ADDIS ABABA UNIVERSITY
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THE ENVIRONMENTAL IMPACTS OF REFUGEE SETTLEMENT: THE CASE OF KEBRIBEYAH REFUGEE CAMP SETTLEMENT; SOMALI NATIONAL REGIONAL STATE (SNRS)

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Title

The Environmental Impacts of Refugee Settlement. The case of Kebribeyah Refugee Camp Settlement; Somali National Regional State (SNRS)

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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome (AIDS)
Apa	Agro-Pastoral Associations
ARRA	Administration for Refugee and Returnee Affairs
CPRS	Common Property Resources
EIA	Environmental Impact Assessment
EPRDF	Ethiopian People Revolutionary Democratic Front
FG	Focus Group
FGD	Focus Group Discussion
GBV	Gender Based Violence
GOs	Governmental Organizations
HHP	Home Help Preferences
HIV	Human immunodeficiency virus
IDP	Internally Displaced Persons
IRC	International Rescue Commission
NGOs	Non-Governmental Organizations
NRM	Natural Resources Management
TLU	Tropical Livestock Unit
Pa	Pastoral Association
PRA	Participatory Rural Appraisal
PTSS	Program and Technical Support Section
RHA	Refugee Hosting Areas
SNRS	Somali National Regional State
SPSS	Statistical Package For Social Sciences
SSA	Sub-Saharan Africa
UN	United Nation
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNHCR	United Nation Higher Commission For Refugees
ZOA	Zoud Oust Asia (in Dutch language it means South East Asia)

ABSTRACT

The Somali refugee influx into Ethiopia started with the civil war in the northern parts of Somalia in 1988. The influx increased significantly with the fall of the Said Barre regime in 1991 which lead to the establishment of nine refugee camps in eastern Ethiopia with a total population of 628,000 Somali refugees. According to ARRA 2008 report, the recent civil and instability in Somalia also led to new arrival of refugees in Kebribeyah and the surrounding areas. The arrival of these refugees coupled with their long stay in the area negatively impacted the forest, water and the land of Kebribeyah. The failure to tackle the problem and to take some measures before it turn to the worst level made the situation to be persuasive to other social and economic problems and became a cause for competition, conflict and unrest between the refugee and the host community. Failure to manage the natural resources utilization of the refugee and failure to intervene the environment appropriately according to the UNHCR environmental guide line for refugee hosting areas in the appropriate time made the situation to be worse rather than bad. Generally, this study is conducted with the objective of assessing the impacts of refugees on the environments of Kebribeyah. And specifically, establishing baseline to kebribeyah, identify and assess if there is competition and conflicts associated with the scarcity induced by refugee and also to identify and also assess the natural resource management activity in the area. To achieve these, the study relied on both qualitative and quantitative methods of data collection and analysis. The secondary data were collected form published and unpublished documents from websites and different local and international organizations. Primary data were collected by using both qualitative and quantitative data gathering tools and analyzed through employing both qualitative and quantitative methods of analysis and through triangulating data from the secondary and primary sources. The finding of the study showed that, the arrival of huge number of refugees in different time in Kebribeyah damaged the fragile environment and depleted the scarce natural resources. There is a problem of declining trend of production, scarcity of firewood, scarcity and deterioration of water and water sources which resulted from the boom of refugee influxes and the resulting resources scramble in the area. In turn, these shortage and deterioration of resources led to competition and conflict between the refugee and host communities. It is also identified that the natural resources management found in the area is minimal and lack consistency in its intervention to off-set the negative impacts and enhance the environmental capacity. The result also further suggests the need for participatory NRM practices in the area to ensure the sustainability of the environment and also to make the livelihood activity of both host and refugee community sustainable.

CHAPTER ONE

1. INTRODUCTION

1.1 Background

The United Nation estimates 19 million people in the world have been forced by conflict or tyranny to leave their nation of origin. Another 24 million though still in their active countries, have had to flee their communities in response to dire circumstance, such as civil war or famine (UNHCR, 2007).

Refugees are people who leave their home for various reasons. This varies from inability to find employment and a desire for a better life in another place, to escape from torture and tyranny, or imminent danger to their lives (Encyclopedia Encarta, 2005; UNHCR, 2007). With this has come a large semi-permanent population of displaced persons living in barely tolerable conditions under a shadow of poverty, illness and death. Often, these refugees are forced to live in hand to mouth existence, forging basic necessities form natural systems of the place to which they have fled. Because of these physical upheavals in addition to sever human hardships, their sudden influx has taken a significant toll on the environment (Well, 2003).

Flights of refugee are not planned orderly events. Huge numbers of people may move suddenly in a matter of days. On the other hand, the movement may be spread out over months or years (Well, 2003). Refugees searching for safe haven can burden the ecosystems in their country of asylum and complicate environmental decision-making (UNHCR, 2002). Often, refuges are forced to settle in resources scarce areas, putting further pressure on trees, land, water and wild life (Masser et al., 2000).

Generally, in the Horn of African countries, there is a high refugee influx. This is due to continuous conflict, war, draught, and unemployment in the area. Ethiopia provides asylum and protection to refugees from various countries. Ethiopia is a party to the 1951 Convention relating to the status of refugees, and the Federal Democratic of Ethiopia in its Federal Negarit Gazeta of, No 54, 2004 issued a national refugee proclamation establishing a procedure for applying asylum. According to the Proclamation, refugees or asylum seekers are not refused entry to the country, and returning to any country they

would be at risk of persecutions is prohibited by the Ethiopian Refugee Law (ARRA, 2008).

At the present, the government of Ethiopia in collaboration with the UNHCR and other humanitarian organizations is providing protection and assistances to over 85,000 refugees mainly from Eritrea, Somalia, and Sudan. These refugees are housed in eight different refugee camps located in various parts of the country except 1,446 urban refugees who have been allowed to stay in Addis Ababa (ARRA, 2008 & UNHCR, 2008).

One of the most frequently cited negative impacts of refugee camping in recent years emphasized in particular by the host country governments is environmental degradation and natural resource depletion. However, it is not only the host governments that claim refugee camps cause environmental degradation; rather there has also been a growing acceptance by the United Nations High Commissioner for Refugee and other organizations, that the presence of refugees often leads to environmental degradation and natural resource depletion both with in and around the refugee settlement (Black, 1998).

Until recently, the entire issue of the environmental impacts of refugee camps, reception centers, and settlement areas was neglected by host governments, UNHCR and other refugee oriented international organization including local NGO's (Black, 1994). UNHCR refugee assistance programs and host government settlement and reception policies have similarly neglected environmental consideration. It was only after the UN general assembly resolution to convene conference on "environment and development" in Rio. De Janeiro (UN 1991) that UNHCR began its concern about environmental issues (Kiberba, 1997).

Environmental considerations need to be taken into account in almost all aspects of UNHCR's work with refugees and returnees. Basic considerations such as the provision of safe clean drinking water, the physical location of refugee camps or settlements, or the provision of food assistance by UNHCRs partners all have a direct bearing on the environment. The state of the environment in turn will have a direct bearing on the welfare of refugees, returnees or local communities (UNHCR, 2005).

The Somali refugee influx into Ethiopia started with the civil war in the northern parts of Somalia in 1988. The influx increased significantly with the fall of the Said Barre regime in 1991 which led to the establishment of nine refugee camps in eastern Ethiopia with a total population of 628,000 Somali refugees. Following the voluntary repatriation that took place from 1997 until July 2005 only one camp, Kebribeyah, hosting 16, 678 refugees remained. All other Somali refugee camps were closed by June 2005 and the remaining refugee populations were relocated to Kebribeyah camp. Most of the refugees in Kebribeyah refugee camp fled from civil war of Somalia and the instability that followed the fall of Said Barre in 1991(ARRA, 2008).

Due to the present insecurity in Somalia, over 15,000 Somali refugees are sheltered in Sheder and Awebere (previously called Tesferiber camp) refugee camp near Jijiga town in the Somali region and currently, there are about 15,000 new Somali asylum-seekers in Lafaisa transit and reception center waiting for screening process and further registration by the host country and also almost all of the refugees in the camp are expected to stay beyond 2008. According to ARRA 2008 report, the recent events in Somalia have also lead to new arrival of refugees in Kebribeyah and the surrounding areas. Since April 2008, more than 6,000 asylum seekers have been screened and accepted as refugee in Kebribeyah. The arrival of the refugees coupled with their long stay in the area has negative impacts on the environment.

1.2 Statement of the problem

Environmental problems exist through out the world but many reach an exaggerated scale when large numbers of people are forced together to leave their country through a common sense of survival. Among the most significant problems associated with refugee affected areas are deforestation, soil erosion, depletion and pollution of water resources (UNEP, 2000). The unstable in and out flows of displaced people affects established patterns of rural cropping and food production system and upset long- term agricultural investments of an area (Messer et. al 2000).

The large scale and the suddenness of these refugee inflows created a sudden, sharp increase in the population density of humans as well as herd animals in Kebribeyah

affected the environment. These have rapidly changed the situation of relative abundance of the local resources to one of acute scarcity.

Different literatures show that deforestation occurs as refugees seek out fire wood and shelter materials from the environment. Grazing land becomes denuded as refugees' herd animals strain the carrying capacity of the range (Black 1994). This is also evident in kebribeyah and its surroundings. The water sources in the Kebribeyah failed to support the greatly increased demands of the refugee population coupled with the host community in Kebribeyah and they became polluted and depleted, and also became garbage and other waste accumulation areas.

The settlement of these large populations of refugees in Kebribeyah area has invariably impacted the fragile ecology. The in and out flow of the refugee populations with the political condition of Somalia made the area to entertain big fluctuation of refugees beginning from 1988 to now. At the moment, competition for scarce resources is found in Kebribeyah town by over 29,665 people both in locals and refugees. In addition to this, the presence of large herds of livestock in the area made the situation worse.

The environmental impacts of the refugees have multiple causes and effects on the environment and can lead to irreversible land degradation, loss of biodiversity and economic value of the environment as well as the host community of Kebribeyah area. The environmental impacts which come with the refugee also further aggravate and rapidly spread out to other adjacent areas of region. In addition to this, the degradation of these resources became a cause to competition and conflict between inter clan and intra-clan. If not appropriately managed and intervened, their natural resources utilization and management can further evict the host community to other strange places and can turn them to internally displaced persons (IDPs).

Analysis of the subject should not dwell on the presence of refugee or IDP per se as exerting environmental impact rather, it should incorporate the size and ratio of displaced person and the local people and the adequacy and appropriateness of international assistance provided to refugees, local people and host governments which matter in the whole equation (Jacobsen, 1997).

Therefore, examining the environmental impacts of refugee is crucial for curtailing the negative impact and enhance the positive impacts and also for further study and policy making concerning the refugee settlements and the environment. Generally, much harm could be minimized if governments and other organizations have more and better environmental data. This implies that some bind of evaluation is needed (Bakonge, 2000).

1.3 Objectives

1.3.1 General objective

- The over all objective of this study is to assess environmental impacts of refugee settlement in Kebribeyah refugee camp.

1.3.2 Specific objectives

The specific objectives of this study are to;

I. To establish baseline data for Kebribeyah refugee camp.
II. To identify if there is conflict between host community and refugees in relation to scarce resource competition.
III. To identify and assess the natural resource management activity (NRM) in the refugee hosting areas.

1.4 Research Question

- How does the environment like before the arrival of refugee?
- What are the major impacts of refugee settlement in kebribeyah area?
- Is there any conflict between refugee and host community in relation to natural resources competition?
- Is the settlement in line with the UNHCR environmental guideline?
- How does refugee utilize the natural resource in time of food shortage?
- What type of natural resource management activates takes place in the area.

1.5 Significance of the Study

Refugees of most countries of the world especially in Sub- Saharan Africa (SSA) are mostly situated in marginal, fragile and environmentally sensitive areas. Besides, governments and concerned bodies do not assess the carrying capacity of the settlement area before settling the refugees. Because of these, refugees can bring unexpected effect on the environment and the host community (Ouch 2007). Thus, studying the impacts of refugees on the environment has significance of practical utility for stakeholders on environmental issues and efforts to address problems related to environment and refugee.

Firstly, the impacts of refugee settlements in Kebribeyah were not studied, and are not known. Studying this, will give an insight to international organization, local governments, and researchers of how sudden influx and activities of human influence the environment and socio-economic well being of a host community.

Secondly, the local as well as the refugee response to the environmental changes may involve both sustainable and unsustainable practices. The findings of this study depict the cause and constraints to the practices and forwards corrective measures for implementation both at the study site and elsewhere, where there are identical problems.

Thirdly, the findings of this study show the impacts of the environmental change in Kebribeyah. This shows, the failure of priority setting of intervention of the different governmental and non-governmental organizations, and donors involved in the matters and help in showing their failure and assist in developing sustainable intervention program on this matter.

Fourthly, the findings of this study can serve as a good input for forging policy towards sustainable utilization and management of the countries resources base in general. This implies that the result of this study will help those organizations working in environmental issues and refugees to design effective policy and guideline. And make the necessary move to curtail the negative impacts which is associated with the refugee arrivals in a strange situation and area.

1.6 Scope of the study

This study is conducted in Kebribeyah town with the intent of analyzing the environmental impacts of refugee settlement and the consequences on the host community due to the deterioration of the environment. The focus is on the ecological (soil, water and forest) impacts and its consequences on the livelihood of the host community.

1.7 Limitations of the study

Lack of baseline data for the area made the study to go the harsh way of establishing base line retrospectively. While doing this there were some unintended limitations on the findings of the study, which was induced by the nature of the problem under the investigation and data set. There are also limitations which come with the failure to document information with some of the local and international organization which are involved in the issue. Beside these, there are also the following constraints with the study:

Firstly, in line with the objectives of the study, data were gathered retrospectively by cracking the memories of the respondents. The reliability of such data depends on mainly on respondents' recalling ability and memory to the actual value of the variable under investigation.

Secondly, Due to time and resources limitations, it was not possible to exceed the sample size, however, this sample size were thought to represent the target group since it was selected based on randomness and homogeneity of the refugee and the host community.

Thirdly, some of the organizations which are involved in the issues are reported that they have problem of documenting data. Even some of them reported that they don't have their own base line data which they made prior to their intervention. Beside these, the need of refugee for permanent solution (leaving the area to abroad or home, or to settle permanently in the area) made them to be reluctance to involve and to give information for the study. These, and similar factors limited the study not to go beyond what it is.

1.8 Organization of the Paper

The thesis is organized into five chapters. Chapter one presents introduction of the thesis, which include background of the study, statement of the Problem, objectives of the study, scope and limitation of the study. Chapter Two presents Literature Review, Description of the Area and Conceptual Frame work. Chapter three describes the approaches and methodologies used in selecting and identifying the Key informants, sample households and focus groups and also it contains the data collection and analysis. Chapter four and five presents results and discussions and conclusion and recommendations of the study respectively.

CHAPTERE TWO

2. LITRATURE REVIEW

2.1 Refugee Crises and Environment

The deep causes of refugee problem are mainly to be sought at the political level. The principal factors which provoke large movements of population throughout the world are well known, the violation of human rights, political and military conflicts with in a country, tribal and religions repression, frontier despite and armed conflicts between neighboring states, rivalry between the superpowers and regional powers, natural catastrophes, economic crises etc. All these factors exist in the Horn of Africa and are so interwoven and they result in tragedies of which results in the drama of the refugees. Even though, all are clearly not of equal importance and cause (Cimade et. al, 1986).

Refugees in war-form or other wise disrupted areas usually seek sanctuaries in the immediate vicinity of their own nations. Frequently they end up in countries that are just as poor and politically unstable as the one they left. Certainly, this was the case in the Congo, with the refugee crisis is a major factor leading to the larger war. Such flights from "bad to worse" can be seen in many other instances as well Refugees from the Horn of Africa (Well.2003).

Spontaneous refugee settlements usually establish themselves in border areas or existing towns, which can bring competition for the limited resources such as wood, water and fertile land. Governments commonly use security or political concerns to select camp sites and give little attention to the quality and condition of the selected environment. Sites are traditionally selected on the bases of security, availability of water, absence of environmental hazards and accessibility to aid delivery (Jacobsen, 2002a).

Environmental problems exist throughout the world but many reach an exaggerated scale where large numbers of people are forced to flee together through a common sense of survival. Among the most significant problems associated with refugee- affected areas are deforestation, soil erosion, and depletion and pollution of water resources. Other considerations which must be taken into account include change in the social and economic welfare of local communities following the arrival, or during prolonged

residency of refugees. These may impact the environment, altering the rate and extent of local service available to people-today and in the future (HHP, 1995).

2.2 Environmental Impact and Environmental Impact Assessment

Environmental Impact and Environmental Impact Assessment are two distinctive but easily miss-constructed concepts. Environmental assessment and environmental impact assessment are defined to complete plaguing the conceptual terrain. But first, we define environmental impact which denotes simply the process of change that occurs with respect to natural resources such as forest. Soil and water, often viewed through negative lens (Jacobsen, 1997). Many take the environmental impacts of refugees to mean the environmental problems caused by refugees in a given place others take environmental impact can be, and is misinterpreted to mean environmental impact Assessment as analogous to those caused by a development project or program in the area of operation.
To evaluate the environment, environmentalists often talk about environmental assessment, which denotes assessing conditions of the environment at any given time, and could move further to environmental impact assessment, that is, assessing the environmental conditions in the wake of an occurrence, for example, the presence of refugees and returnees in an environment (Ouch, 2007).

UNHCR (2005) Environmental Guideline is comprehensive enough to provide environmental impact indicators, their assessment and the parties to be involved in implementing of the document.

2.3 Why Care for the Environment?

The spontaneous movement and displacement of large number of people may have significant impacts on the environment. Arriving in an alien situation, refuges face hunger, fatigue humiliation and grief. Their first concern is to look after themselves most often to find food and shelter. Trees are felled to provide support for rudimentary shelters. Dead wood is collected to build a fire for warmth and as fuel for cooking (Well, 2003).

Human welfare is dependent on the state of the environment. A large proportion of the world's population depends directly on natural resources as a source of wild foods,

natural medicines and shelter. Many others make their living from the sale of natural resources, either through direct trade or more refined processing and marketing. Indirectly, the environment provides a wide range of services without which we would not be able to survive- fresh water being an example. In some way or another, all of our lives are intertwined with, and dependent upon, the continued well-being of the environment. The challenge, however, is to manage the environment and the specific resources in a manner which will help guarantee their availability for future generations. Human behavior can have profound effects on the environment (Ouch, 2007). This is often highlighted during refugee situations, when large numbers of homeless people have catered.

Minimizing the impacts on the environment is a major challenge at such times, but a challenge which must be met. Decisions taken to promote responsible actions geared towards wise environmental management are essential. For this to happen, technical planners, managers, decision-makers and donors must be conscious of the links and interdependencies between economics, political decisions, social welfare and the environment. Inappropriate decisions taken to foster advancements in one of these sectors might have serious negative implications for the environment as well as the people who depend on it (UNHCR, 2000).

Refugees do not put environmental considerations ahead of their own safety and welfare. This is where UNHCR and other organizations lend a helping hand, helping confine to make the impact of refugees to as low as possible and assisting host countries with rehabilitation and clean up operations (UNEP, 2000). Nobody is suggesting the environmental damage as an intended out comes of humanitarian efforts and activities on be half of refugees. Yet, they evidently cause such damage even if some times unwittingly. Generally, much harm could be reduced if governments and other organizations had more and better environmental data on possible sites. This implies that some kind of evaluation is needed (Bakonge, 2000).

According to UNHCR 2008, between 1995 and 2006 UNHCR spent over 36 million of USD on refugee hosting area (RHA) projects in Tanzania, intended to mitigate the impact of hosting refugees, improve security in the region and improve the living standard for

the local population. RHA projects focuses on infrastructure improvements access to safe drinking water, education, health security local administration and the environment. According to this report Tanzania, the environment related project received the greatest proportion of RHA fund in 2006. The environmental management projects include tree plantings tree, seeding nurseries, rehabilitation of water resources, environmental education, and promotion of energy saving (wood saving) stoves in the refugee camps and agro forestry education (UNHCR, 2008). RHA projects in general, are extremely valuable. This is not just due to their obvious, immediate benefits, such as improved health care and better education but also because they can ultimately improve the relationship between the two groups.

2.4 Impacts of Refugees on Natural Resources

Like any other mass population movement and subsequence settlement, refugee brings environmental consequences. The recent Burundi /Rwanda emergency and the incidence of Afghan, Mozambican, Cambodian and Ethiopian refuge in the past involved a case load of millions. Prolonged presence of such populations in the neighboring countries tends to result in various forms of environmental problems, which usually accompany significant changes in the social and economic system of the local communities (HHP, 1995).

Until recently, the entire issue of the environmental impact of refugee camps, reception centers and settlements were neglected by host governments, UNHCR and other refugee-oriented organizations, including NGOs. UNHCR's refugee assistance programs and host governments settlement and reception policies have similarly neglected environmental consideration. It was only after the UN general Assembly Resolution to convene a conference on "Environment and Development" in Rio de Janeiro (UN 1991), that UNHCR began to express its concerns about environmental issues (Kiberba, 1997).

When populations of an organism exceed the carrying capacity of a region, there is usually environmental crisis, ultimately leading towards a population crash. When human refugee populations are forced to exploit environmental goods and services in an

unsustainable manner, they exceed the area carrying capacity, and complicate the harmonious of relationship of the area (Well, 2003).

One of the earliest statements by the UNHCR, on why environmental issues in refugee situation differ from concerns else where was made in a report of the Program and Technical Support Section (PTSS) in autumn 1991. The drafted report cited three specific conditions of refugee situations; the disproportionate high population densities often created in areas of refugee settlements, the tendency to site refugee camps in environmentally fragile areas and, refugees lack of any incentives to conserve the environment, because of the trauma of war and resettlement, and the fact that "the land where they are living is not theirs" (Black 1998).

Livelihood activities of refugees that depend on access to land and common resources take a toll on the hosting environment and create security problems. For example: in the forest region of Guinea wild palm groves were destroyed and exploited by refugees, this led to a decline in palm oil production and an increase in the retail price. Average per capita fuel wood consumption variable, Deforestation and destruction of plant cover, when refugees clear forest for farming, or to obtain wood for construction or charcoal making, Water pollution, loss of water courses, and over burdened water supplies, uncontrolled fishing: and The over use and destruction of rangeland are among the major (Jacobsen, 2002a).

Being strange and unsecured, refugees create demand for both fuel and construction materials, and in much of the developing world, this is likely to be met from local resource of wood. In addition to this, there is demand of land for the site of refugee settlement, and in many cases for agricultural land, and forestland will be cleared for these purposes (Jacobsen, 1997). Refugee engagement in deforestation is due to two main reasons: to meet their own survival needs for lumber to build shelter or for firewood, and to earn money through selling wood and charcoal in the local market (Oucho,2007).
The physical impacts create socio-economic impacts on refugees and on local communities. The effects of environmental degradation harm refugee women and children disproportionately, particularly, those effects related to deforestation caused by fuel-wood gathering. Women must spend longer hours seeking and carrying wood

entailing increased exposure to assault. Children are forced to miss school as fuel supply become harder to obtain, cooking time may be shortened and water not boiled, leading to increased incidence of disease and also refugee families may be forced to sell part of their food rations to obtain the fuel needed to cook the remainder resulting in under-nutrition (HHP, 1995). Basically the same social impacts may be imposed up on most populations, particularly the poorest, who are the most dependants on the surrounding environment for a lively hood and for fuel.

Demand on water supply in refugee camps and settlements may create water shortage for both refugees and host populations, which in some extreme situations may necessitate the supply of water by tanker from elsewhere. In addition, impacts on water supply and quality may have considerable relevance to the health of refugee and host populations. Most obviously, people may be able to respond to depletion of food or energy resources by utilizing alternative foods or fuels, but no such substitution is feasible for water with out which death occurs rapidly. As such, where pressure of population on water supplies becomes acute, the only solution is to find new water sources of supply which may involve further population movement (Black, 1998). Large concentrations of people also produce large quantities of human excreta and other waste which may lead to pollution of ground water and soils.

2.5 Ecological Problems in Ethiopia

Increased human and animal dependency on the environment, whose livelihood is based on the use of natural resources, in particular renewable natural resources, has led to their fast depletion and serious degradation, their exploitation has become and still is beyond their "self replicating capacity"(Shibru and Kifle, 1998).

There are important trends that indicate growing scarcity of natural resources and vulnerability to human impoverishment and scarcity-induced conflicts in rural Ethiopia. First, degradation of natural resources, particularly renewable resources, is widespread as evident from loss of forest, soil and water resources. Second, these resources are increasingly scarce because of diminished supplies, increased population-induced demands, and quality in distribution. There are signs of growing scarcity of natural

resources, particularly arable land resources in pastoral dominated lowland areas (Tesfaye, 2004).

Since the livelihood of 85% of the population is dependant on natural resources (particularly renewable natural resources) depletion and deterioration of these resources has resulted in reduced agricultural productivity and subsequently, in reduced quality of life of the people. In addition, drought has become more frequent (Shibru and Kifle, 1998).

The same authors also noted that land degradation is the major problem in Ethiopia. Land degradation is expressed in many ways including silt removal by sheet and gully erosion, nutrient depletion by biomass burning including dung and crop residue resulting in a break down of nutrient cycle. Animal dung and crop residue are used as sources of domestic fuel because of lack of wood.

Deforestation is a major issue in Ethiopia. It is one of the main causes of the prevailing land degradation. Tree cutting is a common occurrence which has been taking place over the centuries because of the need for more land for cultivation, for use as firewood, for production of charcoal and construction purposes (EFAP, 1991).

2.6 Refugee Welfare and the Environment: Integrated Concerns

Environmental impacts of refugee camps and settlements are diverse. Among the most obvious are the cutting of trees for housing support and fuel others, such as pollution or the extraction of groundwater resources are far more subtle, at least in the short-term. Changes have also been recorded in terms of impacts on household labor and health. In all cases, the increased pressure on regions natural resources invariably affects human welfare and the options available for sustainable management of natural resources. Local people and refugees themselves may be equally affected by inappropriate or excessive use of such natural resources.

Host governments and humanitarian organizations are responsible for assuring the welfare and security of asylum seekers. The condition of the environment where those asylum-seekers are settled thus becomes a key factor in enabling them to fulfill their mandate. The main reason for this is the range of direct links between refugee sustenance

and products derived from the local environment. Refugees may depend on firewood and building poles from nearby woodland, water from local aquifers or rivers, or medicinal plants from surrounding land natural products and services which help support them during a time of great uncertainties (UNHCR, 1998). It is increasingly accepted that environmental interventions cannot be separated from regular refugee assistance activities. The growing number of projects that seek to counter or compensate for the refugees impact on local environments is an indication of this inter-relatedness, as well as a useful indicator of how serious these environmental impacts can be (HHP, 1995).

There are also varieties of indirect linkages between refugee well-being and the state of the local environment underground water reserves being easily polluted by inadequate sanitation, a situation which can result in illness and spread of disease. If firewood becomes scarce, refugees may need to go further to collect wood, journeys which may expose women and children in particular to other hazards, if farm lands is over cultivated then crop yields may decline and nutritional levels decrease (UNHCR, 1998).

Establishing natural resources management system is a long-term activity that calls for the involvement of local communities and range of stakeholders. Among the stakeholders, an environmental implementing agency with experience of both relief and development is an ideal candidate. The challenge for stakeholder's involved and acting institution is to work with in existing structures, creating new structures only when existing facilities are incapable of addressing environmental concern (Blain, 2003).

With the onset ' Environment and Development' in the last decade of the centaury, the idea of incorporating environmental concerns into all sectors of refugee assistance schemes emerged and was strengthened by the design and issue of an all embracing Environmental Guideline by the UNHCR, in 1996. The main objective of this guideline is to include the national government concerns and measures at all stages of refugee assistance with a main focus on undertaking preventive measures to avert serious environmental damage in refugee hosting areas (Kiberba, 1997).

2.7 Sustainable environmental Management practices in refugee hosting areas

Environmental concerns that exist in different part of the world's refugee hosting areas are diverse and specific to an area due to the specific areas climate, the physical setting and socio-economic conditions. Due to this, the environmental problems confronting UNHCR, refugees and local populations are different from area to area. UNHCR (2005), in its Environmental Guidelines has outlined four major criteria which need to be considered when addressing environmental concerns in refugee operations: integrated approach, local participation, cost effectiveness and prevention before cure.

UNHCR (1998) in its guidelines for environmental management emphasized: "a healthy physical environment helps to assure the well-being and protection of the refugee population". The guidelines further advocate sound environmental practices, and the overall cost effectiveness is stressed in its activities. Program interventions promoted include planning for environment-rehabilitation needs, income-generating activities and incentives to encourage refugee and host populations to become involved in sustainable environmental management. Attention is concentrated on the assumed effects that the presence of refugees has on the environment.

Planting trees and promoting energy-efficient stoves are two of the most common environmental support practices adopted in refugee situations. One of the reasons for this is because environmental programmes in refugee operations are often seen as straightforward supply and demand activities. The supply of wood is increased through tree planting and its rate of consumption reduced by promoting improved cooking stoves (UNHCR, 2008).

Refugee related environmental problems require the involvement of a number of parties both at the local and international level. The main actors at the local level include the national government at the national level, and the main parties are the UNHCR, international NGOs and other donors. Since environmental issues touch up on different actors, the effectiveness of any intervention in the area is highly dependant on the coordination and cooperation among these actors (Blain, 2003).

2.8 Environmental Issues: UNHCR's Experience and Response

The social and environmental problems prevailing in the refugee receiving areas of the host countries have prompted new policy and programme formulation by UNHCR. As early as 1984, UNHCR's governing body adopted *"Principles of Action for Developing Countries"*, addressing UNHCR's role in refugee related development type projects. Under these principles, "projects aimed at repairing or improving a host country's economic and social infrastructure to help cope with the presence of refugees" were covered, to give effective soil conservation, watershed protection and reforestation activities in the refugee affected areas (UNHCR, 1998).

The High Commissioner's speech at UNCED (1992, Brazil) drew attention to the problems and to the effect of the refugee on the environment. Following UNCED, UNHCR's specific policy on environmental matters was a subject of discussion by its governing body. In July 1994, UNHCR adopted the *"Interim Guidelines for Environment-Sensitive Management of Refugee Programmes"*, which set the stage for further policy development (Kiberba, 1997). According to HHP, 2005 the fundamental principle enunciated in the Interim Guidelines was the integration of an environmental perspective into UNHCR programme planning and implementation. The Interim Guidelines introduced the following four measures to strengthen UNHCR's response to environmental concerns. UNHCR took measures to: Define environmental criteria for selection and planning of a refugee site; institute environmental reporting, surveys, monitoring and studies; promote environment oriented projects and programming; and define and mobilize the technical and operational support required from Headquarters. These Guidelines were qualified as interim because more reflection and discussion, based on further studies and experience, was thought to be necessary before elaborating definitive guidelines.

2.9 Competition for Scarce Resources and Conflicts

Refugees' immediate livelihood goals are likely to include: physical safety from violence, the threat of violence or intimidation; reducing economic vulnerability and food

insecurity; finding a place to settle and locating lost family members. Even if these goals are achieved, refugees remain in protracted situations and new goals will become priorities (Jacobsen, 2002a).

Conflicts, emerges as one way in which human society adjusts in the face of scarce resources. Conflicts are complicated issues that get interwoven with other social, economic, environmental and political activities within a society. If not managed well, conflict can have a negative impact on the environment and on the assets and capabilities of people (Elieen, 2005).

Because of refugee hosting, the host-community losses significant amount of their meager resources. Local loss of biodiversity, wild animals, aquatic resources (fish, hippos, crocodiles, etc), land degradation, soil erosion and decrease in water content of rivers and sedimentations on water reservoirs are the common impacts. Thus, 40,000 hectares of forest land and 6,000 hectares of dense forest area have been changed into barren land and agricultural land at Bonga, invasive harmful weeds are introduced at Dimma hence pasturelands are at severe risk (ARRA, 2007). Thus, the local community develops frustration for its future existence and thinks displacement may come after.

Conflict between refugees and locals over common property resources (CPRS) is common. It has occurred in the United States, where more marginal and less successful local fisherman were no stile to Vietnamese refugee immigrants over averaged over fishing. In the mass rural refugee situations localized pressure on CPRS occurs especially when refugees are in camps or settlements water, grazing and trees can be causes of trouble (Chambers 1986).

Some conflicts are occasioned by the scramble for scarce resources. For instance in Kenya the perennial in and inter-clan clashes among the Somali communality in the north part were actually recourses wars in to the extent that they are about pasture and water which are very scarce in the arid and semi arid northern district (ROD, 2005)

Competition between local population and the refugees for insufficient resources (fire wood, fodder, and water) can create conflicts and damage to traditional and sustainable local system of resources management. For instance, in Balkans in the winter and spring month of 1999, kukes, a small impoverished town in northern Albania with a population

of 25,000 absorbed more than 100,000 Kosovo Albanian refugees fleeing the war. Such a massive increase in population quickly overwhelmed local water, fuel, and health care resources. Local residents were deprived of fire wood and fodder for their livestock. Scarcity of fire wood for heating and cooking also forced women and children to spend longer hour looking for fire wood far from the camp. These exposed them to assaults and cold weather conditions (UNEP, 2000).

Competition for CPRS appears to give rise to more open conflict than competition for work or effect on the wages of the poor. Two main reasons can be suggested for this. The first is that the act of exploiting CPRS is visible and tangible people are there physically taking something giving their livestock water or lopping trees for fodder or grazing their animals on pasture or collecting wood for fuel or grass for thatching huts the poor hosts but helps the rich and less poor hosts thus dividing their interests competition forceps hurts most of all of them and services to unite them (Chamber, 1986)

Refugees relay on access to common natural resources like water, forests (for fire wood, construction materials, wild foods) and range lands (for grazing of livestock) to support themselves and eventually to earn income. Wild products are either used for subsistence (especially in the initial stages of arrival) or for trade. The belief that refugees impose significant economic and environmental burdens on their host communities is widely accepted and well documented fact. Every host country in Africa has its set of studies describing these burdens. Host governments complain that refuges compete with locals for scarce resources such as land, jobs and environmental resources (e.g. water, range land, fire wood) and over whelm existing infrastructure such as schools, housings and health care facilities. These concerns underpin the state's rationale for keeping refugees in camps, where they can be assisted and managed by international refugee agencies (Jacobsen, 2002b).

2.10 Refugees, Environment and Conflict

Refugee movements are generally the result of conflict but can also be a cause of conflict. "The number of armed conflicts has risen since 1950" (Eriksson & Wallensteen, 2004). "The global human population is likely to increase by around two and a half billion people over the next 50 years" (UNFPA, 2003). Furthermore, these current and potential

causes of (forced) migration are predicted to impact most on developing countries: most recent armed conflicts have been located within and between developing countries (Gleditsch et.al., 2002); 90% of population growth is expected to occur in developing countries (UNFPA, 2003); and climate change is expected to have the most detrimental impacts in developing countries (DFID, 2003). It is widely accepted that influxes of refugees into an area can place considerable stresses on natural resources, leading to both environmental and social impacts (UNHCR, 1998; Black & Sessay, 1997). Resource demand can dramatically increase following the creation of settlements, leading to accelerated conversion of forest to agricultural land, collection of firewood, extraction of surface and ground waters, fishing and hunting. At the same time, the assimilative capacity of environments can be stretched by the additional wastes produced, and this can exacerbate threats to human health. The UNHCR's (2005) Environmental Guidelines identifies six categories of environmental impact: natural resource degradation; irreversible impacts on natural resources; impacts on health; impacts on social conditions; social impacts on local populations; and economic impacts. This list highlights the view that environmental impacts are always accompanied by social impacts of some kind and often by health impacts, cultural impacts and economic impacts. Moreover, certain sections of local populations can suffer as much as, if not more than, refugee populations.

There has been some debate as to why refugees cause environmental problems. Chief amongst these is the mere fact of numbers. Population increase, especially when it occurs so rapidly, places additional stresses on local resources. For example, it is rare for refugees to be provided with construction materials or fuel for cooking, and these resources will often by necessity be collected from local environments. There has also been a tendency to perceive refugees as having an impact beyond their numbers. This perception of refugees as 'exceptional resource users' is still popular, although it has been convincingly refuted by Kibreab (1997) and Black (1998).

In sub-Saharan Africa, refugee settlements typically exhibit environmental trends that are widely believed to be contributory factors for triggering unproductive environmental conflict. Foremost amongst these is rapid population expansion and poverty, but also deforestation, water scarcity, soil erosion, land shortage and violation of sacred sites.

Furthermore, refugee situations nearly always bring together different groups of people to share local subsistence resources. There is a growing concern that scarcity induced insecurities can contribute to an amplification of the perceived significance of ethnic differences and inequalities, creating the conditions for conflict (Adrian, 2003). Ek and Karadawi (1991) found that refugees in Sudan were increasingly perceived as a burden, following the deepening of economic recession and as relief agencies were seen to prioritize refugees over host communities. Adisa (2003) makes similar observations about refugee–host relationships in the Great Lakes region. In such cases, perceptions of resource use conflict and perceptions of inequity are mutually reinforcing. In the worst scenarios, conflict following refugee settlement leads to further population displacement, aggravating the very problem to which such settlements are a response.

2.11 Somali Region: The Place and the People

According to the 2008 Census report, Somali Region consists of 9 administrative zones, 53 woredas (administrative districts), and 67 urban settlements. The regional population was enumerated at 4,439,174 in 2007, of whom 1,970,363 were female and 2,468,784 were male. The region is overwhelmingly rural. The level of urbanization is low, at 14.3 per cent. Household size average is 6.6 with a range from 6.3 in urban Jigjiga to 6.7 in rural Korahe Zone. This figure is larger than the highland regions of Ethiopia, where nuclear household units are the norm. There are approximately 98,629 households that reside in urban Somali Region. The largest zone of the region 5 is Jigjiga zone, with over 966,213 residents enumerated in 2007, while the smallest is Fiq, with 347,769.

Somali Region linguistically and religiously is homogeneous. Of the enumerated population, Ethiopian Somali accounted for 98.17 per cent of the enumerated population in 2007, and 99.1 per cent of the population is Muslim.

2.11.1 Kebribeyah

Kebribeyah, where the refugee camp is located is found in the Somali National Regional State. Geographically kebribeyah woreda is located in the north east of the Somali Region, bordering northern Somalia. The woreda lies form $9^{0,}$ 25' and 9^{0}, 44' North Latitude and 42^{0}, 32' east Longitude. Relatively the woreda is bounded by Aw-barre in the North, Gursum woredas in the North-west, and West Harshin woreda in South and the

Republic of Somalia in the North-east. Kebribeyah is one of the six woredas of jijiga zone in the Somali regional state. Administratively Kebribeyah woreda is divided in to 52 rural kebeles of which 44 are rural and 7 are urban. Somali ethnic group known as the Habaskul clans inhabit dominantly in the study area (see Annex 4). There are also Oromos, Gurages, Amharas and other ethnic groups of negligible numbers. Religious persuasion in the area also goes with the number of the inhabitants. In this case it is noted that more than 99 % are Muslim (SRNS).

Kebribeyah, the capital of the woreda is situated at the western parts of the wereda. It serves as the woreda capital. This capital is accessed and connected from the zonal/regional capital Jijiga by asphalt road which is about 55 kilometer south east of the regional / zonal capital Jijiga. The same road leads you to other significant town; called Hartisheik, located to the north part of the woreda, which is only 19.5 km to the republic of Somali land. Because of these, this shows that Kebribayah is located on the main trading route into Somaliland from Jigjiga and the Harar highlands, and trading is a significant activity, both for contraband goods (which has boomed in recent years, despite government efforts to suppress it) and for "official" cross-border trade.

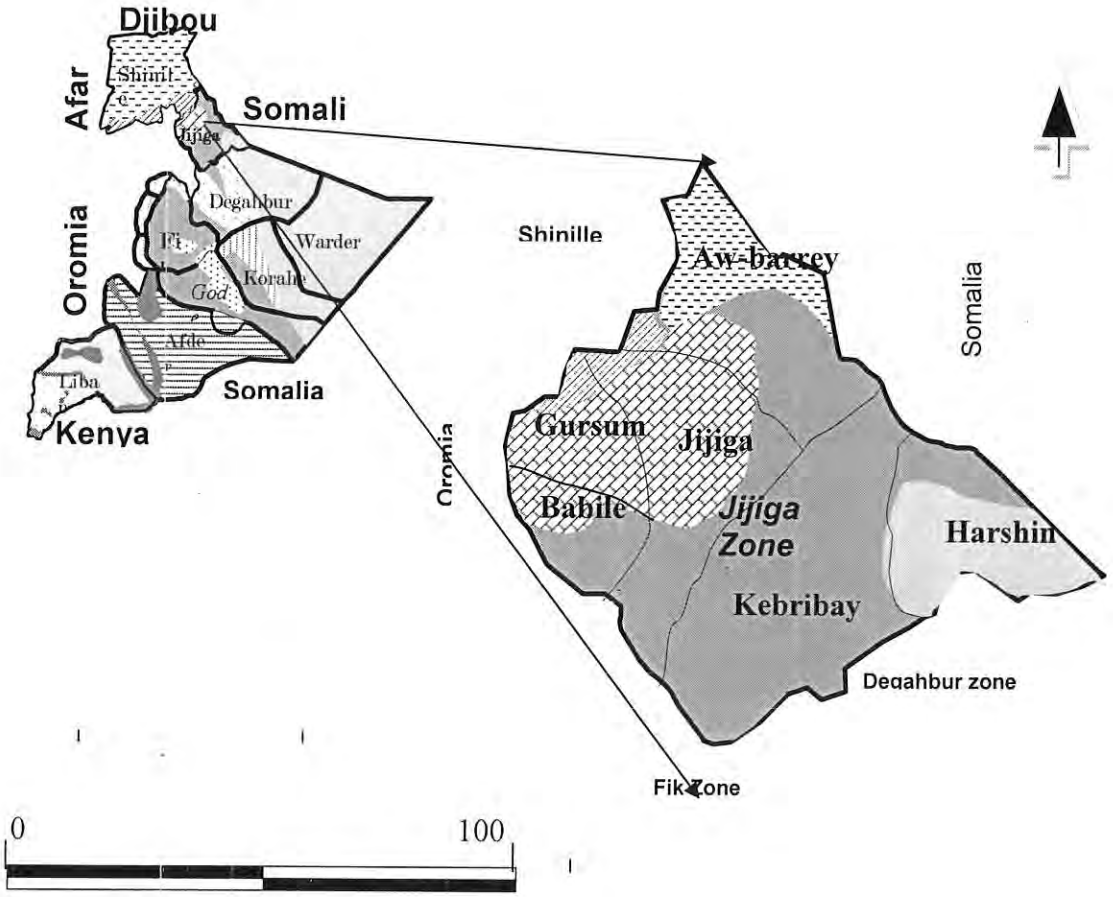


Fig1: Map of Jijiga Zone

2.12 Resource ownership, Land use and Production system in Kebribeyah area

Climatic factor largely determines the people's mode of life and degree of anchorage to land in this area (Takele, 1994). Resources in this context are the natural/environmental resources that include land, pasture and water.

In Somali Regional State land is owned communally and clan leaders regulate its use traditionally. One of the principal features of clan oriented land holding is that if the fore father of certain clan was rich, then the successor will be rich. Male members of the clan have tenure security over their land holding in Somali culture. The vice-versa is also true, i.e. if the forefather of certain clan was poor, then the grand and children of the grand children also remain poor (SNRS, 2006).

In the semi-arid zone, clan territories are divided among sub-clans and further sub divided among individual members of the sub-clans. Therefore, under the traditional Somali system, all arable land is privately owned. Boundaries between different clans' territories are demarcated by natural features such as stream, hill etc. and in some areas a buffer zone serves as a boundary between different clans' territories. This boundary is traditionally known as "*had*". Individual holdings also are differentiated by narrow uncultivated stripes of land known as "*Medi*". The only areas used for communal grazing and collection are hills, mountains and rocky rangelands that are not suitable for cultivation (Takele, et.al 1994).

Water resources such as wells, ponds and streams are used freely by all clans. The use of water from "*brekads*" (underground cistern) on which money is invested by individual or groups is exceptional. Few people identified in the woreda have protected well water. Otherwise, the majority of have no access to safe drinking water. People use water from un-protected wells and ponds. Out of 52 kebeles in the study area including Kebribeyah, the woreda capital, only 7 kebeles have water supply of different kind (shallow well, traditional well, bore hole installed with motorized pump) of which 40% are not functional. The question of adequacy and quality is still there. The remaining kebeles have to travel a long distance to fetch water, particularly during dry season (SNRS, 2006).

In this area people lead a semi-permanent sedentary life, where parts of the family stay in permanent village year round and some family members move with livestock for longer period of time each year. The main land use is extensive grazing with high density of livestock population and rain feed crop cultivation. The livestock population density is calculated at 2TLU/ha, that is good enough (at carrying capacity) to support the existing livestock. Land owners obtain two important resources from their holdings. They grow food crop and secure pasture for their animals. Crop production is not reliable due to erratic nature of rainfall. Therefore, the success or failures of crop production depend on the nature of the rain fall during the three rain season (***Karan,Gu',Deyr***). If the crop don't produce and is not successful the farmers change it to forage for their animal or sell it.

The main production system is agro-pastoralism. The main crops grown are maize sorghum and chat. The latter is mainly planted to earn cash, where as the grain is mainly used for house hold consumption. The people also keep livestock of different species. According to the survey results of Devereus (2006), Kebribeyah is an agro-pastoral district. Almost all households keep animals and produce crops. By definition, agro-pastoralism is a more diversified livelihood system than pure pastoralism, and the average household pursues three livelihood activities–rearing livestock (especially cattle, sheep and goats, and also camels, especially in the drier eastern and southern parts of the district), crop farming, as well as a minor income-earning activity like trading, charcoal burning, or collecting of firewood or construction materials for sale is practiced.

Chat is mildly narcotic leaf cultivated in many places of the country. The export quality, which is produced in Harerge highlands, is exported to Djibuti, Somali land and Somalia both through official and unofficial channels (Tegene and Almayehu, 2000). Kebribeyah can not compete with Hararghe, the neighboring Oromiya Region, which has a more conducive climate and is the centre of chat production in Ethiopia, in terms of both quantity and quality. Instead, farmers in Kebribeyah cultivate a lower quality chat that is less labor-intensive and reaches a lucrative market among lower income earners. These also are supported by Deveroux, 2006.

In the area after the refugee arrival new charcoal production has began, and got new face. Prior to the arrival of the refugees, the local community did not utilize charcoal and live trees for charcoal making but with the coming of refugees this has come true in the area. This is also supported by Takele et.al, 1994 explaining that "Production of charcoal has been introduced just recently as a new way of life particularly between Kebribeyah and Degahbur towns".

2.13 Conceptual Frameworks

Refugees are settled in several possible ways, but there are two most preferred way. First, "self-settled" or spontaneous settlements amongst the local community where they remain unregistered and depend on unofficial assistance from the local community: and the second, is "camp settlement" either voluntary or relaying on the support of the host

government and relief agencies where they are registered and receive official assistance (Jacobsen, 1997). The later found to be true in Kebribeyah.

According to the schematic conceptual frame work overleaf, the overall assumptions that guided this study are presented in figure2. Refugee settlement in kebribeyah camp induces impacts up on the environment if not appropriately dealt with. Environmental impact define the concept to embrace "the process of change that occurs with respect to forest, soil and water," (Jacobsen 1997).And also on the host community.

Strengthening institutional capability to deal and intervene with environmental matters in the field is essential to off-set the negative impacts and enhance the positive impacts. The provision of clear guidance and guide lines, to UNHCR and other implementing partner field staff on environmental matters should be treated with in UNHCR'S and other implementing partners operational frameworks (UNHCR, 2005).

UNHCR and other implementing partners' proper intervention in different level on the environment in different phases such as emergency phase, care and maintenance phase, and durable solution phases, are vital. But the failure or hesitation to the intervention on the phenomenon can inflict adverse impact which can even be un-returnable and permanent state of environment degradation, socio-economic problem and also can bring hostility and conflict between host community and the newly arrived refugees (Black and Mohamed, 1998). The degree of success of refugee settlement depends on various kinds of proper interventions of the local community, the national government, NGOs, GOs, UNHCR and other agencies who are involved on the phenomenon in different phases.

Certain environmental measures need to be taken to all phases of the refugee assistance programs (primary, secondary and durable). These measures are of general in nature. Their function is to provide a common technical and institutional basis for more detailed environmental interventions as well as to achieve consistency among sectoral activities. These general methods include local capacity building, institutional strengthening and further development of environmental expertise.

The key concept of the model is, if not properly controlled and intervened with refugee settlement and associated matters in different phases and mitigated their impact on the

environment can lead to environmental degradation, livelihood deterioration and conflicts with the host community. Therefore, to promote sustainable practice of refugee settlement it needs proper intervention on the refugee concerned activities on the environment and appropriate utilization of the UNHCR environmental guidelines.

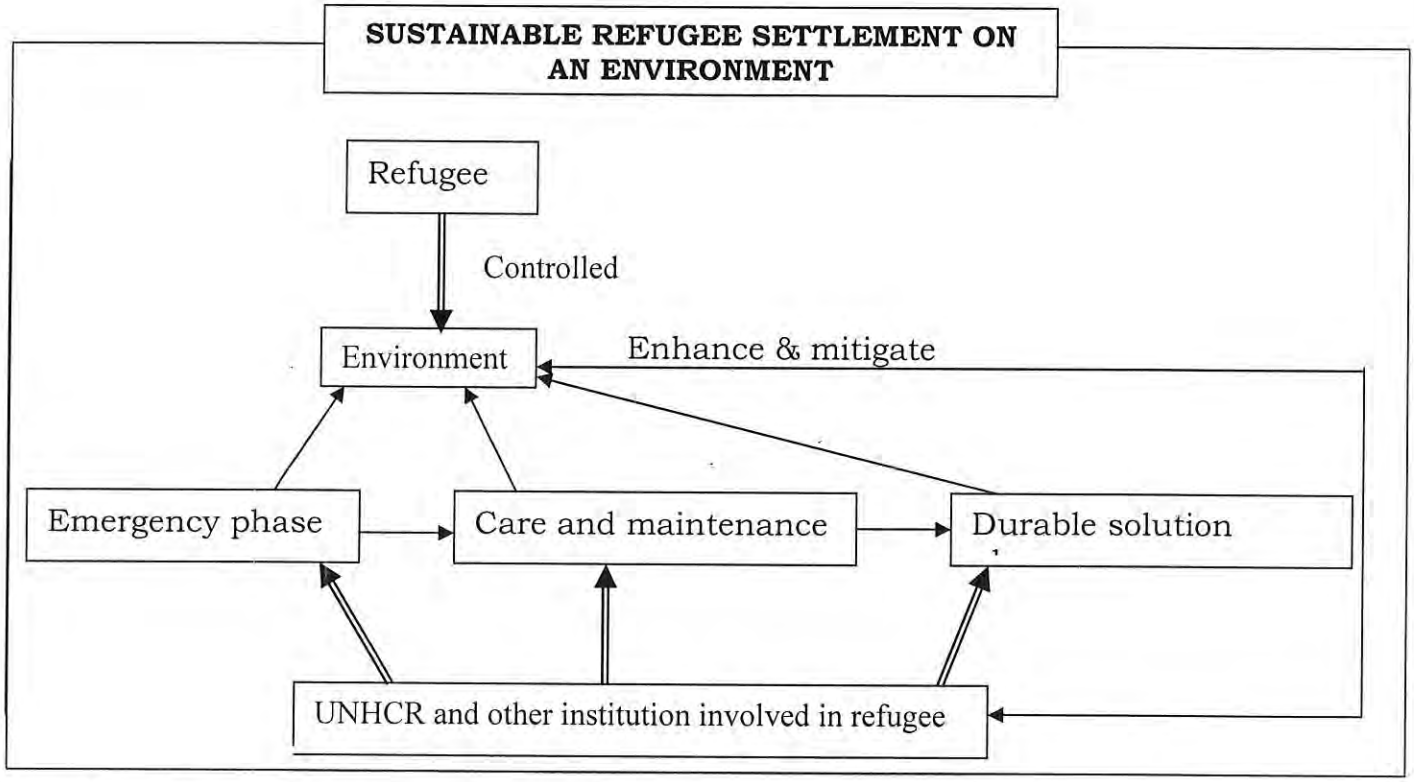


Fig2. Conceptual Framework

Source Own Construction

2.14 Definition of Concepts

Environmental impact: - refers to the process of change that occurs with respect to forests, soil and water. This process is often negative, because the environmental pressures imposed by an influx may lead to loss of woodland and rangeland, increased soil erosion and a breakdown of soil ecology, and reduction in groundwater recharge and deterioration of water sources (Black 1994).

Environmental Degradation: - is partly in the eye of the beholder. And it is defined as a process that lowers the current and/or the future production capacity of the land. It also refers to the degradation of soil, water, fauna, and flora. Similarly, soil degradation refers to the loss in soil quality through erosion, leaching and other forms of physical, chemical and biological process (Blaikie and Broubfied 1987 as cited by Kangalawe et.al 2005).

Refugee: - Refugee is a person who flees to escape conflict, persecution or natural disaster. Owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of their nationality, and is unable to or, owing to such fear is unwilling to avail him/herself of the protection of that country (encyclopedia Encarta, 2005).

Carrying capacity: - is an ecological concept that refers to the maximum number of individuals of a particular species that can live in an area without causing environmental damage to the amount of resources it uses and the amount of waste it generates, relative to the regions natural capacities.

CHAPTER THREE

3 Research Approach and Methodology

Generally, this research can be seen as fact finding research with a main objective of assessing the environmental impacts of refugee settlement on the Kebribeyah environment. The entire approach of the study was participatory in which all concerned bodies and organization were involved on the study to find the facts associated with the refugee settlements. Even though the study dominantly relay on qualitative data, quantitative data also were used.

3.1 Research Design

The study design which was used was retrospective-prospective study design. These study designs focus on past trends in a phenomenon and study in to the future. This study design is mainly chosen for the advantage it has over other methods in constructing the baseline data of the area and for easy comparison of the effects that come with refugee in the area.

A study classified under retrospective-prospective category relay on measurements of an intervention with out having a control group. In fact most before and after studies, if carried out with out having a control–where a baseline is constructed will be classified as retrospective–prospective studies. In retrospective prospective study a part of the data is collected retrospectively from the existing records before the intervention (refugee settlement) were introduced and then the study population is followed to ascertain the impact of the intervention.

3.2 Sources and Methods of Data Collection

Both primary and secondary data were employed in this study. The collections of primary and secondary data are discussed separately in the coming sub-sections.

3.2.1 Secondary Data Sources

Secondary data are data collected by others for different purposes. These data were collected from published and unpublished works of GOs and NGOs. These data were helpful to conceptualize and provide clear idea to analyze the research work. And also

were important to have a better insight of the issue under study before getting in to the field work and also used in after the data collection. Because of these, secondary data were used from different sources that comprise published and unpublished sources, news papers, articles, and websites. Further more, population data produced by the Central Statistical Authority in Ethiopia and Somali Regional state, were included in the research work.

3.2.2 Primary Data Sources

Various techniques of primary data collection were used in the filed to find the facts to meet the objectives of the research. These were collected through formal survey and other PRA tools such as observation, focus group discussion, key informant interview and participatory resources mapping.

Before beginning of the collecting of data, data gathering tools were cheeked and an adjustment was to suit the respondents at the same time to meet the objectives of the study and then were translated to the local language I.e. Somali.

a) Formal Survey

After identifying and selecting the respondents from refugee and non refugee community separately, data concerning house hold general information, characteristics, resources endowments including livestock, assets ownership, sources of income, type and amount of natural resource consumption pattern, time spent to get natural resources and involvement in GOs and NGOs development activity were collected using structured interview schedule

Data collection using the interview schedule was conducted by enumerators. The enumerators were recruited on the basis of their competence to collect data. Enumerator who can speak the vernacular language and who have experience were given the priority to collect the data. After selecting the enumerators, they were given theoretical and practical training as to how to conduct the data collection.

b) Direct Observation

This approach was implemented through direction observation of objects events, process, relation ships, activities of refugee and non refugees in the area. Records were kept

mentally and in a note. This kind of observation is one of the most powerful methods of observation to get acquainted with situations in the study area. Through this, information was obtained and was utilized in supplementing the formal survey and were utilized in compression of the environmental resource in the area.

c) Key informant interview

Key informant interview is a powerful data collecting instrument in qualitative research. Key informants were people who were knowledgeable about the environment and over all situations in the area prior to the settlement of refugee and were living in the area, and also can tell, explain important and reliable information to the interviewer. The logic is that, key informants knew the issue very well to talk with the relevant issue to get reliable and valid data about the subject before and after the settlement. To achieve these, eight key informants were identified based on their past knowledge about the environment and ability to narrate the fact clearly to establish baseline data of the research area and see the impacts which are associated with the refugee settlements. After selecting the key informants, same interview questions were asked to each informant separately, and recorded accordingly.

d) Focus Group discussion (FGD)

A focus group is a small group of people meeting to discuss a specific topic in an informal setting in which all participants are encouraged to participate in the discussion. FGD can be useful forum to show priorities of community action, the level and nature of resources awareness and environmental interest.

Three FGD were employed separately, each having 8 to 10 peoples; refugee and non refugee and experts who are working with NGOs and GOs. During the discussion the researcher had interview guide to direct the dialogue and discussion among the FG in order to find out their experience, perception, activities and views in the area. The FGD was not absolutely dependent on the guideline; rather it was flexible with the content and mode of the respondent. They were also probed to get maximum reliable information.

e) Participatory Resource Mapping

Community resource mapping are important participatory tools to interactively communicate with local community and refugee and find out their own perception about their environment, understand what key resources they had and have and also their interaction with these resources. Participatory resource mapping was an important community empowering process in the field, in such a way the field researcher handed over the stick to the community to lead and play the facilitation role to map the area and pin point the resources before and after the refugee settlement in the area. Based on this, the environmental resources in the area before refugee settlement was identified and constructed. And after the construction of resources on the map, participants were asked to confirm whether the map was correct on the paper or not. Through this, unanimous agreement was reached on the resources map.

3.3 Sampling techniques and procedures

Both probability and non probability sampling were used in order to identify and select sample house holds for the research. In the first stage, the non probability sampling was used to select local elders, key informants, environmental experts who are involved in the matter and also working in the study area. For this judgment/ purposive sampling were used and key informants and focus groups were selected.

In the second stage, through probability sampling technique local and refugee house holds were selected. This was done through using local administration list of house holds and ration cards of UNHCR and ARRA respectively. From this sample frame 80 household respondents were selected using simple random sampling.

Due to time and resource limitations, it was not possible to exceed the sample size, however, this sample size were thought to represent the target group since it was selected based on randomness and homogeneity of the refugee and the host community.

3.4 Method of Data Analysis

The analysis and assessment of response from local house holds, refugees and experts and DAs before and after the settlements of refugees, their impact on the environment were analyzed through using qualitative and quantitative methods of data analysis.

The qualitative data analysis was based on the impact of refugee people and their activities in the environment. The data that was collected using different methods were transcribed classified and ranked from primary sources and analyzed thematically through comparison and direct quotations. The data collected was also compared, contrasted and examined accordingly to give meanings. In analyzing the qualitative data further more perceived and observed realities during the fieldwork were also analyzed through triangulation.

In the quantitative data analysis, numbers are the principal component of analysis to make meaningful patterns of relationship among the data acquired for the study. Descriptive statistics were employed to compare and analyze the quantitative data through using SPSS.

CHAPTER FOUR

4. Result and Discussions

4.1 Demographic and socio-economic characteristics

4.1.1 Demographic Characteristics of the Refugee Camp and the Sample Households

According to ARRA 2008, the refugee population in Kebribeyah camp as of November 2008 was 16,929. The refugee in the camp where composed of 49% male and 51% female while children under 18 years old constituted about 57.5%. 59 percent of the camp population is under the age of 18, which means that almost half of the camp's population were born in the camp and have lived there, their entire lives. According to SRNS 2006, age figure of the camp, the figure is relatively similar with the woreda figure. This shows a combination of high fertility and declining mortality in the area which resulted in a high population growth rates and high percentage of immature people.

In terms of clan composition, in the refugee camp the majority belongs to Merihan, Awlian Majertaeen, and Darod clans followed by Hawiye and minority clans of Gaboye and Bantu, respectively (ARRA, 2008 & UNHCR, 2008). These clans originated from the Southern Somalia where insecurity is still a problem. Due to the current political insecurity in Somalia, almost all of the refugees in the camp are expected to stay at least beyond 2009. The instability and lack of security in Somalia at the present time is worsening, because of these and other similar problems further Somali refugees given their similar language, cultural background, and clan linkage with the local community of Kebribeyah area, made further population booms to be expected in the area. Due to this, the area will host the existing refugees and others for more unlimited time in the future.

Local people and refugees live together in the town, the two settlements separated only by the main road which dissect the town in to two and lead to Degahbur. There is barely any distinction to be made between refugees and local peoples. Both communities interact freely in the town.

Table 1: Refugee population with their respective clan

Area	Clan	N	%
South Somalia	Darod	3137	18.90
	Awlahan	3048	18.37
	Merahan	2997	18.6
	Mejerteen	2995	17.61
	Hawiye	2363	14.24
	Others	2125	12.80
	Total	16,665	100

Source: ARRA, 2008

4.1.2 Basic Infrastructural Assistance Provided to Refugees

The Kebribeyah camp has one health center, seven pre-schools and a primary school for the refugee population. The health center for the refugee in Kebribeyah entertains minor and mild health cases, but when it comes to higher medical cases, the refugees are referred to Jijiga, Harar or Addis Ababa, according to the severity of the cases.

Students from the refugee family get their primary school, intermediate (junior) school education from the schools which were constructed for them by different NGOs such as IRC, ARRA, and UNHCR, but when they reach high school, they join the local community's high school in Kebribeyah.

Table 2: Educational statistics of kebribeyah refugee camp as of 2008

Preschool		**Male**	**Female**	**Total**	**IRC**
	Age 3-6	**416**	**319**	**807**	

Primary school	Grade	Male	Female	Total	ARRA
	1	149	105	258	
	2	89	69	158	
	3	142	110	252	
	4	104	49	163	
	5	101	90	200	
	6	89	55	144	
	Total	683	492	1175	
High school	Grade	Male	Female	Total	Local school
	7	50	29	79	

	8	53	33	86	
	9	40	15	55	
	10	30	11	41	
	11	09	02	11	
	Total	182	90	272	

Source: ARRA, 2008

Water points are constructed, each having 7 out let taps and. Water from the Jerer valley is supplied through pipelines to refugees and the local community. To make the water supply sustainable the Jerer valley system are electrified in 2005. Beside these, there is a mechanical grinding mill for the refugees and the local community (ARRA, 2008).

There are 903 pit latrines (ratio 1:18) and 22 communal disposal pit latrines (ratio1:750) in use as of April 2007. This figure shows that the ratio of communal disposal and latrine is below the standard of humanitarian charter and minimum standards in disaster response 2004 (which recommends a minimum of 1 toilet per 50 for dislocated and refugee people). Health services provided in the camp are: OPD, IPD, VCT, and awareness rising on HIV/AIDS, EPI and sexually transmitted diseases, the importance of nutrition and sanitation, family planning, pharmacy services, laboratory services are provided for the refugees.

To address the domestic fuel need of the refugee community Gaia Association are providing clean safe cooking stoves and ethanol to the refugees to address the risk associated with collection of fire foods such as gender based violence GBV and Environmental damages. According to Gaia Association expert report the distribution of clean safe cooking stoves and ethanol began in 2006 and reached coverage of both clean safe cooking stove and ethanol for the refugee 100 % exhaustive and reach every house hold in every month. Even though they explained this, the fact is not supported by the refugee house holds.

According to the Focus Group discussion held with the refugee (FGD), it was found that the health center for the refugee lack proper testing and laboratory equipment, and drugs; beside these it lacks female health personal. Due to this, people do not get the appropriate and the intended treatments in the health center. It is also explained about the infrastructural problems and shortages that the refugees are facing, they complained

about poor shelter, inadequate potable water (both in terms of quality and quantity) lack of education after grade 10, insufficient food and non-food item distribution, and reduced protection coverage are among the mentioned problems.

4.1.3 Age of the Sample Household Respondents

The grand mean age of the sample household for refugee and non-refugee is 36.32 years, and specifically the mean age of refugee is 38.95 years and non-refugee is 33.39 years old. Respondents below 65 years (active age group) for both refugee and non-refugee are 93.7 Percent. And specifically refugee and the non-refugee make 97.5 and 90 Percent respectively. This is also true for the region as well as for the Kebribeyah refugee camp. This age group has got high potential work forces for development activities and also implies that the so called potential work forces can also turn into potential destructor and agent for negative environmental impacts if not appropriately utilized and managed.

Table 3: Age of the respondents with their respective kebele

age category	Kebele in which the respondent lives				Total	
	Refugee Kebele		Non-refugee Kebele		N	%
	N	%	N	%		
15-25	6	15.0	3	7.5	9	11.3
26-35	11	27.5	20	50.0	31	38.8
36-45	11	27.5	13	32.5	24	30.0
46-55	10	25.0	0	0.0	10	12.5
56-65	1	2.5	0	0.0	1	1.3
65 and above	1	2.5	4	10.0	5	6.3
Total	40	100.0	40	100.0	80	100

Source: survey, 2009

4.1.4 Sex of the Respondents

According to SNRS 2006, and UNHCR 2008, the sex feature generally observed in the Kebribeyah town for both the refugee and non-refugee household was higher number of female. This is due to less mobility and migration of females than male in the region as well as in the town. However, it shows the reverse is true. Sex of the sample house hold is indicated in the (Table 4). Accordingly, male make 65 percent and the remaining 35 percent are represented by female household. Of these, refugee house holds comprises 38.50 percent and 71.40 percent of male and female respectively. Where as the refugee make 61.50 percent and 28.60 percent of male and female respectively.

Table 4: Sex of house holds

Sex of the respondents	Kebele in which the respondent lives				Total	
	Refugee Kebele		Non-refugee Kebele			
	N	%	N	%	N	%
Male	20	38.50	32	61.50	52	100
Female	20	71.40	8	28.60	28	100
Total	40	50	40	50	80	100

Source: survey, 2009

4.1.5 Marital Status

Variations in marital status have an important bearing on the size and structure of the household or a family. Table 5 presents data on marital status of the sample households. 81 percent of the respondents are found to be married, of these, refugee respondents were 45.3 percent and 54.7 percent were non-refugee. Further analysis of the same data indicate that 88.6 of the house hold respondents were ever married i.e. (married, divorced and widowed) of these, the refugee house hold respondents make 87.2 percent and 90 of the non-refugee house hold respondents were ever married while the remaining 11.4 were unmarried. In Kebribeyah town most of women (95 percent) were married under the age of 20 (SRNS, 2006).

Table 5: Marital status of house holds

Marital status	Kebele in which the respondent lives				Total	
	Refugee Kebele		Non-refugee Kebele			
	N	%	N	%	N	%
Married	29	74.4	35	87.5	64	81
Unmarried	5	12.8	4	10	9	11.4
Divorced	3	7.7	0	0	3	3.8
Widowed	2	5.1	1	2.5	3	3.8
Total	39	49.4	40	50.6	79	100

Source: survey, 2009

4.1.6 Socio-economic Characteristics of the Household

Literacy and educational status, occupation and off farm activities of the respondents are important socio-economic variables for the analysis of the house holds ability to respond to the environmental shock.

4.1.7 Literacy and Educational Status of the Respondents

Table 6: Educational status of sample house holds

Educational status	Kebele in which the respondent lives				Total	
	Refugee		Non- refugee			
	N	%	N	%	N	%
Illiterate	23	57.5	20	50	43	53.8
1-4	6	15	1	2.5	7	8.8
5-8	7	17.5	5	12.5	12	15
9-12	4	10	8	20	12	15
higher institution	0	0	6	15	6	7.5
Total	40	100	40	100	80	100

Source: survey, 2009

Literacy in the region is very low, and again much lower among female than among males (SRNS, 2006). 53.8 percent of the house hold respondents were illiterate i.e. (can not read and write) while the remaining 46.2 were literate i.e. (can read and write). Of these, the refugee share 53.5 percent of the illiteracy and the remaining 46.5 percent were shared by the non-refugee house hold respondents (table 6). Further more, analysis of the

same data shows that in addition to their less participation in junior, senior and tertiary level of education, refugees have high drop rate as they reach to secondary and higher education (tertiary level) than the local community. This is also true for the Kebribeyah town. According to SRNS 2006, the tendency of the enrollment in the area is characterized by dramatic declining pattern going from the 1st to 2nd and 3rd cycle.

4.1.8 Livelihood Activities

Knowing and analyzing the occupation of the house hold shows the households income sources and livelihood activities. The majorities of the sample household respondents were agrarian and involve in more than one (occupation) economic activity for their livelihood (table 7).

4.1.9 Crop Production and Land use

In Kebribeyah area crop production is seasonal and do not have regular pattern from time to time and products are shared by family members. Crop production is among the main economic activity in the study area next to livestock keeping. Households in Kebribeyah produce different kinds of crop such as maize, sorghum, and even if not significant, they also produce wheat. Beside this, chat production is also now a day becoming common in the area. 85.9 percent of the non-refugee community and 51.3 percent of the refugee community participate in crop production from the total population (table 7). According to the response, the local community makes 63 percent of the crop producer where as the refugee community share the remaining 37 percent of the producer in the area. Based on these, crop production constitutes the second economic sector next to rearing of livestock for the local community as a livelihood occupation. But it takes the lion share of occupation for the refugee community.

Table 7: Livelihood activities of sample house holds

livelihood activities	Kebele				Total	
	Refugee		non-refugee			
	N	%	N	%	N	%
crop production	20	51.3	34	85	54	68.4
Rearing livestock	21	53.8	37	92.5	58	73.4

Mixed	13	33.3	33	82.5	46	58.2
Employed	1	2.6	5	12.5	6	7.6
Trade	15	38.5	17	42.5	32	40.5
daily labor	19	48.7	13	32.5	32	40.5
Total	39	49.4	40	50.6	79	288.6[1]

Source: survey, 2009

The pattern of land use and access in the area were different among the refugee and non-refugee community. The majority of Refugees (42.5 percent) have no access to land in any ways. Access to land for refugee in the area was more limited to using land under ARRA and using through sharing the product with the local community 25 percent and 22.5 percent respectively. The refugee constitutes 5.4 percent, where as the non-refugee make 94.6 percent of the total land ownership in the area.

According to SRNS 2006 report, even though, land holding in Kebribeyah compared to other regions of the country are large (It ranges from 6 hectare to 10 hectare), it is only in a few cases where a farmer produce a surplus. Farming, in the area is supplemented with food aid and some non-agricultural activities.

Table 8: Land ownership of house holds respondents

	Kebele in which the respondent lives				**Total**
	Refugee Kebele		**Non-refugee Kebele**		
Ownership	**N**	**%**	**N**	**%**	
own land	2	5	35	87.5	37
rent in	9	22.5	0	0.0	9
Sharing	2	5	2	5	4
no land	17	42.5	3	7.5	20
use under ARRA	10	25	0	0.0	10
Total	40	100	40	100	80

Source: survey, 2009

[1] % of Multiple response will not adds up to be 100 since the respondents may involve more than one livelihood activity and may be counted more than once

4.1.10 Rearing of Livestock

Livelihood in rural Somali Region are dominated by livestock rearing, which are the main assets owned by the majority of the households. Livestock are a major source of food consumption, and are traded both live animals and animal in the form of products to generate cash income for pastoralists, agro-pastoralists, traders and a range of livestock marketing agents. It is the major economic activity in the area. The sample household respondents reported that they rare different kinds of livestock for different kinds of uses, such as to generate income, to produce animal products and also to use as a social capital like gift and wedding wealth.

The major type of livestock reared in the study area includes camel, cattle, goat, sheep, and donkey. According to the survey 73.4 percent of the community (both refugee and non-refugee) rare Livestock in Kebribeyah area. Of these, the local communities make 92.5 percent of the livestock ownership in the research area, where as the refugee make 53.8 percent (table 7).

The economy of Kebribeyah woreda is dominantly based on livestock rearing. The report also depicts that the livestock population of Kebribeyah is about 394,000 heads (152,891 TLU) and generate 65 percent, 30 percent and 5 percent of the income form the sales of the animal, their products and poultry respectively. This accounts for about 60 percent of the total income of the region (SRNS, 2006).

4.1.11 Mixed Farming (crop production and rearing of animal)

Even though livestock rearing and crop production constitute the major activities in the study area, mixed farming (crop production and livestock raring) is also practiced by considerable proportion of the community. According to the survey, this type of livelihood activity is very dominantly practiced by the non-refugee/local community. Based on these, the mixed farming makes the third dominant livelihood activity next to livestock raring and crop cultivation by making 58.2 percent. This implies that, 58.2 percent of both the local community and refugee community who reside in the area participate in mixed farming. Of these, the local community makes 82.5 percent and the refugee community in the area makes 33.3 percent (table 7). According to SRNS 2006 report, 20 percent of the land is covered by agro-pastoralism. The rest 80 percent is

dominated by pastoralisim. This shows that, the kinds of economic activity in the region are highly practiced next to the pastoralism in the region.

4.1.12 Off-farm Activities

Off-farm activities contribute or hinder house hold ability to respond to the environmental shocks. To this end, respondents from both community (refugee and non-refugee) were asked whether they participate in off-farm activities or not. Based on this, about 40 percent of the respondents of the total intervened house hold found that none of their family members involved in off-farm activities (table 9). Relatively, larger proportion of the refugee house hold i.e.56.3 percent were involved in off farm activities, where as the non-refugee houses hold who account 43.8 percent which is mildly less than that of the refugee house hold. This low proportion of involvement in off-farm activity indicates that there is high proportion of dependence on natural resources for a livelihood. Further more, this indicates that effort should be made on the local community so as to involve them in off-farm activity and decrease dependency on the natural resources from the environment.

Table 9: Involvements in off-farm activities of house hold respondents

Off-farm activities	Kebele in which the respondent lives				Total
	Refugee Kebele		Non-refugee Kebele		
	N	%	N	%	
Yes	27	67.5	21	52.5	48
No	13	32.5	19	47.5	32
Total	40	100	40	100	80

Source: survey, 2009

a) Employment

7.6 percent of the sample households in kebribeyah town were employed (table 7). Accordingly, 12.5 and 2.6 percent of the local community and refugee participate in employment respectively. The majority of the local community work for the government institution and also insignificant number of locals works for NGO in kebribeyah. Where

as the refugee afford such kinds of chances only from the non-governmental organizations, which is rare and also insignificant in the area.

b) Trade

Trade constitutes all type of trading and transaction activities such as petty trade, shopping, hotel, tea shop (*mekahi), chat* selling, charcoal and firewood trading and contraband trading between Somali land and the border area in and around kebribeyah Jijiga area. Socio-economic survey of different sources reported that about 35-40 percent of house holds have at least one person engaged in small-scale trade (SRNS, 2006). The survey of the study shows that 40.5 percent of the household respondents in Kebribeyah were involved in trading activities. Of these, 53.1 percent of the traders were non-refugee and the rest 46.9 percent were refugees who involved in trading activities in the area (table 7). This shows that, there was no big difference between the refugee and the non-refugee in the involvement of trading. Given their same language, clan and cultural background Somali refugees from Somaliland, Somalia and Ethiopian-Somalis especially who live in the study area have got the contraband trade in the area easily. These people are also assisted by the topography of the region which is barren and open to move with their contrabands luggage.

c) Daily Labor

Daily labor is the dominant economic activity next to livestock rearing and crop production for the refugee households. According to the survey result, daily labor accounts 40.5 percent of the livelihood activity in the area, and this is similar with trading. The lion share of the daily labor activity in the area were found dominated by the refugee house hold, sharing 48.7 percent of the involvement and the local community accounting 32.5 percent of the activity (table 7).

4.2 Baseline Characteristics

Almost all the key informants who are knowledgeable about the environment and the natural resources prior to the refugee settlement in the area explained about the area (the current refugee camp) and over all the surroundings of Kebribeyah before 1991. They

explained the natural resources in the area, such as the forest resources, the water quality and availability and also the coping and adaptive strategies of both the local community and the refuges in their first 10 years of arrival.

4.2.1 Forest

Through informal survey, Kebribeyah, before the refugee settlement and in their first arrival time (2-5 years) had been covered by forest and had good grazing land. This is also mentioned by ZOA 2006, saying that "in the past the area was covered with shrubs and thorny bushes and acacia trees". The local People and their magnanimous livestock in the area were reliable on the natural resource and the environment. It was habitat for different kinds of animals. According to the key informants, the area which is now covered by refugee shanty house was covered by thorny bushes, forest and grasses.

The forest and bush land used to provide different kinds of uses for the local community in addition to timber and firewood. It was also found that the best side of the local community life in Kebribeyah was strongly tied with the forest. It was the forest which kept their land fertile, the grass available for house construction and fodder for their livestock and made all the water sources abundant and safe for drinking. Perhaps, the most important ecological function of the forest and trees was protecting the land against erosion, from the wearing away of topsoil due to wind and water. The trunks and branches of trees provide protection from the wind, and the trees roots used to help to solidify the soil in times of heavy rain. In addition to these, it is used in decreasing flood, increasing the holding capacity and nutrients of the soil. Trees and forests also used to provide habitat, protection, and food for many animal species including the local people. In addition to these, they played an important role in regulating the local micro-climate and atmosphere. The leaves of trees are used to absorb carbon dioxide in the air and produce oxygen which is necessary for life. But all the trees and forests in the area were degraded with the arrival of refugees. These facts were also supported by Yacob 1996 by saying that: "Refugee and returnee camps near the cities of Jijiga, Teferiber, Darwanaji and Kebribeyah, and at Hartishek are located on good grazing land formerly worked by agro-pastoralists. These camps are jointly run by state authorities and whatever forest resources are left is being further depleted by the need to use them for firewood and to

construct makeshift shelters for refugees and returnees. Grass is being mowed for roofing and wall thatching. The refugees also share in the meager water resources'."

According to the key informants of the local community, the forest of Kebribeyah was used to be habitat for different wild animals. It used to harbor both large and small mammals and reptiles. Some of the large Mammals that have been in the area have undergone a significant decline, due to hunting before the refugee arrival and settlement and habitat destruction. Others were migrated with the deforestation and over population which prevailed after the refugee settlements. Beside these, people used to get different kinds of fruits and seeds which they were used to utilize it for food especially, when food shortage occurs. In addition to these, different Practices of gathering herbs, incenses and medicinal plant for different purposes was widely practiced through out the forest. Ilmi Mogea Mohamud who is 76 years old reported that;

> *I had more than 93 cattle and 243 sheep and goats in 1988. And when my 4 children look after these livestocks they did not take some times any food and ration from home, for them the forest products was much more enough. They had merdef, gaire, hamege,ambshu,hangaine, hamegoo, hoghoge,medied, lekea, temeyruuk, warike, and many others. All this are gone even we can not find their seeds at this time in this area.*
>
> Source; Qualitative Survey Interview 2009

The forest in the area was dense. Before the refugee settlement it was difficult to see the grave and the pond which is now found in the heart land of the refugee camp (see the community map). There was abundant grasses and forest cover which even used to impede vision, due to these, people used to make signs when they travel to and from the water sources which was found in the heart land of the refugee camp.

According to the informants, People in this area had been endowed with different species of wood and had easy access to it for different purposes such as for construction, and for fire wood. The different products of the forest were easily accessible for their daily uses. It was wild in the forest and people used to get it for free in the forest as well as in their farm. Beside these, the local people did not need to travel long distance in search of forage and water for their livestock, firewood and for their house hold consumption. The

surrounding forest, pond and water sources used to provide them the basic necessity with out giving them challenges.

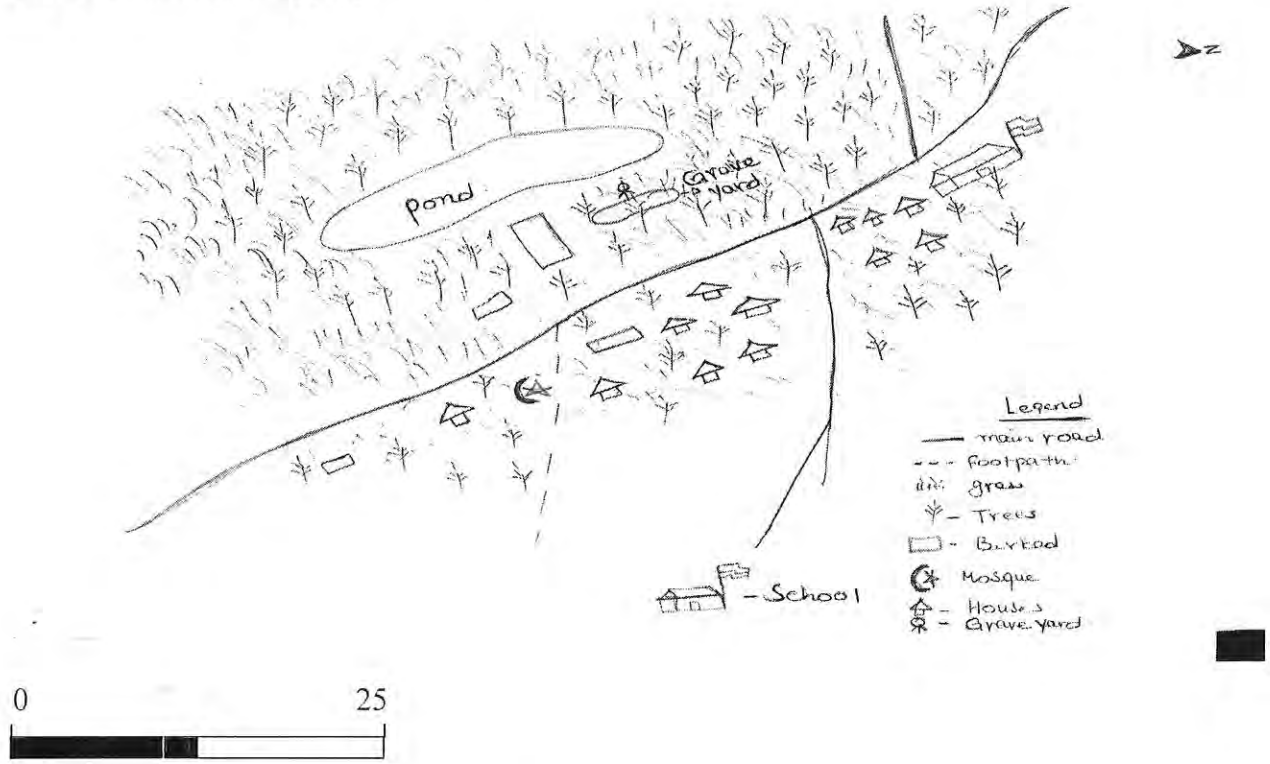
4.2.2 Water

Water resources such as wells, ponds and streams were used freely by all clans. The use of water from "*brekads*" (underground cistern) on which money is invested by individual or groups was exceptional. Few people, identified in the woreda had protected well water. Otherwise the majority of had no access to safe drinking water. People use water from un-protected wells and ponds (Takele et.al, 1994). Out of 52 kebeles of Kebribeyah woreda, including Kebribeyah, the woreda capital, only 7 kebeles have water supply of different kind (shallow well, traditional well, bore hole installed with motorized pump) of which 40% are not functional. The question of adequacy and quality is still there. The remaining kebeles have to travel a long distance to fetch water, particularly during dry season (SNRS, 2006). This is also found to be true in Kebribeyah and its surroundings. Birkeds have become increasingly important as a water source in recent years, particularly, in parts of the region where permanent water is limited. These water cisterns are purely privately owned, and anybody who can afford to construct by their own can construct in their clan territory. The owner of the birked will have full control over the use of the water. In addition to these, the local community of Kebribeyah also had cemented biakeds, lagoons, ponds, and different wells such as shallow well *ella,* and deep wells. These sources had been utilized in different times for different uses. To access these water sources, people used to travel less than 10 minutes if it is so far on average, for both house hold consumption as well as for their livestock watering. The inaccessible water source where the local people used to utilize in time of draught and shortage of water was *Dru'alea,*(a place near *Jerear* valley) a water source area which took 3-4 hour walk from the village in the south-west. In the then time, the water was safe and clean to utilize for both drinking and house hold consumption such as washing, cocking and other similar activities.

According to the informants, it was the forest and the grass that kept the water clean and safe through decreasing the soil erosion by compacting and keeping the soil. The trees and the grasses used to protect the water sources from garbage and unnecessary wastes.

and kept the wells clean and unbreak, because of this the water stayed good in hygiene and sanitation. The availability of the forest and grasses made the soil to hold the water and to be fertile and productive.

Fig: 3 Community Mapping



Sources: Qualitative Survey Interview, 2009

4.2.3. Soil and Production Capacity of the Local People

The soil of kebribeyah was good for production. It only needs a little effort to produce and harvest ample production. But the production capacity of the area decreased and compromised by the excessive because of excessive erosion and soil degradation. The production capacity of the land had been good. The local community in the area had more than sufficient production for their household consumption as well as to keep as a back up for the bad time. According to informal survey, In the host community used to produce more than 11 quintal in one *Qoodi* (which is local measurement unit equivalent to 1/5 hectare) with only disturbing the land once with out using oxen or and tractor before their settlements as well as in the first five year of the refugee settlements in the area. Being able to produce what is more than sufficient for the house hold consumption,

the local people were able to store food in traditional way through digging a hole in the under ground of the earth which they call it *Boholle*[2]. Beside this, the rain fall of the area was good. Kebribeyah and its surroundings had good 3 seasonal rainfalls. ***Gu'*** the first rainy period (April to June), ***Deyr*** during the second rainy season (October to December), But are considered unreliable by farmers since total rainfall is inadequate for rain-fed agriculture. ***Karan***, between August and September – provides sufficient moisture and a growing season that is lengthy enough to allow cultivation of crops.

4.2.4 Coping and Compensation Strategy of the Host Community and Refugees

Households confronted with a livelihood shock that undermines their access to food can react in a number of ways. Protecting consumption requires buying or being given food to maintain food intake levels. Modifying consumption includes reducing or diversifying consumption, or 'reducing consumers' by migrating or sending some household members elsewhere. The frequency of adoption of different coping strategies provides an indication of the sequence in which they are adopted. As a general rule, strategies that are the least costly (both economically and socially) and are most easily reversible are adopted first, as an immediate response to a food shock. Examples include mild rationing of food consumption, or reducing non-essential spending. Strategies that are most damaging to livelihoods or social status, and most difficult to reverse, are adopted last, after all other survival strategies have been exhausted. Examples include: selling farmland, begging, or engaging in illegal activities (Deveorx, 2006).

These activities show how the people cope with the harsh conditions as well as their intimacy and pattern of utilization of the natural resource from the environment. From this the impacts of coping and compensation mechanisms can be elicited clearly.

a) Refugees Coping and Compensation Strategy

Refugees since they arrived to kebribeyah adopted and passed through different kinds of coping and compensation strategies in different phases and in different time. Refugees

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1Traditional underground storing system, constructed in time of good production

facing a food shortage make strategic decision about how to bridge their consumption deficit and secure their livelihood.

In the primary phase of their settlement (emergency phase), they were dependant totally on the natural environment for house construction and firewood need beside the help of the host community for their basic necessities such as food and shelter; they used to sell firewood to compensate their deficit. As one of my key informants from the refugee community reported;

> *when we got her Kebribeyah in 1991 fleeing from Somali, in search of safe heaven from the brutal war and murder, we did not had any thing to eat, to drink and we did not had any place to shelter ourselves, beside the kind and generous receptions of the host , most of the people began to relay on the forest, and the available forest, they began cutting trees and selling to generate income at least to cover for the daily bread beside using the forest for construction and for house hold utilization.*
>
> Source: Qualitative Survey Interview, 2009

The refugees began to use natural resources to compensate their shortage of food and other needs such as soap, and other hygiene staffs through cutting and selling trees and making charcoal. When they began to adapt the area they began to utilize the natural resource which is found in the surrounding area widely and they broaden their production and market frontier from kebribeyah to Jijiga and later to Hargaysa.

Refugees did not had enough support, the aid which was provided was not enough for their house hold consumption, it was not enough to feed themselves as well as their children even if they decrease and change their consumption pattern both in amount and number of meal time. As to the report of a refugee who came to Kebribeyah and got asylum in 1992, "the assistance which was given is and was not sufficient for myself leave alone for the family, hence I used to cut and sell around 40-50 trees per day to get an income for my family and my self".

As different NGOs began to appear and involve in the situation through providing different assistance and aid the mechanism of coping strategies began to be modified.

Refugees began to sell their ration for the local people and traders and instead began to save the money and or buy other kinds of material for their consumption; both in time of insecurity as well as to replace food item which are not familiar with them. This helped the refugee to utilize the aids exhaustively, and to save money for the unsecured time.

Besides these, informants from ARRA reported that, refugees are organized in blood ties and clan and it is in consideration of this tie that the camp is organized and established. These assist them to help each other in time of insecurity. Grouping help the refugee in group mobilization, Such as to cut and sell tees, for making and selling charcoal and also helping each other from any treat and conflict from any side. In addition to these the different groups in the camp cook and eat together. These helped them to decrease ration consumption, energy consumption and also strengthens their social tie.

b) Coping and Compensation Strategies of the Host Community in Kebribeyah

The local community of Kebribeyah like that of the refugees has gone through different phase of coping and compensation strategies.

Before the arrival of the refugee the local people used to produce enough food for their house hold as well as they had enough forage for their livestock. In their prosperous time they used to store food and ration as a back up for the time of food shortage and insecurity. They also used to make *boohole,* a traditional storing system in the underground of the surface. In time of food insecurity and shortage people used to utilize it as a back up. In addition to these, the local community also used to destock their sheep, goat and cattle according to the severity of the insecurity to compensate the house hold ration need.

Their ultimate responses of insecurity had been moving the family to some safe place in the town or some where else, and mobilize the young member of the community with their livestock to a better place, where there is a better pasture and water for their livestock. By so doing they reduce the impacts of insecurity in their house hold as well as in their family.

Beside these, the local people also used to reserve water sources. The inaccessible water source used to be preserved for the dry season as well as for the drought time and they used to utilize it accordingly. But with the population pressure the local environment began to be degraded and the livestock number began to decline. With these, their environment production capacity has began to decrease and because of these they lost food to store for their bad time and began to consume what they produce. As a result they lost a back up. The local community transferred to other kinds of coping strategies. At this time the local people began to compete with the refugee and began to cut trees and sell, make charcoal, and also began to involve in pity trade especially in contraband and illegal smuggling.

4.3 The Environmental Impacts of Refugee Settlement

4.4.1 The Induced Impacts

The environmental impacts of the refugee influx and settlement in kebribeyah up on the livelihood of the community are analyzed by resource type and amount. Any impacts can be positive or negative. But in this part of the study major emphasis is given for the impacts which came with failure of interventions while settling the refugee in kebribeyah camp.

According to some key informants, following the arrival of the exodus refugee in kebribeyah the environmental change aggravated to the worst level. Various literatures reveal that population boom and refugee influx leads to environmental resources destruction and scarcity such as water, firewood, and grazing land (e.g. UNHCR, 1998; Black & Sessay, 1997). Resource demands dramatically increased following the creation of settlements in the area, and lead to accelerated conversion of forest area to agricultural land. Collection of firewood increased, and also extraction and withdrawal of surface and ground waters increased with the increased number of people. The massive influx of refugee and concomitant population concentration in the beginning of 1990's eventually impacted on the kebribeyah's ecology, demography and resources use pattern. A dramatic increase in the demand for water and forest resources, firewood and construction material and extensive grazing denuded the vegetation in and around the refugee camp.

Refugee and returnee camps near the cities of Jijiga, Teferiber, (Derwenaji), and Kebribeyah and Hartishek were found in a good grazing land formerly worked by agro-pastoralist. What ever forest resources left in the area, are being further depleted by the need to use them for fire wood and to construct makeshift shelters for refugee and returnees (Yacob, 1996).

a) Induced Impacts on Forest

Almost all Somali community in general and the local community in particular in Kebribeyah, are largely dependant on the natural environment for their livelihood. These include dependency on the environment for energy, food, shelter construction (fence and house construction), medicine and animal feed. All these sources are basically part of the environmental asset which is found some in the wild others through employing and investing on the environment directly or indirectly. Such dependencies on the environment lead to over all shortage of the natural resources in the area.

Kebribeyah camp and the surrounding suffer from several forms of environmental degradation. The area is leading to desertification and the higher pressure on the environment is compromising food and agricultural productivity of the area. Both formal and informal survey shows that, now a day's people are forced to travel long distance to get wood for fire as well as for house construction. Informants reported that the local people are forced to utilize roots of trees (*guffei)* for fire wood.

Table 10: Utilization of forest resources by sample house holds

	Kebele				Total	
	Refugee		non-refugee			
Forest uses	N	%	N	%	N	%
House construction	37	48.7	39	51.3	76	95
Energy sources	37	48.7	40	51.9	77	96.3
Medicine	14	53.8	12	46.2	26	32.5
Total	40		40		80	223.8

Source: survey 2009

People utilize the forest resources more for domestic energy consumption and house construction. As a result of political instability in Somalia there was large number of influx of refugees in the 1990's that depleted the natural forest cover, both in Kebribeyah and

Awe-barre woredas. Even after the relative peace in the Northern Somalia (the current Somali land) and in the surroundings, the refugee through making negotiation with individual land owners had began to run charcoal production business and exported charcoal to Arab countries. Before making a deal they came with their guns, gradually with their machines to cut trees and finally with dollars to lull the local community (SRNS, 2006). Even though their activity is against the natural resources utilization of their norm, they were/are not willing to give up producing charcoal.

95 percent of the refugee and non-refugee sample house hold were found to be dependant on the forests resources for house construction purpose, of these, the refugee share 48.7 percent of the dependency on the forest for the house construction, where as the local community share 51.3 percent of the total dependency. Where as 96.3 percent of the sample house hold found to depend on the forest for energy sources, of these, the refugee share 48.7 percent and the non-refugee 51.9 percent respectively. And also people in Kebribeyah utilize the forest resources for medicine and incense this found to be 32.5 percent (Table 10).

The refugee influx and prolonged stay in the area have negative impacts on the environment. Whether the refugees are restricted or not, or else they are provided an aid, their ultimate needs remained unmeet, to satisfy this and other needs they are exerting further pressure on the local resources. This pressure is impacting the environment and resources of Kebribeyah area. This fact is also supported by Jacobsen, 1997 explaining, "When camps are situated in semi-arid or otherwise ecologically fragile regions (as they often are) this concentrated and localized increase in demand can lead to rapid degradation." The situation is further aggravated when refugees have herd animal". Like conflict, drought, desertification and environmental degradation have a debilitating effect on the local communities.

In the past, the area was covered with shrubs and thorny bushes and acacia trees. These are already gone. The refugee and the host communities have to travel long distances (5-10kms) to collect firewood and construction poles and other materials. Deforestation has induced in the area a shortage of fuel, fertile soil (by water and wind), reduction of productivity of farms and grazing land and disappearance of wild life (ZOA, 2006). There

is also an extensive deforestation by the refugees in the area related with the immediate need to construct shelter and satisfy domestic energy demands.

i) Deforestation Related With House Construction

Building materials including poles and grass thatch, rafters etc are harvested indiscriminately from natural vegetation by the refugees and the local community in the area. It is well known fact that refugees do not get shelter as aids, rather they entirely depend on the surrounding natural vegetation for building materials to construct their temporary shelters. These temporary shelter materials are perishable within specific period of time due to the harsh weather conditions and vulnerability to highly destructive ants common in the area. Harvesting of fencing materials activity is also practiced in Kebribeyah besides harvesting for house construction in refugee settlement area from the local forest. These have immense environmental impacts in particular tree species.

Pic 1: Refugee Houses in Kebribeyah Refugee Camp (2009)

In Kebribeyah almost all the refugee camps are fenced with *commophora* species and acacia tree locally known as *sogsog*. A total of not less than 12ha is so far fenced with this particular type of tree species which is double and some times triple layered. The fence does not last long, like the houses it is perishable and mostly renewed yearly. Beside these, harvesting woods for carving materials are extracted from the natural environment

surrounding Kebribeyah. Wood carvers are selective in the area. They utilize by targeting certain tree species to produce certain products, the product include walking sticks (*bokerede*), tablets (*lohe quran*) Koran tablets, domestic vessels, wood craft and many other. These activities are posing a serious threat to particular trees.

ii) Deforestation related with Domestic Energy Utilization

According to the survey, the sample households heavily relay on resources from the environment for domestic energy consumption. The demand for firewood has increased dramatically with the increasing number of the people who sheltered in Kebribeyah. Firewood is the primary source of energy for cooking and similar activities. In Kebribeyah 97.5 percent of the sample household respondents found to relay on forest resources for firewood, of these the refugee account 95 percent and 100 percent of the local community. And 56.3 percent of the household utilize charcoal as a fuel, and the remaining sources of energy are Animal dung, wet leaves and ethanol which account 20, 41.3, 55 percent respectively (Table 11).

Table 11: Sources energy for the sample house holds

	Kebele				Total	
	Refugee		non-refugee			
Energy sources	N	%	N	%	N	%
Firewood	38	95	40	100	78	97.5
Charcoal	30	66.7	15	33.3	45	56.3
Animal dung	10	62.5	6	37.5	16	20
Wet leaves	15	45.5	18	54.5	33	41.3
Ethanol	39	88.6	5	11.4	44	55
Total	40	50	40	50	80	269.9

Source: survey 2009

Ethanol is a bio-fuel produced in Fincha Sugar Factory and it is delivered by GAIA Association to be used as a source of energy for the refugee house holds in Kebribeyah refugee camp. And it was thought to halt the refugee community from relaying on firewood for their domestic energy and there by decrease impacts associated with it. Such as gender based violence (GBV), deforestation and air pollution related health problems. But delivering this did not halt the refugee community to relay on the environment and it did not achieve the planned target. In this case, out of 40 sample house hold almost all (i.e.

39 of them, accounting 98.6 percent) get the ethanol aid from GAIA association, with safe and clean stoves but at the same time they do not abstain to relay and utilize firewood and charcoal as a sources of energy. In other way, a number of factors affect the pattern of domestic energy utilization[3], and its achievements.

Pic 2; Clean Safe Stove distributed in Kebribeyah (2009)

iii) Deforestation related with Charcoal Production and Selling

74 percent of households of both refugee and non-refugee in the Kebribeyah are found to be participant in charcoal production and selling activity, of these, the refugee and the non- refugee household share 75 and 25 percent of the activity respectively (table 12). Even though the (Table) shows that insignificant people participate in the selling of charcoal in Kebribeyah, the impact they impose was found to be magnanimous. In the FGD, it was reported that the refugee changed the area completely to barren land. Beside these, the (Table) show that the majority of this activity is occupied by the refugee households than the host community.

Table 12: - Participation of house holds in charcoal production

Variables	Kebele				P-Value	Chi-square (X^2)
	R*	%	NR*	%		
HH Charcoal production and Selling					0.133	2.254
Yes	15	41.7	8	66.7		
No	21	58.3	4	33.3		
Total	36	100	12	100		

Source: Survey, 2009

[3] Tradition, kinds of food material to be cooked, knowledge, house condition etc

Charcoal production is relatively a recent activity in Kebribeyah district. Both the local community and refugee utilize charcoal for domestic energy resources and as a traded good. According to formal and informal survey, before 1991 charcoal production was based on dead trees rather than live trees and it was only produced in the houses. This was changed with the refugee influx, increased demands for fuel wood and by successive population increase in the area.

The refugee introduced new technologies for charcoal production and started cutting large amounts of live trees for selling. Following their repatriation to Somaliland and successive camp closures in the late 1990s and 2000s, the refugee began to lay a network with the local community in Kebribeyah and Harshin to expand the charcoal production and market frontier. Following this, charcoal production has become a source of revenue for poorer households who had lost their livestock assets by the draught and other similar catastrophes. They compensate their food scarcity in time of food insecurity and also as sources of daily bread in the normal time.

Acacia bussei trees (*galol*) are found to be the major tree to be used for the production of charcoal. *Galol* are covered with iron sheets and burned with minimum oxygen, a process known in Somali as *moofo* (roasting, baking). This is the kind of technology introduced by the refugee in the area. The technology does not require the firewood to be dry or dead.

The dependency on forest resources is still high in Kebribeyah. It accounts 27.3 percent of the sample house hold in the area found to compensate their deficiency through selling charcoal and firewood. Of these, the refugee household takes the highest share than the host community. These show that how the environmental resources are starched and how it is being utilized in time of food insecurity and how the refugee is contributing for destruction and deterioration of the environment beside the normal time (table 13).

Charcoaling has been predominantly financed by urban Somaliland businessmen who provide the capital, tools and trucks to cut down trees and process the charcoal and transport it and sell it to Somaliland and Jijiga areas[4]. The local people reported that, this

[4] Based on key informants and focus group discussion with the local community and refugees

is not their matter of preference to be involved in such kinds of activities but instead it is found as a "last resort" of survival option they adopted. They claim that poverty and destitution are the reasons which drive them to such activities.

Charcoal burning is often criticized as causing environmental damage, and some attempts have been made by the regional government to regulate it, but these regulations are weakly enforced in the area. Local people themselves recognize the problems associated with charcoal production and environment distraction, but argue that those who burn charcoal are forced into this by poverty and have no other option.

Pic 3: Charcoal Production in Kebribeyah (2009)

As to informal survey, recently informal commercial charcoal associations have been formed that are exporting large quantities of charcoal to Somaliland. This commercialization of informal livelihood activity is increasing time after time. And also becoming incentives to over-exploit the natural resource and beside these according to some people it is even undermining rules and regulation of resources utilization of the society and also their own culture (Somali culture) of respecting the elders and clan leaders' advice and power in regulation of the natural environment.

Table 13: Compensation mechanisms of sample house holds

compensation mechanism	Kebele				Total	
	Refugee		non-refugee			
	N	%	N	%	N	%
Aid	12	50	13	50	26	59.1
daily labor	9	47.4	10	52.6	19	43.2
Remittance	1	20	4	80	5	11.4
Credit	2	40	3	60	5	11.4
Livestock selling	4	19	17	81	21	47.7
firewood and charcoal selling	7	58.3	5	41.7	12	27.3
Petty trade	11	55	9	45	20	45.5
help of relatives	1	12.5	7	87.5	8	18.2
Salary	0	0	11	100	11	25
Total	18	40.9	26	59.1	44	288.8

Source: survey 2009

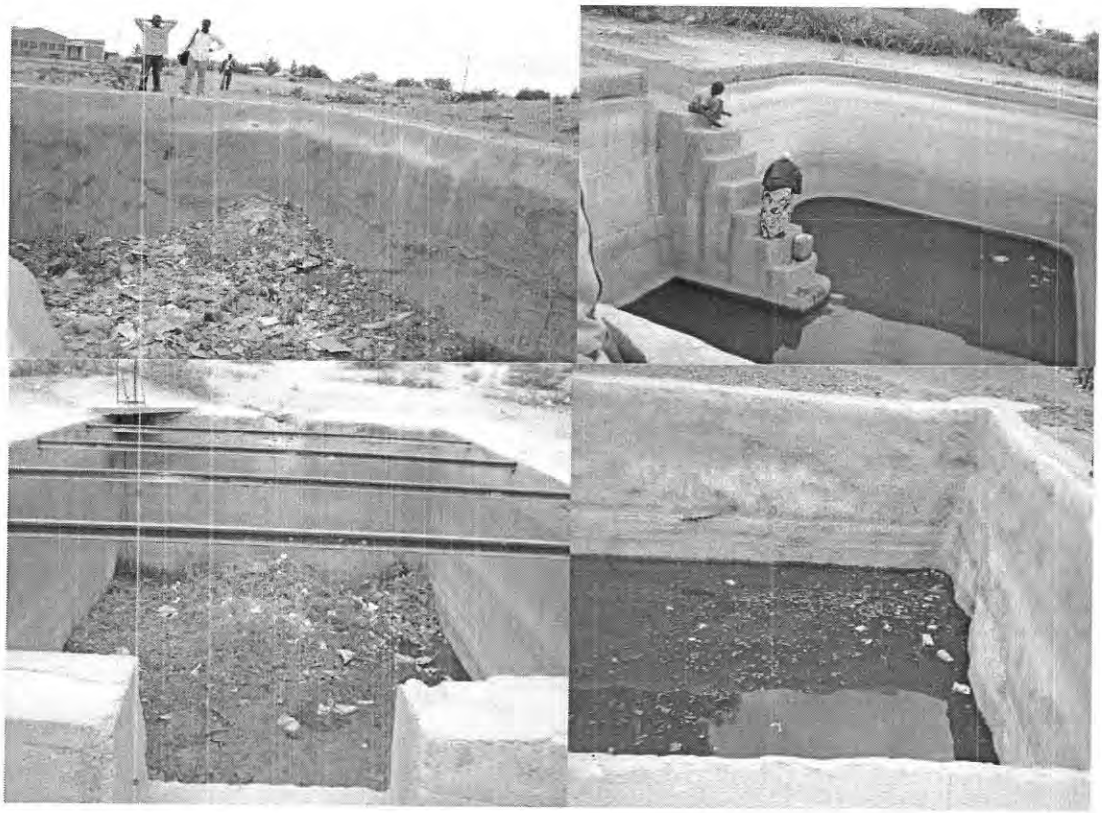
b) **Impact Induced on the Water Resources**

There were different option of water sources which were clean and safe for Kebribeyah and the surrounding community. They had birkeds, ponds, and different wells. These sources had been utilized in different times for different uses. To access this water sources, people used to travel less than 20 minutes if it was too far, for both house hold consumption as well as for their livestock. The inaccessible water source in the then time where the local people used to utilize the source in time of draught and shortage of water was *Dru'alea*,(a place near *Jerear* valley) a water source area which took 3-4 hour walk from the village in the south-west. But now this is not true, all these water sources were observed depleted and destroyed.

According to the informal survey, water is a very scarce resource in Kebribeyah. Due to the population pressure in the area, the water availability was changed and the land become dry, the wells were depleted and died. They were utilized extremely beyond their recharging ability and they were depleted and became garbage throwing areas. The ponds and the lagoons in the area were changed to refugee settlement area and became a play

grounds. Some of the *birkade* which left in the area are now found in the area and are they not safe like they were before. Their quality declined due to excessive erosion which was caused by excessive deforestation and over grazing, inappropriate defecation (shortage of latrine), and others are changed to latrine and garbage throwing areas.

Now a day, ground water supply is playing a vital role in supplying water for domestic as well as for livestock needs. It becomes more important during draught time, when the other sources in the area exhaust. This and high pressure in the dry time, and high population number made to be utilized beyond its recharging and replacing time. Informants from ARRA also hold the same truth about the rapid population growth, urbanization and increased demand for water in the area.



Pic 4: Water sources in Kebribeyah (2009)

One of the importance's of water is its usage for domestic purpose including drinking, preparing food, promoting personal hygiene and cleaning the environment. However, no one in the study area had access to sufficient quantity and quality of water required for daily consumption. According to FGD held with the local community, inhabitants in Kebribeyah have to travel long distances (4-5 hour in one way walk) to fetch water

especially during the dry season. Further analysis of the same data, depicts that accessibility of water sources is much better for the refugee than for the local community in Kebribeyah.

Table 14: Distance to water sources by the sample house holds

Distance in One Way Walking	Refugee		non-refugee		TOTAL	
	N	%	N	%	N	%
Less than 500 meter	16	40	6	15	22	27.5
501 meter-1000 meter (1 km)	17	42.5	11	27.5	28	35
1001meter-1500 meter	6	15	13	32.5	19	23.8
1501 meter-2000 meter	1	2.5	2	5	3	3.8
More than 2 km	0	0	8	20	8	80
Total	40	100	40	100	80	100

Source: survey 2009

There is also change in quality of water as well as quantity of water consumed. A household in a dry season consumes 1 1/2 *jerican*[5] and 4 *jerican* in wet season. The amount of water an individual consumes per day in this case is far more less than to be compared to the standard of water quantity an individual consumption per day set by UNHCR. Under UNHCR's emergency guidelines, a person needs at least seven liters a day to survive and 20 liters a day to ensure their well-being and good health. Currently, that minimum standard of 20 liters is not being met in the camps and also in the host community as to key informant from UNHCR.

According to informal survey report, the quality of water is also a major concern by the host as well as refugee community in the area. There is high surface water pollution in Kebribeyah. This concern reaches high in dry season when people lack an option to utilize safe water sources rather than the polluted *birkades*. SRNS 2006 report also holds the same truth. It is reported that the *birkades* are not protected from any garbage and waste and it is exposed to pollution beginning from the inlet of water to the *birkades* to the utilization of the water. This makes the water not to be safe.

[5] 20 liter plastic container

Currently, people in Kebribeyah (both the local community and the refugees) are using under ground piped water from *Kaho* (a water sources area around Jerear valley). This water is delivered both for the local community and the refugee with out any cost (key informant from ARRA). The quality of the water according to key informant from ARRA and both the local community and refugee is told better, but the problem of quality comes with the water supply consistency. The water sources from *Kaho* is not reliable and there is shortage of water as well as failure of delivering water on regular pattern in addition to fluctuation of amount in a season (good deliver in rainy season and some times non in dry season). When this kind of problem occurs people who have money buy water from Jijiga, and those who don't have money are persuaded to drink from the polluted *beirked*, beside these they will be persuaded to scramble for water from the refugee camp until any help from NGO or GOs arrives.

Table 15: Impacts induced on water sources

Induced change in water after refugee settlement	KEBELE				Total	
	Refugee		Non-refugee			
	N	%	Non-refugee	%	N	%
change in water sources	39	52.7	35	47.3	74	100
shortage in water supply	38	51.4	34	45.9	72	97.3
change in distance of water sources	39	52.7	28	37.8	67	90.5
Total	39	52.7	35	47.3	74	287.8

Source: survey 2009

All the inhabitants (100 percent) of the sample household respondents (refugee and non-refugee house holds) reported that they changed their water sources in Kebribeyah. This was due to water sources deterioration and sources depletion, access to clean and piped water led them to neglect their former water sources (table 15). Further more in the survey 97.3 percent of the sample house hold replied that they are victims of water supply shortage and change in water quantity. Beside these, change in distance of water was also reported in the area.

c) Soil Degradation and Production Capacity of the Local Community

Measuring the impacts of refugee settlement on the soil directly is difficult due to the nature of the subject. Hence, the impacts on soil are measured indirectly through analyzing trends of crop production in the area with in a specific period of time.

Any Production is affected directly and indirectly by soil degradation, fertility and rainfall. Hence, the degradation of the soil and rainfall migration is among the observed impacts in the area. In Kebribeyah almost all of the top soil is washed away by wind and water erosion. However, the communities around the study area have not given up of the land. One of the informants said the following. "*We still depend on our land for our survival; we did not give up struggling with the land even though the fertility of the land declined as well as the production also gone with it. We believe that we are living by the mercy of Allah*".

According to the survey, the soil has been good and used to serve the local community for a long period of time, but with the excessive deforestation, overgrazing and compaction in the area exposed the soil to excessive erosion by wind and water. The refugee influx and the population boom which followed the refugee have played their own role for the deforestation, compaction and over grazing in the area. In turn, these lead for the decline of agricultural production.

The survey for trends of production of the last 10 years shows that 80.7 percent of the sample households from the refugee as well as non-refugee replied that they observed a declining trend of production in the area for the last 10 years and only 5.3 percent from the total respondents replied increasing trends of crop production (table 16).

Table 16: Trends in Crop Production for the Last 10 years

crop production trend	Frequency	Valid Percent
Increasing	3	5.3
Decreasing	46	80.7
No change	8	14.0
Don't know	2	3.5
Total	57	100.0

Total	57	100.0

Source: survey 2009

Two main reasons for the decline of their production were identified. These were decline in rain fall which constitute 93.5 percent, and the other was decline in soil degradation which account 80.4 percent. The rest were pests and weeds 47.8 percent, low access to inputs 26.1 percent, and market problem 23.9 percent were also mentioned as cause for their decline of production, but they do not make an outlining effect like that of rain fall decline and soil fertility (table 17). These show how the soil of the area is impacted and washed away by water and wind erosion. For this matter, the local community and the agricultural expert blame the unsustainable deforestation in the area after the arrival of refugee.

Table 17: Cause for failure of crop production

Reason for crop production failure	Count	% responses	% of cases
Soil degradation	37	29.6	80.4
Low access to inputs	12	9.6	26.1
Market problem	11	8.8	23.9
Pests and weeds	22	17.6	47.8
Rain fall decline	43	34.4	93.5
Total	125	100	271.7

Source: survey 2009

Further more, in Kebribeyah the expansion of *(Keliginolea)* Parthenium, a weedy plant species commonly known as congress grass, is rapidly encroaching into both rangeland and crop farms and reduced the range land and crop lands. Beside reducing the size of the range, this rapid expansion has had a negative effect on the composition and consumption of milk (from goat, cow and camels), causing a bitter taste in the milk produced. In some instances, pastoralists have abandoned consuming milk produced by animals fed on congress grass. The appearance and the expansion of Parthenium are strongly related with refugee arrival. The host explains that Parthenium come to this area with the ration and the aid for the refugee.

4.4 Conflicts in relation to scarce natural resources.

This part of the research identifies conflict which arises due to scarcity and competition over scarce natural resources in the study area. The study depicts how conflict over environmental resources arises, and develops and the core issues and causes which brought conflict in Kebribeyah.

Conflict between communities occur and triggers by multiple ecological, economic, socio-cultural and political factors rather than single cause, but in this part, emphasis is given only for conflicts that arise between refugee and local community in relation to scarce environmental resources, further to this, conflict between inter clan and intra clan occurs. Even if it occurs and persist, as a matter of concern it will not be discussed.

4.5.1 Conflict and Competition over Scarce Natural Resources

Both formal and informal survey result shows that conflict and competition found to occur in the area between refugee and non-refugee community in relation to scarce natural resources. Based on this, 76.3 percent of the household respondents replied that there is conflict over scarce natural resources, where as the rest 23.7 percent replied as there is no conflict related to natural resource competition (Table 18). From the Chi-square test it was found that, the level of conflict between refugee and non-refugee in relation to natural resource found to be insignificant ($x^2 = 1.726$; $P > 0.05$) (Table 18). Even though it shows insignificance, it was reported that when it happen it brings more distractions and damages between the two communities. Some times it reaches to lose of human life and burning of live and non live property.

Table 18: Existence of Conflict over Scarce Natural Resources Competition

Variables	Kebele				P-Value	Chi-square (X^2)
	R*	%	NR*	%		
Conflict Due to Shortage of Resources					0.189	1.726
Yes	28	70.0	33	82.5		
No	12	30.0	7	17.5		
Total	40	100	40	100		

* R= Refugee; NR= Non-Refugee

Sources: survey

4.5.1.1 Causes of Conflicts

Several studies have suggested that internal as well as international migration can lead to tensions in receiving areas. Increased migration rates can further fuel social tensions in the host regions, such as conflict and human insecurity (Gleditsch, 2007).

Rapid environmental change, unequal distribution of resources, and changing consumption patterns of a community, increased demand on limited resources and exacerbate natural resource scarcity. These lead to fierce competition between the refugee as well as non-refugee community. The decreasing of the availability of physical, environmental and land resources such as clean water, good agricultural land for arable and animal husbandry could create a condition of "simple scarcity" and "deprivation" in an area, (Homer-Dixon, 1994) that could provoke violent conflicts of high magnitude.

Natural resources often lie at the heart of conflict, wars and civil strife. The People do not hesitate to use forces in pursuit of their own interests. Recent studies show that tension, competition and conflict around natural resources are prevalent in Kebribeyah(SNRS, 2006 & ZOA, 2008), and it is true that with more people competing for fewer resources fuels conflict and also it is true that when different people perceive a given resources differently in an area. This is also supported by M.B.K Darkoh and J.E. Mabaiwa 2001, "Conflict over resources arises when several interest groups see or use resources differently in the same natural system or geographic location." This is also supported to be true in Kebribeyah by ZOA, 2008.

The principle of a resource based conflict (RBC) is simple: when the amount of resources available is limited, the refugee and host community fight over their appropriation. The main reason for these conflicts being widespread and various, in this part of the area, it is most caused because of the following factors:

a) Refugee Influx and Long-stay in Kebribeyah

The refugee influx in Kebribeyah did not get an end with in 18 years. The instability and security problem in Somalia is getting worse time after time. This is negatively impacting

the Kebribeyah environment, society as well as economy indirectly. People are fleeing from Somalia to Ethiopia continuously in search of safe heaven beginning from the 1988 conflict and the fall of Seid Bare regime. These continuous inflows of people are exerting maximum pressure on the local environment. Kebribeyah refugee camp, being the only refugee camp opened and is still serving with out any gap like the other 8 refugee camps to host the refugee influx beginning from the early 1990's. This made the pressure fierce and led the degradation of natural resource bad to worse in the area. Besides hosting the refugee influx, Kebribeyah is experiencing population pull from other parts of the region, such as from the highland of Harerghe and other parts of Ethiopia. These people flee to this area to get better opportunity of work and to trade in the border area between Somali land and Ethiopia and also with in the market created by the refugee in Kebribeyah and its surroundings (SNRS, 2006).

The addition of the refugee and other people from the other areas lead the situation further worst by putting further demand on the environment for firewood, shelter, water and other natural resources. This and the prolonged stay of the refugee in Kebribeyah (from 1991 up to now) aggravated the natural resources degradation and made the competition tense over scarce resources in the area, as a result conflict was invited to show up as a response of the uncontrolled and unhealthy competition for resources in the area.

b) Population Increase

"There has been some debate as to why refugees cause environmental problems. Chief amongst this is the mere fact of number and their sudden movement" (Kibreab, 1997). Population increase, especially when it occurs so rapidly, it places additional stresses on the local resources.

Refugees in Kebribeyah are not provided with construction and shelter materials, these resources by default are collected and obtained form the local environment. This is supported by Martin, 2005 "It is rare for refugees to be provided with construction materials or fuel for cooking, and these resources will often by necessity be collected from local environments."

The continuous movement and the presence of this large proportion of populations of refugee community in Kebribeyah area for 18 years have invariably impacted the fragile ecology. Because of these, it is reported that competition for scarce resources in the area increased with the population increase. This situation explained by the informants of the local community as follows:

> *When you say their number declined and they left the area, automatically you see other thousands of refugees fleeing Somalia to Kebribeyah. Beside their switching character, now the population number of the refugee community out numbers that of ours by two fold in Kebribeyah town. The increased number of the population in the area made further population pool from other part of the country. All the demands of the new comers as well as the host community are entertained by the local environment. These made our resource to be scarce our people to be destitute and in turn a cause for competition as well as conflict in the area.*
> Source: Qualitative Survey Interview, 2009

The impacts of this high number of refugees have caused multiple effects on the environment. It lead to irreversible land degradation and loss of biodiversity and also made the host society to inflicted economic impacts. The effect also is rapidly spreading to other adjacent regions. Because of this and lack of appropriate management and proper intervention over the natural resources utilization, conflict raises between the host community and the refugee and in turn it is affecting the host community livelihood and to the worst level it is evicting them to other areas form their original places.

c) Natural resources degradation

The destructions of natural resources in Kebribeyah are evident based on both formal and informal survey made in 2009. Natural resources in the area are impacted by the refugee and the host community for domestic uses as well as for commercial purposes. Almost all Somali community (refugee and non-refugee), are heavily dependant on trees for house construction as well as for fencing the area. Firewood are harvested for domestic uses as well as for commercial purposes by both refugee and the local community, charcoal are made and even exported to Arab countries beside domestic countries and domestic uses (SRNS 2006). In addition to this grazing land and water are extremely stretched and used both by the local's as well as refugee livestock's. This made the competition over the limited natural resources fierce. Because of these, the natural resources of the area are

now being utilized beyond its carrying capacity and the natural regeneration ability. Especially, the renewable natural resources are eroded beyond its limit. Most of the water sources which the local community used to utilize in the area are not functioning. Some of the birkades are changed to garbage throwing areas, the pond which the livestock were watered has become playing ground and other resources which were known in the area are not available. These include some of the prominent livestock fodders such as *Maded (Cordia monoica), Himir (Grewia indigofera), Dareemo (Plumulosis sp), Majeen (Killeri sp), Badhooli (Tenellus sp),and Badhiweyne (Rupestaris sp).*This compromised the utilization of the resources as well as made the competition tight, beside this it become potential cause for conflict in the area.

4.4.1.2 Forms of Conflict in Kebribeyah Area

Conflict over natural resources, such as land, water, and forests, occurs everywhere today, as it has happened for centuries. Whether it is a local dispute between neighboring farmers and herders or an international debate over shared resources, people compete for the natural resources to ensure or sustain or enhance their quality of life.

Disputes over natural resources arise for a number of reasons in Kebribeyah. For instance, actions of one group may intentionally or unintentionally impinge upon the ecological well-being of others. People in Kebribeyah are not different from the others, as they are part of this world they are on the move to sustain their life. To do this, they go through different scenarios which trigger conflict with their computing counter parts.

a) Conflict for grazing land and pasture: According to both formal and informal survey, most frequent conflicts are linked to competition over access to common grazing land and pasture. 29 percent of the conflicts in the area are linked with grazing land (table 19). This has been caused by the degradation and reduced carrying capacity of the rangelands combined with the continued overgrazing by large livestock herds of the refugee and the host community. This resulted in competition over scarce resources between refugee and the host community especially, during drought time and dry season *Jilaal* (January-march) when their access to food for their livestock are generally compromised. The limitations of the rangeland resources and the subsequent competition

over natural resources leads to violent conflicts between refugees and the host community in the area.

Table 19: Cause of conflicts in relation to natural resources

COUSES OF CONFLICT	Kebele				TOTOAL	
	Refugee		non-refugee			
	N	%	N	%	N	%
scramble for water	12	46.2	14	53.8	26	100
Firewood shortage	10	34.5	19	65.5	29	100
grazing land and pasture	13	44.5	16	55.2	29	100

Sources: Survey, 2009

b) Conflict for Water: Though water is a renewable resource, population growth and growing per capita consumption puts pressure on fresh water supplies. Fresh water scarcity in the area is fostering conflict between the two communities as well as among each community.

According to key informant from ARRA, Conflict over water is declining with time after the installation of electric to the *kaho, (*a water sources near *Jerer* valley) by UNHCR and Ethiopian Electric Power Corporation in the last 3 years. Even though the trend is declining as it was told, it is still playing a major role in triggering conflict in the area. Especially, in the dry season (*Jilaal*) when the water sources depleted and supply from *Kaho* decline and the counter part i.e. refugees supplied with water by the UNHCR and ARRA. In the survey, 26 percent of the sample house hold respondents linked the conflict in the area between the refugee and the host community with water shortage and scramble for water in the area (table 19).

C) Conflict over Firewood: Conflicts over firewood for domestic uses as well as for selling (through making charcoal and as it is) in the study area is prevalent. According to the formal survey 2009 result both refugees and host community answered that there is conflict over firewood in the area. In this case, 29 percent of the respondents linked the conflict with scramble for firewood (table 19). This fact is also supported by ZOA refugee care 2008 on its Conflict Exploring research: A different kind of problem is based on the use of wood, both for making charcoal and building houses. The plains around Jijiga have been rid of nearly all the trees, with all the detrimental effects of deforestation as a result. The lack of firewood both by refugee and the host community bring conflict between both

refugee and the local community and also among each group. This problem is reported to have much implication to the host community than the refugee's. They link the deterioration of the environment with the high destruction of the environment for firewood.

Furthermore, there is a high risk of rape for women venturing from the camp to collect firewood. The problems with collecting wood are also an example of the general conflicts occurring between refugees and the local community based on the lack of private land of the former.

D) Other Forms of Conflicts in Kebribeyah: Beside the fore mentioned causes of conflicts, conflict also occurs between refugee and the host community because of different known and unknown reasons in Kebribeyah. According to the survey with both refugee and the host community conflict was also found to occur between refugee and host community through the following reasons.

I) Support to Refugees: The distribution of various types of goods does not only lead to conflict amongst the refugee themselves, but also it leads conflict with the host community. In a focus group discussion with the local community, the following complaint was forwarded: *"We are all Somali and all at the same standard of living condition, why do they get food help and training, whereas we get nothing."*

Locals and refugees are hardly distinguishable and only live on different sides of the road, hence, the distribution of goods, trainings and counselling to refugees alone results in rising tensions and conflicts between the refugee and the local community.

II) Enclosure: In Kebribeyah, because of different reasons land enclosure is practiced. First and for most, Kebribeyah agro-pastoralists enclose land for safeguarding their land from encroachment by other groups. The purpose clearly was to claim and defend territory vis-à-vis neighboring clan lineages. Second and partly related to the first, land was enclosed to preserve grass for the dry season either as fodder reserved for one's own animals or as hay for the transport of animals and sell. Here, land enclosures primarily served as resource reservoirs for the dry season. Thirdly, farm plots were demarcated for rain fed agriculture. Beside these, most informants explained the idea that population growth and the above cited influx of refugees contributed to the spread of land enclosures. According to the survey, this has become now a day a conflict triggering practices as the

refugee or any other member of the community try to cross over with their herds the enclosure or try to utilize resources in other's enclosure, triggers conflict between individuals which later develop to be inter-ethnic or intra-ethnic conflict. The same is also true with the refugees.

III) Competition for Occupation: Even though, the impacts of the availability and abundance of cheap labor vary among the hosts it brings positive effects for some, at least in the short term, these are indicated when the land is abundant and the poorer host can employ refugee labor to help them produce more. But on the negative side, not all the poorer hosts are able to employ refugee labor (Chambers, 1986). In Kebribeyah, due to continuous draught and failure of production host community are changed to destitute and the later appeared to be true for the local community. This made them to compete with the refugee in the daily labor occupation. Beside this, the wage paid for daily labor has declined significantly and lead the situation from bad to worse.

Conflict based on competition for occupation is expanding in the area. As the formal survey the two houses hold occupation depict, refugee house holds highly dominate the daily labor activities in kebribeyah (table 7). These situations are found to cause tension and conflict between refugee house hold and the host community.

4.5 Natural Resources Management Activities

4.5.1 Natural Resource Management Activities in Kebribeyah

The natural resources management interventions in Kebribeyah include environmental education and trainings, promotion and distribution of clean safe stoves and ethanol for the refugee house holds by ZOA Refugee Care and Gaia Association respectively. Beside these, there was a project of tree planting, afforestation, and nursery development which were operating by Hope for the Horn until the project has banned and closed. These activities were valuable even though, they were not efficient and exhaustive. They are important not only due to their benefits to the local environment, but also opened ways to improve relationship between the host community and the refugee through co-operation and rehabilitation of the Kebribeyah environment. Comparing these, with the environmental guide line of UNHCR, which targets a sustainable participatory

environmental intervention for refugee settlement areas, it has been found that the activities are in their creeping stages and lack basic principles of the participatory NRM activities.

4.5.2 Households Participation in Natural Resource Management (NRM) activities

About 40.9 percent of the sample house holds in Kebribeyah reported to be involved in the NRM activity which takes place in Kebribeyah town. Of these, the majority share of the participation goes to the refugee community making 25 percent. Where as the host community share the remaining 15.9 percent of the participation (table 20).

Table 20: Participation of Sample Households in Natural Resources Management

Variables	Kebele				P-Value	Chi-square (X^2)
	R*	%	NR*	%		
Participations in NRM					0.632	0.229
Yes	11	44.0	7	36.8		
No	14	56.0	12	63.2		
Total	25	100	19	100		

*R= Refugee; NR= Non-Refugee

Source: survey 2009

This shows that there is low participation of both communities in NRM activities; beside these, the survey shows that the participation of host community is much lower than that of the refugee community. This implies that, the activity lacks indigenous knowledge and the leadership of managing the environment and its resources is taken away from the host community. In addition to this, from the chi-square test ($X^2 = 0.229$; $P > 0.05$) the level of participation in NRM activity in the area found to be insignificant (Table 20).

Table 21: Types of natural resource management activities

Activates	Refugee		non-refugee		Total	
	N	%	N	%	N	%
soil and water conservation	14	32.6	11	25.6	25	58.1
Afforrestation	23	53.5	15	34.9	38	88.4
diversion of channels	7	16.3	3	7	10	23.4
Environmental Education	22	51.2	13	30.2	35	81.4
Total	25	58.1	18	41.9	43	251.3

Source: survey 2009

According to the formal and informal survey, the NRM activities taking place in the Kebribeyah are soil and water conservation, afforestation, diversion of channels and environmental education, but when we see the level of participation and involvement of stake holders in these activities, we observe that it is not significant (table, 20 & 21). The host as well as refugee households reported that they don't consider these activities as NRM activities. It was found that the activities lack consistency, responsibility and sense of ownership from the implementing organizations. This was also supported by key informant from the local community as explained follow.

> *There are different organization which say we deliver NRM activities in Kebribeyah, but in the actual ground you can not see them doing what they say. They come with their photographs and t-shirts and run hear and there for a while to plant trees and take photos then you can not see them for unlimited time. They don't even know where to plant the trees and the people who take care of the planted trees in the area leave.*
>
> Sources: Qualitative Survey Interview 2009

Beside these, other informant also reported that he only see their shine cars and their logos, but not their activities in the locality.

According to UNHCR report, there are different activities theat run by different non-governmental organizations and governmental organizations in Kebribeyah. Among these, NRM activities are presented as a part of the activities (table 22).

Table 22: Participation and activities of different NGOs and GOs in Kebribeyah

Agency	Main activities
World Food Program (WFP)	➢ Provides basic rations, supplementary food and ➢ implements the school feeding programme
Administration for Refugee and Returnee Affairs (ARRA)	➢ Primary Education ➢ Logistics (distribution of food & Non-food items) Sanitation ➢ Health & Nutrition ➢ Physical protection ➢ Camp administration
International Rescue Committee (IRC)	➢ Community Services ➢ Pre-school education ➢ Non-formal education

	➢ Preparation & supply of sanitary materials
ZOA Refugee Care (Netherlands)	➢ Environmental awareness & introduction of environmental friendly technology ➢ Peace education
Rehabilitation and Development Organization (RaDO)	➢ Disability prevention awareness ➢ Provision of auxiliary limbs ➢ Provision of physiotherapy Service
Hope for the Horn (HOH)	➢ Nursery site management Reforestation & forestation
Mother & Child Development Organization (MCDO)	➢ Advocacy against Female Genital Mutilation
GAIA Association	➢ Clean cooking stoves & supply Ethanol

Source: UNHCR: 2008

4.5.3 Major Constraints of NRM Activities

According to formal and informal survey, different factors were found to impede the NRM activities and effort in the area to be ineffective and to fail what it should have to achieve. 31.3 percent of the sample household who were participant in NRM activities related the problem with lack of budget for the NRM activities by the NGO and GOs working in the area. Furthermore, 28.1 percent of the respondents pointed that lack of integration between host community and refugee in NRM activity caused the failure and made the activity ineffective. Beside these, lack of consistency of intervention and integration between different organization who were directly and indirectly involved in the activities were also mentioned to share 15.6 and 12.5 percent consecutively for the failure of the achievement of the activities (Table 23). Furthermore, it is obviously clear that refugee do not put environmental consideration a head of their own safety and welfare (Well, 2003). Knowing this, environmental consideration and intervention should be made prior to the boom of the refugee influx and the first phase of UNHCR environmental intervention (emergency phases).

Table 23: Constrains for the Effectiveness on NRM Activities in Kebribeyah

Constraints of NRM activities	Kebele in which the respondent lives				Total	
	Refugee Kebele		Non-refugee Kebele			
	N	%	N	%	N	%
Lack of integration between local and refugee	4	12.5	5	15.6	9	9 28.1%
Lack of integration between stakeholders (NGOs and GOs)	3	9.4	1	3.1	4	12.5%
Lack of consistency of activities	5	15.6	0	0	5	15.6%
Lack of adequate budget	4	12.5	6	18.8	10	31.3%
I don't know	3	9.4	1	3.1	4	12.5%
Total	19	59.4	13	40.6	32	100

Sources: survey, 2009

Selecting appropriate cites which has good regeneration potential assists the move to curtail the impact of refugee on the environment through reducing the environmental impacts associated with the refugee in the emergency phase. Problems, costs and conflicts related to natural resource degradation were likely to be reduced significantly if environmental issues were addressed from the outset of the refugee settlement in the area. The issue of the pressure and impacts on resources as large populations cross the borders within a relatively short period of time is clearly articulated by the UNHCR 2005 Environmental Guide Line as one of the impediments to meet international protection standards.

Environmental concerns are often not a priority of intervention at the outset of an emergency phase, when saving lives must take precedence. But, environmental problems created at this stage continue into other phases of refugee assistance stages to be a major problem, and typically become more serious and costly to redress. Under such circumstances, areas which were ecologically resilient should have been mapped prior to their arrival for refugee protection purposes in order to minimize the environmental degradation associated with the influx and to treat refugees in a humane way. These

moves if not able to curtail the impacts, it would had had huge impact in mitigating and minimizing the initial environmental impacts through sitting in capable place, and providing sustainable basic and expected needs for refugee with out compromising the host communities'.

In 2005 UNHCR environmental guide line, states that "uninformed decision concerning the sitting of refugee camp in or near a fragile or internationally protected areas could result in irreversible local and distant impact on the environment. Likewise Kebribeyah is an arid area and is found among the fragile part of Somali region. In addition to these, placing the refuge with out involving and consenting the host community aggravated the problem. Informants reported that, the settlements were made in 1991 by ARRA and UNHCR only considering the clan tie between the host community and the settlers. This shows that, the settlement of the refugee on the present camp was made with out the involvement of the host community in the decision making.

Capacity of implementation of environmental issues can not be achieved by participation of two or three organization, rather it need the participation of both NGOs and GOs in addition to the wide participation of the host community as well as the refugee community. To realize these, Environmental issues need to be integrated into institutional operation plan and should be participatory of different stakeholders beginning from site selection prior to emergency phase to durable solution phase of an intervention, where refugees either repatriate or integrated with the host community. In supporting this, informant from ARRA reported that, a planning frame work should have been devised in a way which threat environmental factors as integral parts of overall contingency plans for refugee emergency operations. The delay in incorporating environmental considerations has resulted in-effective and costly attempts to offset and tackle negative impacts in the area.

In addition to these, failure to construct baseline study for the Kebribeyah refugee camp and surrounding areas left negative draw backs. Assessing the environment is vital to forward possible mitigation mechanisms and to draw policy towards the case. Also it is important for evaluating and estimating the environmental standard and extent of destruction in the area. Simple data gathering processes should have been initiated as

early as possible to determine and make environmental baseline data which is highly important for later planning and monitoring activities. Local institutions capable of carrying out required surveys should have been established and strengthened.

To realize ultimate achievement in rehabilitation and management of the environment, it needs further to establish effective monitoring and evaluation mechanisms. These mechanisms should be there to see the achievement and failure of the intervention of the programs. The mechanism can differ from area to area and place to place since the environmental situations and issues arise with in refugee differ from area to area and place to place based on the spatial characteristics.

a) Lack of Effective Participation of Stakeholders: continuous demand and inappropriate utilization of natural resources in Kebribeyah call for the necessity of proper participatory natural resources management practices, which is all inclusive and consider the potential, knowledge and active role of all concerned parties to off-set the impact and re-generate the lost renewable natural resources.

A number of parties who are concerned directly or indirectly should have been involved and the door should have been open to involve all in the campaign directly or indirectly. The actors include the local communities, national and local governments, refugees themselves, and local NGOs, the international bodies involved in the concern i.e. UNHCR, international NGOs, and other UN agencies, and multilateral and bilateral development and donor agencies.

More than many other policy issues, environmental issues and measures bring together a large number of organizations. If many of the concerned stakeholders were involved, close coordination and collaboration among them were established, the move for curtailing and mitigating the impact would have been effective.

Protection and rehabilitation should aim at restoring the capacity of the local community to derive a sustainable livelihood from their natural resource base. In planning and implementing NRM activities, international organization and donors must take into account of, the local communities' knowledge of the environment and ability to scale off and mitigate the adverse impacts, and they should take a co-leader's role with the host

government in promoting environmental protection and rehabilitation in the field. If these were implemented and the hosts were given the primary role in the activities of natural resources management, things would have been better off, but their ability and knowledge were underestimated and neglected.

Activities such as reforestation, agro-forestry, controlled grazing of livestock or the promotion of fuel efficient stoves must recognize the people, if they were to succeed in the long term. Beside these, the donation of such technologies should had consider the local tradition and condition (such as feeding habit, food preferences, housing condition and the like) to meet its maximum intended out come. Furthermore, refugee's and local community's leaders should be encouraged to create awareness and a sense of responsibility for protecting the surrounding environment and to protect their own resources. Failure of doing these activities costed and is also costing the Kebribeyah environment and natural resources. In turn, the local communities who don't have formal aid assistance from different organizations are paying the cost than any other inhabitant in Kebribeyah.

The host government and community should take a leading role in the campaign to minimize the adverse environmental impacts arraying from the refugee situation. Giving responsibility to the owners does not bring an effect worst than taking the responsibility from the owner. Because of this, giving the responsibility to host government and community is critical to avoid a situation in which potential participants adopt a "wait-and-see" approach. Establishment of a local environment task force is considered instrumental in promoting local coordination. Based on the informal survey, it was found that these conditions do not exist at all in the Kebribeyah. The role of leading the campaign of the NRM activity is not inclusive and do not participate the stakeholders. Beside these, the activities which are running by the local NGOs lack consistency and are fragmented and the participation of the local community as well as refugees in the activities are rare and insignificant. Better to seal this issue by the idea of my key informant. *"The organization which you are talking abut are present physically in kebribeyah, but they are not practically here with us and I can not see them doing what they are here for".*

b) Lack of Proper Control: When the food aid for refugee was delayed and as most of the time is true donation fail to meet the need of the refugee community in terms of kind as well as amount, lead them to draw and depend on the natural resources to compensate their daily bread deficiency. This also further aggravated by competition with the local community in the utilizations of the natural resources as the local communities' production capacity compromised and showed sharp decline. Furthermore, the expansion of charcoal market frontier further to Somali land and Arab countries made the community to practice in the charcoal production and marketing widely. These aggravated the deforestation of the forest as well as made the competition high. In turn, the deforestation of the local environment brought other environmental degradation such as land degradation, soil erosion, and deterioration of water sources. These have brought significant impacts on the local community in terms of crop production, livestock production, water sources distraction and deterioration in the area.

Lack of control and failure to ban the unsustainable utilization is encouraging the charcoal producers and sellers and led for further destruction. According to informal survey, charcoal production first come with the refugees but after that with the ban of Saudi Arabia on livestock import brought the charcoal production boom in Harshin district, and then began to expand to Kebribeyah and its surroundings. With this, the local people together with the refugee began to sell the land with the *Galol* to people who come from Somalia and Somali land to produce charcoal.

According to the Ethiopian settlement guide line 2004, Economic and social development activities carried out in a settlement area should be based on a coherent environmental management plan that enhances the quality of the environment and maximizes its productivity and sustainably. Special care and protection must be given to fragile natural and human made environments, which can be easily damaged or destroyed and cannot be easily replaced. Therefore, consultations and protections should be carried out on the environmental, economic, social and cultural impacts of any activity aimed at implementing around the area. This is a necessary precondition for precaution. Similarly, a utilization and management plan of the area should be prepared based on environmental audit. The environmental audit should be established based on the capacity and

regeneration ability of the local environment, beside the population number and characteristics. Even though, these are seen as necessary and vital, it was not implemented in the area. And failure to do so is costing the sustainability of the local environment, and is compromising the regeneration capacity of the local environment. Hence, it needs proper control of the refugee community as well as the host community in their utilization of natural resources. To make the effort plausible, establishing a community based natural resources management which is participatory and open is vital in the area. Beside these, the community in the area should be empowered and should be given a capacity in the form of training, access to extension package and experiences to make their effort up to date and effective.

c) Lack of Proper National Policy for Refugee: Influential policies that govern and control the natural resources in some cases are more cost-effective measures for protecting the environment than direct implementation of field activities (UNHCR, 2000). Significant environmental impacts are associated with policy issues. Polices are vital during refugee operations such as during making decisions related to camp sitting, layout of camps, and size, extent of right to use the natural resources and population density of the refugees as well as the concomitants. If agencies can influence these and other decisions at the policy level, through a combination of local, national and international organizations and advocacy, achievements can be far more significant than agencies confine themselves to implementation of remedial programme only.

Ethiopia, being a country in the horn of Africa is liable for continuous boom and influx of refugee from different direction. Knowing these, it would have been better for the local people to have policy and legal code of conduct for the natural resources utilization by the refugee and new comers and precondition for selecting an area. Failure of having these plays its own parts in impacting the environment adversely.

Formulating and ratifying proper policy and law for the access and utilization of natural resources can have further positive impacts, such as reduced conflict between refugee and host community in relation to access to natural resources, minimizing contrabands and illegal trades in the border areas, excessive child labor exploitations for firewood gathering and water fetching and many other positive impacts.

d) Other Technical Problems: - Besides to the aforementioned constraints, in Kebribeyah the NRM activities face technical problems. The nursery which was owned by Hope for the Horn and other nurseries under some association lack proper management and handling. The nurseries lack water, man power (skilled and unskilled labor), and suitable seedling which suit the local environment. Further more, the survival rate of the seedling is reported to be low. The reasons for this low success rate are the planted species and provenances are not suitable for local ecological conditions (such as altitude, temperature, precipitation and soil depth), for instance in the area the major species that has been planted is eucalyptus trees and this species of tree needs ample water to grow. The plantation of the seedling is mostly focused inside the camp and settlement areas, and the other lands assigned to afforestation projects are too marginal to support mature trees. In addition to these, the communities who participate in NRM activities are reluctant to establish woodlots to take care of the plantations. This made the seedling to be eaten by goats and sheep.??

CHAPTER FIVE

Conclusions and Recommendations

5.1 Conclusions

The interrelationship between society and environment is partly mutually deterministic. The environment at some stage (particularly at the initial stage) provides a given society with a wide range of alternative goods and services to sustain and lead their livelihood. The depletion of these environmental goods and services over time would force the society to shape and reshape their livelihood activities and socio-culture in response to the changes in the environment caused by human action or natural causes.

Kebribeyah has got considerable proportion of young people. Where the working age groups of 15-45 constitute 80.1 %, which is the majority of the respondents. These are potential forces for development works if managed and utilized properly and also can be a distraction forces if not appropriately managed and utilized

The socio-economic of the local house holds in Kebribeyah is generally characterized by Agro-pastoralism. Crop production in the area constitutes the major economic activity next to livestock rearing. Members are highly characterized by illiteracy and low level of education and high drop rate in intermediate and high school level.

Significant number of households in Kebribeyah takes part in off-farm activities even though the off-farm activities in the area are illegal and mostly based on the local natural resources. Selling of forest products such as firewood and charcoal to compensate deficiency has become one of the major means of income generation for a number of households (refugee and host community) in turn resulting in a huge natural resources depletion and environmental degradation.

The instability and security problem in Somalia is negatively impacting the Kebribeyah environment, the society as well as the economy. People are fleeing from Somalia to Ethiopia continuously in search of safe heaven beginning from the 1988 conflict and the fall of Seid Bare regime. These massive influxes of refugee, concomitant population concentration and their prolonged stay in the area from the beginning of 1990's have eventually impacted the Kebribeyah's resources. The high proportion of population

dramatically increased demand on water and forest resources, firewood and construction material and grazing land. These denuded the vegetation in and around Kebribeyah. These did not get an end with in 18 years. These are still continuing and in turn exerting maximum pressure on the local environment and on the livelihood of the host community.

Kebribeyah refugee camp being the only refugee camp opened and is still serving continuously unlike the other 8 refugee camps, to host the refugee influx in the early 1990's, made the pressure fierce and lead the degradation of natural resource bad to worse. Besides the refugee influx, Kebribeyah and its surroundings are experiencing population pull from other parts of the region, such as from the highland of Harerghe and other parts of Ethiopia. These are adding another pressure on the environment and accelerating the degradation. Due to these and other factors, a declining of caring capacity is reported in the area.

Environmental stress is linked with conflict indirectly but significantly. Its impacts emanate directly from the declining resources in amounts, kinds as well as in quality. Competition over these resources resulted in conflict and also is aggravated by the tension created by refugees and people who moved seeking improved life chances in the region. The frequent conflicts are linked to competition over natural resources, such as access to common grazing land and pasture, water, firewood and charcoal are among the majors. This has been aggravated further due to the degradation and reduced carrying capacity of the local environment.

As the area is ecologically fragile and spatially marginal, special attention should be given. Even though, the Ethiopian settlement guide line 2004, states that the economic and social development activities carried out in a settlement area should be based on a coherent environmental management plan that enhances the quality of the environment and maximizes its productivity and sustainably. Special care and protection were not given to this fragile environment.

The degradation is obvious and is well known by the government, NGOs and by the inhabitants. However, measures taken to offset and mitigate these impacts were found to be insignificant. Beside this, the NRM activities in the area are not effective in off-setting

the negative impacts. It has short comings. It lacks trained manpower, adequate budget, consistency between activities and integration of different stakeholders. Alternatives that involve and consider the host communities' potential and knowledge are not devised. Devising participatory NRM has found to have tremendous positive contributions, not only because of managing the natural resources but also they appear to be more cost effective in maintaining the remaining resources. In this respect, giving responsibility to the owners does not bring an effect worse than taking the responsibility from the owner.

Lack of control and failure to ban the utilization of forest resources for illegal trading to Somali Land and Arab countries is encouraging the charcoal producers and sellers. As a consequence of this deforestation is aggravated in the area. Developing relevant policies that govern and control the natural resources utilization for refugee may in some cases be a more cost-effective measure for protecting the environment than direct implementation of field activities. In turn, failures to do so are found contributing and encouraging for further destruction of the local natural resources and environment.

5.2 Recommendations

Based on the discussion and the analysis of the study the conclusions reached and the following recommendations are forwarded.

Knowing that the country (Ethiopia) lie in the Horn of Africa where continuous conflicts and arm struggles prevail, prior selection of a site for settling an influx of refugee in the country have tremendous effect in reducing the negative impacts in the emergency phase of refugee influx, it is also true that failure to do this costs the environment and the host community which inhabit the area.

Once they failed to do this, the concerned national and international organizations such as ARRA and UNHCR should conduct an EIA (Environmental Impact Assessment) to determine the carrying capacity of the area. EIA helps the decision makers to make good decision and enables to allow a given number of settlers to stay and refuge in the area with good condition with out harming the environment as well as cause impact on the host community. According to FDRE Environmental Protection Authority environmental impact assessment procedural guideline, EIA has been made mandatory for

implementation of major projects, programs, and plans (see also Proc No. 299/2002 of the Federal Negarit Gazeta of FDRE)

The study shows a new direction of livelihood development that came with the distraction of the local environment which came apparently with refugee. The local community shaped and reshaped their livelihood activities in response to the changed environment, now the livelihood of the host community is compromised and they are no longer pursuer of the former livelihood system. Hence, they need to be provided with Support. The support particularly should target on livelihood improvements in such a way that it enhances self-reliance not dependency in a given period of time.

The GOs and other NGOs concerned with the issue should enact and follow up policies geared towards sustainable use of natural resources in the area and regulate the influx of refugee with the capacity of the natural environment to make the local and refugee communities' livelihood sustainable.

The capacity of implementation of environmental issues can not be achieved by participating of two or three organization; rather it needs the participation of both NGOs and GOs in addition to the active participation of the host community (the affected) as well as the refugee community. The NRM attempts should be participatory. This is also enshrined in the environmental policy document of the country (see EPRDF 1997). Nevertheless it has been of little practicality seen in light of what is going on the ground.

Empowering the host community through establishing PA (pastoral Association) and APA (Agro-Pastoral Association) in different kebeles of the woreda and handle the leadership role of NRM activities and control of the firewood and charcoal producers and sellers to them can have tremendous effect than taking away the leadership from them. In addition to these, giving incentives for the PA and APA's in the form of food for work, training, access to extension package, money for work can bring a make difference on the activities.

It is essential to think of the conservation technology distributed such as clean safe stoves and ethanol. It needs to be endorsed by user's community, if meaningful results are to be achieved. User's endorsement will be obtained if they are genuinely involved in all stages

of problem identification, search of alternative solutions, implementation and evaluation of effectiveness and efficiency of the solutions. While providing aid and support, be food or any other technology (clean safe stoves and ethanol), to meet its ultimate goals, it needs to consider and study the social, cultural and economic need and background of the users. Introduced technologies that are building upon indigenous ones have better chances of success than those which are totally new. Participation of the stakeholders should be made in the sense of partnership towards a common goal. Real participation in resources conservation is in fact, a question of empowering the stakeholders to decide on their own and their children's livelihood potentiality.

Improving ration allowances for refugee and creating off-farm activities for locals and refugee can bring lower dependency on the environment and also will have tremendous positive impacts in improving their livelihood standards. But to meet the intended targets care should be given to their priority and preferences.

Environmental issues are persuasive; they affect and are also affected by any development activity. Because of these, it needs to be included and considered as a part of an organization's development plan. At least the organizations, both NGOs and GOs in Kebribeyah, should include and consider environmental issues in their contingency plans. This helps for the better management of the environment.

Base line data should be established for the area. These are important not only for delivering and knowing situation in the area, but also it is important to measure and evaluate a given intervention in the area. Based on these, the organizations which undertake different activities in the area should be monitored and evaluated against their plan and base line data of the area. This would have magnanimous help for evaluation of the status of the impacts which come with the influx of refugee as well as with any organization.

The camp management should establish regular community and institutional consultation and involvement with stakeholders who are directly or indirectly affected by the impact of the refugee settlement in the area. This would help to create a positive relationship and decrease conflict between the refugee and the local community. Dialogue and free flow of information would help to correct micro misconceptions that people have about the

settlement and other similar things. To achieve these, the administrator (ARRA) should ensure proper public relation with the host community.

Developing Influential policies and law for the refugees is a priority. With out having a legal frame work and policy it is difficult to talk about enforcing an appropriate measures of banning and controlling the illegal and unsustainable activities. The country need to ratify policy for the refugee matters and their activities in their stay with in the country. In some cases this may be a more cost-effective measure for protecting the environment than direct implementation of field activities.

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Annexes 1

Addis Ababa University

School of Graduate Studies

College of Development Studies

December 2008.

Questionnaire prepared for formal survey

Title: - Environmental impacts of refugee settlement: in the case of kebribeyah refugee camp, Somali regional state.

Instruction: - the principal objective of this research is for academic purpose. It has no relation with politics or any other and agencies. The information to be collected remains confidential and will not be used for other goals. Beside your name will not be included in the report.

Part I General Information

1. Age of the respondent _____
2. sex male female
3. Marital status 1. Married 2. Unmarried 3. divorced

II Basic information of the respondent

.1 What is your economic activity for your livelihood? Rank according to their importance if it is more than one answer.

Agriculture: crop _____ Livestock _____ Mixed_____

Non Agriculture: Employed _____ petty trade _____ if other specify _____

2 What are your income sources rank according to their importance if it is more than one _____

3, (for 3&4 refugee only) is your monthly ration enough for your family?

1. Yes 2. No

4 If the answer for question number 3 is no haw do you compensate?

1. Petty trade 2, Selling wood or charcoal 3, Selling livestock
4. Remittance 5. Farming 6, if others specify _____

5 land ownership 1. Own land 2, Rent in 3.Sharing 4. Other specify

6 land size _____ (in local unit)

7 do you produce crop 1. Yes 2. No

8. If yes what type of crop do you produce?

1. Sorghum 2, Maize 3, Millet 4, Wheat 5, If other specify

9. What kind of crop production trend have you observed for the last 5 years?

1, Increasing 2, Decreasing 3, No change 4, I don't know

10. If the answer for question 8 is decreasing what is/are the reason/s?

1. Soil fertility decline 2, Low access to inputs 3. Market problem

4. Pest 5, low rainfall 6. If other specify _____

11. Was the last year production sufficient for your household consumption?

1. Yes 2. No

12. If the answer for question 10 is no how did you compensate the deficiency? (Rank than according to their importance)

1. Aid 2.Daily laborer 3.Remittance 4.Credit 5.Selling Livestock's 6, Petty trade 7. Help from relatives 8 if other specify

Part III grazing land and water sources

1. Do you have livestock?

1. Yes 2. No

2. Where do you use grazing area for your livestock's?

1. own plot 2. Communal 3. Delineated area for refugee/non refugee

4. Specify if other _____

3. Is there change in grazing area after the refugee settlement?

1. Yes 2. No

4. Is there any regulation in using grazing area?

1. Yes 2. No

5. Do you face shortage of grazing pasture for your livestock?

1. Yes 2. No

6. When did it begin to appear such shortage?

1. Before 5 years 2.before 10 years 3.before 15 years 4.it used to happen always.

7. If the answer for question 4 is Yes, during which season?

1. Rainy 2. Dry 3. Both rainy and dry season

8. What is your solution to alleviate this problem? (Rank)

1. Moving your livestock to other are 2. Selling some of them

3. Selling all of them 4. Giving stored feed 5. Looping of trees (cutting of branches) 6. Specify if other

9. Do you use the same water sources for you and your livestock?

1. Yes 2. No

10. If your answer for question 7 is No, What is/are the source/s of water for your livestock?

1. River 2. Spring 3. Pond

4. Wells 5. Tap water 6. Specify if other

11. If your answer for question 7 No, is What is/are the source/s of water for your household?

1. River 2. Spring 3. Pond

4. Wells 5. Tap water 6. Specify if other

12. If the answer for question number 7 is yes, what are the main sources of water for the whole year?

1. River 2. Spring 3. Pond

4. Wells 5. Tap water 6. Specify if other

13. Is there any change in water quality, quantity, and availability?

1. Yes 2.No

14. If your answer for question 7 is yes, How far are the water sources far from your village in one-way walking? _____ hrs.

15. If your answer for question 7 is yes, How far is the water source for your household from the village in one way waking? _____ hrs

16. How many times do you water your livestock per day?

1. Once in a day 2. Twice a day 3. Once in two days 4. Difficult to specify

5. Once per month for camel 6. Once 7. Others specify

Part IV fuel wood consumption

1. What type of fuel do you use for cooking purposes (Rank them; if more than one)

1. Fire wood 2. Dry leaves 3.Animal dung 4. Charcoal

5. Gas (Ethanol or kerosene) 6. Solar energy 7. Other, specify _____

2. In the following table, please mention the distance traveled, source, responsible person, time taken to collect, amount of bundle needed for a week, frequency of collecting to get this bundle?

Type of fuel source	Area that has been collected (code A)	Distance one way waking in hours	Purpose of the fuel source collected (code B)	Amount collected in bundled or sack per week	Frequency of collection per week on average	Collectors (codeC)
Firewood						
Animal dung						
Charcoal						
Other specify						

Code A: 1. from homestead 2. from common grazing land 3. From crop land 4. From private land other than homestead 5. Buying 6. Other specify

Code B 1. Cooking 2. Selling 3. Both if other specify

Code C, Male children 2. Female children 3.Young males 4.men 5.Young females 6.Women 7.Others. Specify _____

3. Do you face shortage of fuel wood for home consumption?

Yes No

4. If the answer for question number 3. is yes, which season?

1. Dry season 2. Rainy season 3. Both seasons

5. When did this shortage began to appear?

1, Before 3 year 2, before 5 Years 3, before 10 years

4, specify if other

6. What is/are the reason/s for this shortage? (Rank)

1. Population pressure 2. Scarcity of forests 3. No alternative source 4. Other specify

7. What are your coping mechanisms for this problem?

1. Using fuel saving stoves 2. Decreasing the frequency of cooking 3. Restoring to collective cooking 4. Buying cow dung 5. Specify if others _____

8. How do you collect the fire wood for home consumption? (Rank)

1. Through cutting live trees from communal forest and dried them

2. Collecting already dried trees from communal forests

3. Collecting already dried trees from croplands

4. Cutting live trees from croplands and dried them

5. Buying 6. Others specify _____

9. Have you ever sold any type of fuel source?

1. Yes 2. No (skip toothier question)

10. If yes what type of fuel did you sell? (Rank if more than one answer) 1. Fire wood 2. Leaves 3. Animal dung 4. Charcoal 5. Others specify _____

11. If you sold fire wood, from where was it collected? (Rank)

1. from communal forest 2. From private land 3. From cropland 4. Trees from home stead 5. Other specify_____

12. Where do you sell the fuel source? (Rank if more than one market place)

1. market place 2. Camp 3. Near by village 4. Other specify _____

13. Have you ever bought any type of fuel sources?

1. Yes 2. No (skip the questions related to this)

14. If the answer for question number 13 is yes what type of fuel did you bought? (Rank)

1. Fire wood 2. Leaves 3. Animal dung 4. Charcoal 5. Other specify

15. Where do you buy the fuel sources (rank if more than one answer)

1. market place 2. Camp 3. Nearby village 4. Other specify

16. How is the price of fuel sources?

1. Increase 2.Decrease

17. If your answer for question 16 is increasing what is the reason_____

_____?

V Identification Conflict in Relation to Scarce Resources and Natural Resources Management

1. Is there any conflict that comes because of a shortage of resources?

   1 Yes 2 No

2. If your answer is yeas for question No.1 what are the resources that trigger the conflict

   1 water, 2 firewood 3 grazing land 4 specify if any other

3. Is there any kinds of natural resource management activities in your area?

   1 Yes 2 No

4. If your answer is yes for Question.... What are the NRM activities in your area_____?

5. Do you participate in the NRM activities?

   1 Yes 2 No

6. Do you believe these activities are enough to mitigate the negative impacts associated with the refugee influxes?

   1 Yes 2 No

7. Do you believe that the NRM activities are effective in off-setting the negative impacts?

   1 Yes 2 No

8. If no what is the constraints and problems that made the activities not to be effective_____

   _____

   ____?

Annex 2

Checklist for refugee, experts and locals in focus group discussion

- **Is there any resources depletion and deterioration in your area after the refugee settlement?**

Water source identification and assessment

1. What was the source of water before refugee arrivals (1991) in Kebribeyah?
2. How much hours were you traveling to get water?
3. Is there any change in amount of time you spent to get water before and after the refugee settlement or because of refugee settlement in Kebribeyah?
4. Is there any difference in the amount of water you used to have?
5. If yes by how much Grecian/liter it decline?
6. Is there change in water quality and quantity?
7. If yes, what is the reason for the change?
8. It there any problem that you face because of the change (depletion /deterioration)?

Forest and energy source identification

9. How was the status of forest before refugee settlement?
10. Is there any change in the amount and species of forests in the area?
11. If yes what is the reason for the change?
12. What problem did/do you face due to forest change?
13. What are your sources of energy?
14. Is there any change in sources of energy before and after the refugee settlement?
15. Do you use the same species of wood before refugee settlement and now for your sources of energy?
16. How much time do you spent to get sources of energy? Is there a change in time you spent before and after the refugee settlement? If yes, by how much?
17. Is there any environmental change in your area before ten years? If yes what do you think the reason is? If yes what problem do you face because of the change?

Natural Resources Management (NRM)

18. Do you have access to training and extension based on NRM if yes, what kind of training and extension?

19. When do you intervene (time/ phase of intervention) the environment?
20. What kind of intervention mechanisms do you use physical and non-physical intervention?
21. What are the tools and techniques you utilize during rehabilitation of the environment?
22. Do you think your intervention is sufficient?
23. If no, what further intervention do you think is needed to make the attempt successful?
24. Do you think your intervention is sufficient?
25. 13. Is your activities are in line with UNHCR environmental guide line? (Only for experts)
26. What are the tools and techniques you utilize during rehabilitation of the environment?
27. Who are the active participants in the NRM activities?
28. Do participate in the training and extensions programs?

Coping Strategy

29. What is your coping strategy in time of food insecurity/shortage? Can you mention the coping strategy you go through in your stay in Kebribeyah?
30. Is there any change in your coping strategies both for refugee and non refugee?
31. Are refugees restricted to the camp?
32. What kind of Activities do they perform out of camp?

Conflict Identification

33. Is there a natural resources (such as water pasture forest) scarcity in your area?
34. If your answer is yes, is there any resource competition in this area between refugee and local community?
35. Is there any conflict over scarce resource? If your answer is yes can you mention the resources which trigger conflict between refugee and the host community?
36. What are the causes of the conflicts?
37. Which party involves in the conflict?
38. What kind of impact did it left behind?
39. Who do you think are the victims?

Key informant Interview Schedule (for local community, NGO and GO expert)

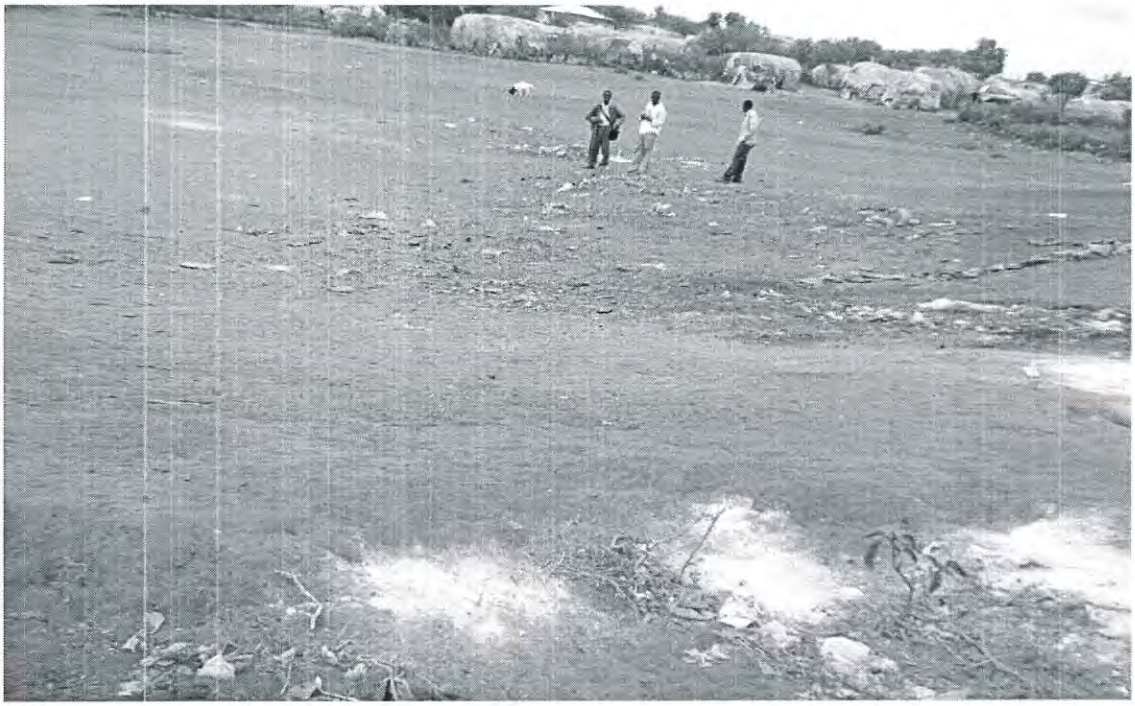
40. What are the natural resources in general and forest water, pasture resources in particular available in your area?
41. How did it look like the natural/ Environmental resources before refugee settlement? If your answer is yes, can you Show on the map? (Only for local community) (Community mapping)
42. What kind of differences do you observe before and after the settlement in your area? Show the difference on the map (only for local community) (community mapping)
43. Describe on the map where refugees actively involve? (Community mapping)
44. Describe on the map your source of water before and after refugee settlement (community mapping).
45. How was the status of forest before refugee settlement? (Only for local community)
46. Is there any change in the amount, type of species and product of forest?
47. Do you have access to training and extension in natural resource management?
48. If your answer for question is yes specify it.
49. Do refugee and host involve in natural resources management activities.
50. Who decide in establishing refugee camp? If you are involved on the decision making how do you decide?

Checklist for Observation

- Grazing areas, both for refugee and local community
- Refugee settlement camp area and its surrounding.
- Forest areas, charcoal producing areas, fire wood areas
- Water sources and water quality
- Schools
- How they compete for resources
- Refugee interaction with host community

Annex 3: Over view of the Kebribeyah Refugee Camp

Former pond area in Heartland of the Refugee Camp 2009



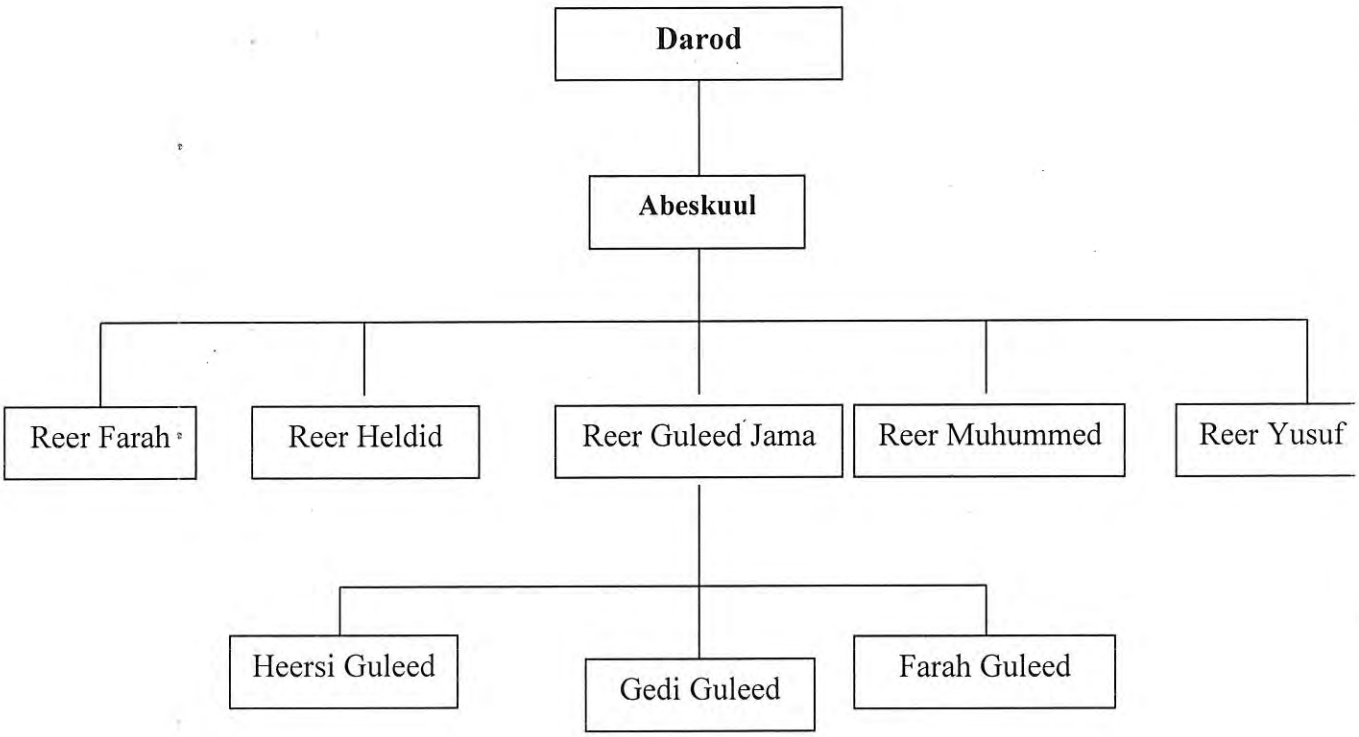
Charcoal and Firewood Production activates in Kebribeyah 2009

Nursery site in Kebribeyah 2009

Travel for a water by the Kebribeyah community

Annex 4

Clan linage of kebribeyah local community



Declaration

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

Declared by:

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Advisor