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MAJOR CAUSES OF ENVIRONMENTAL DEGRADATION AND LOCAL PEOPLES' ADAPTIVE STRATEGIES: THE CASE OF BABILE IN EASTERN HARERGHE

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Selamawit Menkir

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Acronyms

MFM - Menschen Fur Menschen

CISP - Comitato Internazionale per losviluppo dei popoli (International Committee for the Development of People)

PA - Peasant Association

CSA - Central Statistical Authority

NGO - Non-Governmental Organization

DA - Development Agent

DPPD - Disaster Prevention and Preparedness Department

OPED - Office for Planning and Economic Development

BOPED - Bureau of Planning and Economic Development

M.a.s.l - Meter above sea level

Kms - Kilometers

Kg - Kilogram

Ha - Hectare

Glossary of local terms

- **Woreda:** district
- **Meher:** long rains between June and August
- **Balg:** cultivation using short rain usually between mid of February and March
- **Kolla:** a lowland hot, usually arid area
- **Chat:** Catha edulis
- **Enjera:** beaked food made of sorghum or maize flour
- **Woinadega:** an area characterized by temperate climate
- **Gosa:** Clan
- **Bokku:** a symbolic ruling wood made of olive trees
- **Abba Bokku:** a man who holds the Bokku-he is the leader of the gosa
- **Garadas:** administrators
- **Tanika:** a container, usually plastic is equals to 25 kg
- **Lafiso:** Local food
- **Mitatis:** Sweet Potato
- **Afosha/Idir:** an association formed mostly to help each other in times of death and weeding
- **Deminas:** Landowners
- **Gende:** Village
- **Liqemembers:** Head of the association
- **Hoja:** Local tea
- **Guza:** Labor organization
- **Haro:** Well

Preface

The thesis deals with the cultural ecology of the people of *Babile* in general, the people of *Tula*, and its *PA* in particular with specific a focus on the major causes of environmental degradation and adaptive strategies of the people. In brief, it presents all aspects of the life of the society.

To give a coherent flow to the reader, it is organized into seven different chapters; chapter one presents the problem statement, method and other subtopics such as introduction.

Chapter two deals with conceptual framework having three subtopics-cultural ecology/Ecological anthropology, environmental degradation its effect and adaptive strategy.

The general historical and geographical background is described under chapter three; while chapter four is ethnography of the people divided under many subtopics.

Chapter five is about people's perception of their environment, major causes of environmental degradation in *Babile* and adaptive strategies of the people. It is the essential part of the thesis.

Finally the study ends with the description of the impact of people's knowledge and attitude towards their adaptive strategies and the impact of adaptive strategies in their socio-economic and cultural life, followed by chapter seven, which is the summary and conclusion of the whole thesis.

Abstract

The social and cultural life, the environment and the production system of the people of *Babile* is the result of various historical layers. The people were detached from their traditional institution that was well adapted to that particular environment. Courses of interactions and domination affected the attitude of the people by debilitating their traditional knowledge system.

The killing of important *Abba Bokkus* and the capture of *Abba fugug* the leader of *Raba-Dori*, a traditional institution, adaptive to the environment, at the battle of *Chiracha* by the Egyptian forces in 1875 was a disastrous time when the *Raba-Dari* faced the first threat to its existence. Dominated by foreigners, and with no traditional leader, the people were forced to accept Islam.

After the introduction and expansion of Islam in the area most of the rituals, that were protective of the environment, were condemned as evil deeds against the will of Allah. Their indigenous knowledge and identity were shadowed by the new religion. Their conversion to Islam changed their tradition, dressing style, and their outlook to their rituals and culture.

Minilik's army arrived two years after the departure of the Egyptians. It was a fatal blow to the revival of *Raba Dori*. After the battle of *Chellenqo*, the traditional institution of the *Afran Qallo* was totally undermined. Their defeat was severe for they totally lost their traditional identity and their land.

To expel fascist Italy from Ethiopia, the British had shown some interest to help Ethiopia. The British brought the Sudanese as their servants

when they came to Ethiopia. But after five years they left all the Sudanese in Ethiopia when they were replaced by Americans. These Sudanese became dangerous to the area because they were highly engaged in cutting acacia trees that were and still are rituals symbols and nitrogen fixers.

The strong central government of *Haile Sellassie* I, with all its bureaucratic problems became another threat to both the people and the environment.

Population pressure, due to new settlers at various historical times coupled with high birth rate became also one of the major causes of environmental degradation.

The land tenure system after the 1974 land reform did nothing for the local poor farmer. It was those aristocrat families who gained benefit out of it.

All the aforementioned historical events were responsible for the degradation of the area's environment.

Though they helped to avoid problems for the time being, most of the adaptive strategies have had far reaching consequences upon the production system of the society and on their identity and for some the feeling of increased. And some threatened the working time and moral of the people, thus, adversely influencing the environment at large and the production system in particular.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In Ethiopia the agrarian society accounts for 85% of the total population. And it is known that 85% of the country's export income is from on agriculture. However environmental problem in for this country is a critical social problem. The agricultural sector, which accounts for 85% of the employment and livelihood of the population, is largely dependent upon the physical and social environment of the country (Gedion, 2002). On the other hand the nature of its production affects the physical environment, either negatively or positively. The most important environmental factors that influence agriculture are climate and its elements like temperature and rainfall, latitude, altitude, topography, soil and vegetation.

In Ethiopia overgrazing, intensive and mono cultivation, deforestation, over population and other socio-economic and political factors, which are related to peasant agriculture, have a pivotal role in affecting the ecosystem. The sum of the above mentioned factors and loss of vegetative cover and soil fertility results in a decline of crop production in many places of the country. These in turn give rise to rampant and recurrent drought and famine (Alemneh, 1990).

Society and environment have inseparable cause and effect relationship. Physical factors like climate, altitude and the like have considerable impact on human activities. Similarly, human intervention has its own impact on the

ecosystem. In Ethiopia both the physical factors and human activities are responsible for the land degradation of the country. Thus the country faces multitudinous problems concerning the agricultural activity and the development of the country.

Regarding the causes for land degradation, different scholars suggest various views from which land degradation should be dealt.

For example, Alemneh (1990) states that land degradation depends on the local socio-economic and national political forces working in a specific place. Stahl, (1974) mentioned that socio-cultural factors must also be taken into account when land degradation is studied.

Therefore, the causes of land degradation could be viewed from different perspectives. This includes socio-economic, historical, cultural and geographical conditions of the place.

1.2 Statement of the Problem

Land degradation is common in Ethiopia, where 85% of the population of lives in rural areas. This population entirely depends on agriculture for their survival with little option of off-farm activities. Land degradation in Ethiopia, aggravated by soil erosion, deforestation, over grazing, and over cultivation, now poses a serious danger to environmental degradation which has a wider and harsher manifestation, such as crop failure, uneven distribution of rainfall, desertification and drought (Alemneh, 1990).

Though Ethiopia is endowed with enormous natural gifts, our resource utilization seems inappropriate, so it creates difficult situations for the people to live harmoniously with the environment.

Environmental degradation, the focus of this study, is one of the causes of poverty and along with drought it is a catalyst of famine (Hutchison, 1991). People whatever the cases may be, set their own adaptive strategies to cope with unstable environmental conditions.

A number of anthropologists, Harris (1968), Netting (1986) and others, agree that culture is man's tool to adapt to his environment. In different parts of Ethiopia different societies have developed their own adaptive strategies. As Michael Watts, cited by Alemneh (1990:49), puts it, "desertification and environmental degradation is an ultimately local, place-specific process and must be understood as such". Considering this, to get out of our poverty and recurrent famine in the country, we need to find out the major causes of environmental degradation and foster the adaptive strategies that the local people use to cope with the continuously changing environmental conditions.

In Ethiopia, many areas are being environmentally degraded and *Babile* is a case in point. In *Babile,* environmental degradation is manifested in the form of soil erosion, deforestation, low productivity due to over-utilization of land; and in general misuse of natural resources mainly, due to the accelerating rate of population pressure (MFM *Babile* Integrated Rural Development Project, January 2002; Socio-economic Profile of *Babile* District (1995/96-1996/97)]. According to some studies made in the area, (MFM *Babile*

through were the causes for deforestation, population pressure and what most people considered as the 'reluctance' of the local people. Actually the people had no say on their own land after 1875.

The study is designed to answer on the following research questions:

1. What are the major causes of environmental degradation in *Babile woreda*?
2. What are the effects of environmental degradation in the area?
3. What are the adaptive strategies that the local people deploy to cope with the changing situation?

1.3 Objectives of the Study

1.3.1 General Objectives

The study has a general objective of assessing and describing the various causes and effects of environmental degradation and how the people could survive in this condition.

1.3.2 Specific Objectives

The specific objectives the study are to:

1. identify the local people's knowledge about their environment and its degradation;
2. assess some major causes of environmental degradation; and agricultural production system;
3. assess their adaptive strategies, at different level; and,

4. analyze the effects of their adaptive strategy on their way of life and to the over all environment.

1.4 Significance of the Study

So far there is no anthropological research done in the area on the issue under consideration. Since there is no such study on the topic in the area this piece of work might initiate others to do further researches in the area. It goes without saying that, without society-based and detailed study, eradication of poverty, protection of the environment from degradation, as well as agricultural sustainability will be very difficult. The study provides policy makers and local officials with information about local knowledge and culture in coping with degrading environmental conditions.

1.5 Rationale for the selection of the study area

Babile was selected as a study site in order to see the impact of cultural interaction and domination of local people by 'outsiders' on the environment and indigenous knowledge. The importance of historical and cultural interaction of different society's in *Harerghe* in general and *Babile* in particular was and still is strong. Moreover, its geographical location, between the town of *Harar* and *Jijiga*, obliged the people to set a number of adaptive strategies and obviously these strategies themselves have a number of impacts on the environment. Its access to transportation and other facilities along with the fore mentioned reasons are the very factors for its selection for this study.

1.6 Research Methodology

1.6.1 Sources of data and field experience

The study has used both primary and secondary data. Local people and other concerned local officials were interviewed to generate primary data. As to secondary data published and unpublished materials and information from the internet were also used.

My field experience is based on four visits made at different time, in August (2003), October (2003), December (2003) and April (2004). These experiences enabled me to see the various activities of the people in various seasons. On August 25, 2003, I went to *Harar*, where Eastern *Harerghe* Zonal Administration is found. The Zone officials gave me some information and permission to carry out fieldwork in the *Babile* woreda. In addition they gave me a list of names of people that might help me during my fieldwork period.

When I went to *Babile* after a few days, I found some officials and secured permission to do my research in any *PA* of the *woreda*.

During my first journey, the rainy season of the year, the researcher encountered a variety of difficulties. Due to high rainfall the muddy soil road from *Harar* to *Babile* became difficult fore aged old cars providing passage. With this difficulty it took two hours and 30 minutes to reach *Babile*. Which in normal times took only an hour and 30 minute. There, every thing was green even those big sedimentary rocks were covered by green grass, and the land was endowed by scenic beauty.

I stayed there for a few days visiting the *Magala* (urban) and *Hulaga* (rural) of *Babile* particularly *Tula*. Then I selected *Tula* as my study *PA* before returning to *Harar* where stayed for some days in order to get written documents from zonal offices.

In *Babile* there are 22 *PA*s and one town. Among these *PA*s, I selected the one that is considered the first for its high population density, and second for its highly degraded environment. Its historical significance and nearness to the urban center were also among the criteria. Due to its nearness to the town, *Babile*, *Tula* residents entertain a variety of adaptive strategies.

In selection of the *PA*s the Natural Resource Department of *Babile* and the Agro-Ecological Department of MFM helped me very much.

I got some secondary sources from various departments of the Zonal Administration Bureau, and the two active NGOs in the *woreda* - CISP and MFM.

In October 2003, when I went to *Babile* for the second time it was a time of harvest. People were busy in uprooting groundnut which made their afternoon times very busy, so I had to visit them in the morning when they chew their morning chat *ija-bana* or before their breakfast time. If I went early in the morning and usually ate breakfast with them. And they were happy with that but in cases I went to their field where they fed their cattle and chewed *chat* under a shade, they or where they collected groundnut by uprooting them, they offered me fresh groundnut were astonished at my note being able to open the chaff of the groundnut. All these contacts (participant observation) attracted

their attention and helped me to establish a good rapport with them. They liked me and were usually happy to answer any of my questions.

Moreover, my supposed resemblance to a certain lady further strengthened the rapport. Long ago, there in *Tula*, there was one lady called Adanech Tefera. As the story goes, she lived in that *PA* as an extended family of one ruling class, but unlike most of these people, she married a common man from the lower class and lived harmoniously with the local people. All dwellers, therefore, loved her very much. Fortunately my complexion and physical appearance looked exactly like Adanache's. So the people consider me a relative of Adanech and hence their relative.

Furthermore, my dressing style attracted the people, most of them told me, and even those fanatics and religious leaders were happy with my long skirt and even told me to wear it always.

This time, of harvest, is a hard time for the farmers. For one, it demands more energy and time, and second there is food shortage in this time. But surprisingly they were generous and helpful to me.

My third journey was in December. It was a time when farmers get ample time to do non-farm activities. Their houses were full by this time no food gap; no problem for the year's yield abundant.

Familiar enough with them now, they saw me as one of their neighbors who returns home after a short excursion to the urban areas.

It was pleasing to be with them during this period. Because their face was attractive enough and they were available for a very long period of time to do in depth interview.

April 2003 was my last journey in the area. This time was a period of groundnut sowing and land preparation for the *belg* rain softens the dry land. People were started to engage in preparing their seed, agricultural equipment and land. And it is the time of *Mukedem*, a ritual held in this time to celebrate the coming of the first rainfall, but this year this ritual was not celebrated. The reason behind is the influence of fanatic Islamic groups, for they consider this ritual to be against the will of Allah. One of my elder informants, Ismael Umar, a knowledgeable 73 years old man, sorrowfully told me that "these young men did not know what they were doing. This is not against the will of Allah we invoke the name of Allah, and it is this ritual that encourage and organize the farmer to till his land before the end of the rain".

My last visit was also enabling me to see the land preparation activities of the farmer.

I faced no in surmountable problem when I was in the field except for there was a problem of security during my last fieldwork period.

1.6.2 Methods of data collection

I totally relied on qualitative method of data collection, analysis and interpretation. Particularly, participant observations, key informants interview, focus group discussions and checklist employments to collect relevant data.

Participant observation helped me to introduce myself to the society. People were happy to invite me to groundnut, since I didn't chew chat. In my observation, I was involved in a formal and informal discussion with different people. This was helpful, especially, in knowing about people's knowledge, about the causes of degradation and its relation to agricultural practices. Moreover my visit in different seasons (dry and rainy) of the year made the use of this method fruitful.

Key informants in-depth interview had opened the opportunity to have a discuss with knowledgeable people in the area. A number of individuals were asked a lot of questions about their adaptive strategy, and other issues through repeated visits. Religious people, elders, and young farmers were approached, to reflect their ideas on their respective categories.

Focus group discussion was held to get information about the effects of their adaptive strategies to their way of life and to the environment itself. Focus group discussions were held with different people in their respective age and sex. Young and old women, as well as men (six for each group) were approached according to their age and sex. This method was helpful in generating data that convey attitudinal variation on their adaptive strategies, particularly based on age.

However, this method was both time-consuming and expensive. People took a long time to meet and usually they were engaged in their own talks. Again it required more money primarily, because a large group of people (six at one group) need much *chat* to get them to talk. Secondly, I had to have a field

assistant with a good educational background and who could speak *Oromifa* fluently.

Finally, checklists were prepared for educated people and officials at different levels. This helped me to generate information from these educated people and officials.

1.7 Limitations

Working with a translator had its shortcoming. The translator may leave out some important ideas thinking that are impertinent to the topic. Another problem was lack of books on cultural ecology at various libraries and lack of data from the zone offices.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Cultural Ecology/Ecological Anthropology

Ecology is a general and broad term. Under it there are branches of studies, such as, social, human, biological, evolutionary, historical, ecosystem and cultural ecology (Moran, 1996; Bohannan and Mark, 1988). Shapiro (1977) explains it as a science focused on the relations between living organisms and their physical and biotic environments. He continues: each species tries to adapt and maintain itself to the remaining species. To Steward (1955:30), "the principal meaning of ecology is adaptation to environment".

Contrary to deterministic approaches, cultural ecology has wider scope. Cultural ecology is the study of both problems and methods. And it gives a materialist explanation of human society and culture as products of adaptation to given environmental conditions. The study of cultural ecology includes population dynamics, environment, social organization, and human culture and production techniques. Such study may require diachronic or synchronic approaches and may focus either on a single, group, or a comparison of different groups and different environments. (Harris, 1968; Barrett, 1984; Hawley, 1950)

Cultural ecology is a holistic approach to the study of environment-society relations. The view of culture-environment relationships has on occasion been categorized as a compromise between cultural determinism (only culture determines culture) and environmental determinism (only environment

determines culture). This classification underestimates and obscures the core of interactionism, the dialectic between culture of human choices and environmental opportunities inherent within the possibilist stance. Environmental possibilism in many ways marks an important paradigm shift towards an interactive and dialectical rather than deterministic view of the relationships between cultures and their environment which has remained at the center of cultural ecological approaches. (Seymour-Smith, 1986; Harris, 1968; Sahins, 1976)

Cultural ecology, as one branch of social anthropology, deals with the cultural adjustments that people made to adapt to their environment. As Moran (1996) explains, it focuses on the interaction between aspects of environment and social organization and subsistence requirements of a society. Cultural ecology, as many anthropologists defined it, is a relationship and interconnectedness of society and its environment. Elements of environment-land, climate, plant and animal species and human society have impact and on going contact with each other (Murphy, 2002).

Cultural ecology deeply studied adaptive process and of resulting relationship between humans and the animal and natural features of their environment. Again emphasizing on the arrangements of technique, economy, and social organization through which culture mediates the experience of the natural world: it studies the adaptation of human societies or populations to their environments (McCurdy and Spradely, 1979; Winthrop, 1991 in Murphy, 2002).

Barfield (1979:448), cited in Murphy (2002), puts the three steps that Steward specifies, in the investigation of the cultural ecology of a society: "1. Describing the natural resources and the technology used to extract and process them; 2. Outlining the social organization of work for these subsistence and economic activities; 3. Tracing the influence of these two phenomena on other aspects of culture".

Generally, currently cultural ecology focuses on the way people live, doing what, how well, for how long and with what human and environmental constraints. The diet of the society, its settlement, festivals and ceremonies, organization of agricultural labor, technologies used and exchanges of goods and services are crucial in the investigation of cultural ecology (Batterbury, 1997).

Haeckel who coined the term ecology in 1870, cited by Batterbury (1997:2), defined it as: "... the study of the economy of the household, of animal organisms. This includes the relationships of animals with both the inorganic and organic environments, above all the beneficial and inimical relations that Darwin referred to as the conditions of the struggle of existence".

According to Kennedy, J and Robert, Edgerton (1982), the broadness or the narrowness of our basic needs limits the scope of cultural ecology. For the process of adaptation is the process to satisfy the basic needs of individuals or population of individual-society. And cultural ecology is the study of society's adaptive strategies to their environment.

Belsey in Attfield and Dell (1996) stated that, the very essence of man's nature has dialectical relations with nature that man transforms it and is thereby transformed. By means of his perceptions, reflection, controlling activities with tools, machines and techniques, his consuming and enjoyments, man has dialectical interpenetrating with the rest of nature.

Steward's method of cultural ecology proves his materialist emphasis. His method entails the study of the relation between certain features of the environment and certain patterns of behavior practiced by a society. Steward's emphasis within the environment was the quality, quantity and distribution of resources (Orlove, 1980).

Orlove (1980), justifies, the process of change in the development of cultural ecology in three various stages based on their development in method and theory. And he termed it ecological anthropology; the first stage was that of Julian Steward's and Leslie White. Neo-functionalism and neo-evolutionism were the second stage; these are associated with the works of Marvin Harris, Roy Rappaport, and Andrew Vayda. And the third stage is processual ecological anthropology.

The emphasis of neo-functionalists was social organization and culture in terms of the function, which they serve in adapting local population to their environments. Both neo-evolutionists and neo-functionalists examined the mechanism, which link culture and social structure to the environment. These two schools have minor differences in analyzing the same variables and in terming them (Ibid.).

The last stage, processual ecological anthropology, is wider and uses both theories and methods form the previous stages based on conditions. This last stage has many variables to analyze society-environment relationship. These variables include demography, environmental problems, adaptive strategies, social organization, culture and process, and it analyzes specific cases and it used Marxism (Ibid.).

Recently cultural ecology stated to pay attention to communities and settings where environmental degradation and negative environmental outcome occur (Marquette NODATE).

2.2 Environment and its effect

Environment has great role in society's culture and land use system. Barlett (1980b) explicitly put environmental factors like altitude, rainfall, temperature and incidence of wind to have crucial role in determining what land uses are possible or profitable. Decisions on agriculture are highly dependent on the environment. In this respect Moran (1996) has the following, to say: latitude and other environmental factors have great role in the character of the people. For Johnson and Anderson (1988), change and relationship between man and environment is social because man lives in the form of society, therefore, ecological change involves the reciprocal impact of society and the environment on each other. "These ecological changes contain ecological stress".

According to Bayou (1996), poverty is closely linked with degradation of land and water resources of the environment. Likewise, human well -being is

intimately linked to environmental well being. This environmental degradation includes over-cultivation, overgrazing, deforestation and poor irrigation practices that lead to a process of desertification. The degradation of the natural resources of the environment has serious economic and environmental consequences.

In line with this, according to MFM (2002), the major causes of degradation in *Babile woreda* are soil degradation, loss of vegetation cover. Soil degradation due to erosion, the occurrence of high run off and loss of vegetation cover due to population pressure, excess utilization of resources, deforestation in need of farmland and fuel and construction wood. Again, according to the same source, this degradation has its own effect on economy and on the environment, low agricultural production and other natural resource depletion, for instance, reduction of spring and ground water, respectively.

Environmental degradation, according to Moran (1979), lowers soil quality, which results in the lowering of floral and faunal productivity and diversity. Again, he mentions some factors, which cause environmental degradation. Overgrazing, salinization, over-cropping without replacement of the lost soil nutrients, erosion or, in general mismanagement are some of the factors.

Means of subsistence in developing countries are threatened by degradation of natural resources. For their life is directly related with primary mode of production, it will result in reduction of crop production and animal holdings (Yeraswork, 2000).

Soil erosion is the major cause of land degradation in Ethiopia. This land degradation of the country has various causes and impacts. Mainly erosion, deforestation, extractive human activities, political, and economic conditions are some of the causes for degradation. Its impacts are mainly crop decline, insecurity, and a number of other socio-economic problems (Alemnhe, 1990; Zemenfes, 1995).

Land degradation can affect climate, water resource and the overall ecosystem. In Ethiopia, natural resource degradation has been going on for centuries in different part of the country (Shibru and Kifle, 1998; Environmental Protection Authority, 1997).

However, though it could have several causes and impacts, it is difficult to get common causes and solution for environmental degradation. Taddesse (1995:139) has put it aptly as follows

> The cases of environmental degradation are diverse and often complex. They are largely place-specific and are greatly influenced by local socio-economic and national political forces operating on a particular society. There can be no mono causual explanation. Sometimes the causes are difficult to distinguish from, and are dependent on, other causes. The solutions to the problem are equally difficult to achieve.

Resulting from soil erosion and desertification, massive environmental degradation affects the agricultural sector, which is the core of Ethiopia's economy. Together with population pressure, environmental degradation is

going to halt the development of the country. Supporting this idea Theodorson (1961) stated that, man and agriculture have a symbiotic relationship. That the farmer is dependent on his harvest for his food, as vegetable life that the farmers grow is dependent on his plowing, seeding, fertilizing and watering.

Land degradation can be viewed, from a social science perspective, as a result of human decision making regarding land use. That includes socio-cultural, political and economic factors (Stahl, 1974).

2.3 Adaptive Strategies

To Amanor (1994), adaptation is a concept within the context of the interaction between environments, technology, population and human values.

Local decisions and conditions, to Fried (1968), have roles in affecting resource management. Orlove (1980) too agreed that the notion of adaptive strategy follows closely from that of decision-making.

Culture is largely functional and plays a role in adjusting the society to its environment. Quoted by Abeya (2000), Harris (1971:41) defined culture as, "man's primary mode of achieving reproductive success. Hence particularly socio-cultural systems are arrangements of patterned behavior, thought, and feeling that contribute to the survival and reproduction of particular social groups".

Again, according to Moran (1979), cultural knowledge of house construction, clothing styles, subsistence technology and ritual aspects along with social and economic organizations are social and cultural adjustments to climatic conditions. Conditioned by its geographical setting, culture is a

remarkable device for adaptation. People in their environs have their own adaptive strategies, functional for their particular environment. Stauder (1971) has stated that, the *Majang* culture is well adapted to their particular environment not to the environment of their neighbors, *Anuak* or *Oromo*. Therefore, adaptive strategies are place - specific. Culture is created to serve as an adaptive mechanism, it affects and is affected by the total ecology. To Steward (1955), man involves the ecological scene using this adaptive mechanism.

Adaptive strategy permits people to adjust or to cope with artificial and natural constraints. Abeya (2000) contends that analysis of adaptive strategy aims at an understanding of community, change, the availability of options and the reason of selecting one option over the other, and complements the study of ecological patterns, economic growth and other societal dynamics.

Moran (1982), quoted by Abeya (2000) describes many strategies to adapt to a particular environment or condition. These include resource sharing, intermarriage, reciprocal visiting and commercial exchange along with shifting cultivation, hunting, gathering, fishing, gold panning, animal husbandry and other subsistence strategies. Each of these strategies shows human effort to deal with the diversity and complexity of the habitat.

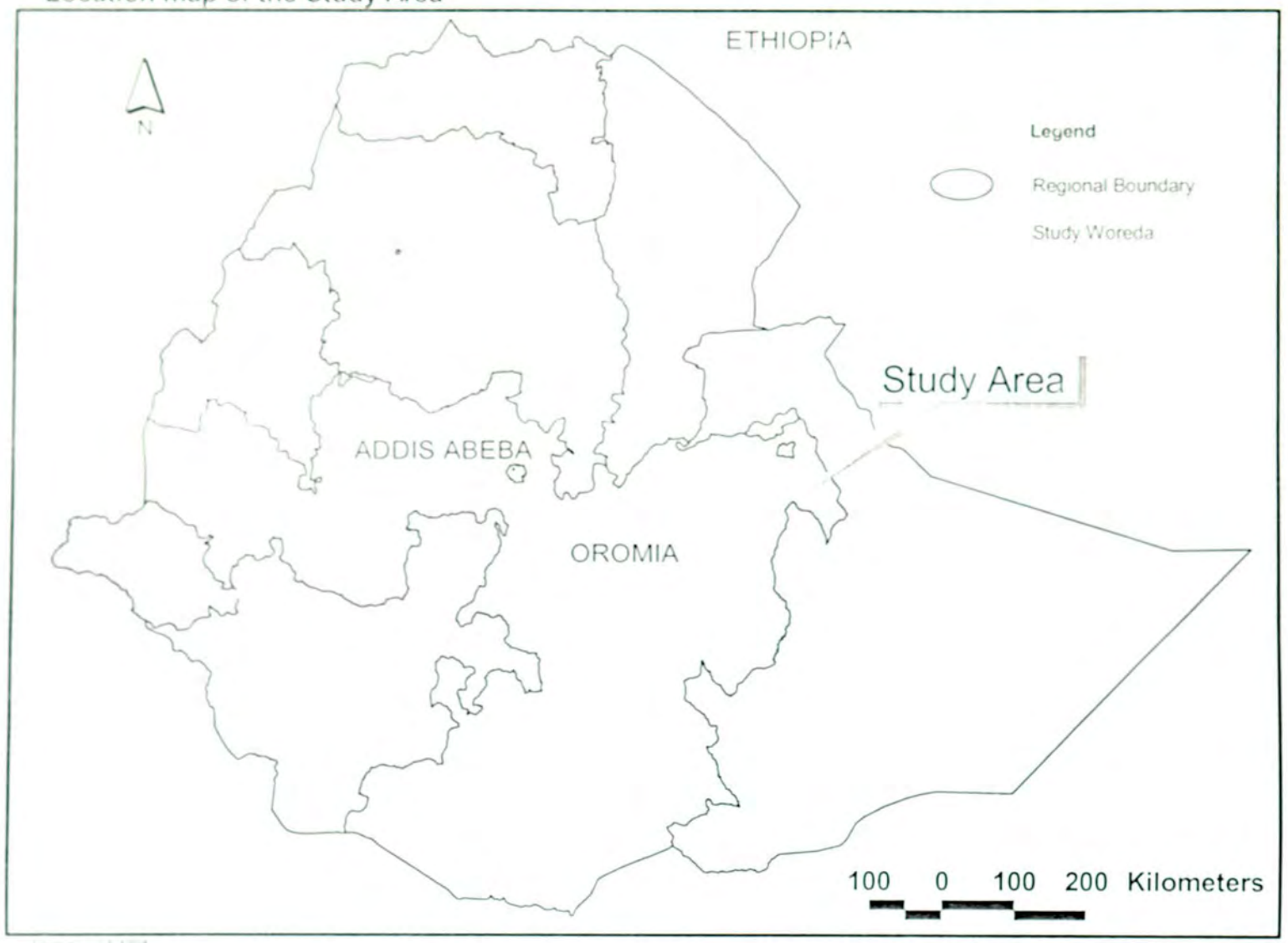
In this regard, CISP (1997) has said a lot about adaptive strategy of the Babile people. Some of these are practicing petty trade, migration to urban areas in search of day labor, reduction of food consumption (reduce the quantity they eat once), and so forth.

Most of the time local knowledge about plants, animals and other resources is well developed and, it is this knowledge that permits people to adapt and survive in a marginal environment. This response to change could lead to the development of better technologies to cope with increased food needs, or to the continuing changes made to farming patterns (Batterbury, 1997).

About adaptation in cultural ecology, there are theoretical arguments in different schools of taught. For instance, substantivists concern for it gives much attention to institution and distribution, while formalists emphasized on strategy and choice. On the other hand, Marxists proposed increased attention to production. Substantivists concern, distribution and institution, are explored through Marxists study of labor's role in the production process. Formalists concern is maximization of individuals, thus institutions, for them, are individuals' means of adaptation. Contrary to formalists idea, substantivists emphasized on distribution and social institutions as determining adaptation tools (Barlett, 1980a).

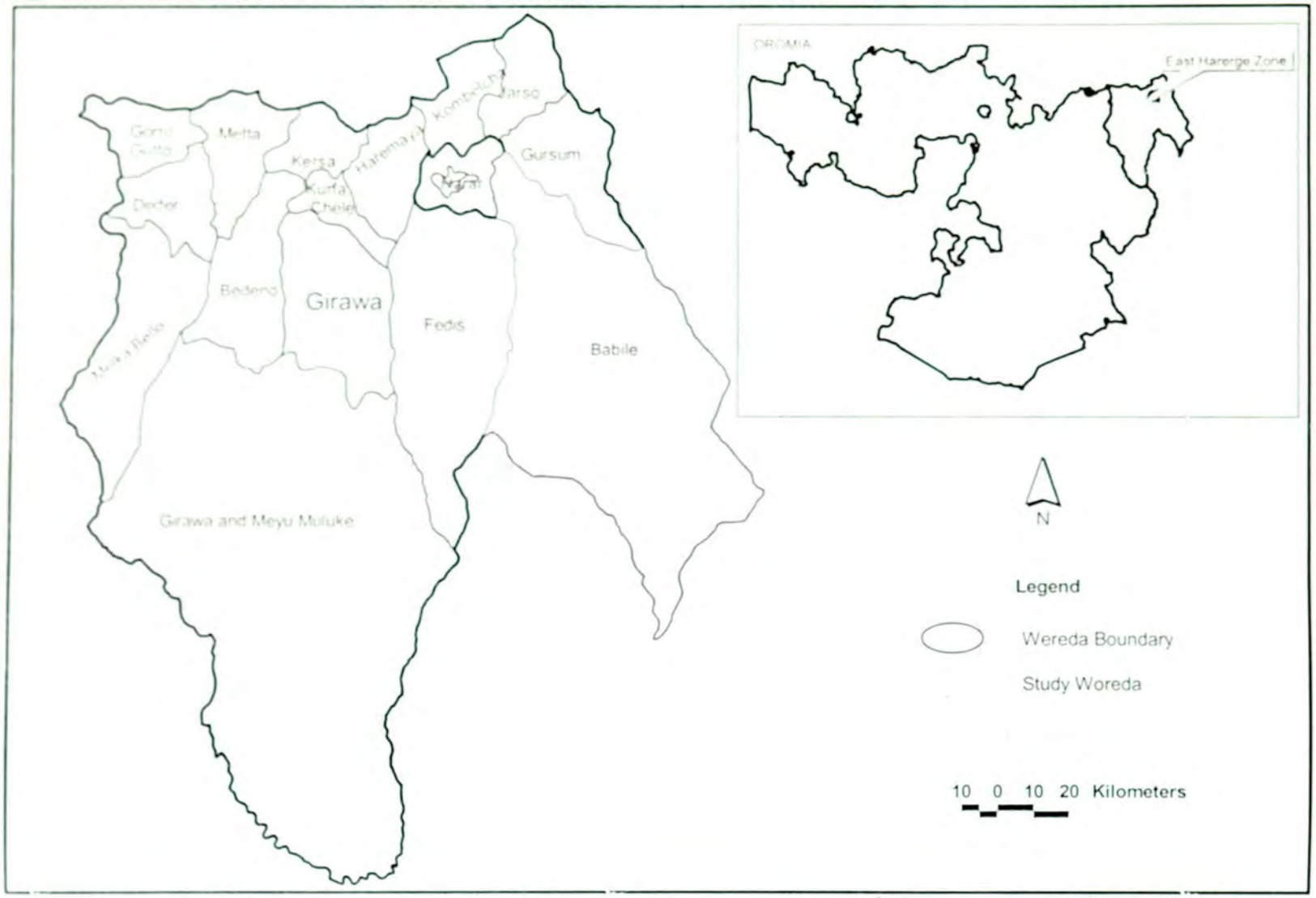
A number of scholars who write about cultural ecology have various understanding and definition about adaptive strategies. Nevertheless, generally adaptive strategies are dynamic responses of human social and cultural adjustments to changing environmental conditions. This fact is true to the people of *Babile* who have developed a number of adaptive strategies to manage and cope with different scarcities in the area.

Location map of the Study Area

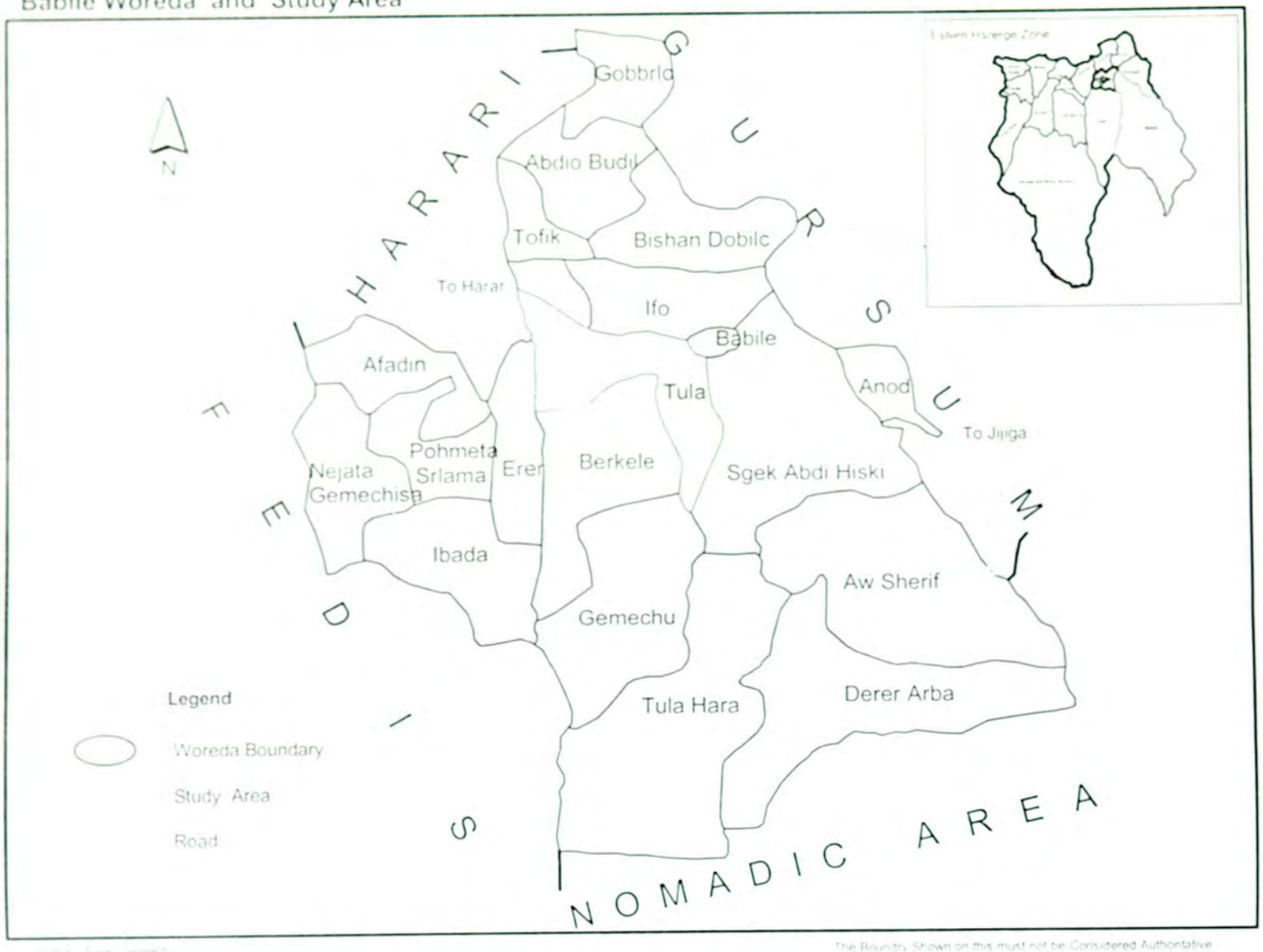


The Boundary on this map must not be considered Authoritative

EAST HARERGE ZONE AND STUDY WOREDA



Babile Woreda and Study Area



CHAPTER THREE

General Background: the people and the environment

3.1 Physical characteristics and environmental setting

Currently Ethiopia has federal type of government. The *Oromiya* Regional State is one of the nine Regional States; it takes the greatest share of the total area of the country. Likewise, its population size is considerable.

The *Oromiya* Regional State has twelve administrative zones. Eastern *Harerghe* is one of them with an area of 22, 622.6 km^2 or 6.5 percent of the total area of the Region. Eastern *Harerghe* is located in the eastern part of Oromiya and eastern Ethiopia. Its latitudinal and longitudinal location is 7°32'-9°44'N and 41° 12'-42°53'E, respectively. It shares its boundary with the *Dire Dawa* Administrative Council in the north, with the *Bale* Zone in the south, Western *Harerghe* Zone in the south, and *Somali* Regional State in the east and south east (Adelegn, 1999).

Babile is one of the fifteen *woredas* of Eastern *Hararghe* Administrative Zone. With an area of 5.120.6 km^2, this account for about 12.36% of the total area of the Zone, it has a total population of about 66,481(CSA, 2002). *Babile*, the capital of the woreda, is about 35kms from the town of *Harar*, to the southeast direction on the way to main Jijiga road. The woreda has 22 peasant Associations and one urban center.

The Woreda lies between 8°09' and 9°23'N latitude and 42°15' and 42°53'E longitude. *Gursum* woreda borders Babile woreda to the north and northeast, *Harari* Regional State to the north and northwest, *Fedis* woreda to

the west and Somali Regional State to the south, southwest and southeast directions.

The *woreda's* economy mainly depends on agriculture. The people are engaged in crop production and livestock husbandry for survival. Major crops grown are maize, sorghum and groundnuts. Recently root crops have become also the most important components in the farming system.

As far as topography is concerned, the woreda is predominately characterized by plains mainly *Mulu-Bota, Adada Bota* from north to south direction along the rural gravel road from Babile to *Fike* town (in Somali Regional State). There are also isolated hills in these plains such as *Kora* (1,518 meter above sea level), *Kurfa Denbe* and plateaus as well as mountains such as Mt. *Ambelber* (1,780 m.a.s.l) and Mt. *Sarbadin* to the north and northeastern parts of the woreda. Altitudinally, the woreda stretches from 950 to 2000 meters above sea level. The lowest place lies in the floor of *Daketa* valley. In general, plains and isolated hills (94.4%), dissected plateaus and mountains (4.6%) and valleys including gorges (1%) characterize the total area of the woreda (DPPD, 1997/98).

Perennial rives like *Daketa* (137.5kms), *Borale* (46.25 kms), *Erer Tiko* (38.75 kms) and intermittent streams like *Gelde'a, Gelalcha, Chemere/Birk'o, Gemechu, Gutu*, etc are rivers that drained the woreda. A total length of about 543.75kms of rivers and intermittent streams are found in the woreda. Moreover, in the woreda there are several well-developed springs such as *Shek Hussein, Babile* mineral water, *Wedaja, Doefa, Tinike, Bate, Salt, Oda*, etc.

Mostly they are used for domestic purposes. On the other hand, there is no known lake in the woreda (Socio-economic profile of *Babile* District (1995/96-1996/97)].

The woreda is classified into two agro-climatic zones, *Woinadega* (15 percent) and *Kolla* (85 percent). *The Woinadega* agro-climatic zone (1500-2000 m.a.s.l) is characterized by average annual rainfall and temperature ranging from 600 to 2000mm and from 15°c to 20°c, respectively. While *Kolla* agro-climatic zone (900-1500 m.a.s.l) has average annual rainfall and temperature varying from 410 to 820 mm and from 20°c to 25°c, respectively (DPPD, 1997/98).

Based on various data from zonal DPPD and Eastern Harerghe Natural Resource Conservation Strategy and soil research departments of the *Alemaya* University of Agriculture there are various types of soil in the woreda. Black (10%) clay (2%) and clay loam (88%) soils covers the woreda. These soil types are further classified into: regosols and regosols-arenosols associations (38%), Litho sol, rendzinosol rankers association (15%), fluvisols and its association (8.5%), combisols and its association (6.5%), vertisols and vertic fluvisols, vertic cambisols and vertic luvisols complex association (3%) and other out cropped rocky soil (4%). Soil types like vertisols, vertic fluvisols, vertic cambisols and vertic luvisols, rendizions, nitosols and luvisols have good potential for agricultural activities because of their better profiles and fertility while the rest soil types have poor agricultural potential due to their poor profiles and less fertility content (Socio-economic profile of *Babile* District (1995/96-1996/97)].

The woreda has very few forest areas, consisting of woodland savanna, acacia woodland bush and grassland, reverine and man-made forest. Currently, about 3.7% of the total area of the woreda is covered by both natural and man-made forest. There is wild life conservation sanctuary in the woreda known as *Erer-Fafem* wild life sanctuary.

There are wild animals like lion, elephant, duiker, hare, baboon, spotted hyena and lesser kudu found in the wildlife sanctuary, mountains, peaks, valleys, gorges and other areas of the woreda (OPED, 1997/98; East Hararghe Zonal Atlas, 1997).

3.2 History, Distribution, and Settlement

3.2.1 Historical background of the people

The settlement pattern and history of the Oromo people have been given great attention by many historians and anthropologists. For the purpose of this study the historical background of the study area, Babile, begins from a little before the occupation of Harar by Egyptians in 1875. This time was selected because written documents are available and the informants highly emphasized around that time.

The Oromo people who settled in that area long ago as pastoralists and farmers predominantly occupy the study area, Babile. Waldron (1980) stated that in every tribe of the *Oromos* were divided into two classes one of farmers called *Kottu* or *'Argata'* and the others cattle herders called *'prontuma'*

Burton (1990) cited by Waldron (1980) mentioned that a considerable number of *Oromos* from the lower *Erer* valley, now it is part of Babile woreda, came to the market of Harar with their, milk and milk products.

According to the information from Mohammed (1973), most of the *Oromos* who lived in the present day Harerghe belonged to one large group, the *Afran Qallo*. The *Afran Qallo* includes four major subdivisions, as the name indicates *Afran Qallo* means the four sons of *Qallo*, called *Gosas*. These four *Gosas* are *Alla, Nole, Obora*, and *Babile*. But my informants, Badir (1995) and Klemm (2002) agreed that Nole, Jarso, and *Hume* are the three sons of *Daga* who was one of the four sons of *Afran Qallo*.Therefore, the Afran Qallo gosas are *Alla, Obora, Babile* and *Daga*. With Anniya and *Ittu*, *Afran Qallo* makes up the overwhelming majority of the *Oromo* of the present day eastern and western Harerghe zones of Oromiya Regional State.

However, the exact time when the Oromos of the study area had settled is unknown. According to Mohammed (1973) the three *gosas* of *Afran Qallo-Nole, Babile* and '*Alla*', settled in the area at unknown time. Many old age informants, who did not recall the exact time of the historical settlements of their ancestors, confirm this idea. However, generally, according to Slikkerveer (1990), a large number of mostly 'nomadic' Oromo entered the Harar area from southern Ethiopia in 15 67.

People of the study area *Babile* are one of the 'Gosas' of *Afran Qallos*. It is worth to describe the history of *Babile* with the other member of *Afran Qallos* and of course, it is sound to describe the political and military institution of

Afran Qallos, *Raba-Dori*. Although each 'gosa' had its own government, headed by *Abba Bokku*, their *Raba-Dori* was a strong unifying political institution until it was eroded by the rule of '*Melqana*' after the battle of *Challanqo* in 1887.

3.2.2 Intra-and inter-clan relations

The *Afran Qallos*, in which the *Babile* people are one *gosas*, had strong inter clan relations with the other Oromos in the area. In addition, they had friendly and hostile relations with the other clans in the surrounding.

Historically the *Afran Qallos* had strong political and economic relations with the Emirate of *Harar*, both friendly and hostile. They had also recurrent and prolonged wars with the *Somalis* and *Issas* (Mohammed, 1973). Nevertheless, the relation with the Emirs of *Harar* was strong and deep until the occupation of *Harar* by Egyptian forces in 1875; *Afran Qallos* had a strong impact on the Emirate of *Harar*. They had good relation with some Emirs, with those who could tolerate and satisfy all the political and economic needs of the *Oromos*. In addition, of course if they failed to do so they would face problems including war (Waldron, 1980; Mohammed, 1973).

Most of the time the reason for the conflict of *Harar* and the *Afran Qallos* was market inconvenience. The pastoralist *Afran Qallos* demand salt and cloth from *Harar* and they usually brought skin of various animals, milk and milk products.

Internally they had strong relation with each other through their political and economic institution called *Raba-Dori*. *Raba-Dori* had high value for the oneness of the *Afran Qallos*. Each *'gosa'* had its own government for the

satisfaction of its own interest but as a unifying unit, *Afran Qallo* had *Raba Dori*: the *Rabas* were elected elders for eight years from each *gosas*. These elders were required to have good knowledge of the unwritten constitution called, *Hera*. These people were called the *'Hera gosa'*. The constituent lineage, the *Hera gosa*, was responsible to elect the leader of *Raba-Dori*, called *Abba Fugug*, every eight years (Mohammed, 1973).

According to the Oromo tradition the last *Abba Fugug* was elected some three years before the coming of the Egyptians, thus the last *Abba Fugug* of the last *Raba*, Orfo Jilo, was elected in 1872 (Mohammed, 1973).

Among many responsibilities of the *Raba*, the following are mentioned: They settled disputes between each gosa, declared war, and made peace and elected a new *Raba*. Above all the *Heragosa* fixed the responsibilities of individuals to each other in all gosas and sub-gosas. Mohammed (1973) cites the memoire of Mohammed Moktar, an Egyptian army officer, as follow the political institutions of Afran Qallo, "the system of democracy in all its primitive purity" (Mohammed, 1973; Waldron, 1980).

On the other hand, *Dori* was the army of Afran Qallo. *The Dori* was composed of cavalry and foot soldiers commanded by the *Abba Dula* (war leader) who was elected after every eight years. The *Dori* was raised at the time of danger and its main duty was to fight against common enemies like the *Somali*, the *Issa* and the *Harari*.

Finally Mohammed (1973: 24-25) describes the whole process as follows

> After every election each gosa sent its elected men to a place called Water about thirty-five kilometers southwest of Dire Dawa. At this place they performed a ceremony and discussed the Hera Gosa. These men, in turn, elected the Abba Fugug and the Abba Dula. The climax of the activities at this place came with the planting of a tree called *Dalla*, which is said to have exactly eight years of age and signify the taking of office of a new Raba. At the end of the ceremony the elected elders returned to their localities leaving the Abba Fugug, the Abba Dula and the top Bokkus at Mullata, the capital, for eight years.

Thus, the aforementioned *Raba-Dori* was a strong unifying and protecting unit for the *Afran Qallos*. In 1875, the Egyptian force eroded the significance of the *Raba-Dori, occupied Harar*. According to Mohammed, (1973) and Waldron, (1980) and some informants, the *Dori* of the last *Raba*-fought bravely against the Egyptians at the battle of *Chira cha* but it was a total defeat for the Afran Qallos. Their Abba Fugug was captured and the three famous *Abba Bokkus* were killed. The defeat of the army and the imposition of Islam diminished the *Raba-Dori*, the political and military institution of *Afran Qallos*. With the destruction of the *Raba*, the *Afran Qallo* felt that they were "robed of their birthright" (Mohammed, 1973:25).

The coming of the Egyptians and their occupation changed the relation between the *Oromos* and the Emirs, the tradition of the *Oromos* and their mode of production.

3.2.3 Distribution, settlement, language and religion

Hararghe is now divided into eastern and western *Hararghe* Administrative Zones under the *Oromiya* Regional State, *Harari* Regional State and *Dire Dawa* Administrative Council. In all these areas, including *Harari* and *Dire Dawa*, the socio-economic dominance of the *Oromo* is considerable.

When we see the distribution and settlement of the people of *Babile* we can't ignore the historical facts that took place in the area. After the coming of the Egyptians in 1875 the way of life in the area was changed. Most *Oromos* before 1875 were pastoralists in the area of course there were few *Oromo* farmers called *Qottus*. But due to the encouragement from Egyptian administrators most people changed their mode of production from pastorialism to agriculture. Mohammed (1973) mentioned that Rauf Pasha had strong interest in the plantation of coffee and hence he highly encouraged the Oromos to be farmers.

Like that of their mode of production the settlement of the people was highly affected by the Egyptians. Traditionally the *Afran Qallo* was a lineage-based society with segmentary patrilineal system called *'gosa'*. The patrilineal rationale implies in the very term *Afran Qallo*, means the four sons of *Qallo* (Waldron 1980). But this traditional settlement and organization had affected by the Egyptians because they divided the province into four *Nole*, *Jarso-Giri*, *Abado* and *Nunu*. Again they re-divided the four *Modiriyahs* (groups) into villages for the sake of collecting revenue. And they appointed *Garadas*

(administrators) thus the traditional system of governance and settlement was really broken.

Even after the evacuation of Egyptians in 1885 it was difficult for the *Oromos* to revive. Then a more disastrous event occurred for the Oromo after the battle of *Challanqo,* on January 6, 1887. The whole area came under the kingdom of *Menilik* who imposed the system called *malqanna* that reduced the status of the *Oromo* and it shattered the dream to revive the institution of *Raba-Dori* (Mohammed 1973).

Their religion, too, was changed. Originally the *Afran Qallo Oromos* practiced their traditional belief. But gradually it was eroded by their contact with the Emirate of *Harar* and rapidly after the Egyptian occupation. Immediately after their conquest the Egyptians imposed Islam up on the *Oromos*. Previously Emir Mohammed has started the Islamization process. However, the method and system of the two, the Egyptians and that of Emir Mohammed, was completely different. The latter did it gradually and peacefully while the former used force.

In any case, the traditional belief was eliminated and Islam became dominant. In the study area currently 99% of the people are Muslims. Most of their traditions are combined with their religion even their culture and religions are highly associated.

As far as language is concerned the official language of the woreda, is *Oromiffa*, since it is a part of *Oromiya* Regional State. And since the majority of the people are Oromo in the study area, *Oromifa* is the language. In the urban

area (in the town of Babile) people speak *Amharic* and *Somali* along with *Oromifa*.

Currently the settlement pattern is not guided by their traditional patrilineal lineage system strictly. However, according to my informants, many people settle where their ancestors had settled. For the newly married spouses a house is constructed around the house of the groom's parents.

3.3 Physical infrastructures: transportation, communication, and other facilities

Within a country that follows agriculture-led development-led strategy, the physical industry infrastructure play a vital role. The people of the study area belonged to the wide rural population of Ethiopia that suffers from the lack of various infrastructure.

Between the two big towns *Harar* and *Jijiga*, if the infrastructure is adequate *Babile* could profit from its agricultural products both from the farmers and the pastorialists. Groundnut and sorghum from the farmers and milk (particularly camel's milk) and milk product from the pastorialists are marketable items in the surrounding towns. Though *Babile* is known for its milk and groundnut in the surrounding areas due to lack of infrastructures particularly road, yet they could not make profit out of it.

In the woreda there is no railway, air, or water transport. The only means is road transport. In 1996/97 there was a 9.6kms paved road for about 1000 km^2 of area. In the woreda there is rural feeder road from *Babile* to different

PAs. There was, for instance, 15kms road from *Babile* to *Gambela* (one of the *PAs* in the *woreda*), 12 kms road from *Babile* to *Gemachu* and 10 kms road from *Babile* to *Doroba*. (this data was obtained from the socio economic profile of the woreda in 1995/96-1996/97).

There is a transport service from the town of *Harar* to the *woreda's* town, *Babile*. There is a telephone service though it is not digital. Schools both secondary and elementary are there *NGOs* like *CISP* and *MFM* are active in building schools and health centers. There are government-owned few health centers and clinics and there is *Bisidimo* hospital in the *woreda*. Pure water supply in the *woreda* is a big problem, even in the town there is a high problem concerning water.

CHAPTER FOUR

MEANS OF LIVELIHOOD

4.1 Land Tenure

The type of land tenure system determines the tradition of production and land/environment protection. Relating land tenure system with production and land/environment protection, Stahl (1974) stated that land tenure and land use systems are highly influential contributors to land degradation. Any decision-making relating to agriculture is highly influenced by land tenure and other policies of the government.

In Ethiopia currently land is the property of the state. Farmers do not have the right to sell or own land. The only right of the farmers on their land is just to use it. As it has been said by a number of scholars, it erodes the confidence of the farmer to invest much of his energy on the land that he does not possessed. The motive to protect the land from degradation is very low for it is not his property.

Moreover, there was a recurrent conflict between Oromiya and Somali Regional States over *Babile*. As a result, there was a clash between these two nation groups. This clash renders people to lose a settled mood of life. Although *Babile* is administered by the *Oromiya* Regional State, the Regional State of Somali has got some legal right on it. So now in *Babile* town there are administrations of Somali and *Oromiya*.

This situation challenges the confidence of the people on their land. For so many Somali migrants who live in the PAs of *Babile*, the confusing status of

the woreda posses a potential problem on the land use of the people and on their attitude towards their land. This problem is clearly seen in the study PA, *Tula*, which is very close to the urban center. The local people take no measure to protect of the environment.

Almost all farmers cultivate their land for the subsistence of the family. They plant annual crops or other plants that they believe will enable them to satisfy their immediate needs. They give little attention to tree planting. Currently, having considered the long run effect of this problem, government officials have set a project called agro-forestry. To put this rule in to effect, government officials force the people to plant trees inside and around their farmland. According to my informants, if they fail to do so, those concerned officials tell them that their land would be taken and given to other landless people or to farmer who would plant trees on his land. So the farmers planted trees, albeit unwillingly.

The government officials prepared an obligatory rule based on the assumption that the people were reluctant to exert their utmost energy on the concentration of their land. But as it is understood from my informants, their lack of initiative arises primarily form the question of unwavering possession of their land.

As many scholars agree, if the land tenure system continued in this trend it is difficult to bring the desired environmental sustainability and food security in the country at large and in the woreda specifically.

4.2 Land Use Pattern

The environment has a pivotal role in society's culture and land use system. Barlett (1980b) explicitly put that environmental factors like altitude, rainfall, temperature, and incidence of wind have a crucial role in determining which land uses are possible or profitable. Policy decisions on agriculture are highly dependent on the environment.

In addition, the land use system is highly affected by the land tenure, social, cultural, economic and political systems of the society. In the woreda though there is no such reliable data about land use system, the zonal department of Agriculture indicates the following land use system.

Table 1. Land use Pattern of Babile Woreda, 1995/96

No	Land use	Area (ha)	Percent
1	Arable land	63,728.01	21
2	Pasture land	11,858.10	3.9
3	Forest land (Shrub and bush land, manmade forests)	111.89	3.7
4	Degraded land	198,020.34	65.5
5	Land for social purpose	17,421.92	5.8
	Total area	302,217.37	100

Source: Adapted from socio-economic profile of Babile district 1995/96-1996/97.

4.3 Agricultural Implements

Land is vital as agriculture is a primary mode of production in Babile. In the 'woreda', on average one farmer owns about 8.5 hectare of arable land (MFM, 2002).

In various parts of our country there are different ways of farming. In the study woreda, the plough is used as a basic means of firmly which makes the ox a crucial property of the farmers. But it seems that not all farmers are not equipped with this crucial property.

Most of the people have two or more farm oxen, some have one ox and a few of them have no farm ox at all. Those who have only one ox borrow another ox from a neighbor, a relative or a friend on the bases of various agreements to cultivate their land. If the ox is an experienced one in cultivation, the ox less will pay 12 *tanika* (300kg) of his harvest to the owner, fattens the ox and returns if during harvest time. If the ox has no experience, the ox less will pay six 'tanika' (150kg) of his harvest and returns the fattened ox to the owner.

But if the farmer has no ox at all, he will lend half of his total land, only for that particular season, to his friend, neighbor or relative who has oxen. Then the farmer can gain the product from the portion of his total land that was used by another farmers. The only input the farmer is expected to contribute is to cover the expense or the seed that his half land takes.

In addition, when farm ox is dealt with, it is necessary to list some of the complementary equipment to ox such as wood-made equipment beam of yoke/plough, yoke, ploughshare and others. Skin-made equipment that is used

to tie the wood-made equipment to the ox and the wood made equipment together. There is also other supplementary equipments that are used to cultivate their land such as spade, pickaxe, sickle, axe, and so forth.

Besides the traditional ways that they use to increase or maintain the fertility of their land, they use modern agricultural input. Such as fertilizers (Urea and DAP), improved seeds (of maize, sorghum and sweet potato), pesticides (both liquid and powder) and herbicides.

Traditionally the society has the practice of digging a community pond around the central place of the community to satisfy the demand for of water when scarcities happen, both for domestic animals and for the society. But recently with the help and pressure of the concerned government officials they have started digging well individually for irrigation purposes.

This enables them to plant various vegetables, fruits and *chat*, a very important cash crop in the eastern part of the country. Previously *chat* was not planted because there was no irrigation and enough rainfall for it. Now they use package by which they learn to plant their seeds in line and this simplifies the use of fertilizer and control of pests and weed.

My informants recall that, before getting the opportunity to use the package program, their fertilizers were not used absolutely to the improvement of their yield. Instead the herbs also took the fertilizers. As a result, the seed became thin and gave fewer yields than expected; in addition to this package program, when they get adequate amount of rainfall they will have good harvest.

4.4 Crops, Cropping system and Agricultural Calendar

There is no *belg* production in the woreda. Elders justify this with the coming of the elephant to the area. Since the woreda is geographically located between the two valleys, Erer and Daketa, there are a number of wild animals in the area. Starting from the end of February the elephants move from the lowland (Daketa) to the highland. It is time for *belg* production. And they return back in the beginning of the month of June. Thus when they by pass the area they completely destroy every crop that have been planted in the *belg*. Besides, the rainfall is unreliable. For these reasons the farmers of Babile have abandon *belg* production.

The *woreda's* climatic condition consists of arid and semi arid agro-climatic zones. Land preparation for *meher* crop production takes place between mid March and the end of March. And this followed by planting (sowing) from mid April to third week of May. Lastly, harvesting takes place from the beginning of October and extends to the beginning of December (for maize, sorghum and groundnut).

Nowadays in *Babile* and in other populated regions, intensification is highly used. In *Babile* until recently maize, sorghum and groundnut were the only crops that are cultivated in the area. But now due to land fragmentation and various problems, they have started to intercrop various fruits and vegetables with grains crops. They inter cropped vegetables and root crops like potato, carrot, sweet potato, garlic, tomato and fruit trees like papaya and mango.

Their subsistence crops are maize and sorghum with some root crops like sweet potato and onion. Groundnut is their major and only cash crop.

According to the Socio-economic Profile of *Babile* woreda (1995/96-1996/97), a large amounts of cultivated land is covered by sorghum and groundnut. They covered 82.7% of the total cultivated land. In addition to this, sorghum and groundnut have a great role and tie in very well to the society's socio-economic life.

As a major means of subsistence, sorghum has a strong relation with the life of the society. Due to the agro-climatic condition of the *woreda, Kolla*, which is the dominant feature sorghum is a very suitable-crop. If resists drought that occur frequently and is easily manageable in sandy soil. Moreover, it demands less manure or fertilizer and labor than other crops. Moreover, its seed is cheaper and are easily available and the leaf and stalk of it are also important as fodder for their cattle.

Land preparation for sorghum and groundnut is at the same time. There is no *belg* cultivation in the area even if there could be sufficient rain. Cultivation of land in *meher* (*hagay*) a starts in the first or second week of April. Then groundnut is planted and it is followed by sorghum.

There are five types of sorghums. These are locally called *Bulo, Chame, Aftuqani, freeleme* and *Dasle*.

Chame is the one that is cultivated widely. From the beginning up to harvesting time it needs four months. But the most qualified, both as a food and fodder, is *Bulo*. It total takes of six months. A farmer who produced a large

amount of *Bulo* is considered to be as a strong farmer and get great social respect among the society.

The society uses sorghum to prepare enjera from which they prepare their local food called *Lafiso*, which is a traditional food of the people consumed through out *Harerghe*. The preparation of *Lafiso* differs in each household and this difference is based on economic status of the household. It mostly contains potato, tomato, oil or butter, meet, linseed, fenugreek, so forth.

Maize is another crop that serves as subsistence food in the area. It is also used as fodder for cattle. Again it is preferred for it takes a shorter period of time, i.e., two months and fifteen days. And the selected seed of maize even takes less time than the indigenous one. In addition, it can be intercropped with sorghum and groundnut. Maize has more or less similar value with that of sorghum. The difference is the social value that is associated with sorghum.

Groundnut has also a great role in the society for three reasons. One, it is their major and only cash crop. Second it contains high amount of protein. And thirdly its chaff is very important as fodder of cattle. Moreover, it resists drought and performs well even in a poor sandy soil.

Groundnut is worths more than sorghum. The latter is used for subsistence and fodder but has less market prices. Unlike sorghum, ground is more profitable.

April is the most suitable season for sowing groundnut because it attaches its roots with the soil using the summer rainfall. Groundnut can't resist drought only once, that is if lack of rainfall happens before it sends its

roots deep in to the soil. After this time it withstands any drought and usually its harvest is good.

Depending on the type of groundnut, it is harvested after eight or nine months. It has three different types *Oldele, Sartu* and *Jambo*.

Sartu is the first quality. It has more oil content and good market price than others. But it needs tiresome work because it expands its roots widely and strongly deep into the soil so it is difficult to hoed up weed and uprooted itself.

Other than the aforementioned crops and groundnut there are various types of fruits, vegetables and root crops are grown in the woreda. The most important are mango, papaya, tomato, pepper, carrot, potato and a number of others. Sweet potato, locally called *mitatis* is a very important root crop to fill food shortage gaps.

Unlike most part of *Harerghe*, both eastern and western, *chat* is not produced in the *woreda*. Although there are very few farmers who have hand pump to group irrigated chat, there is no significant chat plantation in the whole part of the *woreda* and particularly in *Tula* PA. Different officials and informants had given various reasons. Some of the reasons are lack of rainfall, absence of irrigation practice, presence of *chat*-attacking pests, namely, *Girisa, Galelo*, and *Ramo*.

Girisa is small bloodless insect, according to my informants; through the flower it sacks the liquid substance of the *chat* and retard its growth. *Galelo* enters the *chat* tree through the root and makes the *chat* remain only at the stage of flower. *Ramo* is the most dangerous one because it changes its color

with the color of the *chat*. With red *chat* it becomes red and white with white chat. So it is difficult to control or avoid it.

Now people start digging wells around their farmland. And to avoid the problem of scarcity of water for *chat* plantation they would buy hand pump in groups. Regarding the problem of pest they are trying to solve it in collaboration with the *woreda's* agriculture office.

These initiated them to plant *chat* and some individuals have already started planting it. It will have a greater contribution in increasing the income of the household and in meeting the daily *chat* consumption needs of a household. So this will enable them to save the money and time that they spend to get *chat*. Thus, in turn they use all their energy and working hours appropriately.

4.5 Problems and Constraints in Crop Production

Many problems in the *woreda* that contribute to the failure of crop production. Land fragmentation, lack of rainfall, soil infertility and erosion, and a number of other social, economic and political factors are believed to be some of the causes of crop production failure. Most of my informants also blamed government officials for calling the farmers for meeting during cultivation or harvest time I myself have seen this problem. Although agriculture needs closer follow up, Babile farmers are not able to do so due to this problem.

There are very serious problems that weakened the production capacity of the farmers.

Land is one of the major problems in the area. First the land tenure system itself has a great negative impact on crop production. As already stated before, land is the property of the state that farmers do not have any confidence on that the land will remain their property and do not take their responsibilities seriously to care for the land for longer period of time. This irresponsible use of land brings land degradation, which in turn brings a lot of problems on their production system.

Along with the land tenure system, land fragmentation is a big difficulty for the *woreda* farmers to cope with. According to my informants and some officials land fragmentation is one of the most critical problems of the society. High population growth is said to be the major cause of this problem.

The other critical problem in the *woreda* is shortage and the uneven distribution of rainfall. Shortage of rainfall has many consequences. It contributes to soil erosion and even degradation. Besides the untimely and uneven distribution of rainfall, to make things worse, the practice of deforestation has reached its climax level.

The other major obstacle that hinders people from getting the needed amount of crop production is the poor quality of the soil. The soil is not capable of holding the water that they get during the rainy season.

Erosion and soil infertility are the other problems to crop production activity in the area. Hence, people have been trying to eliminate the problem of soil erosion using various methods, such as terracing, afforestation, change the direction of ploughing-from vertical to horizontal in order to minimize run-off.

But soil erosion is still uncontrolled and it is a great barrier to the people to achieve their objectives of conservation.

Drought could also be mentioned as a critical and recurrent problem in *Babile*. As far as the cause of drought is concerned, two main reasons could be stated. Firstly, the volume of rivers and spring water is steadily decreasing for the rainfall does not replace them. The second reason is the extreme activity of deforestation. These have strong implication on crop production, in particular and agricultural activities of the society in general.

The cumulative effect of these political, cultural, social and economic reason exposes the society to uncontrollable and harsh famine. Besides, farm sizes are so small ranging 1.5 ha.

In general, agricultural productivity in the *woreda* is increasingly constrained by the unreliable declining rainfall, the declining soil fertility and the prevalence of pests and herbs. So people produce so small that it is not enough even for their subsistence.

In some villages where irrigation is practiced farmers have already streak to seasonal production of horticultural crops. Generally, the application of improved agricultural practices is non-existent due to poor institutional set-ups. As a result, there is a drastically decreasing land productivity and crop production.

4.6 Livestock Production and its Problems

The growing demand for both farming and grazing lands has increased the importance of mixed farming in Ethiopia.

When the problem of crop production becomes severe, it is necessary to shift to livestock production. In this light, although it is difficult to find accurate and reliable data, the people of *Babile* have engage in livestock raising since early times. Livestock, other than, the direct use of improving one s economy, the manure that the people get from their cattle use to fertilize the soil.

Domestic animals by the farmers of the area are cattle, goats, sheep, donkeys and chicken. The number of camels in this *PA* among the farmers is very few because large land and much manpower are needed but the society is not able to get this favorable condition. In the *PA* and in the *woreda* there are no horses and mules, most probably due to climatic factors.

On average, households have ten cattle and 20-25 goats. Some households have two bulls, one cow and five to six goats. Of course, it is undeniable that some individuals have less than others people and some individuals have none.

Although different diseases and parasites affect livestock resources, vaccination coverage is very low. Herd productivity is low due to lack of water and pasture during the dry season. As a result, the number of livestock units has decreased considerably in recent years, mainly wing to poor climatic

conditions particularly drought and lack of shepherds. Because boys are sent to school, there is no one to keep the cattle.

Moreover, according to the information from the *woreda's DA*, due to feed problems the productivity of existing livestock is quite low. Genetic problems and disease outbreak undermine the contribution of livestock to food self sufficiency.

In spite of all these constraints, is known for is milk in the surrounding areas including *Harar* and *Dire Dawa (Babile)*.

4.7 Organization of Production and Division of Labor

There are a number of local organizations which serve various purposes. These include *Afosha (Idir), Guza, Faraka/Mero* and *Yetimaa*. The assistance of the last three social organizations is related to crop production, while *Afosha* is dedicated to social life problems and events like death, weeding and the like.

Guza is a work force, which entails mobilizing a group of 10-50 farmers, usually led by a wealthy individual. The land owning individual who requests *guza* will have to provide chat and *lafiso* (local food). In some cases, relatively better off farmers prepare *guza* on behalf of sick or elderly farmers who are unable to make such arrangements by themselves.

Faraka/Mero is a group of workers (farmers) that help each other, but unlike *guza* there is no food preparation. Rather a chat ceremony is held to mark the verbal agreement between several able bodied farmers that they will help each other in turn.

Yetimaa although, on Fridays it is forbidden to work on one's own land, farmers work on the land of an individual who are unable to engage in productive activities. The group of people that are helped by this group includes the elders, the sick, and the female-headed households.

When such vulnerable group is needed to be helped, the peasant association formally forms a work force, and then this operation called *zemecha*.

Guza is exercised mostly than the others in different time and activities including house construction, fence building and recently terracing. These people help each other based on one's own demand at various stage of production.

The other basically different economic organizations are *Godo* and *Irta*. *Godo* is an organization from which a group of farmers will take an ox on credit, normally at sowing time (April-June) with the agreement to pay off at harvest time (October-January). The price of the ox that the group repays is determined in accordance with the price of ox of the harvest time. The group will sell the ox and share the money to purchase either seed or grain. The implication is that they will have to refund in monetary terms a higher sum than they were able to obtain when selling the animal. At the same time, in order to refund the required amount at harvest they will have to sell more grain than they were able to purchase when they sold the ox.

Irta/woldia qotubule, farmers' association/ is a group of people that is formed on the basis of contributing inputs. For example, one may contribute

seed, the other may contribute irrigation water, and the third farmer may contribute the land. Then they will share the yield.

All these organizations, particularly production organizations, are allowed for men who have land owning right, who have the right on the production (subsistence and cash crop production) and there is a clear division of labor between men and women.

In the production process, women don't have as such an important role. They simply prepare food on time to the men who cultivate the land. Their very limited participation in the production process reduces their opportunity to be independent producers and owner of the product.

Let us name some of women's minor but time consuming activities in production. In-group they put manure in the cultivated land, during harvest time they collect and transport the harvest. In groundnut production when the husband cultivates the land, they (women) sow the seed in line.

Women carry out a significant community role in terms of: ceremonial food preparation and informal health care services. Demand for men labor in agricultural activities is much higher than that of women labor.

Table 3. Gender based daily activity of the people of Tula

Time	Sex	Activities done
6AM-10Am	Male	- eat breakfast (usually 'Lafiso') - drink 'Hoja' (local tea) - Feed cattle usually oxen - Chew chat, that is called ija bana (eye opener)
	Female	- Prepare breakfast - Milking - Water fetching - Clean the house and cattle's ban
10AM-7PM	Male	- Went to the town to buy chat and sometimes to sell grain or groundnut in a large quantity. Stay there until the chat arrived from Harar
	Female	- Went to the town to sell milk and milk products, grain and groundnut in small quantity, firewood, sweet potato and other things. In return they buy Kerosene, cooking oil, and other items from urban areas for their consumption. And returned home a bit earlier than men to prepare lunch for their husband and children.
7 PM-12PM	Male	- Eat their lunch, chew chat and usually engaged in agricultural activities or any other activities based on the season. Except for Friday that is holyday in Muslim society.
	Female	They did whatever activities in the household preparing food, Hoja, and other things to the dinner, carrying of children, keeping cattle, milking, grinding grain, etc But their activities vary from season to season.

Table 4: Gender based seasonal activity of the people of Tula

Time	Sex	Activities done
Spring March to June	Male	- Fencing - Land preparation - Cultivation - Sowing - Digging well - House construction - Transporting manure/fertilizer
	Female	- Transporting manure /fertilizer and add it to the land - House decoration - Prepare food and Hoja for the farmers called Guza - Sowing ground nut - Cleaning house and the surrounding - Sell of grain in local markets in small quantity
Summer June to September	Male	- Oxen management - Selling of construction wood - Weeding - Digging storage pit - Protection of crop from wild animals
	Female	- Management of cows and small stocks - Weeding - Making traditional utensils and furniture - Sell of fire wood - Purchase food items
Autmn September to December	Male	- Harvesting - Collection of harvest - Uprooting groundnut - Sale of groundnut in large quantity
	Female	- Collection of harvest - Storage of ground nut - Transporting ground nut
Winter December to March	Male	- Threshing - Sell of ground nut in large quantity - House construction - Transportation and storage of grain
	Female	- Preparing land for threshing - Grinding of grains - Transportation and storage of grain

4.8 Handy Craft and Artisans

In the study *PA* there are very few artisans, called *ougeye* the most significant category of this *ougeye* are *Tumtus*, who are black smith. All the traditional agricultural implements are made by *Tumtus*. These agricultural implements are made by male *Ougeye*, males done water container (*insera*), griddle of clay (*mitad*), etc.

Socially this category is alienated by the society. No one will marry or give his daughter to *Ougeye* recently some people marry the daughter of an *Ougeye*, but still no one is willing to give his daughter to the man who comes from this category.

In addition to the social problem that they encountered there is problem of raw materials like grass, firewood and clay. These problems undermine the development of handicraft in the area.

4.9 Forms of Exchange and income Generation Activities

In the area cash crop is not extensively used except, groundnut. The subsistence crops, maize and sorghum, have low market prices. So, as income for the family they highly depended upon milk from their cattle. Besides, increasingly they are engaging themselves in contraband trade and in selling of *chat*, from Harar, and fuel wood.

Most of the time in *chat* and firewood selling and in other petty trade it is women who actively participate; while men sell construction wood and engage in daily labor.

Like most parts of the country the significance of barter is almost non existence. But in some cases people exchange their labor or cattle for grain particularly in times of food gap. However, the dominant exchange is managed through the use of money/*Birr*.

The low market price of sorghum encouraged exploitation of the forest coverage in the area. In order to satisfy their need for oil, kerosene and other items from the town they sell construction and firewood and that accelerates the rate of deforestation in the area.

As far as income generation activities are concerned the society participates in many activities to increase their income and to decrease food insecurity. These income generation activities are both farm and off farm activities. We will see these activities in relation to their adaptive strategies latter. But to throw light about their means of income other than their own activities; they had opportunities to get debt from different organizations.

CISP, for instance, had started lending money to poor women on the bases of interest. But in Islam to borrow money or anything else with interest is strictly forbidden, thus totally the program was a failure. Now MFM has started to give money to poor women to be returned with out any interest. They borrow the money and engaged in different profitable activities, then after some times they return back that money.

But here there is one major difficulty to accumulate wealth in any form in the household. Due to the presence of polygamous marriage women deliberately wasted the money and/or the surplus grain. Because if they have surplus grain

and few money in the house men usually want to have the second wife, so to control this women wasted the surplus using various ways like preparing wedding for their son, to this end usually mothers encouraged their son to marry early, buying ornaments, clothes and other materials. This trend has its own impact on the family's food security and saving culture.

CHAPTER FIVE

PEOPLE'S PERCEPTION OF THE ENVIRONMENT AND ADAPTATIVE STRATEGIES TO THE ENVIRONMENT

5.1 People's Perception of Environment and Major Causes of Environmental Degradation

The environment itself could be very broad or very limited. In this context, environment is the place where people live and do their activities. It includes the natural resources such as land, water, forest, animals (both domesticated and wild) and sunshine /light. Every individual has their own attitude towards environment. And as society is a group of individuals who share common geo- historical, socio-economic and cultural traits, they have developed their own attitude to a particular environment where in they live.

The people of *Babile* perceived their environment as the outcome of various socio-economic and historical events. To elaborate we can analyze the historical perspective at different stages. The stages are treated according to the interaction of *Oromo* with other people.

The first stage is the stage when the *Oromos* of the area lived with-out any interference. The second one is *Oromo-Harari* mutual relationship. *Oromo* relation with the powerful *Harari* with the help of Egypt characterized the third stage. The fourth stage is the period by which *Oromo* was dominated by both the influences of Egypt and the Kingdom of *Minilik*. The last stage can be weak *Oromo* tradition, due to past influences, by dominant central government and Italian occupation period.

Traditional *Oromo* culture was adaptive to their environment. For they were ruled by strong traditional institution called *Gada* and for they were strong lineage based societies. This is clearly explained by Kassam and Gemetchu (1995: 86).

> ... Far from exploiting their environment, the Oromo evolved a highly elaborate model for environmental management where in a perfect balance was kept between nature and culture. In the Oromo jural system (seera), all environmental rules, propounded to protect the soil, vegetation, wild and domestic animals, water resources, high places of worship (such as certain rocks, hilltops, and mountaintops), and stone burial mounds, as well as those that define people's relationship to each other in the sharing of these natural resources, are known in Oromo as the laws of the inside and of the outside (alloof alolla).

In the first stage when the people of *Babile*, as one part of *Afran Qallo*, lived with no interaction with any outsider clan their mode of production was pastorialism. Most of them were pastorialists and they hunted wild animals from the forests of *Erer* and *Daketa*. There was surplus production of honey for the bees got enough trees to live on. During this stage the rules of *Raba Dori*, their traditional institution, were strong and people strictly followed it.

They kept their traditional belief, which had a strong relation and respect to the natural resources particularly to land and forest. Many authors express this attitude of the people of *Oromo*. For instance, Kassam and Gemetchu (1995:91) explained it as follows:

> For all Oromo, the fig tree in the highlands and the Acacia tree in the low lands are highly condensed symbols of long historical and spiritual processes linking them to the beginning of time. All such holy trees, situated in high place of worship on mountains and hilltops, as well as the sites themselves, are protected from desecration. No branch is allowed to be broken, no leaf picked, no stone displaced, except for ritual purposes. These trees are living ancestors, and it is in their shade that meetings are held and laws enacted ... all of these trees and their sites are equally associated with springs and wells-water being the source of all life, be it human, animal or vegetal. In daily life, these and other religious beliefs protect certain trees.

Therefore, it shows that being ruled only by their (*Oromo*) tradition, without the interference of any outsiders, was advantageous for the environment.

Then in the mid 19thC they began commercial relations with the Emirate of *Harar*. This relation enabled both people to exchange their different items of goods and agricultural products.

The people of *Harar* started importing agricultural products from the surrounding *Afran Qallo*. Items like milk and milk products, honey, sorghum (after the *Afran Qallos* became farmers), skin, ivory and the like were exported from the *Afran Qallos*. In turn the *Afran Qallos* imported salt, cloth and other manufactured items, which were imported or made in *Harar*.

This commercial interaction did not take away the institutional rules of *Afran Qallo*. Of course, there were changes in the process of Islamization

though it was very gradual, and the change in the mode of production was significant. This change in mode of production, from pastoralism to agriculture, had its own negative impact on the local environment. In addition it affected the settlement pattern of the people.

To deal with the changed mode of agricultural activities, it needs many natural resources like land, water, sunlight and human labor than the pastoralist mode of production. Besides it requires technological advancements that keep soil fertility, with no progress in technology the land lose its fertility and would give less and less yield from time to time. And this fact was true in *Babile*.

During this processual change in the area another external force emerged in 1875 that was the Egyptian force. The emergence of the Egyptians was not good for the *Afran Qallos* as it was for the *Aderes/Hararis*. Initially the *Aderes/Harari* were Muslims so the coming of Egypt in that particular part of the country did not affect them. But for the traditional institution of *Afran Qallos* and for their identity it was a threat.

There were fatal battles in various parts of the *Afran Qallo* territory against the new Egyptian force. But lastly the *Afran Qallos* were disastrously defeated by the Egyptians. Helped by their modern guns the Egyptians defeat the people, captured their last *Abba fugug*, *Orfo Jilo*, and killed three known *Abba Bokkus* at the battle of *Chira Cha* in *Garamulata*. This military victory was followed by a forceful Islamization process upon the *Oromos* and that led to a

fatal breakdown of the traditional institution *Raba Dori*, and the relation with and attitude to wards the environment (Muhammed, 1973).

In the history of Africa in general or during the colonial period in particular, the introduction of Islam or Christianity in any form had brought attitudinal change about the environment and their own identity and had created and widened the gap between human society and the environment. Particularly those forceful conversions had great destruction to the environment and attitude of the people.

Besides the forceful Islamization process, the coming of Egyptians had also been an advent for the *Afran Qallos*. The Egyptian administrator Muhammad Rauf Pasha had strongly encouraged the *Afran Qallos*, specifically farmers called *Qotto* to produce more coffee to export. The Egyptian army was given land to cultivate and they introduced new fruits vegetables, and cereals like lemon, vines, potato, and beet root, olmand and peach (Muhammed, 1973).

The land was so fertile it that gave more surpluses to the Egyptians than they had expected and they exploited the land as much as they could. Furthermore, Egyptians engaged themselves in taking the land away that had been communal before, when *Raba Dori* was active, and giving it to individuals and administrators whom they appointed as *Garada* and *Demina*, in order to facilitate tax collection weaken the traditional ruling system.

By then almost all the people in Babile converted to Islam, their institution was weakened by the process of islamization and the lack of administrators, for *Abaa Bokkus* were killed and *Abba fugug* captured. Thus

their traditional indigenous culture was intermixed with different cultures and they had already started to exploit their land desperately, without protecting the resources that they had been taking care of through their tradition.

Besides, the population pressure increased in accelerating rate due to change in mode of production and islamization. When most of *Afran Qallos* were pastoralists' husband and wife had been living separately for along period of time until the husband returned home with cattle. So this subsistence strategy, pastorialism, was a natural method to control family number. But when they became farmers they started living together throughout the year and get many children every year. To do so, the person obviously needs to be a rich man because he must be capable of giving or doing everything that his second wife needs to have. Still now the first wife or any household hence, deliberately waste their wealth earnings.

Furthermore, women are not encouraged to participate actively :n agricultural and income earning activities. This trend is difficult for both the family and the society at large in securing their annual food.

In (1885) the Egyptians left the country after ten years,. But their impact exists to up now. Now almost all the *Harar Oromo* claim them selves as Islam, but few of them are converted to Christianity after *Minilik*.

After the evacuation of Egyptians in 1885 there was a sort of attempt among *Afran Qallos* to revive their *Raba Dori*, and most of them particularly, *Babile* did not want to accept the new Emire of *Harar, Abduilahi*. There was a clash between the two to take control over the area. But unfortunately the force

of *Minilk* from the center emerged in the area where both *Afran Qallos* and *Harar* were weak. Two years were not enough for the *Afran Qallos* to empower the *Raba Dori*.

The emergence of *Minilik's* forces in the area was another historical stage for the area's people. Then *Minilik's* force won a decisive victory over the *Oromos* at the battle of *Chellenqo* on Jan 6, 1887. This battle reduced the status of the *Oromo* and it completely destroyed their dream to revive their institutions. The *Malqana* system was imposed by *Minilik*, immediately after the battle (Muhammed, 1973).

Together with new administrative system new species of crops and trees were introduced at various times by followers of *Minilik*. These new species were some adapted some did not. For instance, eucalyptus was introduced to the area immediately after the battle. It is good to areas where water is surplus but in the area like *Babile* it was destructive, because, there was a serious problem of water shortage. During *Haile Selassi's* period sesame and haricot beans were introduced. Then after, during the five years occupation period of Ethiopia by Italy groundnut was introduced, and it is their major and only cash crop now.

The period of the Italian occupation can be considered as one historical stage that put its own impact particularly on the environment and economic milieu of the people, due to the introduction of groundnut.

The impact of the Italian period on the environment of the area came after their evacuation; because the British who came in the area to help the Ethiopian army in expelling the Italian brought the Sudanese as servants and

entourages. When Britain left the country and replaced by Americans they left those Sudanese in and around *Babile*. Optionlessly and mindlessly the Sudanese cut down these respected acacia trees, that served as shade for the cattle and the people, had strong ritual respect and that fixes nitrogen, so contributed a lot for the fertility of the land. Whenever they reached the Sudanese cleared the forests and sold the trees in large markets at *Harar* and for the *Garadas* themselves.

The *Garadas* became hereditary administrators of the land after they were once appointed by the Egyptians in order to weaken the traditional institution of *Raba-Dori*.

The people were powerless to stop the Sudanese and the *Garadas* or even to participate in the tree trade. Villages were established after the forest was cleaned by the Sudanese and took their name. In *Babile*, now there are a lot of *Gende* (village) Sudani in various places.

Through out this long historical process, we can learn that there were basic changes taking place among the local people. First of all their mode of production, then their settlement shaped and reshaped by the change in their mode of production it self, by Egyptians for administrative purpose and for the sake of revenue collection. But without considering the traditional patrilineal settlement pattern the change in religion was also influential for it changed people's ideology and perception of themselves and their environment. We can also see the impact of religion on the control of the family size.

After centuries of change on the local people the 1974 revolution changed the administrative structure of the area, *Gardas* and *Deminas* (administrators and land owners) were replaced by Liqemembers. *PAs* emerged Peasant Association followed the change in land tenure system and the formation of *PAs*. Land became the property of the government from feudal lords. However, it had no critical change for the farmer.

The impact of *Derg's* policy and the policy that the country followed now is almost similar for the local farmers and the environment.

So when we talk about people's perception of their environment it is the outcome of all of these. And when we talk about the major causes of environmental degradation, we have to consider the impact of all these historical changes and impositions.

To day the root causes of environmental degradation are believed to be population pressure, excess utilization of the natural resource, deforestation and its outcomes, erosion of fertile soil, lack of rainfall, occurrence of high run off, etc.

It is simple and plausible to analyze these major causes of environmental degradation through time, through historical changes and processes; because society is the result of its history.

Population pressure is one of the problems in Third World Countries, especially in Africa. In Ethiopia too population pressure is becoming a serious problem from time to time. In *Babile* the increase in of population pressure at alarming rate has its own historical background.

The change in mode of production allowed the husband and the wife to be together throughout the year. Hence, the natural method that control family number when they were pastorialists was broken by this change from pastorialism to peasant agriculturalist.

Besides, population pressure increased because of the coming of new settlers in search of agricultural land and as the extended family of the ruling class, particularly after the battle of *Challanqo*.

Land was exhaustively exploited due to absence of intensification and advancement of agricultural equipment along with population pressure.

Until recently the practice of intensification was absent throughout their long agricultural history except intercropping of sorghum and maize with groundnut. Likewise the use of manufactured fertilizer and water harvesting were absent in the area.

Excess utilization of the natural resource in the area had occurred because of population pressure, backward agricultural inputs and irresponsible use of the resource. The land tenure system both in post and pre 1974 period, the powerlessness of the local people and the breakdown of their indigenous adaptive mechanisms all contributed to the irresponsible use of the natural resources.

Due to this the natural forest mainly acacia, which is very significant in fixing nitrogen and had high respect for its ritual purpose, was clear. This high deforestation had its own impact on the water resources and on the climatic change of the area.

Deforestation enhances soil erosion, uneven distribution of rainfall (with high intensity or scarcity and untimelyness, etc) and desertification. Now the forest coverage of *Babile* is almost non existent. Except for *Erer* and *Daketa* valleys the natural forest and indigenous trees are non existent. Now in the villages the dominant species of tree is eucalyptus. By its very nature, eucalyptuses is adaptable to marshy or swamp areas not to dry areas like *Babile*.

In *Babile* eucalyptus is disadvantageous for it exploits the scarce water, hence, it has its own shortcomings to the crops and the other water beings.

Currently crop failure and drought are very common in *Babile*. Due to the aforementioned socio-historical reasons and due to backwardness of their agricultural equipment crop failure happens very commonly. Due to lack of modernization in their agricultural method and equipment it's only the topsoil that has been is tilled for more than hundred years so it has lost its fertility. In addition deforestation facilitated the erosion of soil. Moreover, the water holding capacity of sandy soil is very poor so, along with lack of rainfall or irrigation, backwardness of agricultural input, and erosion this low holding capacity of the soil leads to critical crop failure and even now the land becomes unsuitable for agricultural activity. With much effort they earn less, hence, always there is a food gap, particularly around the time of harvesting and sowing. To fill this gap they developed various adaptive strategies including farm and off-farm activities. Food aid was given to them for the last 20 years on and it has its own

negative impact on them, because it erodes the confidence and working habit of the people.

Overall, due to deforestation today fuel wood scarcity is more critical in *Babile woreda*. It has already forced the people into destroying shrubs, herbs and layers of the natural vegetation. Additionally, the shortage of fuel wood has forced the population to burn crop after math. Due to this scarcity, more of freely collected fuel woods are now becoming marketable. This in turn led to loss of land fertility and environmental degradation.

5.2 Environmental Degradation and Farm and Off-farm Oriented Adaptive Strategies

To withstand the multi-faced problems of environmental degradation the people have developed numerous adaptive strategies. These include crop adjustment, change in diet, rope and fire wood sale, reduction in consumption, grain loans, local famine food (herbs, etc), sale of small animals, collection and sale of wild fruits, temporary migration, sale of cows, sale of donkeys, semi permanent migration, etc (CISP, 1997).

The above-mentioned adaptive strategies are used at various levels and to various scarcities or problems. So let's see each adaptive strategy to a particular scarcity that it developed against.

Because of population pressure land fragmentation is one of the most critical problems. Boserup (1965) sees population pressure as a principal cause of changes in agricultural technology, land uses, land tenure systems and

settlement forms. She stresses that the principal means by which peasants increase their agricultural production is through intensification.

However, the case in *Babile* and generally in Ethiopia is not like this. Due to economic backwardness and less advancement of technology population pressure didn't lead to change in agricultural technology. Again land tenure in Ethiopia, most of the time, is based on political conditions rather than social. Of course, the land use and settlement patterns could be influenced and changed by increase in population.

So, to overcome this land fragmentation problem the people of *Babile* has started intensification. They intercropped different fruits and vegetables with sorghum and maize. It enables them to reduce the food gap created usually by crop failure and lack of recorse to produced diversified food crops.

Moreover, a considerable number of people, mostly men, migrate to urban centers and neighboring Regions and countries like Djibouti and Somalia in search of employment.

Deforestation and destruction of indigenous trees are problems that have given to another problem. Thus recently farmers with the help of DAs have invested their time and energy to replant those indigenous trees. Along with this, afforestation is considered the soundest solution to this problem particularly to protect soil erosion.

Rainfall is one of the most serious problems in *Babile* and has many consequences. It contributes to soil erosion, drought and even degradation. In

Babile, where deforestation reaches its climax, the untimely and uneven distribution of rainfall has a lot to devastate the area.

Some of the adaptive strategies to this problem are digging wells to get sufficient water in times of short rainfall, plant trees within farmland (what is called agro-forestry) and they have changed their agricultural calendar. Previously they were entirely dependent upon rain for their crops and groundnut. But now they plant a variety of vegetables and fruits using their motor pumps (they bought motor pumps in group and used it in turn and get water from the wells that they dig called in *Oromifa, Haro*).

There are two types of *Haro* (pond) in the area. One is societal dug for one village or more. And the other is individual. The later was introduced recently and is used for irrigation and to satisfy the water needs of the household, while the former has its roots deep in the culture of the society is still used for societal purposes such as to. Their cattle and other domestic animals, for laundry and for various ritual and societal uses. And cultural pond is dig by the will of the society the later one, individual pond is dug by individual farmers usually by obligation from government officials.

Drought could be mentioned as one of the critical and recurrent problems of in Babile due to short rainfall, spring water and decrease in volume of rivers. Deforestation is said to be the major cause of drought.

The people managed to cope with this problem by digging wells, watering their cattle in neighboring *PAs* and *woredas*, where rainfall is sufficient. They plant drought resistance crops like groundnut and sorghum, and early

maturing vegetables; if the drought is strong and prolonged people flee to the neighboring regions and countries.

Soil erosion and infertility are caused by heavy rainfall, deforestation and over utilization. To eliminate the problem of soil erosion recently they have started terracing (locally called, *daga*), afforestation, changing the direction of ploughing from vertical to horizontal in order to minimize run-off. As far as fertile soil depletion is concerned they have tried to enhance the fertility of the soil by using fertilizers and crop rotation, for fallowing is unthinkable due to land scarcity.

Various environmental and economic factors are responsible for crop failure. It is recurrent in *Babile*, particularly failure of sorghum, their major subsistence and fodder for their cattle. To cope with this problem selected seeds are used but due to their shortage the stalk is not enough for the cattle. Moreover, due to the social values attached to the type of sorghum that a farmer produced, most farmers didn't like the selected seeds.

Groundnut has great nutritional value, it is rich in protein and is their only cash crop. In addition, it resists drought and gives good quantity honest even with poor sandy soil. Thus they have planned to produce more groundnut, rather than sorghum, and from its income they can buy sorghum for their consumption. The chaff of the groundnut is important for their cattle.

Resulting from the cumulative effects of social, political, economic, historical and cultural reasons, famine has become harsher and harsher from time to time. It creates political instability, turmoil, discontent, and one of its

coping mechanisms, food aid, kills the confidence and the working moral of the society, in general, it encourages dependency.

The people have tried to cope with famine by consuming crops (example, maize), plant cash crops to generate income in order to buy grains, consumed wild plants and fruits, engaged in off-farm activities to generate income frequently through temporary migration, borrow money or grain, and food aid.

In spite of their use as a solution for scarcities and problems of the society, adaptive strategies have a far reaching impact on the social, economic and cultural life of the people. They have great role to play in both devastating and protecting the environment as well as shaping in the attitude of the people about their environment and their values.

Of course various traits of culture along with the economic and social life of the people have great influence on the adaptive strategies themselves. We will see the impact of culture on adaptive strategies and the vice versa in the next chapter.

5.3 Indigenous Knowledge and Rituals, as Adaptive Strategies

According to Rappaport (1967), rituals could regulate important ecological relationships. There could be several rituals, for instance, among the Tsembagas, in Rappaport's description, like war ritual, planting ritual, feast/pig slaughter ritual. Besides various cultural and religious taboos, particularly food taboos have a direct cause-effect relationship with the environment.

Before the breakdown of their traditional institution the *Raba Don*, the *Afran Qallos* exercised a ritual ceremony which ended by planting tree. This

ceremony is called *dalla*. This activity had taken place every eight years when a new *Raba* was elected.

There are three rituals in *Babile* still exercised and directly related to production. One connected with the first rainfall and the other two with harvest and mowing.

Mukedem is the biggest ritual, which is connected with the coming of the rain. The second one is *soriqe* connected with the health of the grown up crops and the third one is called *Hormaguracha* which was conducted before mowing.

Mukedem is celebrated under a big tree's shade called *hujba*. The *Rabsa*, ritual leader, called the people to celebrate by saying "the time for cultivation is coming, the rain is coming. Let us celebrate and ask Allah for more rain and start cultivating the land". The men collect money to buy chat, incense and joss stick. Women in their part prepare *hoja* (local tea) and bread. The prayer is about rainfall (they say "*Harashi dulan doqela*" literally it means "prevent us from drought"), cattle, grass, for those who give birth and for the pregnant.

Mukedem is still celebrated highly and regularly by all people. Then after plowing and sowing in August *sorique* will come. This ritual is about the health of the growing crops. An old cow has to be slaughtered. The cow has to be free from any damage and natural disability, because the cow is the symbol of health and fertility for the growing crop.

The cow should be old and no longs able to give birth. The reason behind this is since it is an old man who prays to Allah, the cow, too, had to be old. Commonly in August, in all peasant communities, there is a shortage of grain.

so it seems wise to slaughter a cow, after all an old cow, in this time rather than using the scarce grain to ritual purpose.

The last ritual, *Hormaguracha*, is conducted just before the starting of mowing. This ritual is small and celebrated around the farmland with neighbors, not with all the community like *Mukedem*. It is conducted to ask Allah to protect them from the sharpness of their tool called *Mencha* and the stalk of the sorghum.

After the ritual and mowing they left glean in the farmland to be collected and given to the poor. According to his surplus every one has to leave his glean, the more surplus one gains the more he gives. Implicitly it encourages redistribution.

CHAPTER SIX

EFFECTS OF CULTURAL PRACTICES ON PEOPLE'S ADAPTIVE STRATEGIES AND EFFECTS OF PEOPLE'S ADAPTIVE STRATEGIES ON THE ENVIRONMENT

Bohnnan and Mark (1988) stated that, other aspects of culture are affected by cultures entailed in exploiting the environment. But all my informants are unanimous in that, their culture, which is useful to exploit the environment, has no relation with other cultures. However, though tacit it has impact on other cultural traits. If we take marriage, for instance, the boy's father sends elders to the girl's parents after he sees his harvest. One of my informants told me that, until recent year's marriage/wedding was determined by the harvest of the year. If the harvest was low the weeding would be postponed. Hence, even though they didn't express it, tacitly their production system has a direct impact on other aspects of culture.

So let's analyze religious and socio-economic effects and people's attitude towards and their impact on adaptive strategies.

6.1 Effects of Religion

Impact of religion is strong on human's personality and mentality. Human behavior is shaped to some extent by religion along with culture and other societal factors. Historically, the people of the study area had their own traditional belief system that was well-adapted to the environment. Because that particular traditional belief, though it could be a part of the larger *Oromo* traditional belief system, would be reshaped according to the environment.

Different interactions throughout their history with different categories of societies had affected the traditional belief system. After the Islamizing process of the Egyptians in the area, particular the traditional belief system faced a threat to its existences and function. Mostly, after Islamization people abandoned the strict rules of their traditional belief, especially, on exploitation of their environment.

Now almost all people in the woreda are Muslim except a few Christians in the urban areas. Islam considers the practice of their traditional belief, as evil doing against the will of Allah. So the more they learn about Islam, the greater the tendency to abandon the traditional system. Change in religion has an impact on marriage, dressing style, life, ideology and in numerous ways of life. The dominance of Islam in that particular area has an impact on what is all mentioned before.

Marriage is highly influenced by religion. For instance, polygamous marriage became legal and expanded after the dominance of Islam in the area. Polygamous marriages in a society where women don't have any production right/significance means much burden for a single husband with limited land. The responsibility to feed all the households, it could be two or more, is only on the shoulder of the husband. So it creates many vulnerable people, i.e. wives with out income and land owing right, children from different wives.

Moreover, in order to satisfy the need of the families, the man exploits the land and the environment as much as he can. Besides to cope with food

shortage or any other scarcity is very difficult in such family with poor economic status.

There are some ceremonies and taboos that are related to religion. Ramadan, the fasting period, is one of the longest religious events that requires much money from every household in the area. Among these religious events, in *Babile,* people celebrate reverate Ramadan. They prepare good food as much as they can to celebrate it. They increase their expenditure to prepare varieties of high quality food.

They eat together with their neighbors. But what is more important about it is, usually Ramadan occurs during harvest time or a bit earlier. If it comes during harvest time, it is very difficult, because people sleep in daytime and celebrate it after sunset. So it days the collection of harvest and it has its own impact.

If it comes a bit earlier there usually is food shortage before harvest so for its celebration they borrow money and/or grain from the have to and they repay it immediately after harvest. This weakens the economic status of the poor.

Otherwise, there are not much feasts and holidays in Islam as that of Christians. And it is only on Friday that Islam forbids to engaging in any profit earning activities, particularly agriculture. But this even is not as such strong. a farmer can do his work after the day *Selat.*

6.2 Socio-Economic Effect

In determining people's activity all institutions have an impact and influence. And these institutions are influenced by the environment. Besides, these five institutions (family, religion, education, economy and politics) influence each other. For instance, the economic status of a society influences all the remaining institutions and the same is true for others. Culture too has great role to play in the adaptive strategy and how people use/utilize their environment.

Social, cultural and economic activities of a society are powerful to affect the adaptive strategy. This fact is seen in *Babile*. Of course people's adaptive strategy is also powerful to affect the social, cultural and economic life of a society. In what follows, the effects of social and economic life of a people on their adaptive strategy will be analyzed.

6.2.1 Marriage System

Marriage is one of the most important things for the people of *Tula/Babile*. It has its own order, ceremony and rule. Both exogamous and endogamous marriage is allowed but the endogamous one is preferred.

Previously marriage age was 40 and above for men and 30 and above for women, unless this is fulfilled, the marriage would never get a legal acceptance in that society. According to the informants, it is good to marry around these ages for the couple will have less number of children mature enough to should responsibilities.

However, nowadays boys and girls of 16 and even less marry each other, this has its own side effect on the type of family they create and on the environment. Because they produce more children on land progressively growing scarce they will be forced to share a piece of land to their sons. The fragmented land loses its productivity due to over use over cultivation and soil erosion.

Marriage has a lot to do with the production of the people. Firstly, the marriage will take place only when the harvest of the groom's father is good. If crop failure occurs the father of the groom will postpone the wedding ceremony. Secondly, there will be no wedding before harvest time. All these things are done after the collection of the harvest of the year.

Bridewealth is also determined by the production of the people. Bridewealth in the area has two types one is called *gebara*, that is to pay money to the parents of the girl. The second one is called *Kerata* it is paying cattle to the girl herself and to her parents.

These *gebara* and *Kerata* vary from place to place and from time to time. In Tula, for instance, the amount of *gebara* is 150 birr and one cattle to *kerata*. This is for the girl's parents.

When a boy is in love with a girl (it is recently that children choose their own husband and wife, specifically it was uncommon for girls to choose their husband), he tells to his father. His father appoints respected elders who go to the girl's parents with a ring, *chat*, tobacco, coffee, sugar, and incense (Libanen). They inform why they have come and the girl's father asks his

daughter for her willingness. He comes back and tells them to untie and open the ring. And call the name of the boy and his father who has sent elders. Once the ring is opened, she is the boy's fiancée and she will not be given to another person.

Until their wedding day the boy serves her father in any of agricultural activities, and even calls *guza* in order to help them. He will provide farm ox to her father with a laborer. All of these activities are recorded as part of the bride's wealth.

The *Nica* (legalizing a marriage) will be made only after, he has given her the *mehari*. This is the gift that the groom has to give to the bride for her virginity. The gift could be cattle, land or grain as determined by elders.

The bride's father provides all utensils and materials for the newly established house.

Because polygamous marriage is legal in Islam, usually men have two or more wives and they go through the same process in marrying each woman. So, commonly, the first wife does not want to share her husband and harvest with other wives, so she spent the money and does not want to accumulate wealth because if they have money and extra grain men want to have another wife or wives.

Hence this trend has weakened the production of the household and the saving culture affected by this trend. In addition, having many wives with fragmented infertile land is a potential problem both for the degradation of the environment and for the adaptive strategy of the people; because many children

will be produced from different wives with one father. And it is only the father that owns land and as the result the children will face a great problem having land. This problem in turn will lead to various social and economical instabilities.

One of the people adaptive strategies to overcome land problem, drought and famine, for instance, is temporary migration. So, as the number of children increases on a very fragmented land, the tendency for migration will increase and subsequently its own bad implication on the identity of the individual and the society. Moreover practical turmoil is also sometimes the case, due to this problem. So this trend of marriage and having of many children make some of the adaptive strategies difficult and sometimes comes up with its own danger.

6.2.2 Food Sharing habits and Taboos

In his description about the Tsembagas, Rappaport (1967) describes about the prevalence of and, function and meaning of food taboos. According to the Tsembaga, food taboos different reasons attribute for their existence -age, gender, and status or title. Some are also spiritual, others psychological and others of sexual. Simply the function of Tsembaga taboo is the distribution of the needed protein to part of the society who needs it very much, in addition to psychological and spiritual functions.

There are food taboos in *Babile* though they are not sophisticated like the Tsembaga's. In *Babile* there are religious and cultural taboos. Furthermore there are some foods tabooed by culture and permitted by religion or vice versa.

Islam prohibits eating of any dead animal, mule, donkey and horse. But domestic and wild animals like goat, cattle, sheep, camel, Rabbit, bushbuck, oryx, are allowed to be eaten.

Any crops planted by human beings are allowed to be eaten. From wild crops there are some allowed to be eaten and some prohibited.

Wild animals like crocodile, porcupine and some species of hyena are allowed by the religion but strictly forbidden by culture as taboos.

According to some of my informants, these food taboos negatively affect the area. Some of these taboo animals are destructive to the arable and grazing land. So it will be good if they couldn't be taboos. In addition, they will be helpful in time of food shortage and crop failure.

Therefore, taboos, both religious and cultural, are problems in adapting to problems and changes.

As far as food sharing habits are concerned, they seem more helpful in adapting the changes that have occurred. For instance, people in the area help poor people particularly during Ramadan, the haves invite the havenots who couldn't afford to prepare the necessary food for that particular period of time or day, and they eat together.

If one household faces food shortage neighbors or relatives contribute grain to be returned if he will have excess harvest next year, if not they are not forced to repay. Or they give it as a gift to save the life of their children.

So these socio-economic factors have a role to play. Particularly coming problem of food gap, they will contribute a lot to cope up the problem. Or

sometimes they will enhance the problem. Hence they have crucial roles to play both positively and negatively.

6.3 People's knowledge and attitude towards adaptive strategies and their impact

Knowledge and attitude of a society towards any of their activities have an impact on the efficiency of their activities and, or for the weakness. Likewise people's attitude towards their adaptive strategies has its own impact both on the environment and on their production.

Many of my informants agree that some of their adaptive strategies have negative outcomes to the production of the people. In this category, we can name strategies like temporary migration in search of employment food aid, consumption reduction and digging well.

Temporary migration in search of labor market is one of the major adaptive strategies that people developed to cope with various problems, like land fragmentation, crop failure, drought, and so forth.

This migration affects the production system, because if once they engaged in day labor, they stay there in the urban areas until the end of the work period, so the time to cultivation will pass and it will be another problem to the cultivation/harvest of the next time. Therefore, this temporary migration, according to my informants, is not a solution to solve their problem it is simply an escape from their immediate problems.

Food aid is one alleviating mechanisms to famine. Many government officers and few elders agree that, food aid kills the work moral of the local people. It highly affects the agricultural activity by creating dependency.

People argue about the problematic nature of this adaptive strategy. Some consider it as good because it saves them from critical food shortage and can't see any negative effect of it. But other people particularly elders of the area, who had lived on food aid for the last 20 years, consider it as potentially dangerous because it creates high dependency and erodes the pride (self-respect) of the people.

This attitudinal difference has a great impact on people's productivity. Those who considered it as lifesaver need it always and don't encourage themselves to work hard. And those who see it as a problem need it only if there is critical food shortage. And this category of people does its agricultural activities diligently.

Consumption reduction is an adaptive strategy that is developed against food shortage occurred, usually in summer when farmers have to do many activities, and a little earlier before harvest time. So they lost the required energy to do their activities effectively. This in turn affects the harvest of the next time, and weakens the farmers psychologically, economically and physically.

Digging well is an activity that helps the people to have sufficient water for their agricultural and domestic activities and for their cattle during water scarcity. But such activities need more energy and time, and it is too tiresome

and difficult to do it alone. So the farmers call the *guza*, it needs money to buy *chat* and prepare food and *hoja*. Though, it is important, but it affects other agricultural activities since farmers get tired in digging this well, *haro*, as they locally call it.

In general, people's move towards one adaptive strategy will affect some other strategies, or the production itself. Moreover the knowledge and attitude of people towards any of their social and cultural or agricultural or any other activities is very crucial in determining the effectiveness and harmfulness of their activities.

Focus group discussions held among different categories of people display how people's knowledge and attitudes affect their life, environment and all other activities. For instance, young people claim some of their cultural practices, like rituals, which they consider against the will of Allah. So among other factors Allah's penalty against this activity is one of the major causes of degradation. While elders believe that it is not against the will of Allah. Rather the causes for environmental degradation are mainly population pressure, break up of cultural institutions, and other historical factors. Like their attitudinal difference, these two categories did any activity according to their understanding.

Most women, on the other hand, claim these all problems are due to the weakness of their men. So various adaptive strategies are not solutions. They believe, it is only hard work that will solve their problems.

To sum up, people's knowledge and attitude like culture and other factors could affect their adaptive strategies. Of course, the environment and culture of a people could be changed, or affected by repeated adaptive strategies.

CHAPTER SEVEN

SUMMARY AND CONCLUSION

Cultural ecology as many anthropologists defined it is a relationship and interconnectedness of society and its environment. Element of environment land, climate, plant and animal species and human society have impact, and ongoing impact with each other (Murphy, 2002). This fact is seen in the case of Babile, where society's history, culture, and economic status have a direct and noticeable interconnection with the environment. As is mentioned in the body of the paper, the agricultural equipment in *Babile*, as they are in most part of the country, are backward. The backwardness of the agricultural equipment has directly affected the environment and leads it to degradation. For instance, the backwardness of their plow agriculture, aggravated soil infertility because it is only the upper soil that has been tilled for centuries due to the inability of the equipment to reach the lower soil. Steward, who is the founding father of cultural ecology, supports this fact. In Barrett (1984:47) Steward explains that "as technology improves, man gains more and more control over his environment".

So with no advanced technological progress and with underestimation of indigenous knowledge system, or culture of the local people by outsiders who were dominant in the area; the existing environmental degradation of Babile is not a surprise. However, if the society does not have the control through its technological advancement over the environment it could be the environment

that controls the production and hence, the way of life of the people, in other words their culture.

Furthermore, changes in cultural and historical trends of the people affect the environment either negatively or positively. Of course, the environment too has strong impact on shaping and directing society's way of life and production system. But it is a dialectical relationship not determinism.

The domination of the people of *Babile* by other peoples from 1875 on wards changed their knowledge system. Once, after they lost all their traditional institutions, knowledge and their own indigenous outlook towards the environment and symbiotic relationship between the society and the environment deteriorated.

As the result, environmental degradation took people's life to misery. Stahl (1974) stated that, land degradation could be viewed, from a social science perspective, as a result of human decision-making regarding land use. That includes socio-cultural, political and economic factors. Bartlett (1980b), raises the same issue by associating agricultural decision- making with the available social and natural environment. Both Barlett's and Stahl's idea conform to the case of *Babile*, where farmers of are faced the problem of having options towards comfortable social environment which adversely affected the availability of the natural resource to the local people.

The forceful detachment of the society from its own indigenous culture and knowledge system had affected the production, the environment and the identity of the people negatively.

Most of the time local knowledge which people have developed about plants, animals and other resources is well developed and, it is this knowledge that permits people to adapt and survive in a marginal environment. This response to change could also lead to development of better technologies to cope with increased food needs, or to the continuing changes made to farming patterns (Batterbury, 1997).

To the contrary, local knowledge in *Babile* was undermined by various historical events that have taken place in that land. The imposition of Islam up on the local indigenous traditional belief, the Egyptians land distribution and appointment of *garadas* and *deminas*, in order to weaken the *Raba-Dori* and other factors, were colonial interruptions that broke down the local knowledge about plants, animals and other resources that we call the environment.

This disruption in the continuity of indigenous knowledge means, break down of the symbiotic relationship of society and environment. Furthermore this culture imposition has a great disadvantage for the society since if lost both its indigenous identity and brought degradation to the environment.

Deforestation, one of the major causes of environmental degradation, had its own historical factors in the *Babile* area. However, even nowaday's many officials who did not know the history of the area usually said "it is due to the unwise use of the society and population pressure". But when I used both the synchronic and diachronic approach to the method of data collection, I found that both factors mentioned by few officials have their own historical background.

In this regard, the cause of deforestation in *Babile* had its own historical background from the time of the Egyptians on wards, i.e. 1875. Its drawback for the people-both in their traditional belief system and agricultural production practice appears to be a significant one.

Hence, in order to know the cause of degradation and its impact on the adaptive strategy, systematic investigation should be done, if we have to come to genuine results. In order to avoid errors in the conclusions we would reach, correct research methods need to be employed. According to Orlove (1980) cultural ecology as a sub field of social anthropology focuses on both problems and methods.

The study of cultural ecology includes population dynamics, environment, social organization, and human culture and production techniques. Such study may require a diachronic or synchronic approach and may focus, either on a single, group or a comparison of different groups and environments.

In the *Babile* case, in the study of environment, we can understand the cause of degradation, only if we consider both diachronic and synchronic approaches.

The people have developed various adaptive strategies at various times for different problems. Most of these adaptive strategies have again negative consequences for the well being of both the environment and the society. We can list migration, food aid and a number of other strategies.

So no adaptive strategy, I can say, is as comfortable as the indigenous culture for the local people in that particular environment.

To conclude the major cause of environmental degradation in *Babile* is the historical process that they have passed through. And it was the domination and impositions they experienced in the past that have weakened the society's culture and exposed the society to severe environmental degradation thus making their lives miserable.

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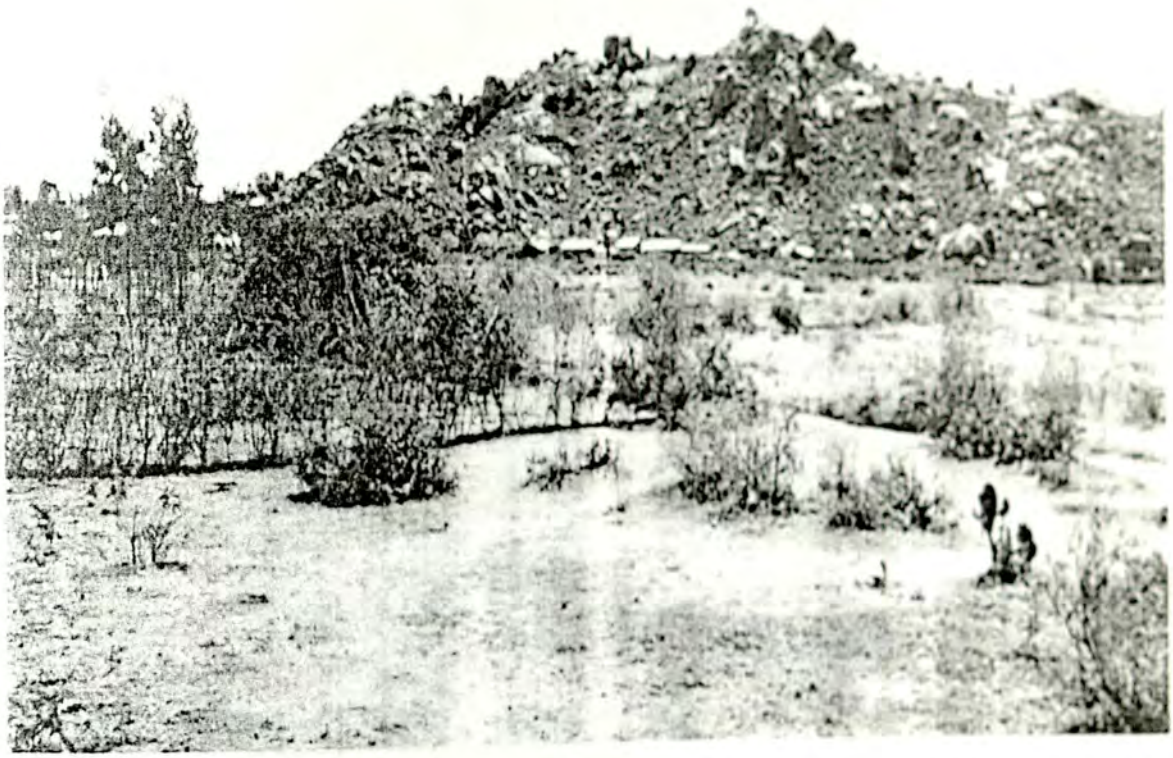
1. Women Selling Chat

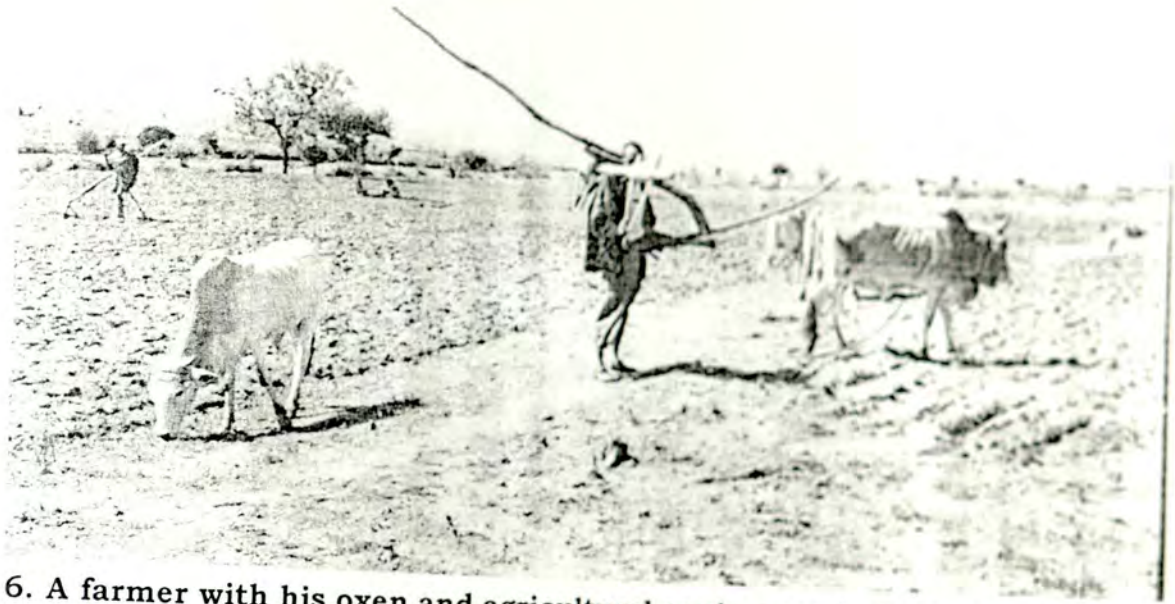
2. Village of Tula Covered by Cactus

3. Individual pond

4. Community Pond



5. Topography of Babile , Partially



6. A farmer with his oxen and agricultural equipment in front of his tilled land

7. Few houses in one Village of Tula

8. The researcher with women during focus group discussion

9. Women going to the markets of Babile having their item on their head and back

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged.

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Signature: _____

Date: June 2004

Confirmed by:

Advisor: Andres Getu

Signature: _____

Date: June 2004