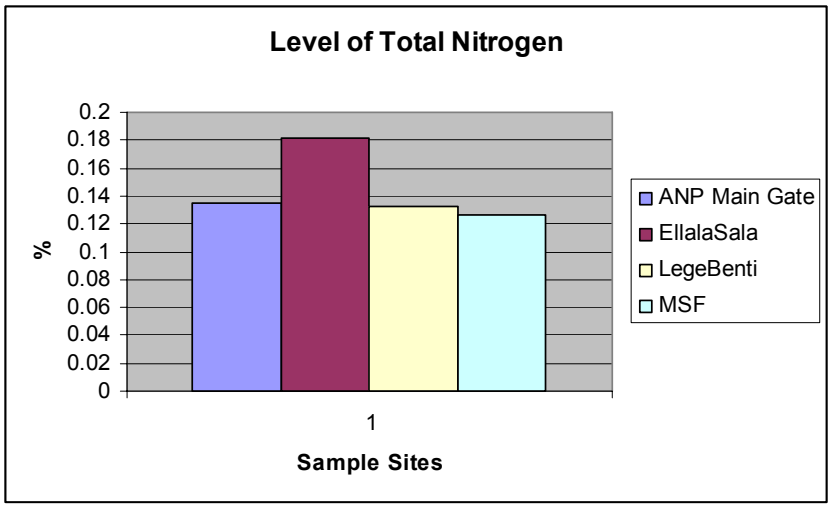

Fig. 21: Level of soil total nitrogen

The total nitrogen level is the highest for EllalaSala site at 0.182% followed by the site at the main gate of the park. The lowest level is that of the site in MSF. There appears to be a certain level of agreement between animal and plant presence and nitrogen level that has to be confirmed, if need be, with further study.

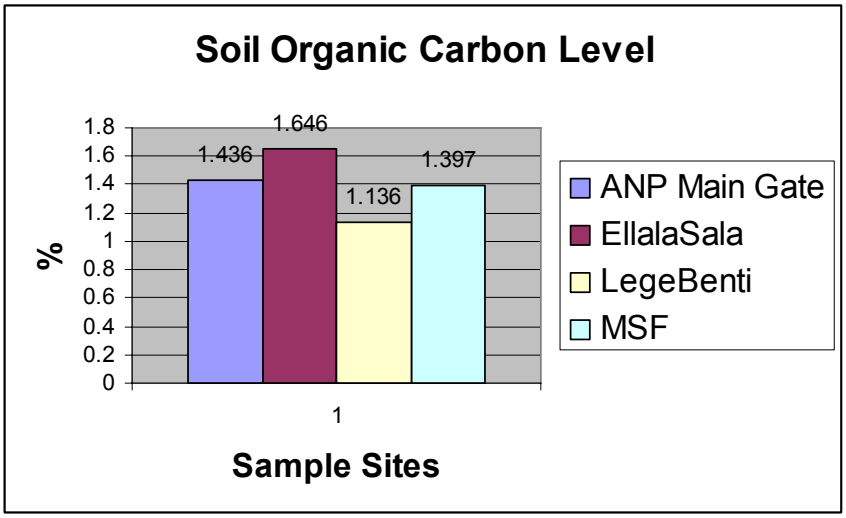

Fig. 22: Soil organic carbon level

The soil organic carbon level, in decreasing order, is that of the sites in EllalaSala, at the main gate to the Park, in MSF and at LegeBenti at 1.646, 1.436, 1.397 and 1.136 %, respectively. The soil organic carbon level is in concord with the livestock and/or wildlife level frequenting the sites and vegetation cover available.

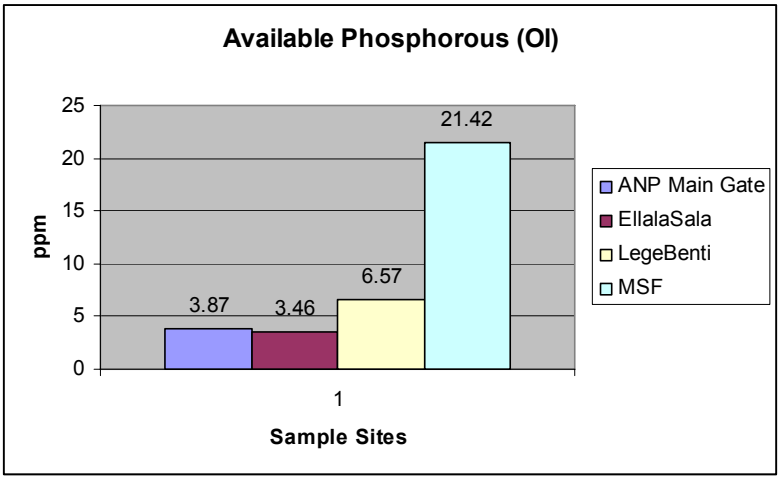

Fig. 23: Level of available phosphorous

The level of available phosphorous is the highest for the site in MSF, which is more than trice that of the next highest level, i.e. LegeBenti. The lowest value is that of EllalSala followed by the site at the main gate of the Park.

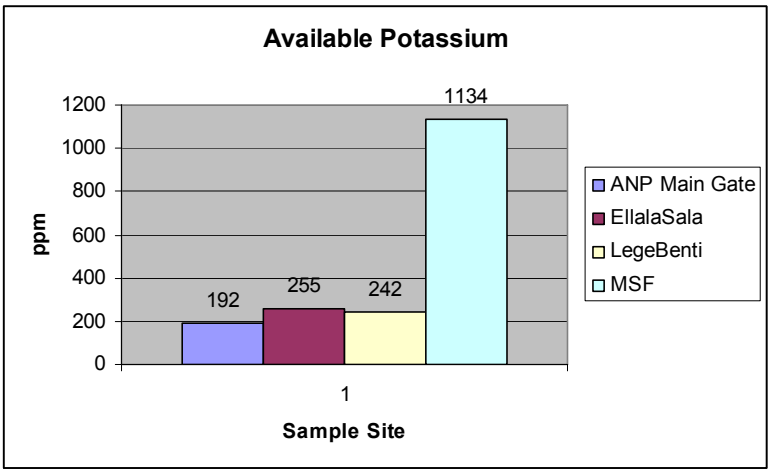

Fig. 24: Level of available potassium

The level of available potassium is not only the highest for the sample site in MSF but it nearly 500% times that of the next level, that of EllalaSala. The difference between the other three sites is not as glaring as it is with MSF and this may be attributed to the use of artificial fertilizers.

Summary of Findings

The glaring variation in ground cover between the sample sites *vis-à-vis* difference in the chemical and physical parameters, which is negligible or not at all much, confirms the presumed cause for range deterioration, namely, overgrazing than, say, difference in the nutrient level or in physical attributes. As such, the correlation between the soil analysis results and assumptions made about the sample sites' conditions as to level of disturbance is not that strong and always consistent, e.g. nutrient endowment and bulk density. Given the fact that with regard to the study pertaining to range condition, site selection was made based on the combination of responses received in relation to enquiries made and results of visual inspection, yielding four sites with presumed differences in range condition: ANP Main Gate, IllalaSala, LegeBenti, and a location in MSF. The first three displayed significant differences in terms of the natural vegetation cover, i.e. a decrease in verdure from one to the other site in the given order. Had the variation been due to difference in physico-chemical attributes of the sites, a certain pattern would have been evident; this is to say that the most verdant site, ANP Main Gate, would have displayed the highest value in terms of nutrient endowment (phosphorous, potassium, nitrogen, etc.) and LegeBenti the least but this is not the picture obtained. For instance, in terms of available potassium the least value is that of ANP Main Gate and with regard to available phosphorous the highest is that of LegBenti, thus in both cases expectation is betrayed. The same goes with parameters that can be attributed to anthropogenic disturbance and a case in point in this regard is bulk density where we observe similar outcomes in which the least disturbed site, ANP Main Gate, was expected to demonstrate the least value but this is far from the truth.

This, however, does not mean that the soil analysis results are bereft of any pattern. For instance, the unnatural levels of available potassium and phosphorous in the sample site in MSF which is 3 to 5 fold greater than the other three sample sites indicates the chemical intensive nature of the agriculture taking place in the sugar estate.

In the next chapter, attempt will be made to relate and straddle what has been so far discussed on development and environment in the context of the Upper Awash Valley viewed from the angle of the three pillars of sustainable development, i.e. economic development, social well being and environmental protection.

CHAPTER 5

THE NEXUS BETWEEN THE WORKS OF GEBREHYWOT BAYKEDAGN AND THE LIFE OF THE KEREYU: DEVELOPMENT, INTERNATIONAL TRADE AND ENVIRONMENT

Since the country's integration into the world market at the turn of the last century, thanks to the feudal-cum-comprador bureagiosie, Ethiopia assumed the status of a dependent state, which, among others, pays for its imports by the export of a handful of primary agricultural products of which the most predominant is coffee. Recently, this prized (sic) export item and the highest foreign currency earner of the country is, unfortunately, fetching the lowest price ever in real terms. The resulting loss of income for coffee producers and the shortfall in foreign currency with regard to the national accounts are causes for additional strain and stress inflicted against the country and its people by the world market.

Table 15: Ethiopia's Economic trade performance for the years 1990 - 2002

Year	Trade Balance (million US$)	External Debt per Capita	External Debt to Export Ratio (%)	External Debt to GDP Ratio (%)	Net ODA as Share of Recipient's GDP (%)	GDP per Capita (Cur. US$)	Industry as Share of GDP	TOT index, 1950=100
1990	-515.39	168.63	1275.70	100.25	11.80	168	11.87	80.17
1991	-752.73	172.20	1666.30	95.79	11.51	180	9.47	78.79
1992	-720.76	170.49	2035.70	93.00	11.73	183	7.51	83.26
1993	-829.51	182.06	1889.50	155.25	17.44	117	9.11	70.41
1994	-669.22	183.33	1903.00	181.66	19.34	101	9.10	74.74
1995	-609.63	182.34	1276.50	178.33	15.28	102	8.55	100.00
1996	-731.69	173.06	1206.10	167.69	13.61	103	8.31	75.88
1997	-710.69	189.66	960.37	157.93	9.07	107	9.08	83.86
1998	-754.67	168.88	951.49	158.80	10.14	106	10.20	99.06
1999	-1073.60	88.31	567.10	85.32	9.90	104	9.99	83.27
2000	-1124.70	85.28	520.75	83.99	10.62	102	9.10	66.21
2001	-1264.40	86.60	572.75	87.51	17.14	99	9.84	61.60
2002	-1114.70	97.04	669.80	107.65	21.57	90	11.11	56.15

Source: ECA, 2004 (adapted)

In fact, this state of affairs has a long history. It is to be recalled that the country's performance in the international trade platform grew worse in most measures that, for instance, Ethiopia lost its food self-sufficiency in the following few years immediately after the Second World War. As indicated in the table above (Table 13), in the last dozen years ending in 1992, Ethiopia was not in a shape to pay fully for its imports. Consequently, the

country had to heavily rely on debt and ODA to cover the ensuing shortfalls. When it comes to the latter, even by the standards of Sub-Saharan Africa (US$ 25 per capita), Ethiopia remained the country to clinch the least sympathy and empathy, i.e. US$ 13 per capita from donors (UNDP, 2005). In order to pay for its unsustainable consumption, therefore, the country appears to have been forced to indulge itself in unsustainable production in which more and more of its primary products have to be consigned for export at the cost of its environment.

The development path/paradigm subscribed to by the country and more specifically in the Awash Valley, i.e. dependent development or underdevelopment, whether export promoting or import substituting, cannot be said to have benefited the country, leave alone the local communities in reference[24]. Bondestam's (1974: 427) study and findings with regard to the Afar is a glaring case in point: "The capital-intensive investments have only benefited the industrialists in Europe (who exported the machinery and technology) and have contributed to the outflow of capital - at the expense of increased employment opportunities in Ethiopia".

In its export promoting version (mostly cotton), for instance, the development in the Awash Valley relied on capital intensive irrigated, imported-input dependent agriculture (i.e. agro-chemicals, machinery, seeds, etc.), utilizing only the soil and the water of the local resource of the valley and a low paid 'indentured' labor, mainly coming from the highlands of the country. For its market, both for inputs and outputs, it relied on external and far from free-markets, which the country had little or no control[25]. The import-substituting version (mostly sugar), differed little or none from the former, including in terms of capital intensiveness. The terms of trade remained unfavorable and, in particular, for the last six years of the period in consideration it steadily decreased. All said and done, when especially the balance sheet is made to include environmental accounting that duly captures the ecological costs of commodity production and the travail local communities like the Kereyu are made to endure,

[24] "The performance of the irrigation schemes looks even grimmer when compared with the magnitude of initial investment costs in establishing the schemes. It is arguable that if these investments costs had been diverted to the pastoral sector, the benefits that could have been derived would have been greater than from irrigation" (Ali, 1997: 124).

[25] A World Investment Report of 1995, writing on the market domination by large multinationals of such prized Ethiopian exports as coffee, has the following to tell: "…the top 1 percent of all multinational companies account for 70 percent of all global trade. The top 15 multinational companies control the world market in 20 key commodities: 90 percent of the world's trade in iron ore, wheat, timber, cotton, tobacco, pineapples; 80 percent of the world's trade in copper, tea and coffee; 70 percent of the world's trade in rice; and 60 percent of the world's trade in oil" (Brar, 1997: 167).

the economic, social and environmental picture that comes out is grim in keeping with what GebreHywot predicted nearly a century earlier.

GebreHywot's two works, of which the first one appears as the curtain raiser for the second, had a temporal separation of about a dozen years in terms of publication year. The common streak between the two is the issue of development, which is dealt with from its political, economic, social and environmental aspects, the last one being the least appreciated of the quartet. In these works, environmental degradation or depletion or disruption in the context of Ethiopia was addressed from the vantage point of its causes, effects and its ultimate panacea. He attributed the cause for environmental degradation to the skewed nature of the international trade system, as we know it today. Consequently, he allotted, at most, second fiddle to the usual hue and cry population growth receives in this respect.

Accordingly, the solution GebreHywot arrived at is political in which an environment conducive to self-sufficiency is, primarily, to be foisted by policy makers. For this reason, it appears that GebreHywot found it otiose to spare words on the mechanisms of land degradation: over-cultivation, overgrazing, deforestation and faulty irrigation systems, etc.

Incidentally,war, which GebreHywot identified as the most entrenched scourge perpetuating Ethiopia's backwardness, unfortunately, is not something in the past as he wished us to believe, but for some quirk reasons, something enjoying repeated new leases on life in this country. The last major war fought, for instance, is only some four years old and, for all we care, the drums of war are still far from muted.

Furthermore, GebreHywot, speaking about the effects of underdevelopment and dependency and international trade on social well being and the environment, most notably on land degradation, maintained that:

- Indulging in international trade as a developing country or as a country without skills or as a primary producer or as a country trading in products lacking in value added is an environmental disaster.

- Due to the ensuing unequal exchange, such countries are required to pay for imported (manufactured) goods in more and more of their natural resources, resulting in the degradation of their land and vitiation of their environment.
- The consequences of international trade do not stop short; uncompetitiveness and unfavorable prices trigger of loss of traditional skills, knowledge, and perpetrate ultimate impoverization and social cleavage, displacement and emigration, even unrest and bloodletting in developing countries.
- International trade also creates an elite social class that is grossly unpatriotic, parasitic, self-seeking and servile to foreign interests and powers with barely disguised aversion to people-centered[26] development.
- The way out of this, an otherwise certain doom, is a self-reliant development that has to involve the participation, commitment and sacrifice of the whole polity, i.e. the leaders and the led alike.
- Most importantly, he warned that development, taking place in the context of people lacking in skills, would be a recipe for resource loss, social disintegration and environmental disaster. Failing to heed GebreHywot's 'wolf-cry', we now find ourselves in the malignant grip of the world market mired in an ostensibly unrelenting underdevelopment and its social consequences.
- The probability of a self-reliant development in Ethiopia at present or in the foreseeable future, however, does not loom large. One glaring shortfall against this eventuality is the absence of political elite with the resolve to galvanize and orchestrate the Ethiopian public against dependency.

Speaking of self-reliant development, we recall that GebreHywot expatiated on it at length in an attempt to answer the question: "Do we, Ethiopians, really claim to be a sovereign people?'' After reminding us that ''the true meaning of sovereignty is not simply having one's own state'', he offers its economic meaning to be essentially a ''self-sufficient'' country, i.e. a nation with the capablity to produce for itself all or most of the items it

[26] People-centered developments are not only developments that directly and substantially benefit the local community of concern, but are also felt as such by that particular local community. Consequently, consent on the part of the community at the initiation and subsequent launching of such developments is *sine qua non*. This, it has to be recalled, is part and parcel of democratic governance or the devolution of power.

consumes. When it comes to its socio-political dimension, he brings to the fore, *a la* Franz Fanon[27], the intimacy, concord and common purpose that has to reign between the state and the people (or the leaders and the lead) in order to attain self-reliant development in the following words: ‘‘If the state fails to guide and lead the people on the right path, a people married to luxury and comfort is invariably doomed’’ (GebreHywot, 1924: 99). In the Ethiopian case, in particular, GebreHywot recommended in the service of self-sufficiency, that the government establish a stable custom regulations and the provision of education to its people if the state is not to lose its sovereignty and the people its freedom. When people acquire know-how, he argued, they can produce for themselves the goods that they consume such that the people get rich and the government more powerful.

The oracular GebreHywot, ‘raved and ranted’, seemingly in vain, as to the uneqiuvocal need for a self-reliant development of his country, but also warned the various dangers and pitfalls posed by dependent development in the following terms quoted verbatim:

- Woe to a people that has borrowed from the land and failed to payback, the earth would surely see to its demise from famine and pestilence (GebreHywot, 1924: 69).
- The building of roads left and right and the construction of railways, unless the skill of the people is boosted and improved, would only perpetrate more indebtedness, entailing from the people more strain in order to pay the debt and interest to the benefit of foreigners…When unable to acquire the skills to pay back the debt, they are given to suffer from poverty, misery, morbidity and mortality. To dodge ultimate doom, they will flee to the lands where their ancestors sold their land to or somewhere else (Ibid: 74).
- But roads and railways without skills are there to relegate a country into poverty and, therefore, are no good. A government, therefore, wishing its people well, shall not treat the two as isolated but promote them as mutually inseparable (Ibid: 75 - 76).
- In a country capable of producing everything that it requires for its own consumption, building roads enables a large number of people to be productive (Ibid: 87).
- A government, when levying taxes, may benefit or harm its people. If it taxes markets dealing in goods produced at home, it is like severely hurting the producers exchanging them (Ibid: 76).

[27] A government or a party gets the people it deserves and sooner or later a people gets the government it deserves (Fanon, 1967: 160).

- The Ethiopian government, therefore, if ever it resolves not to lose its sovereignty and that of its people, has to prepare the means of defense to this end. The institution and smooth running of stable custom regulations and the provision of education to its people are the best line of defense in this regard (Ibid: 81).
- Losing our skills of yore with which we produced for ourselves, didn't we resign ourselves to the cheap blankets and fabrics manufactured overseas that engulfed and ousted from our markets the fine *bulukos*, *gabis* and the exquisite hand-made cotton textiles of fine yarn spun by our womenfolk? ...Since the arrival of Europeans here, leave alone making further gains in knowledge, we have already lost half of the skills bequeathed us by our ancestors. The remaining half we are bound to lose in no time because of the railway connecting Addis Ababa with Djibouti (Ibid: 79).
- If the state fails to guide and lead the people on the right path, a people married to luxury and comfort is invariably doomed…Furthermore, items of consumption produced in countries with skilled labor, using machinery and equipment, are cheaper compared with those produced domestically and for this reason people of these countries are bound to opt for the foreign produced goods as against that of their own. …Because of this, people are bound to lose their skills completely and succumb to the servility of foreigners (Ibid: 99).
- In a state where skills are lacking, trade and war tend to spread and renew while crafts are scorned upon and dwindle…Thus, such a state loses in terms of power and wealth (Ibid: 99 - 100).
- The ultimate fate of a people that, instead of laboring, simply accumulates a lot of money from the sale of what it borrows (i.e. extracts) from the land, is disaster. Actually, in so doing, what it achieves is the fast aging of its land, due to loss of its fertility, expediting the situation where the land refuses to yield anymore. At long last, it is certain the children and grandchildren of such a people shall perish from famine (Ibid: 115).
- The farmers grow poor while the merchants rich, which means that the wealth of the country ends up accumulating in the hands of a few. The latter, when they discern that their native soil is incapable of yielding enough anymore, they take flight to other countries in pursuit of better life, taking along the gold and silver with them (Ibid: 118).
- Because a pauper without food and clothing has no reason to harbor love of his homeland, he would not mind whether the state is strong or weak. …In a country where income

> inequality or difference in living standard between the poor and the rich is considerable, it is clear that the state in question is on the brink of doom (Ibid: 120).

To sum up the above, GebreHywot harbored a studied ambivalence towards such apparent developmental measures as the construction of roads and similar infrastructures, in particular, when they are taking place outside the context of a particular socio-political and economic setting. Most importantly, he warned that such developments, taking place in the context of people lacking in skills, would be a recipe for resource loss, social chaos and environmental disasters. Failing to heed GebreHywot's 'wolf-cry', we now find ourselves in the malignant grip of the world market mired in an ostensibly unrelenting underdevelopment and its social consequences.

`Thanks´ to this malignant grip of international trade the country gradually found itself mired in, GebreHywot's fears and prediction did not take long to materialize. International trade that gradually undermined the self-sufficient development of the country, for example, arrived in the Awash Valley in the form of capitalist farms and other projects, impacting upon the ecology and the life of the pasoralist communities, like the Kereyu, drastically.

The Kereyu have inhabited the Upper Awash Valley for at least the last two centuries, engaging in transhumance that dotes on the local resources that mostly consist of pasture and water, which, for the most part, have been made possible by dint of the Awash River. The development measures that took place in the valley over the years, as they are not people-centered, started to severe the Kereyu, as well as other pastoralist groups, from these resources which constituted their sole lifeline. Moreover, this process, which has been a long-drawn one, failed to involve or benefit the local communities in any meaningful way. Actually, it ended up with chain-effects and/or mutually bolstering untoward impacts, which:

- confined the Kereyu within less and less space in mostly marginal land characterized with less and less carrying capacity;
- perpetrated, in turn, a situation of where the land remaining to the Kereyu is alarmingly devegetated and the soil compacted, making the area more prone to wind and/or water erosions;

- increased the soil load in the waters of the Awash River heightening its turbidity, compromising, among others, its biotic life and fish yield;
- denying the Kereyu their former free and unmolested access to the waters of the Awash River, they and their livestock were forced to subsist on polluted and unhealthy alternatives at the cost of their well being;
- tainted the quality of the Awash River, a factor that formerly made life habitable or even possible for the Kereyu and other pastoralists in the valley, by the uncontrolled discharge of effluent from households, industry and agriculture;
- forced, consequently, the livestock growth and survival dangerously down dale, resulting in loss of income and nutritional well being as well as increasing vulnerability to disease and pestilence;
- triggered of resource competition, leading to frequent and more and more lethal inter- and intra-communal conflicts;
- first they lost their former autonomy and control over their resources, their old ways and folkways, then followed either the erosion or the gradual whittling down of their environmental management skills and, what is worst, got more and more estranged with their indigenous political process that kept them going hitherto;
- the Kereyu got relegated to second-class citizens with their will unsolicited and their rights willfully trampled under and promises made them brazenly ignored in spite of protections from the Constitution and other subsidiary legislation, and;
- the Kereyu were impelled to regard the state (local, regional or central), the agent and perpetrator of all the sins against them, with the deepest suspicion and barely disguised animosity.

The environmental disruption evident in the Awash Valley, moreover, had both distant and proximate causes. The former is attributed to the global climate change fawning desertification while the latter owes itself to the various development activities that came into the valley as well as in the upper basin, directly or indirectly, affecting the receiving environment (i.e. air soil, and water) adversely, as environmental prevention and control are either very weak or totally nonexistent:

- The Awash River and its affluent suffered the most in terms of pollution. Activities far from the study area also contributed; a motley collection of commercial, industrial, agricultural and household sources, from its headwaters in the upper basin and all the way to its terminus, in a series of lakes in the Lower Valley, emptied their wastewater in the Awash River with a sense of impunity. As this study established, the level of cations and anions in this river are well above standard either seasonally or throughout the year *vis-à-vis* various environmental standards, owing to either natural or anthropogenic causes. Fluoride is a good example of the first type, its level surging above 4 mg/L (more than 2.5 mg/L above standard) in the dry season. Although, due to its limitations, this study could not conclusively establish their source, whether artificial or otherwise, and therefore, establish whether this is pollution[28] or not, such ions as Fe and Al are well above standard for all sites and seasons in the Upper Awash Valley. The levels of Cr, F and Cl are also well above standard for summer (May-05), spring (Oct-04) and fall (Feb-05), respectively.

- The level of land degradation, viewed from the perspective of devegetation, due mainly to the twin agencies of deforestation and overgrazing, manifested itself in the study area in a variety of range conditions consisting of either bare ground cover, grass or non-grass species. The first and the last are indicators of overgrazing and the last comes about as animals show less or no preference to non-grass species, thus these plants become prevalent due to the overgrazing of grass species by livestock. This study confirmed that the difference in range condition evident was neither due to variation in soil nutrients nor due to change in such physical parameters as soil bulk density. For the entire sample sites the organic carbon, available potassium and phosphorous, the carbon-nitrogen ratio, total nitrogen and bulk density were all in the desirable range.

- The dust load in the ambient air, owing to the coupling of excessive devegtation and wind erosion, ravaged the study area, especially in seasons where the air current and speed grew predominant; the same holds true for pesticides, especially when these are sprayed from the air, polluting water, soil and vegetation as they are wind-carried to sites even distant from the initial source.

[28] Although this study was unable to pin down the above showings as pollution, on the basis of the precautionary principle, however, these can be dubbed as pollution, as the principle exactly provides for such a presumption. Recall that the precautionary principle, as the fifteenth of the Rio principles, states "… Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation (UNCSD, 1992).

This state of play, therefore, stands to be reversed and, as such, brooks no delay. The facility provided by the Constitution and the environmental laws emanating form the latter are capital assets to this end. A battery of institutions in the form of GOs, NGOs, CBO, etc. is also actors and platforms to be harnessed for this purpose. Enhanced expertise and awareness made possible, among others, by environmental courses offered in institutions of (higher) learning and various other forums, enabling cerebration in this direction are also there to be tapped to the benefit of the same cause.

In the analysis so far, attempt was made, *inter alia*, to trace the developmental discourses and the adjoining developmental practices of the country. This is also included answering such questions as: "Who benefited from the various developmental endeavors that transpired in the Awash Valley? The state, the national economy, the Kereyu and/or the other pastoralist communities? What were the costs, i.e. the social costs[29]? Who incurred them? The proponents of the different projects, the state, the national economy, the environment, the Kereyu and/or the other pastoralist communities? The next chapter takes us to the finale of the paper as it is dwells upon the conclusion and recommendations emanating from this study.

[29] A dictionary of economics defines social costs as "A man initiating an action does not necessarily bear all the costs (or reap all the benefits) himself. Those that he does bear are private costs; those he does not are external costs. The sum of the two constitutes the social costs" (Graff, 1987: 393).

CHAPTER 6

CONCLUSIONS AND POLICY IMPLICATIONS

6.1 CONCLUSIONS

Development thought in the optics of the now developed countries could be traced back to such economic pundits as Sir William Petty reaching as far back as 1662 with his predilection on economic growth. The development discourse in Ethiopia, dealt with from the perspective of a developing country, however, unlike most developing countries, had its beginning before the First World War, when a number of Ethiopian scholars with interest on the subject matter, including GebreHywot, modelled Japan as a country worth emulating. Later editions, however, tended to be ideology mounted and of corporate origin in terms of their promoters. GebreHywot Baykedagn, nonetheless, remains unrivalled both for the lucidity of his thought and the breadth and originality with which he attempted to exhaust his subject matter.

The development thoughts of Negadras GebreHywot Baykedagn differed from the above two in a number of respects. Firstly, he radiated depth in reasoning, arriving at his conclusions based on solid concepts and select premises. Secondly, he made the centerpiece of his arguments and elucidations the notion of dependency, complete with its causes, consequences and way(s) out. The causes of dependency, he attributed to the plethora of warring warlords in the country, the conspicuous consumption and the unpatriotic ways of the Ethiopian elite, the unequal exchange marking the world market and the lack of skills on the part of the multitude. He painted in broad spectrum the manifestations of the consequences, as loss of traditional skills, knowledge and livelihoods, environmental degradation, ever-increasing emmiserization, social dislocation, erosion of patriotism, deepening income inequality, a wobbly state and polity, further conflict and war, etc. As a way out of this quagmire, he recommended the donning of the Ethiopian populace with know-how and the promotion of a studied protectionism in the form of a carefully wrought tariff system.

The development projects and trade relations that gradually started to hold root in the country diverged very much from the development thinking indicated above. The roads (and rails) that started to radiate in different directions facilitated the inundation of the country with cheap foreign goods while an export sector floundered overwhelmed by two or three

agricultural products. The industrial development of the country, likewise lacked autonomy, as it was not a natural evolution of local production activities. Hence, it grew dependent on foreign sources for machinery, finance, skilled personnel, market and, to a significant extent, for raw materials.

By and by, Ethiopia's economic strides ended up assuming a monocultural cast where the country depended on the international market to obtain what it does not produce but wishes to consume (mostly manufactured items and petroleum products) and to sell what it produces but does not consume or, perhaps, wills to forego (primary goods such as coffee, hide and skin). Moreover, Ethiopia was reduced to the rank of such countries that are virtually devoid of any say as to the prices quoted for their products and for the items that they may wish to import. Ethiopia also became a country marked with secular double deficits and, consequently, highly indebted. The economic policy element enjoying the most favor has been and still remains the production, in large quantities whenever possible, of primary produce capable of fetching whatever foreign currency without regard to whatever negative consequences, social, cultural, economic or environmental. In this regard, the three apparently differing successive regimes (i.e. the imperial, the military and the republican/federal) are one and the same. Witness, for example, the uncritical adulation and hyperbole being allotted to floriculture development in the country presently. This is exactly what puts the ruling ideas, past or present, at odds, if not at loggerheads, with that of GebreHywot. Such general features of the country, however, find varied local expressions depending on the level of integration of a particular region into the world market. One such locale is the Awash Valley.

The various development projects unfurled in the Awash Valley gave blind eye to the needs and wishes of the pastoralist communities inhabiting it. This resulted, among others, in what can be dubbed as environmental genocide. The combined loss of pasture and denial of access to the Awash River, spanning nearly a century, resulted for the local communities in the study area in the gradual but inexorable loss of their means of livelihood as well as their ways of life. Environmental degradation of various hues and colors (erosion, water pollution, devegetation/deforestation, bush encroachment, loss of biodiversity, salinization, etc.) went on rampage in no ways unchecked.

We know very well now that pastoralists, in stark contrast to facile highlanders' prejudice[30], are not passive actors simply averse to drudgery, or merely actors shunning dehumanizing labor, or bunches of lazy bones, lounging their 'valuable' time tailing or trailing livestock, but rationale consumers as much as any that one can find on the face of the earth (Shazali, 2000). Given the scorching climate, accompanied as it is with untempered pestilence, hamstrung by the limitations of local and traditional technology, the unaffordability and scale predilections of modern technology, the erratic and scarce nature of the rains here, or, to be more precise, the unreliability of the water supply and the sensitivity and fragility of dry land, the pastoralist were forced to be married with pastoralism as the only optimum and viable mode of existence. According to the pastoralist communities, this mode of life has to be maintained in spite of the savagery of modern civilization spearheaded by the World Bank and the IMF and the mercilessness of the world market along with the behests of its local agents and the accomplice state. The only life worth living and of the highest return for pastoralists remains pastoralism, nothing more nothing less.

The livelihood of pastoralists in the Awash Valley as it stands out now is poised against the odds, as the development measures forced on them are not people-centered, the resources they cherish most, viz. grazing land and water, are being constantly eaten up by modern agriculture and similar developments. Their environment stands at a loss against the unrelenting onslaught of desertification and other forms of environmental vitiation, including pollution. If someone asks, "What is the future of pastoralist communities and their environment in this country?", the author would join many in answering - "*resoundingly bleak*" - unless, of course, something out of the blue (e.g. the united effort of all progressive forces, national and international) is to show its face and reverse the *status quo*. This is not because of any inherent weakness on the part of pastoralism being unable to use pastoralism's built-in resilience in the same way as cancerous cells ultimately do to the body of a victim, but for the simple reason that the forces, domestic and international, arraigned against it are formidable and cutthroat at the same time. In fact, pastoralism sailed smoothly for much of the period leading up to the present because it has always been resilient. Many an indigenous people, for instance, had to perish following Columbus' discovery of the New World

[30] Difference in livelihood systems are known to have spawned prejudice such that "… throughout human history farmers have tended to despise hunter-gatherers as primitive, hunter-gatherers have despised farmers as ignorant, and herders have despised both" (Diamond, 1999: 108). What makes this alarming and all the more dangerous, however, is when such attitudes are let to constitute the policy fabric or somehow inform or influence policy decisions.

(Diamond, 1999) for nothing but the glory and unhindered onslaught of what later on became known as the "profit motive", which nowadays is clad in a new but false garb, viz. globalization that appears to have more victims than converts each passing day.

This state of affairs, however, could be reversed in this country thanks to the Constitution of the land, in particular, with respect to the pride of place it allots to community rights and environment. In the fight against the forces of so-called development, the Constitution of the land and subsidiary legislation, such as the Proclamation to Control Environmental Pollution and the Proclamation for Environmental Impact Assessment, are bound to be formidable weapons to be put to use to the benefit of pastoralists. *Negadras* GebreHywot's observation that the land degradation evident in the country of his days will only have a lasting solution when Ethiopia pursues a self-reliant economic development still holds true as it did then.

The development path pursued by the country for the last century and more is nowhere near self-reliant development. When it comes to international trade, Ethiopians are more and more consuming what they do not produce and producing what they do not consume. The country's integration in the world market involved a change in the makeup of the country's elite in which the former feudal lords were increasingly and inevitably replaced by or transformed into comprador and bureaucratic bourgeoisies in which the latter invariably cater to the capital accumulation needs of a metropolitan bourgeoisie. The international economic order that Ethiopia has been made or forced to fit into for the last century and half is to the detriment of the country's environment, social well being and economic advancement.

6.2 POLICY IMPLICATIONS

The various problems that the Kereyu as well as other pastoralist groups in the Awash Valley have been forced to endure had their origin in a cocktail of variegated policies spanning three or four regimes. Actually, in terms of a major policy document of the land, i.e. constitution, the Constitution of 1995 is decidedly different in origin, orientation and objectives in contrast to its forerunners. In this regard, mention shall be made of the various group rights and environmental rights that it gave birth to.

In the face of these rights, the problems that pastoralist groups like the Kereyu find themselves burdened with are incompatible with the present constitution and, therefore, are

supposed either to be corrected or made impossible. Some of these that need to be addressed are listed down hereunder:

- Put an immediate stop to the state sponsored genocidal land grabs pastoralist communities are suffering from in the Awash Valley so that they may be saved from the various adverse environmental, economic and social impacts ensuing.
- Implement the environmental policies and laws of the land without delay or any hesitation; in particular, enforce vigilantly the Environmental Pollution Control Proclamation and the Environmental Impact Assessment Proclamation enacted for four years now.
- Adhere to the international treaties on human rights the country is a party to with respect to peoples' rights, in general, and to their natural resources, in particular[31].
- Enforce benefit-sharing and community participation with in the management of ANP with regard to local communities with rights thereto.
- Economic establishments active in the Upper Awash Valley, such as MSF, need to mend their old ways and be accommodative in their relationship with the neighboring local communities, including the placing of benefit-sharing mechanisms and real consultative processes (as against bogus ones hitherto exercised through henchmen[32]), in particular, to respond to the legitimate right and needs of the latter.
- Conduct systematic studies on natural resources to determine if anthropogenic or geogenic factors are responsible for environmental vitiation in the Awash Valley and,

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[31] Article 21/1: "*All peoples shall freely dispose of their wealth and natural resources. This right shall be exercised in the exclusive interest of the people. In no case shall a people be deprived of it*", African (Banjul) Charter on Human and Peoples' Rights (*Adopted 27 June 1981, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), entered into force on 21 October 1986*).

Article 1/2: "*All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence*." International Covenant on Civil and Political Rights, G.A. Res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 52, U.N. Doc. A/6316, (1966), 999 U.N.T.S. 171, entered into force Mar. 23, 1976.

[32] "... the Metahara Sugar Estate, the biggest agro-industrial establishment in the area, continues to pursue a policy of silencing community opposition. To this end, it has put on its payroll some influential community figures that are regularly paid only for their contributions in mediating between community members and Estate management. … there are such 'community leaders' who are enrolled in the Estate's pay list, to an annual budget of Birr 80,000 -100,000. …Many kareyu elders bitterly complain that they have often been betrayed by such men from their own ranks ever since the introduction of concession agriculture in the area" (Ayalew, 2000: 198).

accordingly, institute environmental control mechanisms for the management of the former.

- Undertake basin encompassing sustained studies and controls on the Awash River with regard to both abstraction from and discharge into the river body to substantially mitigate pollution.
- Require those establishments pumping their effluents into the Awash River and its tributaries to install effluent treatment plants and monitor the efficiency of same.
- Institute water quality standards that take into account variations in the assimilative capacity of the Awash River across time/seasons and space.
- Redress and compensate past misdeeds and harms inflicted against pastoralist communities in the Awash Valley (some of which are outstanding for decades).
- Find ways and mechanisms that may enable pastoralist to smoothly sedenterize or change their old ways voluntarily (as against coercive measures that have proved futile and harmful).
- Work closely with the Secretariat of the Climate Change Convention and canvass countries, especially developed ones, that are not yet party to the Climate Change Convention or the Kyoto Protocol or both so that they may accede and implement the said MEAs.
- Merge and translate the regional conservation strategies (that of Addis Ababa and DireDawa City administrations, Afar and Oromia regions) into a basin wide strategy to effect (an environmentally) sustainable development in the Awash Basin.
- Foist a basin-wide action program that takes on board complementary preventive and curative actions addressing long overdue, current and emerging issues.
- Improve understanding of the relationship of water resource development and environment in the basin underscoring threats and priorities.
- Expedite the implementation of the provisions of the Constitution with no shilly-shallying and no watering down whatsoever, in particular, the devolution of power to local communities in a manner that actually reinstates back the decision making power of pastoral communities on the use and management of their natural resources taken away from them by the former centripetal states.

REFERENCES

Agrawal, Sunta Narian and Anju Sharma edited. 1999. Global Environmental Negotiations. Delhi: Centre for Science and Environment.

Action Aid. 1999. Food Security. London: Action Aid.

Aleme Eshete. 1982. The Peasant-Worker Transformation in the History of the Ethiopian Proletariat. *East African History Conference* (060/EAS/1982). The institute of Ethiopian Studies (IES). AAU.

Alemayehu Geda. 2002. The Gebre-Hiwot Model: A Pioneer African (Ethiopian) Development Macroeconomist. *Ethiopian Journal of Development Research.* Vol. 24, 1. Addis Ababa: Addis Ababa University Printing Press.

Ali Said. 1997. Resource Use Conflict in the Middle Awash Valley of Ethiopia: The Crisis of Afar Pastoralism. Richard Hogg ed. *Pastoralists, Ethnicity and the State in Ethiopia.* London: HAAN Publishing & IFAA.

Assefa Tolera. 2000. Pastoralists and Environment. Problems of Sustainable Resource Use among Pastoralist Societies: The Influence of State Intervention on Pastoral Life of the Kereyu. *Pastoralists and Environment: Experiences from the Greater Horn of Africa.* Addis Ababa: OSSEREA.

Ayalew Gebre. 2001. Pastoralism under Pressure: Land Alienation and Pastoral Transformation among the Karrayu of Eastern Ethiopia, 1941 to the Present. The Hague: Shaker Publishing BV.

Ayele Zewge. 1981. The Politico-Economic Thought of GebreHywot Baykedagn. *Meskerem Vol. I, 3 & 5*, Addis Ababa.

Bahru Zewde. 1984. Environment and Capital, Notes for the History of the Wonji-Shoa Sugar Estate (1951-1974). ARC-1984, 85/24191.

Bahru Zewde. 1982. An Overview and Assessment of the Gambella Trade (1904-1935). *East African History Conference (060/EAS/1982)*. The Institute of Ethiopian Studies (IES). AAU.

Bahru Zewde. 2002. Pioneers of Change in Ethiopia. Addis Ababa: Addis Ababa University Printing Press.

Baker, M.J. 1993. Grasslands for Our World. Wellington: SIR Publishing.

Baxter, P. T. W. and Rechar Hogg, eds. 1990. Property, Poverty and People: Changing Rights in Property and Problems of Pastoral Development. Manchester: University of Manchester.

Bekure W. Semait. 1982. Industrial Development in the Addis Ababa Area: a Miniature capitalist Penetration. *East African History Conference (060/EAS/1982)*, the Institute of Ethiopian Studies (IES). AAU.

Bizuwork Zewde. 1985. The Jille Community and the Wonji Sugar Factory. BA Thesis. Department of History. AAU.

Bondestam, Lars. 1974. People and Capitalism in the Northeastern Lowlands of Ethiopia. *Journal of Modern African Studies*. Vol. 12 No. 3.

Care-Ethiopia. 2004. Rangeland Condition Assessment in and around Awash National Park (Unpublished).

Caulk, Richard. 1978. Dependency, Gebre Heywot Baykedagn, and the Birth of Ethiopian Reformism. *Proceedings of the fifth International Conference of Ethiopian Studies*.

Currey, D.T. 1972. Geomorphic, Geologic and Ground Water Studies in the Awash Valley. UNDP/SF/ETH24. *Informal Technical Report No.4*. Addis Ababa. Ethiopia.

DEQ Northwest Region. 2001. Restoring Soil Health to Unrabized Lands: the Critical Link between Waste Prevention, Land Use, Construction, Storm water Management and Salmon Habitat Restoration. State of Oregon. (Unpublished)

Diamond, Jared. 1999. Guns, Germs, and Steel: The Fates of Human Societies. New York and London: W. W. Norton & Company.

Duri Mohammed. 1974. Industry, Agriculture out of Step - and the Strains Start to Tell, in African Development.

ECA. 2005. Report on the Status of Sustainable Development in Ethiopia. (Unpublished).

EPRDF. 1989. The Question of Self-Reliant Economic Development: A Short Preamble. (Unpublished).

Fanon, Frantz. 1963. The Wretched of the Earth. Middle Sex: Penguin Books Ltd.Emmanuel, Arghri. 1972. Unequal Exchange: A Study of the Imperialism of Trade. London: Monthly Review Press.

FAO. 1999. Recommendations for Levels of Toxic Substances in Drinking Water for Livestock. http://www.fao.org/DOCREP/005/Y4263E/y4263e0f.htm (browsed on 7/7/2006)

Federal Negarit Gazeta, 1st Year No. 1. 1995. Constitution of the Federal Democratic Republic of Ethiopia. Addis Ababa: Berhanena Selam Printing Press.

Fekadu Gedamu, et Al. 1983. A Study of Nomadic Areas for Settlement. Study Report. Addis Ababa: UNDP/RRC.

FEPA. 2003. Provisional Standard for Industrial Pollution Control in Ethiopia. Addis Ababa: (Unpublished).

FEPA. 2003. State of Environment Report for Ethiopia. Addis Ababa: Artistic Printing Enterprise.

FEPA. 2002. A Water Quality Monitoring Strategy for the Awash River Basin. Addis Ababa: (Unpublished).

Frank, Andre Gunder. 1979. Dependent Accumulation and Underdevelopment. New York: Monthly Review Press.

GebreHywot Baykedagn. 1912. *Atse Menelik-na Ityopia*. Asmara: Berhan Yhun.

GebreHywot Baykedagn. 1924. *Mengist-na YeHzb Astedader*, Addis Ababa: Commercial Printing Press.

Gelabo Sengago. 1988. Water Defluoridation. Solomon Alemu, ed., Water Resource Development. Addis Ababa: Water Resources Commission Geoffrey Lean. 1975.Halcrow, William (Sir). 1989. Master Plan for the Development of the Surface Water Resources in the Awash Basin Final Report. Volume 9. Addis Ababa. Ethiopia.

Graaff, J. de V. 1987. Social Costs in *New Palgrave Dictionary of Economics*. London: Macmillan.

Guninand, Y. 1999. UNDP-EUE: Afar Region, Survey Report of 1999 Awash River Floods. Addis Ababa. Ethiopia.

Halcrow, William (Sir) and Partners. 1978. The Study of Beseqa Lake's Level. AVDA. Addis Ababa.

Harpal Brar. 1993. Capitalism against Capitalism. New York.

Helmut Kloos. 1982. Development, Drought and Famine in the Awash Valley of Ethiopia. *African Studies Review*, *Vol. 25, No. 4*.

Heruy WoldeSellasie. 1923. *YeHiwot Tarik*. Addis Ababa: Ras Teferi Printing Press.

Houe'rou, H. N. and M. Corra. 1980. Some Browse Plants of Ethiopia. Addis Ababa: International Livestock Center for Africa.

Haberson, J. W. 1978. The Afar of the Awash Valley. History Miscellanea 20.

Interim Secretariat for the Convention to Combat Desertification. 1992. United Nations Convention to Combat Desertification. Addis Ababa: Artistic Printing Press.

Jacobs, J., Michael and Catherine A. Schroeder. 1993. Awash National Park Management Plan 1993 – 1997. Addis Abba: Ethiopian Wildlife Conservation.

Kinfe HaileMariam. 1999. Impact of Climate Change on the Water Resources of Awash River Basin, Ethiopia. Climate Research, Vol. 12: 1999.

Lean, Geoffrey. 1975. Down to Earth. Geneva: Centre for Our Common Future.

Mamdani, Mahmood. 1976. Politics and Class Formation in Uganda. New York: Monthly Review Press.

Marx, Karl. 1975. Early Writings (New Left Review): Middle Sex: Penguin Books Ltd.

MoFED. 2002. Proceedings of the Federal PRSP Consultation. Addis Ababa: (Unpublished).

MoWR. 2005. Environmental Impact Assessment Interim Report of the Tendaho Dam and Sugar Project. Addis Ababa: (Unpublished).

Nair, K.N.N.S. and Adugna Libsework. 1989. Socio-Economic Evaluation of the Current Land-Use and Farming Systems in the Yerer and Kereyu Awraja. London: Macmillan Press.

Niamir, Mariam. 1991. Traditional African Range Management Techniques: Implications for Rangeland Development. Pastoral Development Network Papers, Vol. 3, No. 1. Dare Salaam, FAO.

NOPA. 1992. Pastoralists at Crossroads: Survival and Development Issues in African Pastoralism. Nairobi. UNICEF/UNSO.

OAU. 1981. African (Banjul) Charter on Human and Peoples' Rights (*Adopted 27 June 1981, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), entered into force on 21 October 1986*)

QSEA. 2001. Drinking Water - Specifications. ES 261:2001.

Regassa Bayissa. 1993. Labor Migration to the Commercial Farms of the Upper Awash Valley (1950 – 1990). M. A. Thesis. AAU: School of Graduate Studies.

Rump, H. H. and H. Krist. 1992. Laboratory Manual for the Examination of Water, Waste Water and Soil, 2nd ed. Weinheim:VCH Verlagsellschaft mbH.

Shazali, Salah. 2000. Effecting Development: Reflections on the Transformation of Agro-pastoral Production systems in Eastern Sudan. *Pastoralists and Environment: Experiences from the Greater Horn of Africa.* Addis Ababa: OSSEREA.

Shivji, Issa G.1976. Class Struggle in Tanzania. New York: Monthly Review Press.

Smith, Thomas C.1987. The Agrarian Origins of Modern Japan.

Tenalem Ayenew. 2004. Environmental Implications of Changes in the Levels of Lakes in the Ethiopian Rift since 1970.

The Ethiopian Herald. Wednesday, 13 October 2004. Vol. LXI No. 028. Addis Ababa: Berhanena Selam Printing Press.

UNCSD. 1992. Agenda 21: Programme of Action for Sustainable Development. New York: United Nations Publication.

UN. 1966. International Covenant on Civil and Political Rights (G.A. Res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 52, U.N. Doc. A/6316, (1966), 999 U.N.T.S. 171, entered into force Mar. 23, 1976).

UNDP. 2005. Human Development Report 2005 @ http://64.233.183.104/search?q=cache:35DjxyFjlHMJ:www.uneca.org/popia/Peda/PEDA_Advo_Book_Eth.pdf+faostat+on+Ethiopia&hl=en(browsed on 7/1/2005)

WHO. 1984. Guideline for Drinking Water Quality. http:///www.lenntech.com/WHO's-drinking-water-standards.htm (browsed on 9/8/2005)

Wilding, Richard. 1983. The Liban Myth and the Enigmatic Cowman: Some Notes on Issues Raised by the History of the Pastoralists of the Lowlands. *Paper Presented at the Annual Seminar of the Department of History. AAU: Unpublished*.

WWD&SE. 2005. Kesem-Kebena Dam and Irrigation Project: Environmental Impact Assessment. Draft Final Report. (Unpublished).

ANNEXES

ANNEX I: LABORATORY RESULTS FOR WATER SAMPLES (SEASON I)

Date sampling finalized: Nov. 30/2004
Sample Originators: Emmanuel, Tewodros and Yohannes

No.	Fe	Mn	Cr	Pb	Al	EC	COD	Cl^-	SO_4^{2-}	$N\text{-}NO_3^-$	PO_4^{3-}	CO_3^{2-}	HCO_3^-	F^-	T. Alk.
1	0.24	0.00	0.00	0.00	0.49	55	2	0.71	4	0.2	0.06	13	25	0.54	43
2	0.00	0.00	0.00	0.00	0.00	176	6	12.78	2	3.8	0.01	30	12	0.92	60
3	0.40	0.20	0.00	0.00	0.20	547	23	47.93	26	7.0	1.13	42	128	16.06	175
4	0.94	1.09	0.00	0.00	1.65	307	17	25.92	15	4.0	0.18	54	32	18.70	115
5	1.91	0.73	0.00	0.00	4.14	252	14	16.69	9	2.5	0.46	23	108	14.52	127
6	1.07	0.88	0.02	0.00	3.29	365	25	39.05	38	3.0	0.30	0	178	9.18	146
7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8	0.00	0.78	0.00	0.00	3.55	252	14	11.36	10	0.00	0.28	32	81	8.16	120
9	3.30	0.03	0.00	0.00	8.06	155	0	4.97	4	0.00	0.06	24	62	7.08	91
10	0.90	0.62	0.00	0.00	5.77	202	10	8.17	0	1.1	0.12	0	117	4.44	96
11	1.35	0.03	0.00	0.00	6.72	198	5	7.81	7	0.2	0.34	25	74	8.40	102
12	1.20	0.15	0.00	0.00	7.29	168	15	7.81	4	0.6	0.85	20	78	8.52	98
01	2.09	0.12	0.10	0.00	12.50	250	0	10.30	4	0.9	0.82	0	132	4.08	109
02	0.00	0.30	0.10	0.00	9.95	6.81*	13	566.22	560	0.7	3.44	720	341.6	229.36	2680

NB:
1. EC is in micro Siemens per centimeter (Except for * which is in mille Siemens per centimeter).
2. All units are in mg/L.
3. Total Alkalinity (T.alk) is in mg/L as $CaCO_3$.
4. Analytical methods employed are standard procedures adopted by the Environmental Laboratory Service of the FEPA.

ANNEX II: LABORATORY RESULTS FOR WATER SAMPLES (SEASON II)

Date sampling finalized: 12/09/97 E.C. 20/5/2005 (Season II)
Sample Originators: Mehari Wondmagegne and Shimels Tadesse

No.	PH	EC	TDS	Total Fe	Na^{+}	K^{+}	Ca^{++}	Mg+	$CO_3^{=}$	HCO_3^{-}	Cl^{-}	COD	Ni	$SO4^{=}$	$NO_3^{=}$
1	8.22	826.5	336	0.74	52.1	6.98	126.00	14.50	5.2	36.6	273.4	5.0	0.24	2032.0	3.28
2	8.56	848.2	336	1.67	51.8	6.50	38.00	8.44	0.0	0.0	121.1	40.0	0.18	2112.0	3.18
3	8.11	616.2	250	8.95	42.1	7.80	68.90	20.40	2.0	146.4	241.1	106.0	0.78	1195.2	206.00
4	8.51	912.0	366	2.86	52.0	7.91	4.38	2.13	2.4	159.0	277.9	20.0	0.07	1449.6	3.08
5	8.52	824.2	330	0.99	50.4	8.11	7.71	2.29	2.0	159.0	260.9	17.0	0.04	1055.2	2.38
6	8.34	437.8	176	2.58	41.9	7.68	37.90	3.42	2.0	0.0	143.4	24.0	0.09	824.8	2.58
7	8.24	468.5	187	1.46	44.1	7.80	67.90	5.11	2.4	36.6	165.3	68.0	0.08	701.4	2.93
8	8.33	436.6	177	2.48	42.4	6.93	34.00	3.23	2.0	24.4	153.1	14.0	0.06	484.9	2.53
9	8.19	321.5	129	1.97	31.5	6.29	39.30	2.99	2.0	0.0	131.0	4.0	0.05	597.4	2.71
10	8.30	354.5	143	1.04	35.5	6.45	40.50	3.00	2.0	0.0	132.8	4.0	0.03	511.8	2.20
11	8.18	308.9	125	2.11	27.1	4.92	39.40	2.88	2.8	0.0	110.0	0.0	0.04	368.6	1.62
12	8.27	597.4	241	1.17	42.1	11.70	38.90	5.47	2.0	171.0	176.7	4.0	0.06	567.3	7.75

NB:
1. EC is in micro Siemens per centimeter (Except for * which is in mille Siemens per centimeter).
2. All units are in mg/L.
3. Total Alkalinity (T.alk) is in mg/L as $CaCO_3$.
4. Analytical methods employed are standard procedures adopted by the Environmental Laboratory Service of the FEPA.

ANNEX III: LABORATORY RESULTS FOR WATER SAMPLES (SEASON III)

Date sampling finalized: 30/8/97E.C (08/05/05) (Season III)
Sample Originators: Emmanuel, Mohammed and Habtamu

No.	Al	Cr	Fe	Mn	Pb	CO_3^{2-}	HCO_3^-	Cl^-	SO_4^{2-}	Tpa_1^3	NO_3^-	NH_3	F^-	COD	PH	DO	EC
1	0.0	0.0	1.90	0.8	0.0	0.0	154	11	3	0.33	0.1	0.00	0.29	100	6.64	5.55	270
2	0.0	0.0	0.26	0.4	0.0	0.0	170	16	5	0	3.9	0.00	0.03	35	7.53	5.80	390
3	0.2	0.0	0.40	1.2	0.0	0.0	393	47	2	12.8	0.2	21.00	0.41	164	7.54	2.38	752
4	0.4	0.0	0.63	1.6	0.0	0.0	537	98	17	14.3	1.1	21.00	0.39	270	7.52	0.32	1196
5	0.6	0.0	0.44	0.6	0.0	0.0	295	31	8	2.67	1.1	5.00	0.28	44	6.85	2.84	570
6	0.6	0.0	0.27	1.2	0.0	0.0	534	124	14	13.4	3.6	25.90	0.85	116	7.80	2.30	1416
7	0.6	0.0	0.92	0.4	0.0	0.0	331	64	35	1.23	1.4	1.36	0.40	33	7.78	5.80	795
8	1.8	0.0	2.00	0.2	0.0	0.0	331	20	16	0.3	0.6	0.04	0.59	6	7.45	7.80	578
9	0.2	0.0	0.16	0.0	0.0	0.0	280	38	27	0.69	3.3	0.00	0.69	34	8.45	8.04	346
10	3.0	0.0	2.20	0.2	0.0	0.0	188	19	9	0.02	0.1	0.00	0.91	33	8.06	7.83	360
11	6.8	0.0	8.90	0.5	0.0	0.0	209	20	11	0.51	0.3	0.00	1.44	32	8.17	6.27	589
12	2.9	0.0	5.10	0.3	0.0	0.0	201	20	10	0.27	0.0	0.00	0.57	32	8.16	8.30	377

NB:
1. EC is in micro Siemens per centimeter.
2. All units are in mg/L.
3. Total Alkalinity (T.alk) is in mg/L as $CaCO_3$.
4. Analytical methods employed are standard procedures adopted by the Environmental Laboratory Service of the FEPA.

ANNEX IV: LABORATORY RESULTS FOR SOIL SAMPLES

National Soil Research Center — EARO

Result Sheet For Soil Chemical and Physical Analysis

Study Area Metahara ***Location/Coordinates*** ***Supplier Amanuel M***

LAB.NO	Field No	Depth cm	$P^H H_2O$ 1:2.5	EC ds/m	T.N %	O.C %	C/N	Av.P.Ol. PPm	Av.K PPm
1342 /05	D-1	0-20	8.5	0.229	0.157	1.397	9	4.40	170
1343 /05	D-2	0-20	8.6	0.265	0.083	1.197	14	4.80	120
1344 /05	D-3	0-20	8.4	0.235	0.132	1.536	12	2.64	296
1345 /05	D-4	0-20	8.3	0.473	0.155	1.536	10	3.74	228
1346 /05	D-5	0-20	8.5	0.191	0.147	1.516	10	3.76	145
1347 /05	UN-1	0-20	7.9	0.109	0.126	1.037	8	2.54	162
1348 /05	UN-2	0-20	7.9	0.089	0.108	0.898	8	1.80	141
1349 /05	UN-3	0-20	8.0	0.185	0.242	2.394	10	7.80	322
1350 /05	UN-4	0-20	8.1	0.097	0.158	1.037	7	1.80	243
1351 /05	UN-5	0-20	7.5	0.150	0.277	2.863	10	3.36	405
1352 /05	01----1	0-20	7.3	0.400	0.133	0.898	7	5.92	144
1353 /05	01----2	0-20	8.2	0.130	0.086	0.698	8	4.68	270
1354 /05	01----3	0-20	8.0	0.360	0.205	1.430	7	10.12	229
1355 /05	01----4	0-20	7.8	0.473	0.118	1.297	11	6.14	277
1356 /05	01----5	0-20	8.1	0.162	0.124	1.357	11	6.00	290
1357 /05	MSF	0-20	7.9	0.106	0.126	1.397	11	21.42	1134

LAB.NO	Field No	Depth cm	Sand %	Silt %	Clay %	Class
1342 /05	D-1	0-20	43	36	21	Loam
1347 /05	UN-1	0-20	63	26	11	Sandy Loam
1352 /05	01----1	0-20	55	34	11	Sandy Loam

LAB.NO	Field No	Depth cm	Bulk Density g/cm3	
1358 /05	Elala Sala	0-20	1.28	
1359 /05	Main get	0-20	1.40	
1360 /05	LegaBeuti	0-20	1.44	
Remarks.....				

Laboratory Supervisor..... Signature..... Date.....

Center Manager ..... Signature..... Date.....

ANNEX V: HUMAN, LIVESTOCK AND P0ULTRY POPULATIONS IN THE TOWNS AND RURAL KEBELES OF THE FENTALE WOREDA (2002)

No.	Rural kebeles/Twon	Human Population						Livestock Population								
		Adults			Children											
		Male	Female	Total	Male	Female	Total	Cattle	Goat	Sheep	Camel	Donkey	Horse	Mule	Total	Poultry
1	Fentaalle Dbebit	211	53	264	581	1,003	1,584	8,314	3,896	3,081	3,525	341	-	2	19,159	30
2	Haroo-Qarsaa	1,884	102	1,986	4,072	7,839	11,911	7,411	12,703	13,212	6,987	341	-	-	40,654	55
3	Ilaala-qaram	277	117	394	905	1,459	2,364	9,467	8,282	3,729	3,874	328	-	-	25,680	10
4	Xuxuuxii	349	-	349	696	1,393	2,090	2,053	5,936	4,933	7,259	481	-	-	20,662	15
5	Dhaga Edu	211	63	274	771	1,246	2,017	6,157	3,147	1,635	2,286	310	-	-	13,535	20
6	Qobbo	267	-	267	535	1,069	1,604	8,370	12,106	9,405	21,596	1,555	-	-	53,032	46
7	Bantii Mogasa	560	85	645	1,373	2,492	3,865	8,348	6,180	3,400	10,143	742	-	-	28,813	82
8	Galcha Ajotare	438	158	596	1,352	2,229	3,581	6,842	6,496	3,954	7,889	681	-	2	25,864	110
9	Kanifaa	465	85	550	1,182	2,112	3,294	1,260	2,045	1,045	1,979	228	-	-	6,557	89
10	Faate Ledii	206	32	238	507	918	1,425	4,006	6,287	2,720	564	495	-	-	14,072	47
11	Saraaweeba	274	105	379	860	1,407	2,267	2,311	4,760	2,828	2,163	438	-	-	12,500	111
12	Gidaara Kubi	845	158	1,003	2,165	3,855	6,020	3,854	7,488	5,515	4,308	770	-	2	21,937	25
13	Dirre Sadeen	315	24	339	656	1,271	1,927	6,755	10,305	12,354	4,982	117	-	-	34,513	52
14	Godofaate	187	14	201	461	850	1,311	8,476	6,007	3,294	872	13	4	-	18,666	405
15	Tuuroo Badanota	317	-	317	633	1,267	1,900	7,861	9,832	5,100	9,016	990	-	-	32,799	180
16	Gara Diima	211	2	213	429	851	1,280	1,164	1,534	668	230	156	-	2	3,754	624
17	Algee	93	12	105	112	262	374	296	71	47	-	3	10	1	428	494
18	Golaa	228	28	256	651	1,143	1,794	437	282	358	1,979	21	-	-	3,077	388
19	Total	7,338	1038	8,376	17,941	32,667	50,608	93,382	107,357	77,278	89,652	8,010	14	9	375,702	2,783
20	Towns	-	-	-	7,382	7,711	15,093	11,476	1,756	18,967	-	-	1,721	-	33,920	1,325
21	Grand Total	7,338	1038	8,376	25,323	40,378	65,701	104,858	109,113	96,245	89,652	8,010	1,735	9	409,622	4,108

Source: Awash Fentale Woreda Rural Development and Agricultural Office, 2005

ANNEX VI: LOCATION AND ELEVATION OF WATER AND SOIL SAMPLING POINTS

Site No.	Name		LatLong		Altitude (meter)
	River	Local Name	North	East	
Awash Upper Basin					
1	Kebena	Behind KindaneMhret Church	$09^0$04.627’	$38^0$46.446’	2622
2	Kale/Little Akaki	By Gulelle Garment Factory	$09^0$03.932’	$38^0$41.769’	2630
3	Kebena	Under the rail bridge by Karamara Restaurant	$08^0$59.505’	$38^0$46.769’	2282
4	Little Akaki	BhereTsge Park	$08^0$57.041’	$38^0$45.182’	2224
5	Great Akaki	At the approach to Lake AbaSamuel (Mekane Bruh Producers’ Cooperative)	$08^0$51.830’	$38^0$46.671’	2053
6	Little Akaki	At the approach to Lake AbaSamuel (EEPC Station)	$08^0$51.940’	$38^0$44.745’	2060
7	Modjo River	Modjo Town, at the Bridge on the interstate highway	$08^0$35.854’	$39^0$06.672’	1747
8	Awash	Entering Koka Dam on Addis-Awassa Road	$08^0$24.430’	$39^0$01.265’	1596
9	Awash	Leaving Koka Dam	$08^0$28.177’	$39^0$09.387’	1591
Awash Upper Valley					
10	Awash	Melkasa Bridge	$08^0$24.014’	$39^0$20.278’	1532
11	Awash	Sodere Spa	$08^0$23.698’	$39^0$23.909’	1352
12	Awash	Bridge to Metahara Sugar Factory	$08^0$51.117’	$39^0$55.274’	944
13	Awash	Awash Park Waterfall	$08^0$05.558’	$40^0$00.716’	929
14	-	Gelcha (Haji Turre) Pond	$08^0$53.387’	$39^0$57.420’	953
15	Filwoha	Awash National Park			
	ElalaSala	Awash National Park			
		D1	$08^0$53.509’	$40^0$04.661’	1042
		D2	$08^0$53.505’	$40^0$04.674’	1045
		D3	$08^0$53.494’	$40^0$04.058’	1044
		D4	$08^0$53.511’	$40^0$04.643’	1043
		D5	$08^0$53.525’	$40^0$04.661’	1043
16	Main Gate	Awash National Park (ANP)			
		UN1	$08^0$55.095’	$40^0$02.521’	1038
		UN2	$08^0$55.090’	$40^0$02.538’	1035
		UN3	$08^0$55.379’	$40^0$02.522’	1039
		UN4	$08^0$55.095’	$40^0$02.509’	1039
		UN5	$08^0$55.106’	$40^0$02.521’	1041
17	LegeBenti	Open access			
		O1	$08^0$54.456’	$40^0$00.725’	974
		O2	$08^0$54.460’	$40^0$00.750’	978
		O3	$08^0$54.449’	$40^0$00.741’	974
		O4	$08^0$54.429’	$40^0$00.720’	973
		O5	$08^0$54.442’	$40^0$00.715’	973
18	Cane field	Metahara Sugar Factory (MSF)	$08^0$53.402’	$39^0$57.463’	953

DECLARATION

I, the undersigned, declare that the thesis here is my own work and that all source materials used in the thesis have been duly acknowledged.

Name: Emmanuel Malifu

Signature: _____

Date and place of submission: July 2006, Addis Ababa