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**COPING STRATEGIES OF DISPLACED FLOOD  
VICTIMS: THE CASE OF DIRE DAWA**

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## **Acronyms**

CSA- Central Statistical Authority

DFID- Department for International Development

DPPA- Disaster Preparedness and Prevention Agency

ETB- Ethiopian Birr

FGD- Focus Group Discussion

KII- Key Informant Interview

NGO- Non Governmental Organization

SAP- Structural Adjustment Programme

SLF- Sustainable Livelihood Framework

UN/ISDR- United Nations International Strategy for Disaster Reduction

UNDP- United Nations Development Program

UNFCCC- United Nations Framework Convention on Climate Change

WMO/GWP- World Metrological Organization/Global Water Partnership

## **Abstract**

*The main aim of this study was to explore post crisis coping strategies of the 2006 flood-displaced victims of Dire-Dawa in the three resettlement camps (Jerba, Gende, and Mariam sefer). The study intended to look at the challenges victims face to cope, the coping strategies employed and their outcomes, and finally the influential factors behind the choice of coping mechanisms. As a theoretical framework, sustainable livelihood framework (SLF) was employed*

*To this end, out of a total of 624 flood-displaced victims in the three resettlement camps, 18% were selected proportionally for the purpose of this study. Accordingly, 112 respondents were selected. To achieve the objectives mentioned, data were gathered through questionnaire, key informant interview, focus group discussion and observation. The questionnaire was distributed for all 112 sample respondents; FGD was conducted with 16 of the participants of this study. In addition, to cross-check the results of the survey, interview was made with 7 key informants (women, leaders of the resettlement camps, and chair person of the Dire Dawa DPPA bureau).*

*The data obtained through questionnaire were analyzed using simple descriptive statistical methods such as frequencies, percentages, charts, tables, and graphs. For the qualitative analysis (for the data obtained through focus group discussions, key informant interview, observation, open-ended questions) direct quotes and discussions were made.*

*Results of the study revealed that, economic, social/organizational and cultural coping mechanisms were employed in response to challenges exerted by flood incidence. The social/organizational and cultural coping strategies were found to be the most effective whereas some of the economic coping mechanisms were found to be least effective (e.g. children involvement in livelihood activities). The researcher of this study recommends that mechanisms should be designed by city administration and NGOs to avert the consequent problems of those coping strategies which have undesirable outcome (reduction of meals, children school dropout). The communities studied should also be benefited from micro credit services so as to diversify income generating activities and ensure sustainable livelihood.*

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Globally, 1.2 billion people live below the World Bank US\$1-a-day extreme poverty line and about half the world's population lives below US\$2 a day (UN HABITAT, 2003). Obviously, the incidence of poverty is high in the developing countries especially in Africa. Formerly, the focus of poverty analyses was on rural rather than urban areas, but in the 1990s urban poverty caught the attention of scholars for the adverse impact of economic recession and structural adjustment policies have made the “new” urban poor of Africa poorer than rural people (Potts, 1997).

Likewise, in Ethiopia, previous analyses of poverty have generally focused on rural rather than urban areas. However, nowadays, poverty remains a problem in urban areas too. With the increasing rural-urban migration, the urban people have limited access to livelihood opportunities and hence income; inadequate and insecure housing and services; limited access to adequate health and education opportunities; and, in general limited access to social and basic infrastructure (Meron, 2005).

The high cost of land resulting from market forces/liberalization and restrictive regulatory frameworks tend to exclude large number of poor people from obtaining legal access to land and shelter (Payne, 2002). In other words, the better off settled in well developed and secured land while poor people are pushed out from parts of the city near to employment opportunities and other facilities necessary to economic survival. Whenever people lack the opportunity to reside in well developed and secured land, they are obliged to occupy cheap, high density and environmentally poor locations. That is, they are forced to concentrate on physically dangerous sites which are closed to industrial facilities, toxic waste, solid waste dumps, contaminated watercourses, railway lines and roads, on low lying land within and around the cities or in hillsides and river plains which are susceptible to landslides and flooding (Meikle, 2002).

Rapid urbanization, poverty and limited resources, a lack of political will of urban and national governments to invest in much needed infrastructure and lack of power among poor people to

influence infrastructure policies taken as reasons for the marginalization of poor urban residents to dangerous sites with poor living conditions (ibid). Therefore, coupled with income poverty urban segregation makes poor urban residents vulnerable to natural hazards.

Even if natural hazards occur everywhere, their impacts are more pronounced in developing countries due to their level of poverty. To mention few of the natural hazards that were happened in developing nations, the 2004 Indian Ocean Tsunami, the 2005 Pakistan Earthquake, and the 2006 landslides in the Philippines in Asia are the disastrous one (UNFCCC, 2007). Africa has also experienced more and more devastating disasters. For instance in 2001, Mozambique was hit by Cyclone Dera, which left 79,000 ha of planted land underwater and nearly 120, 000 farm families without food. It also affected the livelihood of about 2,000 families from the fishing community. In July 2003, more than 25, 000 villagers were severely affected by flooding in Eastern Caprivi (Namibia), reportedly the worst in decades. In the first quarter of 2004, heavy rains and flooding affected parts of Angola, Zimbabwe, Zambia, Mozambique and Botswana (ibid).

These days, global warming is bringing chronic flooding to the cities. Urban floods spread disease, interrupt schooling and destroy houses, assets and income. Thus, the effects of hazards will excessively increase the vulnerability of the urban poor compared to other groups of urban dwellers (Huraera et al., 2010). The vulnerability of poor people in the face of disasters exacerbated by unsecured livelihoods, health risks, and constrained economic activities (ibid). To this end, climate variability coupled with other factors such as poverty, illiteracy and lack of skills, weak institutions, limited infrastructure, lack of technology and information, low levels of primary education and health care, poor access to resources, low management capabilities and armed conflicts affect African countries ability to cope with devastating effect of flooding (UNFCCC, 2007).

Ethiopia has also encountered flooding in 2006 in all regions of the country with the exception of Benshangul Gumuz Region and Addis Ababa. However, the flood was devastating in Dire-Dawa, the second largest city of the country. Hence, this study attempts to assess the coping mechanisms employed by the 2006 flood-displaced victims of Dire-Dawa.

## 1.2 Statement of the Problem

In Dire-Dawa, flooding had occurred in various times (in April 1981, 2001 and in May 2005; and August 2006) in the same flood prone areas- *Koka, Ginfilie, Addis Ketema, Ashawa, Dechatu* and *Kezira*, with considerable impact on houses, public institutions, market places with their properties, infrastructures, crops in the field, and livestock. However, the August 2006 flood was the devastating one in the history of Dire-Dawa. The flooding had come about during the night with very heavy rains from the sloppy areas of the region and adjacent *woredas* in Oromia caused flooding in Dire-Dawa City and rural areas. The flood affected 6 out of 9 *kebeles* in the City. This devastating flood caused to the death of 256 people and displacement of 9,956. Out of the displaced people, 5,524 were in temporary shelter while 4,432 were living with their relatives and friends in 2006. The flood had imposed huge damages on urban infrastructure including roads, bridges and houses. Electric poles, water pipes and sanitation facilities were also damaged. Still, investors, small and petty traders lost an estimated 30,054,275 ETB in property. Rural areas living along the valleys in 17 *kebeles* had been affected by the flood (DPPA, 2006).

The researcher of this study has gone through reading some works which have been done on flood victims of Dire-Dawa. However, as to the researcher best of knowledge no research was done on flood victims of Dire-Dawa with related to their coping strategies. To mention few works, the study taken by Yonas (2009) on socio-economic impacts of flooding in Dire-Dawa revealed that residential areas and business centers experienced the worst Socio-economic damages among the different sectors in the city. The study has also indicated that the flood had imposed enormous impact on the economic foundation of the city due to expenditure for rehabilitation and reconstruction. Absence of early warning system and lack of land-use policy has contributed to the increased impact of the disaster (ibid). An assessment on the impacts of the Dire Dawa flood on displaced victims from gender perspective discovered that women are more vulnerable to the risks of the disaster for they have limited access to and control over resources (Gelila, 2008). It is indicated that those people who were living in flood prone areas were petty traders and daily laborers (Yonas, 2009; Gelila, 2008).

From various documents and the above mentioned research reports, it has been learnt that people who were affected by the 2006 flood had lost their lifelong savings and properties within few

hours. Obviously, it was impossible for them to return back the lost properties and other stuff without the help of the society and the government and other organizations. As a result, government and humanitarian partners had provided food and non-food assistance, medical supplies, water, and sanitation interventions from the onset of the disaster. Apart with the government and charity organizations, relatives and friends had been doing their best for the possible recovery of flood victims.

Nevertheless, such kind of enthusiastic support could not stay long. It came to an end as the flood-displaced victims moved from temporary shelter to newly constructed resettlement camps (Gelila, 2008). Therefore, the researcher of this study is initiated to explore the coping strategies of flood-displaced victims of the 2006 after their resettlement. However, the capacity of the people to cope with disaster is highly determined by the level of social and economic conditions (Wisner et al., 2003). It is worth desirable to look into the endeavors made by flood-displaced victims to come out from the devastating impact of the flood.

### **1.3 Objective of the Study**

#### **1.3.1 General Objective**

The main objective of this study is to explore coping strategies of the 2006 flood-displaced victims of Dire-Dawa.

#### **1.3.2 Specific Objectives**

- To uncover the challenges faced by flood-displaced victims to cope with the crises
- To identify the coping mechanisms employed by flood-displaced victims
- To explore the outcomes of the coping strategies used
- To identify factors that influence the choices of coping mechanisms

### **1.4 Significance of the Study**

Research is a tool to acquire knowledge, point out problems and inform decision makers. Thus, the student researcher believes that this study will have immense contribution to attain knowledge on the study area. In addition, research is an ongoing process so hopefully this very limited and delimited study will initiate other researchers to make further in depth study about

the issue. Furthermore, during the year 2006, all regions of the country with the exception of *Benshangul Gumuz* Region and *Addis Ababa* were affected by flood incidents. Hence, this study paves the way for further investigation in other flood affected regions.

### **1.5 Limitation of the Study**

The researcher has faced difficulties in convincing target groups about the purpose of the study. Since they are in dire living condition, whenever they see people approaching to talk to them, they expect that they are from NGOs coming to help them. Some of the target groups were not willing to fill questionnaire as they came to know that I was a student and the research was only for the purpose of education. Above all, when I talked to them about the flood it reminded them the unforgettable event that happened during the incidence of flood. Especially those who had lost their families became nervous. Such scenario was a bottleneck in the process of obtaining data from the people under study. After these all, I tried to manage it with the help of the leaders of the camps.

### **1.6 Scope of the Study**

The study is limited to the issue of coping strategies of flood-displaced victims of Dire-Dawa. In the context of disaster coping strategies could be applied in three phases of disaster- pre disaster, during disaster, and post disaster coping strategy. However, this study has focused on post disaster coping strategy for it is conducted on flood-displaced victims. Although there are several parts of the country affected by flooding, the study is limited to the 2006 flood victims in the city of Dire-Dawa. The victims in Dire-Dawa were displaced from their former residence and resettled in the three selected site by city administration namely- *Jerba, Gende, and Mariam Sefer* resettlement camps. Accordingly, this study has been conducted in all of the resettlement camps.

### **1.7 Organization of the Thesis**

The thesis is divided into five chapters. The first chapter presents background of the study, statement of the problem, objective of the study, and significance of the study, scope of the study, limitation of the study and organization of the paper. The second chapter deals with the

theoretical framework and review of relevant materials related with this study and empirical findings. Third chapter presents methodological issues, general description of the study area, and history of flood in Dire-Dawa. Fourth chapter shows results of the study which consisted of socio-economic characteristics of the respondents, vulnerability situation of victims, asset possessions, the coping strategies employed and their outcome, and the factors that determine the choice of coping mechanisms. Chapter five gives conclusions and recommendations based on the findings of the study.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### 2.1 Conceptual Definitions

##### 2.1.1 Hazard and Disaster

*‘Although we call droughts, floods, earthquakes and wildfires ‘disasters’ because of the devastating impact they have on communities, they are not in themselves disasters, but are instead natural hazards – which have the potential to become disasters, especially when they strike unprepared communities or environmentally degraded area’* (UN/ISDR, 2004:6).

From the above citation one can understand that there is a distinction between hazards and disasters. Hazard is defined as potentially damaging physical event, phenomenon and /or human activity which can cause loss of life or injury, property damage, social and economic disruption and environmental degradation (Twigg, 2004 as cited in Dewi, 2007). Keller and Blodgett (2008) used the term hazard, disaster and catastrophe to portray the interaction of humans with natural events such as earthquakes, volcanoes, floods and wildfires. On this ground, hazard is defined as any natural process that poses a threat to human life and property. While a disaster is the effect of a hazard on society, usually as property damage, injury or loss of life. A catastrophe is a massive disaster requiring significant expenditure of time and money for recovery (ibid). Wisner et al. (2003) argued that ‘Hazard’ refers to the natural events that may affect different places singly or in combination at different times. Whereas disaster is a brake on economic and human development at the household level (when livestock, crops, homes and tools are repeatedly destroyed) and at the national level when roads, bridges, hospitals, schools and other facilities are damaged.

According to Keller and Blodgett (2008) natural hazards such as earthquakes, volcanoes, floods and wildfires are natural processes but they become disasters when human beings live or work in their path. Added to this, Climate events or trends are transformed into differentiated outcomes via social structure. The poor and wealthy, women and men, young and old, and people of

different social identities or political stripes experience different risks while facing the same climate event (Ribot, 2009).

Hazard is not only about natural events related with earth's geological process and climate rather it also consists biological, technological and social ones which can cause considerable damage on people's lives and properties (UN/ISDR, 2004; White et al., 2001 ).

**Geological Hazards:** These are natural earth processes that include earthquakes, volcanic activity, and mass movements of the earth such as landslides, rock falls, subsidence and sinkholes.

**Climate-Related Hazards:** These are hazards related to Climate change and variability which include drought, famine, floods, high winds, wild fires and tsunami. These days' extreme heat and cold, thunderstorms, lightning and winter storm have been incorporated in this domain.

**Biological Hazards:** During the past two decades the concept of hazard has been expanded to include diseases such as HIV/AIDS and tuberculosis, together with parasitic infections such as malaria and bilharzias. Biological hazards have enormous impact on people's physical, social and economic wellbeing and are responsible for significant loss of lives and livelihoods. They are amongst the biggest killers in Africa, while animal sicknesses (e.g., foot and mouth disease) have resulted in huge livestock losses across the continent.

**Technological Hazards:** These are hazards originating from technological and industrial sites and accidents, dangerous and unlawful procedures, infrastructure failures, improper waste management and in some instance natural emissions of toxic gas. Some examples include industrial pollution, toxic wastes, oil spills, contaminated water supplies and industrial accidents.

**Social Hazards** - civil unrest, terrorism and organized war are manifestations of social hazards.

The intention of this study is, therefore, to look at one of the above mentioned hazards- floods. As it is depicted earlier hazards are natural events while disasters are the outcome of hazards. To understand disasters we must not only know about the types of hazards that might affect people, but also the different levels of vulnerability of different groups of people (Wisner et al., 2003). Since people vary in relation to health, income, building safety, location of work and home, and

so on, a discussion on disaster as a combination of hazard and vulnerability will help understand how disaster affect some groups of people present and future livelihood.

### **2.1.2 Disaster as a Combination of Hazard and Vulnerability**

These days the volume of research and the books reviewing findings on natural hazards have increased. At the same time changes have occurred on the topics addressed. Emphasis has shifted from the concept of hazard to disaster and attention has given to the exploration of the concept of vulnerability (White et al., 2001).

A disaster occurs when a significant number of vulnerable people experience a hazard and suffer severe damage and/or disruption of their livelihood system in such a way that recovery is unlikely without external aid. By ‘recovery’ we mean the psychological and physical recovery of the victims, and the replacement of physical resources and the social relations required to use them (Wisner et al., 2003).

As it is mentioned earlier the concept of vulnerability has been used in the literature of natural hazards. As to Blaikie et al. (1994) cited by Whiet et al. (2001) there are three major uses of the term vulnerability in the context of natural hazards/ disasters.

1. Vulnerability as being prone or susceptible to damage or injury from natural hazards
2. Vulnerability implies a measure of risk combined with the level of social and economic ability to cope with the resulting event. In this usage vulnerability to hazards combines both the degree of exposure or sensitivity to a threat and the adaptive capacity to respond to such threats.
3. By “vulnerability” we mean the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard. It involves a combination of factors that determine the degree to which someone’s life and livelihoods are put at risk by a discrete and identifiable event in nature or in society. Some groups in society are more prone than others to damage, loss and suffering in the

context of differing hazards. Key characteristics of these variations of impact include class, caste, ethnicity, gender, disability, age, or seniority.

Climate variations and changes present hazards to individuals and to society as a whole. The damages associated with floods, storms, droughts, and slow climate changes are shaped by the social, political, and economic vulnerabilities of people and societies on the ground. The world's poor people are disproportionately vulnerable to loss of livelihood and assets, dislocation, hunger, and famine in the face of climate variability and change (Ribot, 2009). In addition, living with multiple risks, poor and marginalized groups must manage the costs and benefits of overlapping natural, social, political, and economic hazards. Shocks can buttress poverty by interrupting education, stunting children's physical development, destroying assets, forcing sale of productive capital, and deepening social differentiation from poor households' slower recovery (ibid).

Vulnerability in facing natural hazards reflects people's marginalization within society. Disaster-affected people are disproportionately drawn from the segments of the society which are chronically marginalized in daily life. Disaster-affected people are marginalized geographically because they live in hazardous places (e.g. informal settlers); socially because they are members of minority groups (e.g. ethnic or caste minorities, disabled individuals, prisoners and refugees); economically because they are poor (e.g. homeless and jobless); and politically because their voice is disregarded (e.g. women, children, and elderly) by those with political power (Gillard, 2010).

To this end, poor people lack the capacity to cope with the devastating disaster. For instance, when we see the difference between rich and poor people in facing disaster, the homes and possessions of the rich are usually insured, and they can more easily find alternative shelter and continue with income-earning activities after the hazard impact. They often also have reserves and credit. The poor, by contrast, frequently have their entire stock of capital (home, clothing, tools for artisan handicraft production, etc.) assembled at the site of the disaster and they do not have savings and reserves which can help them to come out from the devastating effect of disaster (Wisner et al., 2003, Twigg, 2001; Gillard, 2010). Thus, the impact of a disaster is more pronounced for poor due to their vulnerability

### 2.1.3 Flood- Causes, Types and Impacts

Flood is a natural calamity which occurs by huge rainfalls followed by the overflow of riverbanks and which usually occurs at the bottom of a valley and in coastal areas (Rayhan and Grote, 2007). Flood is claimed as one of the common hazards that result in a heavy toll on properties and lives and caused more economic losses than any other hazard (Thapa, 2005). *“Flooding is one of the common hazards that causes loss of life and properties of the people and even causes severe economic setback, especially in developing countries”* (UNDP, 2004).

**Table 2.1: Factors Contributing to Flooding**

<b>Meteorological Factors</b>	<b>Hydrological factors</b>	<b>Human factors aggravating natural flood hazards</b>
<ul style="list-style-type: none"> <li>- Rainfall</li> <li>- Cyclonic storms</li> <li>- Small-scale storms</li> <li>- Temperature</li> <li>- Snowfall and snowmelt</li> </ul>	<ul style="list-style-type: none"> <li>- Soil moisture level</li> <li>- Groundwater level prior to storm</li> <li>- Natural surface infiltration rate</li> <li>- Presence of impervious cover</li> <li>- Channel cross-sectional shape and roughness</li> <li>- Presence or absence of over bank flow, channel network</li> <li>- Synchronization of run-offs from various parts of watershed</li> <li>- High tide impeding drainage</li> </ul>	<ul style="list-style-type: none"> <li>- Land-use changes (e.g. surface sealing due to urbanization, deforestation) increase run-off and may be sedimentation</li> <li>- Occupation of the flood plain obstructing flows</li> <li>- Inefficiency or non-maintenance of infrastructure</li> <li>- Too efficient drainage of upstream areas increases flood peaks</li> <li>- Climate change affects magnitude and frequency of precipitations and floods</li> <li>- Urban microclimate may enforce precipitation events</li> </ul>

(World metrological organization/Global water partnerships, 2008:4)

#### 2.1.3.1 Urban Flooding

In the urban context, floods are a combination of the relationship between rainfall and runoff, which is significantly changed by urbanization (Keller and Blodgett, 2008). Urban flooding related to the condition of the drainage system. High precipitation can cause flooding if drains become blocked with sediment and debris which result in water flow behind a debris dam, causing flooding in low areas (Keller and Blodgett, 2008; Douglas et al., 2008).

To this end, urban flooding may originate from different causes. According to Douglas et al. (2008) four types of urban flooding identified in African cities and towns: Localized flooding due to inadequate drainage; flooding from small streams whose catchment areas lie almost entirely within built-up areas; flooding from major rivers on whose banks the towns and cities are built; and coastal flooding from the sea, or from a combination of high tides and high river flows from inland.

Similar to the above concept, according to WMO/GWP (2008) flooding in urban areas can be caused by flash floods, or coastal floods, or river floods, but there is also a specific flood type that is called urban flooding/local floods.

**Local Floods/urban floods:** Local floods are types of floods which are caused by the interface between heavy rain and urban drainage system. Many urban drainage facilities are not in good shape due to lack of cleaning and maintenance. Rubbish and debris tend to block drainage facilities, thus reducing the drainage capacity and leading to increased surface runoff and back up effects, causing local floods. Localized flooding occurs many times a year in slum areas because there are few drains, most of the ground is highly compacted and pathways between dwellings become streams after heavy rain.

**Flash Floods:** Flash floods are particularly common in mountainous areas and desert regions which are caused by rapid accumulation and release of runoff waters from upstream mountainous areas, which can be caused by very heavy rainfall, cloud bursts, landslides, the sudden break-up of an ice jam or failure of flood control works. Especially in densely populated areas, they are more destructive than other types of flooding because of their unpredictable nature and unusually strong currents carrying large concentrations of sediment and debris, giving little or no time for communities living in its path to prepare for it and causing major destruction to infrastructure, humans and whatever else stands in their way.

**Coastal floods:** High tides and storm surges caused by tropical depressions and cyclones can cause coastal floods in urban areas located at estuaries, tidal flats and low-lying land near the sea in general.

**Riverine floods:** Urban areas situated on the low-lying areas in the middle or lower reaches of rivers are particularly exposed to extensive riverine floods. River floods are triggered by heavy rainfall or snow melt in upstream areas, or tidal influence from the downstream. Ground conditions such as soil, vegetation cover, and land use have a direct bearing on the amount of runoff generated. River floods occur when the river run-off volume exceeds local flow capacities.

### **2.1.3.1 Impacts of Flooding**

Flooding is one of the natural hazards which have the potential to produce catastrophe (massive disaster). During the past few decades, the world experienced increasing number of natural disasters and increasing losses from these events. The annual occurrence of great natural disasters ranges from zero (1952) to 15 (1993), with an average of five (Abbott, 2008). During the past few decades, natural disasters such as earthquakes, floods, and hurricanes have killed million people on this world; the average loss of life has been about 150,000 and the financial loss exceeds \$ 50 billion per year (Keller and Blodgett, 2008).

The effects of flooding can be primary that is directly caused by the flood which includes injury, loss of life, damages on homes, buildings, roads, railroads, bridges, and communication systems. The secondary effects caused by disruption of systems and services due to the flood. The secondary effects include short term pollution of rivers, hunger and disease, and displacement of persons who have lost their homes and disruption of livelihood, community breakdown, family blighted and reduced national gross domestic product (Keller and Blodgett, 2008; WMO/GWP, 2008). Added to this, World metrological organization (2008) identified the loss due to flooding as Tangible - loss of things that have a monetary (replacement) value, for example, buildings, livestock, infrastructure etc. Intangible - loss of things that cannot be bought and sold, for example, lives and injuries, heritage items, memorabilia etc.

### **2.1.4 Coping Strategy**

The term coping strategy has been given various definitions by different scholars in the context of disaster. In terms of natural hazards, flooding, the application of indigenous knowledge in the

face of hazards and other threats is referred to as a “coping strategy” or “coping mechanism” (Twigg, 2004 cited in Dewi, 2007).

Coping is a mechanism that households or a community employs to handle the stress situation by mobilizing the assets or capital resources (human, financial, physical, social and natural) (Thapa, 2005).

The ways in which capacities are mobilized in times of crisis reflect coping strategies. Coping strategies refer to the manner in which people and organizations use existing resources to achieve various beneficial ends during unusual, abnormal and adverse conditions of a disaster phenomenon or process (UN/ISDR, 2002 cited by Gillard, 2010).

Coping is no more than the manner in which people act within the limits of existing resources and a range of expectations to achieve various ends. But usually it means how it is done in unusual, abnormal, and adverse situation. Thus, coping can include defense mechanisms, active ways of solving problems and methods for handling stress (Thapa, 2005; Wisner et al., 2003).

#### **2.1.4.1 Types of Coping Strategy**

According to Twigg (2004); Huraera et al. (2010) there are four types of coping mechanisms in the context of disaster:

**Economic/material:** Diversifying income sources: in cities this may mean illegal or quasi-legal work, such as street-hawking and waste-recycling. Having more than one, or sometimes several, income earners in the family also allows for diversification or gives household additional labor. This sometimes means taking children out of school to help generate extra income. Saving and credit schemes can be taken as economic coping strategy.

**Technological:** Modifications to the physical and built environment: this may include modifications within the house or to the house structure which include building houses on stilts so that flood water can pass underneath and building houses on plinths or platforms of mud or concrete so that they remain above flood levels. Also improvements outside the house or at the neighborhood scale, such as retaining walls, drainage facilities or sandbags are also technological coping mechanisms.

**Social/organizational:** It is related with the development of social support networks: this is the ability to call on the resources of others during difficult times. Networks can be within the household, between extended family members (living near or far), within neighborhoods, and with wider groups that have a shared identity (religious, geographical, commercial, etc.). Assistance can come in many forms – financial help, emotional support, shelter in time of need, or physical help of any kind.

**Cultural** coping strategies include risk perception and religious views.

Similar to the concept mentioned above, the classification of coping mechanism according to Douglas et al. (2008) are, some of which correspond to strategies used by the urban poor:

- Modifications to the physical and built environment: this may include modifications within the house or to the house structure so that it is not impacted. Also improvements outside the house or at the neighborhood scale, such as retaining walls, drainage facilities or sandbags.
- Building up stores of food and saleable assets: storing food may be more common in rural areas, but urbanites living in a cash-based economy may use similar strategies such as keeping items of value that can be sold if necessary.
- Diversifying income sources: in cities this may mean illegal or quasi-legal work, such as street-hawking and waste-recycling. Having more than one, or sometimes several, income earners in the family also allows for diversification. This sometimes means taking children out of school to help generate extra income. If families have contributed to savings groups, this can offer a form of income during hard times.
- Development of social support networks: this is the ability to call on the resources of others during difficult times. Networks can be within the household, between extended family members (living near or far), within neighborhoods, and with wider groups that have a shared identity (religious, geographical, commercial, etc.). Assistance can come in many forms – financial help, emotional support, shelter in time of need, or physical help of any kind. These types of networks may be less prevalent in urban settings due to the erosion of traditional systems that govern social interactions. Also, transience is quite

common in urban settings, so family may not have the opportunity to establish these important networks.

According to Abbott (2008) human responses to flood hazards categorized in to two as structural and non structural measures. The former includes constructing dams to trap flood waters; building levees along rivers to contain flood water inside taller and large channels; engineering projects seeking to increase the water-carrying ability of a river channel via straightening, widening, deepening, and removing debris; and short term actions such as sand bagging. The later consists of flood forecasting via use of satellites and high tech equipment, zoning and land use policies, insurance programs, evacuation planning, and education.

Coping mechanisms employed by the people can be applied in different phases of hazard management: mitigation, response and recovery. Based on the hazard management phases Wisner et al. (2003) identified two types of coping mechanisms: “preventative” and “impact-minimizing” strategies.

Preventative strategies – at the individual and community level – implies people making choices so that they will not be affected by an event, such as avoiding dangerous places at certain times or choosing safe residential locations. By contrast, impact-minimizing strategies are those strategies adopted to minimize loss and to facilitate recovery in the event of a loss.

#### **2.1.4.2 Levels of Coping Strategy**

We do have coping strategies operating at different levels such as individual (household), community (neighborhood) and institutional (city wide or beyond) level. The individual level coping strategy consists of, for instance livelihood diversification, migration and so on. Collective actions such as cleaning the canal, helping other community member in doing work are labeled as community coping strategies. The institutional coping strategies are strategies taken beyond the level of household or community. Investments in roads and pathways and drainage and sanitation systems, and improvements to open spaces fall under the category of institutional level coping strategy (Hurearea et al., 2010; Dewi, 2007). Taking this into consideration, this study has looked at individual level coping strategy.

When households hit by disasters, they cope by changing work pattern- moving more members in to the labor force, or working more hours or by reducing expenditure, taking loans, leasing assets or in the extreme they sell assets. Members may migrate to the village, or families may move together. If this also does not work the member will beg or ask for help (Gaillard et al., 2008; Thapa, 2005; Peters et al., 2009; Ribot, 2009).

As it is argued by (Skoufias, 2003; Wisner et al., 2003) strategies adopted by households who are affected by disasters enable them to survive but not to improve their welfare. They often cope by reducing expenditure on nutrition, health care and withdrawing children from school. Therefore, the ramifications of these coping strategies are that they may transmit poverty from the current generation to the future generation. As mentioned above, there are different kinds of coping strategies in the context of disasters such as flooding. Since the focus of this study is on displaced flood victims, I would like to see post disaster coping strategies/impact minimizing strategies of the group under study in Dire-Dawa and the outcomes of the coping strategies employed.

### **2.1.5 Factors that Influence the Choice of Coping Strategies**

Access and control over resources greatly affects people ability to cope with disaster (Twigg, 2001; Dewi, 2005; Mekiel, 2002). Those with better income, diversified livelihood, access to information, means of production, equipment and social networks are less vulnerable and are able to recover quickly than those without such endowments (Thapa, 2005; Wisner et al., 2003; Gaillard, 2008; Reganit, 2005). Apart from asset possession, the magnitude of flooding also influences the choice of coping mechanisms (Dewi 2005; Reganit, 2005). For instance, the effect of flash floods is more pronounced in urban areas than other types of flooding because it does not give the chance for communities living in its path to prepare for it. As a result, it causes major destruction to infrastructure, humans and whatever else stands in its way. Such kind of event is evident in Dire Dawa where this study has taken place. During the night, flash flood in Dire Dawa resulted in loss of life, injuries, and great destruction on properties.

## **2.2 Theoretical Framework**

Kitchen and Tate (2000) indicated that the research process is not divorced from theory. Theories are very important in any research project for they serve as a guideline in the research process. *“Theory is taken to be a set of explanatory concepts that are useful for explaining a particular phenomenon, situation or activity. These concepts offer certain ways of looking at the world and are essential in defining research problem”* (ibid, 2000: 32).

### **2.2.1 Sustainable Livelihood Framework**

The sustainable livelihood frame work (SLF) which is promoted by DFID used as a way of thinking about the objectives, scope and priorities for development by putting people at the center of the development process. The (SLF) first developed largely in rural development context. However, the 1990s research on urban poverty, stimulated by the adverse impact of economic recession and SAP on urban dwellers, paves the way for the application of the framework in urban context. Many of the concepts were found to be appropriate and adopted and adapted in work on urban poverty (Rakodi, 2002).

The sustainable livelihoods (SL) approach was not developed specifically for the analysis of disasters, but more generally for a wide range of (usually agrarian) policies. Nonetheless, it is implied that the occurrence of a disaster (or in livelihood terminology by ‘shock’ or ‘stress’) implies non-sustainability of the affected livelihoods or vulnerability context for the affected households (Wisner et al., 2003). Added to this, Twigg (2001) argued that ensuring livelihood security is an integral part of a sustainable approach to disaster mitigation, but livelihood support is largely ignored in disaster mitigation plan. For research studies on livelihood options for disaster risk reduction, the SL approach appeared to be the most useful.

The Sustainable Livelihoods (SL) approach centers on ways of understanding the practical realities and priorities of poor men and women – what they actually do to make a living, the assets that they are able to draw on and the problems that they face in doing this and various strategies they employ to recover or keep themselves away from shocks and stresses (Farrington et al., 2002). Similar to the above concept, Twigg (2001) argued that SLF view people as

operating in the context of vulnerability which help understand the various hardships faced by the world poorest people. Therefore, the analysis of people's capacity to recover from shocks (human health shocks like epidemics, natural shocks- natural disasters) is an important theme in sustainable livelihood approach.

Entitlement and livelihood approach- are called household based social models. They tend to bring attention to the most vulnerable populations-the poor, women, and other marginalized groups. These approaches provide a starting point for analyzing the causes of climate-related vulnerability. However, the entitlement approach focus on vulnerability to hunger but the livelihood approach give due attention to multiple vulnerabilities or a group of factors closely related to the broader condition of poverty such as risk of hunger, dislocation, and economic loss and so on (Ribot, 2009). Apart from this, instead of depicting people as passive agents, the SLF acknowledges their active role in searching opportunities and coping with adverse effects of crises. On this ground, livelihood framework is taken as a tool to improve our understanding of livelihood and survival strategies of the poor (*DFID, 1999; Twigg, 2001; Ribot, 2009*). Having these all in mind, I selected sustainable livelihood framework to analyze post crises life situation of flood victims particularly their coping strategies.

The key concepts represented in livelihood framework are assets, vulnerability context, mediating processes, livelihood strategies and livelihood outcomes. Here under the key concepts of SLF model will be discussed in relation to urban settings and the topic of study.

### **2.2.1.1 Vulnerability**

Vulnerability context refers to the external environment in which people exist and have direct impact on people's asset status. It consist of Trends (demographic, resource and governance trends), Shocks (human, livestock or crop health shocks, natural hazards, like floods or earthquakes, economic shocks and war) and Seasonality (seasonality of prices, products or employment opportunities) (Kollmair et al., 2002; DFID, 1999, Rakodi, 2002).

From the natural hazard/disaster perspective, vulnerability defined as the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of natural disasters (Wisner et al., 2003).

As it is argued by Farrington et al. (2002) the extent of vulnerability relates both to the level of external threats to a household's, individual's or community's welfare and to their resilience resisting and recovering from these external threats. Disasters change the resources available to a household, result loss of employment/livelihood opportunities due to dislocation and, therefore, can intensify some people's vulnerability (Ribot, 2009).

Dependence on the cash economy, the main characteristics of urban economy, is one source of vulnerability among poor urban residents. In other words, most basic goods in urban areas such as food and accommodation must be bought or rented through the market. So, the urban poor must, therefore, survive through undertaking a variety of income-generating activities. In most developing cities, the main part of these income-generating activities takes place in the informal sector. However, informal sector activities generally provide poor men and women with low cash incomes and insecure conditions. Those in informal employment tend to lack labor rights. They are, therefore, susceptible to sudden unemployment and the dangers accruing to unprotected working conditions, such as long hours, poor pay and insanitary or unsafe conditions (Potter and Lloyd-Evans, 1998; CSA, 2003).

Another source of vulnerability in urban areas is the social context. Neighborhoods may be fragmented due to specific social problems, such as a prevalence of criminal activities and drug or alcohol dependency or ethnic, religious or communal tensions which reduce the ability of household to support one another (Farrington et al., 2002).

Apart from this, social mechanisms can be affected by the occurrence of crises. For instance, a distinguishing feature of economic crises and natural disasters from other types of shocks experienced by households is that they affect many households simultaneously. So the aggregate nature of these shocks means that many of the informal mechanisms for mitigating and coping with risk become ineffective. This is particularly the case for the informal mechanisms that are group -based (Skoufias, 2003). On the other hand, dislocation by itself has its own impact on social ties. The disruption of whole communities as a result of eviction poses significant threats to social networks and capital (Meikle et al., 2001).

### **2.2.1.2 Livelihood Assets**

Livelihood assets are assets used by individuals to realize their self defined goals/outcomes which include human, physical, financial, natural and social assets (Rakodi, 2002; DIFD, 1999). The strategy options open to a household depends on the portfolio of assets held and the capability of a household to find and make use of livelihood opportunities (Rakodi, 2002). Assets commonly used by the urban poor are discussed as follows:

#### **Human Capital**

In the context of SLF, human capital represents the skills, knowledge, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve livelihood objectives (DIFD, 1999; Kollmair et al., 2002). Since the urban economy is cash based, the capacity to work is the main asset for the urban poor. Health is also vital in determining the quality of labor. Likewise, education also provides the chance to improve the value of human capital (Meikle et al., 2001; Kollmair et al., 2001).

#### **Financial Capital**

Financial resources consist of available stocks such as bank deposit/saving, or liquid assets (jewelry) and regular inflows of money comprising income, insurance, remittance, access to credit (formal and informal) institution and pension which can determine the livelihood strategies and even access to other asset such as education, health, transport services, housing and so on of household (Kollmair et al., 2002).

Among the five types of capital, financial capital is the most important in urban context as urban areas are dependent on cash. Apart from this it is also the most versatile one as it can be converted to other types of assets or can be used for direct achievement of livelihood outcomes (e.g. purchasing of food to reduce food insecurity) (ibid). The importance of income for the urban poor relates to the highly 'commoditized' nature of cities, leading to a higher dependence on cash income compared to rural residents who usually have better access to land for subsistence agriculture, to common property or 'free' natural resources (e.g. fisheries, fuel wood, hunting grounds), and who may be paid in kind for their labor (Farrington et al., 2002).

## **Physical Capital**

Physical capital comprises assets such as housing, farm, livestock, economic and social infrastructure (education and health facilities, road, energy/electricity) and production equipments such as machinery and utensils. Added to this, Twigg (2001) include affordable transport, secure shelter, adequate water supply and sanitation, access to information as components of infrastructure. Producer goods are the tools and equipments people use to function productively. Physical capital also provides opportunity for making a livelihood. For instance, housing in urban areas can be used for both productive (renting rooms, using the space as a workshop area) and reproductive purposes (Meikle, 2002; Meikle et al., 2001). In addition, access to education and health facilities help poor residents to improve their human capital.

## **Social Capital**

A key asset for both the urban and the rural poor is social capital. Social capital refers to networks of mutual support/ reciprocity that exist within and between households, extended family, and communities, which people can mobilize to access, for example, loans, childcare, food, accommodation and information about employment and opportunities (Farrington et al., 2002). Another key aspect of social capital is information about opportunities and problems related with casual labor markets and other opportunities (Meikle, 2002).

## **Natural Capital**

Natural capital is taken as least significant assets to the urban residents. It incorporates environmental assets such as lands, water, forest or grazing land. These resources are generally less used in the livelihood strategies of urban poor, as they are less available in urban areas (Meikle, 2002).

### **2.2.1.3 Mediating Processes**

In the sustainable livelihood framework (SLF) approach mediating processes refer to the institutions, organizations, policies and legislation that shape livelihoods through determining access, terms of exchange between different types of capital, and returns to any given livelihood

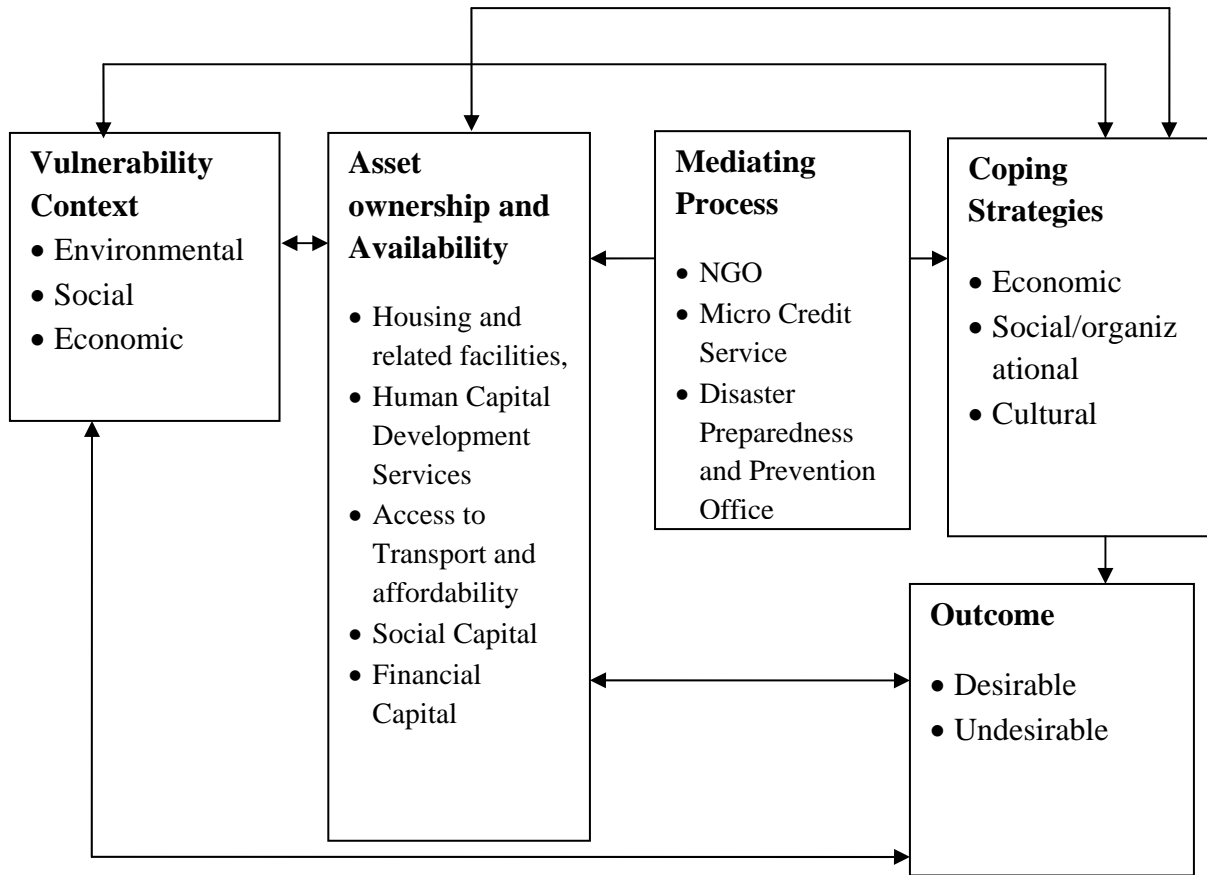
strategy (Rakodi, 2002). In urban areas, the livelihood of poor people is affected by the delivery of infrastructure and services such as education, health care, sanitation, and water supply by city authorities (Farrington et al., 2002). In addition, micro and macro level policies, for instance planning and the current liberalization policies have influence on the livelihood of poor people. In the context of my study, the role of mediating processes such as disaster mitigation office, micro credit program, and NGOs were analyzed.

#### **2.2.1.4 Livelihood Strategies and Outcomes**

Livelihood strategies are a range of activities that people practice to achieve their livelihood goals/ improve their livelihood (Rakodi, 2002). According to Farrington et al. (2002) livelihood strategies embrace coping strategies designed to respond to shocks in the short term and adaptive strategies designed to improve circumstances in the long term. In the case of disastrous event, diversification of livelihood, extending working hours, changing of work or workplace or even trading work for food was found to be strategies that the households adopt in order to increase or extend their economic resistance. Apart from this, they try to use their savings (if any), borrowing money or selling/pawning valuables such as their few appliances or livestock, as these constitute their reserves for other 'critical times' such as illness, unemployment or death (Peters et al., 2009). Most of these strategies are meant to last for shorter periods or at least until the situation returns to the pre-disaster status. However, given the precarious socioeconomic conditions of most of the poor the 'recovery' can last for months, and even years, depending on the magnitude of the event and the level of damage experienced by each household (ibid).

The success of strategies employed by households manifested in more income, reduction of vulnerability, improved food security and sustainable use of resources. The reverse applied to the failure of strategies. Many of the short term strategies (coping strategies) adopted by poor people could not be termed as sustainable. For instance, cutting expenditure on education, basic food, medical and transport costs in the short term may undermine human capital in the long term (Skoufias, 2003).

**Figure 1: Analytical Framework of the Research**



Source: Modified from DIFD, 1999 Sustainable Livelihood Framework and Degefa, 2008

### 2.3 Empirical Findings

Reganit (2005) investigated that the viable coping mechanisms employed by households in relation to floods in Naga city, Philippines are economic and social type. The former includes construction of houses with second floor to escape from flood, purchasing of food stock, saving money, and looking for alternative jobs. Placing valuable things at neighbors and relative's place, staying or evacuating at relatives, neighbors, or city government designated evacuation centers, sourcing relief and borrowing money grouped under social coping mechanisms.

Likewise, Thapa (2005) in his research on impacts of flood hazard and coping strategies of Jagatpur village development committee in Chitwan district, Nepal revealed that the main

livelihood options and strategies of the affected people in the post disaster period were, non-farm activities such as Raski making, wage , domestic and child labor. Apart from this, the study also observed that the workload of elderly, women, and children increases in the post disaster time.

Similarly, Dewi (2007) in his analysis of coping with urban flooding found that economic (economic activities and diversification), technological (construction of houses with reinforced materials and some houses with second floor) and social (cleaning the canal and the surrounding, moving the valuable to safer places, evacuate to local government building such as factory building, mosques and so on) are the most important coping mechanisms employed by households living in the flood prone area in Semarang, Indonesia.

A study by Rayhan and Grote (2007) on the role of migration as a coping strategy in rural Bangladesh depicted that the rural-urban migration as a coping strategy allows potentially vulnerable households to replenish assets damaged by flood and avoid debt.

According to Gaillard et al. (2008) in rural Philippine the kind and variety of livelihoods turned out to be a critical factor in securing the financial means to purchase enough food to satisfy daily needs. Social networking was also found to be critical in providing alternative support in times of crisis for those who are affected by floods.

A study taken by Corbett (1988) on famine-coping responses in Africa, chiefly drawn from the Sahelian and Eastern African countries, discovered the following commonly observed strategies: dispersed grazing, change in cropping and planting practices, migration to towns in search of urban employment, collection of wild foods, use of inter household transfers and loans, use of credit from merchants and moneylenders, migration to other rural areas in search of employment, rationing of current food consumption, sale of productive household assets (e.g., livestock, land), consumption of food distributed in relief programs, sale of possessions (e.g. jewelry), breakup of the household, increased petty commodity production and trading, distress migration.

Samson (2008) made an assessment of the strength and weakness of coping strategy in relation to floods and health in Gambella, Ethiopia. The study reported that the main impacts of flooding on human health in Gambella region were deaths, injuries, and diseases such as malaria and diarrhea. Another notable consequence of flooding was crop destruction and subsequent

malnutrition. However, a lack of flood-specific policy, absence of risk assessment, and weak institutional capacity were identified in the current coping strategies for flood-related health impacts in Gambella region.

As it can be observed from the above mentioned empirical findings, all of them focused on investigation of coping strategies at household level in post disaster period except two of them which have looked at during and post disaster coping strategies. Unlikely, a study taken by Samson (2008) in Gambella, Ethiopia have focused on institutional level coping strategy. Apart from identifying coping strategies developed at household (flood victims) level, this study will explore the outcomes of the coping strategies developed.

## CHAPTER THREE

### STUDY AREA DESCRIPTION AND RESEARCH METHODOLOGY

#### 3.1 Study Area Description

##### 3.1.1 Historical foundation

Historically, the foundation of the Dire-Dawa city can be traced back to the establishment of the Addis Ababa-Djibouti Railway in 1902. Until the late 19<sup>th</sup> century, Dire-Dawa was just a vast plain inhabited by nomads. On March 9, 1884, Menelik II granted permission to Mr. Ilg, a Swiss engineer, to build a railroad connecting Djibouti with Addis Ababa and the work started in 1897. When they arrived near the Dire-Dawa plain, the French surveyors had to find a convenient place which have water for steam engines and workers, a large flat area for their new railway station, and centrally located between Addis Ababa and Djibouti. Dire-Dawa had been the one which could fulfill these conditions. The choice of French engineers had made the location of the town and railway reached Dire-Dawa in 1902. Thus, Dire-Dawa was born. Soon after its foundation, the city of Dire-Dawa became an important center for trade between the port of Djibouti and the capital city Addis Ababa (Baldet, 1972).

##### 3.1.2 Location

Dire-Dawa is found in the eastern part of the Ethiopia with its geographical location (a latitude and longitude of 9<sup>o</sup> 35'N 41<sup>o</sup> 52'E). The Dire-Dawa council bordered by the Somali and *Oromia* regional states. It is found at a road distance of 515 Kilometers from Addis Ababa. The administration has an estimated area of 128,802 hectares. Agro-ecologically, most areas of the region are dominated by dry lowland (67.5%). There are two rainy seasons which are *Belg* (small rainy season) and *Meher* (main rainy season). Its topography ranges from 950 to 2260 meter above sea level. Dire-Dawa is one of the two chartered cities in Ethiopia the other being Addis Ababa. Administratively, the Dire-Dawa council consists of the city of Dire-Dawa and the adjacent rural areas. The council has one *woreda- Gurgura woreda* ([www.diredawacityadministration.com](http://www.diredawacityadministration.com)).

### 3.1.3 Population

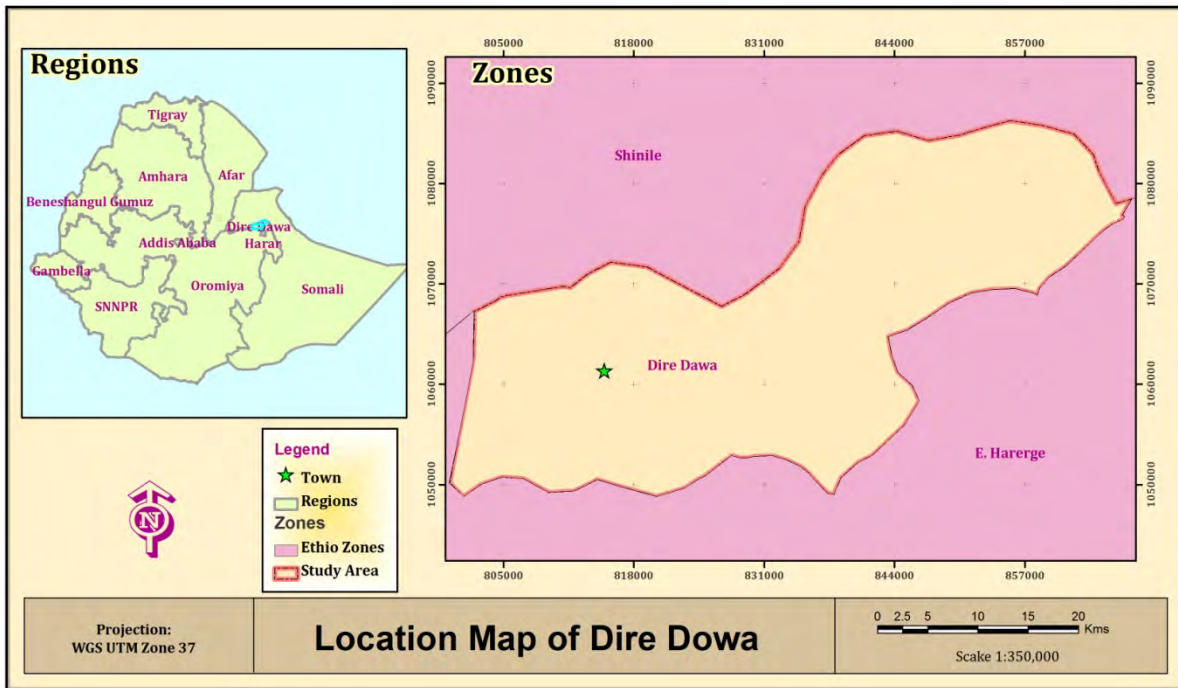
Demographically, the (2007) population and housing census conducted by CSA revealed that Dire-Dawa has a total population of 342,827, of whom 171,930 are men and 170,897 women; 232,854 or 67.5% of the population are urban inhabitants while 109,973 or 32.5% are rural inhabitants. For all of Dire-Dawa 76,815 households were counted living in 72,937 housing units, which results in an average of 4.5 persons to a household, with urban households having on average 4.1 and rural households 5.0 people. Ethnic groups in the region include the *Oromo* (45.9%), *Somali* (24.3%), *Amhara* (20.17%), *Gurage* (4.55%), *Tigreway* (1.23%), and *Harari* (1.09%). Languages spoke include *Oromiffa* (47.95%), *Amharic* (26.46%), *Somali* (19.7%), *Gurage* (2.78%), and *Harari* (1.04%). The religion with the most believers in Dire-Dawa is Muslim with 70.9%, 25.6% are Ethiopian Orthodox, 2.81% Protestant, and 0.43% Catholic.

### 3.1.4 Economy

Economically, Dire-Dawa is considered as one of the industrial cities of the country. Residents of the city earn their living mainly from petty trade, trade and daily labor. In Dire-Dawa the agricultural production systems are mixed farming and livestock rearing. The agricultural sector mostly produces maize, sorghum, chat, coffee, and various kinds of fruits and vegetables. Sorghum is the main staple food crop (85%) where as maize and others constitute about 15% of the total annual crop production. The city has a very conducive environment for investment. Currently there are 136 major investors working in various sectors. Of these, 24 are in agriculture, 33 in industry, 17 in commerce, 34 in real estate, 5 in hotel and tourism, 2 in construction, 6 in transport, 11 in education, and 4 are in health ([www.diredawacityadministration.com](http://www.diredawacityadministration.com)).

With respect to culture and tourism, the city is endowed with various tourist attraction sites. *Legeoda* Cave and mural paintings, the Ethio-Djibouti railway, *kezira* (the cultural market place) are the notable ones. On the other hand, Dire-Dawa is distinctly known by its people mutual respect, tolerance and above all by its hospitality (ibid).

**Figure 2: Location of Study Area**



### 3.1.5 Flood History

Dire-Dawa is known to be vulnerable to natural disaster- flash flood which originate from uphill areas and bordering Oromia *woredas*. For instance, in April 1981 flash flood from Dire-Dawa catchments had occurred three times (once in the night and twice in the day time). The flood caused damage in areas called *Koka, Ginfilie, Addis Ketema, Ashawa, Dechatu and Kezira*, including damage on medical items and medicines in *Dil Chora* Hospital, Rail Way Station, residential houses, and offices as well as household and office items. There is no detail secondary data that indicate the magnitude of damage (DPPA, 2006).

In 2001, the flood also damaged the same flood prone areas in Dire-Dawa. As per information from some community members collected by Dire-Dawa Information and Public Relation Bureau, the flood caused destruction of one Coffee Export Project, Real Estate Development Project and Rail Way Bridge in Dire-Dawa. But there is no secondary data to get more recorded information (ibid).

In May 2005, the flood which occurred in the evening (between 6:00 and 7:00 PM) affected the same places. The death of 42 people was confirmed by Dire-Dawa Police. The flood caused about 10,000,000 in properties loses which include total loss of 3 trucks, one small car, 1 Scania Lobed and damaged 6 trucks, houses and household items (DPPA, 2006).

In August 5, 2006 a flash flood from adjoining Oromia regions during night in Dire-Dawa has caused the highest death toll and destruction of properties in the history of Dire-Dawa. The death of 256 people and displacement of 9,956 was confirmed (DPPA, 2006). About 1,827 rural households and 1,600 urban households made homeless. In addition, the flood imposed huge damages on urban infrastructures and institutions such as the Ethio-Djoubuti railway, the Ethiopian Electric Corporation, the Ethiopian Telecommunication, etc (Daniel et al., 2007).

The 2006 flood incidence of Dire-Dawa had caught the attention of local as well as international Medias as it was the devastating one in the history of the country. The evening of August 5, 2006 will be remembered by residents of Dire-Dawa and the people all over the country. To this effect, local as well as international higher officials made a visit to the area. It was reported in Addis Zemen News Paper as follows:

The FDRE Prime Minister Meles Zenawi had visited flood victims of Dire-Dawa. He had expressed his condolence on behalf of the FDRE government about the human suffering the city had encountered. The Prime Minister held a discussion with flood victims and other residents of the city. On the discussion, the Prime Minister confirmed government would give immediate assistance for the possible recovery of victims (Addis Zemen, 1998:1).

Among the international institutions, the European Union Commission Ambassador Tim Clark made a visit to flood affected areas and people in Dire-Dawa. Apart from this, states from different corners of the world had expressed their heartfelt feelings about the devastation on their letter of condolence (Addis Zemen, 1998).

The psychological upset exerted on those who had lost their lifelong savings and above all their family members, relatives, and friends was immense. The distress experienced by unfortunate victims was reported in *derash* magazine as follows:

“The groaning from the wounded in agony, the wailing from those that had lost their beloved ones, and above all the crying and sobbing of children and aged people looking for their family members- in fact, everything seemed to be in chaos” (Derash magazine, 1999: 29).

The flood hazard in Dire-Dawa is a combined result of its topography, land management condition, rainfall characteristics, and the management of the river corridor (Daniel et al., 2007). During the Italian occupation (1935-1941) settlement in flood path was banned. However, this restriction is not respected to any further extent by officials and residents of Dire-Dawa. Lack of strict land use planning encouraged the expansion of informal settlement, construction of walls lining on the riverbed, establishment of shopping centers and bus terminal within the flooding zone. Such establishments squeezed the width of the riverbed, and result in the overflow of the flood during heavy rains. Land degradation at the upper part of catchment is also responsible for the occurrence of flash flood. This is because of the decline of rainfall infiltration which resulted in pervasive runoff (Daniel et al., 2007).

Unlike the previous years, the 2006 *Kiremt* rainfall was found to be heavy in Dire-Dawa and the adjacent upland areas. As per the meteorological information gained from *Haramaya and Kersa* stations, the 2006 *Kiremt* rainfall has shown an increased trend compared to the past five rainy seasons in the adjacent upland areas- *Haramay/Kersa* areas (from where floods are generated due to heavy Rainfall) (Dainel et al., 2007). See Table 1 and 2 and figure 3.

**Table 3.1: Maximum Rainfall Occurrence at Kersa Station**

Year	Total summer Rainfall	Maximum Rainfall	Months
1995	75.5	57.1	June
1996	<b>336.7</b>	<b>221.0</b>	August
1997	178.3	104.6	August
1998	<b>406.7</b>	<b>231.0</b>	July
1999	<b>393.8</b>	<b>189.5</b>	August
2000	274.7	191.7	August
2001	248.5	148.4	August
2002	196.3	125.0	August
2003	<b>346.5</b>	<b>149.1</b>	July
2004	166.8	81.9	July
2005	234.7	167.2	August
2006	280.8	158.0	August

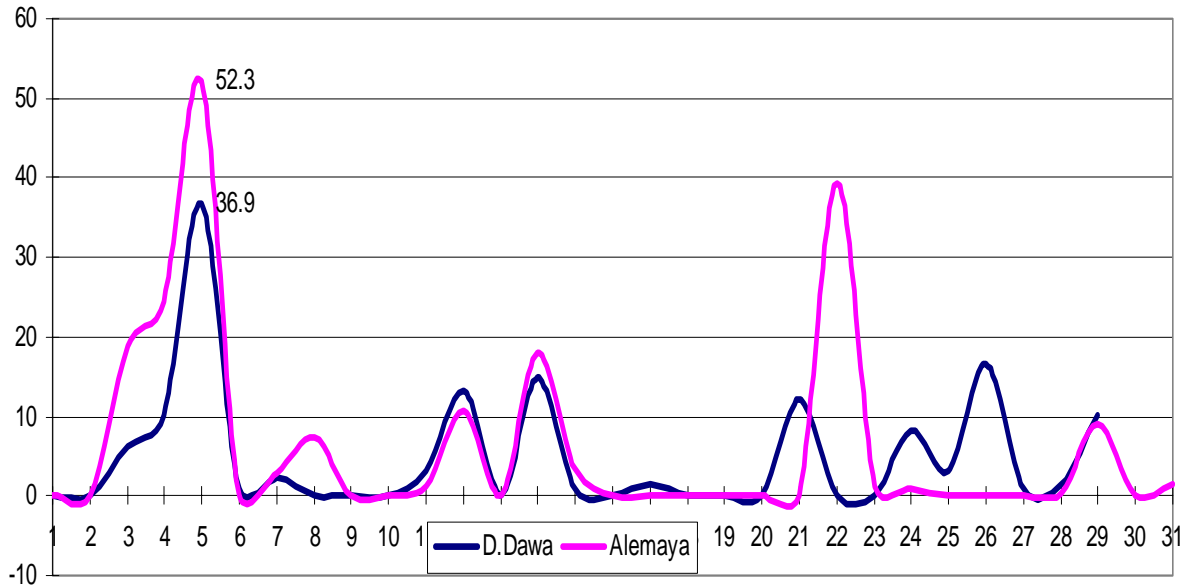
Source: Daniel et al., 2007

**Table 3.2: Maximum Rainfall Occurrence at *Haramaya* Station**

Year	Total Summer (Rainfall)	Maximum Rainfall	Months
1959	109.0	65.5	August
1960	<b>382.7</b>	<b>197.2</b>	July
1961	<b>382.4</b>	<b>153.0</b>	July
1966	<b>740.0</b>	<b>500.2</b>	August
1967	<b>426.9</b>	<b>228.2</b>	August
1968	<b>338.4</b>	<b>128.0</b>	June
1969	<b>324.0</b>	<b>168.0</b>	August
1970	282.8	160.7	August
1971	307.1	127.3	July
1974	282.0	111.5	June
1976	231.0	134.7	August
1979	296.9	160.7	August
1980	218.9	95.9	August
1981	<b>343.6</b>	<b>204.7</b>	August
1982	238.7	122.1	August
1983	<b>496.6</b>	<b>305.2</b>	August
1984	271.6	101.6	August
1985	208.2	90.2	August
1986	308.2	161.4	August
1987	216.1	123.2	August
1988	<b>336.3</b>	<b>180.7</b>	August
1989	302.6	146.0	August
1990	289.7	154.7	August
1991	241.8	109.1	July
1992	243.4	97.6	August
1997	295.7	148.7	July
1998	263.7	128.5	July
1999	<b>363.8</b>	<b>238.6</b>	August
2000	243.1	141.5	August
2001	384.2	217.7	August
2002	273.4	165.3	August
2003	<b>441.5</b>	<b>272.4</b>	August
2004	215.9	116.4	August
2005	307.9	158.8	August
2006	319.7	119.8	July

Source: Daneil et al., 2007

**Figure 3: Rainfall Distribution during August 2006 over around Dire-Dawa**



Source: Tsegaye, 2007

The city administration undertaken flood protection measures which include retaining walls and levees to protect the outburst of *Dechatu* River. Likewise, check dams and terraces were made in the upland areas as flood protection structures. On the other hand, information exchange has been practiced between people at *Haramay/Kersa* areas (from where floods are generated due to heavy Rainfall) and relatives at Dire-Dawa through telephone as one early warning system (Daniel et al., 2007).

### 3.2 Research Methodology

This section of the study gives a brief description of the methods that had been used in the research progress. It includes the justification of study site selection, research method, sampling technique, data gathering tools and procedures, and data analysis.

The main objective of this study is to explore post crises coping strategies of the 2006 flood victims of Dire-Dawa. As it is argued by Farrington et al. (2002) both quantitative and qualitative approaches are found to be decisive in a research that uses sustainable livelihood framework. For instance, quantitative approach is useful to give insight on background contexts and livelihood trends. On the other hand, since SLF is a people centered approach, information

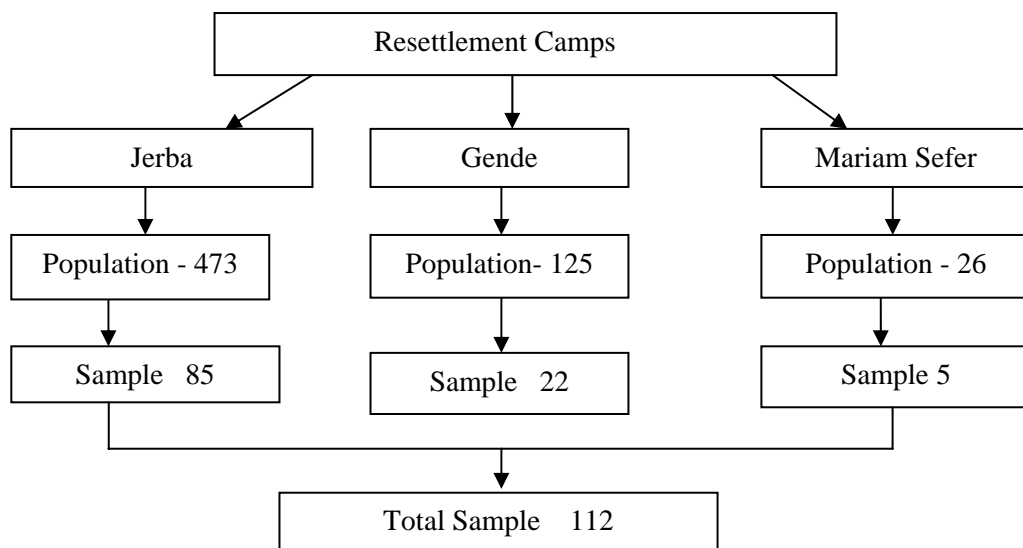
from poor women and men about their priorities and rationales in pursuit of livelihood could only be gathered using qualitative approaches and discussions.

A qualitative approach has been used with the main aim to investigate the perceptions, feelings and experiences of my informants. Geographers adopting a humanistic approach argued that *“human behavior is, in fact, subjective, complex, irrational and contradictory. As such, humanistic geographers began to draw on methods that would allow them to explore the meanings, emotions, intentions and values that make up our taken-for-granted life worlds”* (Ley, 1974; Seamon, 1979, cited in Clifford and Valentien 2003:4).

### 3.2.1 Site Selection and Sampling Technique

The primary purpose of this study was to explore the coping strategies used by the 2006 flood-displaced victims of Dire-Dawa. Therefore, the three resettlement camps (*Jerba*, *Gende*, and *Mariam Sefer*) were selected purposively. The procedures taken to get the target sample involved the following steps. Out of a total of 624 flood-displaced victims in the three resettlement camps, 112 (18%) were selected for the purpose of this study. Then after, 85 respondents from *Jerba*, 22 from *Gende*, and 5 from *Mariam sefer* resettlement camps were taken proportionally as sample for this study. (See Figure 3)

**Figure 4: Procedure of Sample Size Selection**



After the sample of the study had been selected, the next procedure was to reach the sample of the study. Hence, the actual respondents of the study were reached using convenience sampling technique. That is, door to door administration of questionnaire was made for available households until I got the intended sample in each study area. For the qualitative data gathering instrument, FGD, 16 participants were selected out of the total 112 respondents using purposive sampling. Again for the purpose of Key Informant Interview, 7 (3 camp leaders, 3 women from the three resettlement camps, and chair person of the DPPA bureau in Dire-Dawa) were selected purposively. Therefore, totally 121 sample households were included in this study.

### **3.2.2 Data Gathering Tools**

The study used both primary and secondary data sources. Secondary sources of data include articles, relevant materials from the internet, books, magazines, and empirical findings. According to Kitchin and Tate (2000) primary data sources are records by those who actually witnessed an event or entail personal experience of an event itself. As a result, the primary data collected from flood-displaced victims who have real experience in what is going on in their life using Questionnaire, Interview, Focus group discussion, and observation as a data gathering tools.

#### **3.2.2.1 Household Survey**

The questionnaire was designed to collect essential information to address the research agenda. The questionnaire mainly focused on socio-economic condition of victims, availability of services in the camps, challenges to cope with flood damage after resettlement, coping strategies employed and their outcome, and influential factors behind the choice of coping mechanisms.

Questionnaire comprises open and close ended questions in which the “Yes” or “No” answers for close ended questions could be supplemented by the “Why or How” open ended questions for further clarification or elaboration. Thus, the questionnaire of this study was both open and close ended. The questionnaire with fifty five items administered to 112 sample households in all resettlement camps. In order to avoid communication barrier, the questionnaire was translated in to *Amharic* language. And it was also assumed that the respondents could understand *Amharic* language. At the time of the administration of questionnaire, a field assistant was employed. The

assistant and the researcher had assisted some respondents who could not read and understand the questionnaire properly. Hence, necessary clarification had been made to the respondents during questionnaire administration.

### **3.2.2.2 Focus Group Discussion**

Focus group discussion was also used to elicit more information about the issue of the research. FGD is one of a data gathering tools in which “*groups of people meet to discuss their experience and thoughts about specific topics with each other and a researcher*” (Crang and Cook, 2007: 90). As a result, it was used to get ample information from the discussions and idea sharing of the groups under study.

On this ground, FGDs were held at all resettlement camps- (*Jerba, Mariam Sefer, and Gende*). Participants for FGDs were asked their willingness while the questionnaire was administered and the time for FGD was arranged at that time based on their consent. Age and gender were considered at the time of selection. Each of the groups consists of 6 from *Gende* and *Jerba* resettlement camps and 4 from *Mariam Sefer* resettlement camp. The FGD was also conducted at different times in three of the resettlement camps. Constraints to cope with flood impact after resettlement, coping strategies and their outcome, factors behind the selection of coping mechanisms and interaction with governmental and nongovernmental organizations were main topics of discussion.

### **3.2.2.3 Key Informant Interview**

Interview was used as data collection to get ample information on personal thought, experience and attitude for interview is the most commonly used qualitative technique which can provide rich sources of data on people’s **experiences, opinions, aspirations and feelings** (see Kitchin and Tate 2000:213). Having this in mind, in this study leaders of the camps, and women were interviewed to cross-check the data obtained through questionnaire. The availability of services in the camps, challenges they faced after the flood and coping mechanisms chosen and their outcome were covered during the interview.

The leaders of the camps (N=3, one from each camp) were interviewed because the researcher felt that they do have better information about the overall situation of the flood-displaced victims in the resettlement camps. In the same token, women (N=3, one from each camp) were interviewed for the reason that women are vulnerable in such kind of disaster events and have a great role in sustaining life after a disaster. Interview was also conducted with the chair person of Dire-Dawa DPPA bureau. The rationale behind this interview was that the bureau is the very responsible for the disaster related issues. Support mechanisms developed for victims, cooperation with other nongovernmental organizations to help victims were topics of discussion with the chair person.

#### **3.2.2.4 Observation**

Observation ‘entails the systematic noting and recording of events, behaviors, and artifacts in a social setting’ (Kitchen and Tate, 2000). During questionnaire administration, FGD, and interview, the researcher of this study had an opportunity to see the actual living situation of the flood- displaced victims. This had also given the researcher a chance to talk with victims around there. Therefore, observation was used as one data collection instrument in this study. From the observation it was possible to take into consideration how people live, their housing, sanitation, and access to road and so on.

#### **3.2.3 Data Analysis**

The data obtained from questionnaire were tallied, organized and presented using simple Descriptive statistical data analysis technique such as graphs, tables, and charts. To do so Microsoft Excel 2007 were used. While the data obtained from interview, FGD and observation analyzed qualitatively via direct quotes and the discussions integrated with findings of survey in view of substantiating the result. Only 100 questionnaires were analyzed. 8 of the questionnaire were not completed and 4 of them were not returned. But, I missed those questionnaires from the two resettlement camps (*Jerba* and *Gende*). As a result, 12 respondents were excluded from the research.

### **3.2.4 Ethical Considerations**

Nowadays, ethical consideration in research is supported by many organizations to ensure that the research is conducted ethically. According to Clifford and Valentine (2003) the ethical consideration argument further believes that:

- Ethical behavior protects the rights of individuals, and communities who are involved, or affected by the research taken.
- Ethical behavior helps guarantee conducive environment for the continued conduct of research.
- It maintains public trust.

As argued by Kitchin and Tate (2000:35) “research ethics are considered with the extent to which the researcher is ethically and morally responsible to his/her participants, the research sponsors, the general, public and his/her own interest”.

Taking this idea in to account, I tried to be ethical in a manner that will not disappoint my respondents. Initial contacts has made with the camp leaders. I introduced myself and explained the purpose of the research. Then after, I met sample households and asked their willingness to fill questionnaires. The same procedure has been employed for the selection of participants for FGD and interview. After these all, I showed my commitment through availing myself on the intended time to conduct questionnaire or interview, and FGDs, having patience when my respondents were out of track in replying for the question I raised and informing them the purpose of the research and ensuring them that the information given will not be revealed for anyone.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

This part of the study presents the data gathered through questionnaire, focus group discussions (FGD) and key informant interview (KII) from three purposely selected study sites (*Jerba, Gende, and Mariam Sefer* resettlement camps).

#### 4.1 Background of the Respondents

As the data revealed in (Table 4.1), in terms of sex, the respondents of this study are both female and male. From these, 58% of the respondents are females and the remaining 42% are males. In terms of age, this study included respondents with ages ranging from fourteen to old years of age. Accordingly, about 31% of respondents are found in the age group 36-45, 27% in the age group 25-35, and the remaining 20% and 22% of the respondents are within 14-25 and 45 and above respectively.

**Table 4.1: Sex and Age**

<b>Sex (N=100)</b>	<b>Male</b>	<b>Female</b>			<b>Total</b>
Frequency	42	58	-	-	100
%	42	58	-	-	100
<b>Age (N=100)</b>	<b>14-25</b>	<b>25-35</b>	<b>36-45</b>	<b>45 and above</b>	<b>Total</b>
Frequency	20	27	31	22	100
%	20	27	31	22	100

Source: Field Survey, 2011

With respect to level of education, the data (in Table 4.2) showed that most of the respondents of this study are fairly in low level of education. In this regard, over half of the respondents (68%) are illiterate, 13% of them can read and write, 12% cannot move beyond the elementary cycle, 4% of them attained high school level education and very few of them (3%) are Diploma holders. This shows that the number of respondents with higher level of educational qualification is insignificant.

**Table 4.2: Educational Background of Respondents**

	<b>Illiterate</b>	<b>literate</b>	<b>Elementary</b>	<b>High school</b>	<b>Diploma</b>	<b>Degree and above</b>	<b>Total</b>
Frequency	68	13	12	4	3	0	100
%	68	13	12	4	3	0	100

Source: Field Survey, 2011

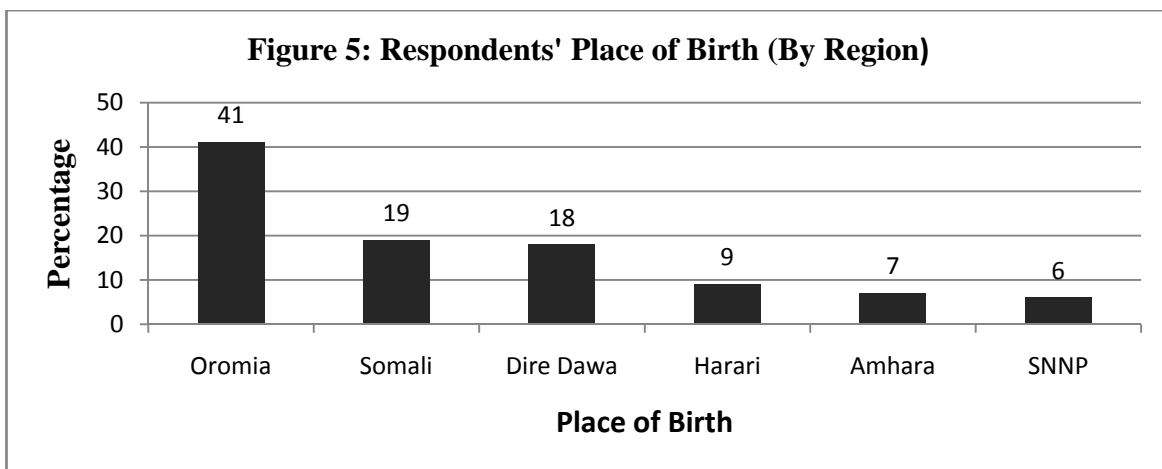
When we see the religious background of respondents, they are from both Christianity and Muslim categories. Accordingly, more than half of them (57%) are Muslims, 21% of them are followers of Orthodox Christianity, the rest 15% and 7% are Protestants and Catholics respectively.

**Table 4.3: Respondents' Religion**

	<b>Orthodox</b>	<b>Muslim</b>	<b>Protestant</b>	<b>Catholic</b>	<b>Other</b>	<b>Total</b>
Frequency	21	57	15	7	-	100
%	21	57	15	7	-	100

Source: Field Survey, 2011

As far as the respondents' place of birth is concerned (Figure 5), respondents are from different corners of the country. About 41% of the respondent's place of birth is *Oromia* region, 19% Somali and 18% *Dire Dawa*. The remaining 9%, 7% and 6% of the respondents belong to *Harari*, *Amhara*, and *SNNP* regions respectively. People from different parts of the country attracted to *Dire Dawa* in search of job because the city is considered as one of industrial cities of the country and serves as center of trade since its foundation.



Source: Field Survey, 2011

## 4.2 Comparison of Pre and Post Flood Status of Respondents

This part of the study presents the status of victims before and after the flood in terms of house hold size, marital status, number of children, occupation, ownership of house and related facilities. In Dire Dawa the incidence of flood with varying magnitude of damage is not new. As it has been stated in some litterateurs, it is reported that since 1945 flood has occurred in the same flood prone areas- *Koka, Ginfillie, Addis Ketema, Ashawa, Dechatu and Kezira*.

With regard to awareness of the occurrence of flood, 85% of the respondents reported that they knew that the place they used to reside in was a flood prone area and the rest 15% were not aware. The result from the FGD also indicated that the victims were aware and had been victims of flooding. Most of the previous flood events happened during the day time so that they had an opportunity to escape from the disaster and move their valuables to safer place. However, the August 2006 flood was a disastrous one for it had happened during night giving the victims no time to prepare for it. Even though victims were aware that their previous residential place was in a flood prone area, they settled and lived there for a number of reasons.

### **Box 1: Reasons for Original Settlement**

- Proximity to city center
- Better employment opportunities
- Provides opportunity for trade
- Ease of access to land
- Low rent

Source: Field Survey, 2011

As it is shown in Box 1, they preferred to live there because it provided them with the opportunity to various income generating activities. Apart from this, this flood path area was the only place where they could get affordable land and cheap rental house. Therefore, according to the respondents report, we can deduce that economic and social aspects forced them to settle in such flood prone area.

As revealed (in Table 4.4), the household composition of the respondents has shown a considerable variation after the 2006 flood incidence. For instance, before the flood the respondents had 5.64 average household sizes while after the flood it comes down to 4.1. This

shows that the household composition of sample victims has shown a declining trend after the flood. The loss of family members during the flood and the migration of daughters (for few of the respondents of the survey) could be a reason for the decreasing of the household composition.

**Table 4.4: Respondents' Household Size (Pre and Post Flood)**

Household Size	Pre Flood		Post Flood	
	Frequency	%	Frequency	%
1-4	20	20	73	73
5-8	58	58	19	19
Above 8	22	22	8	8
Total	100	100	100	100
Average	5.64		4.1	

Source: Field Survey, 2011

With respect to marital status (in Table 4.5), marriage was the dominant type of marital status, which represents 63% before the flood and 37% after the flood. In the same token, single status has shown a decreasing trend holding 27% before the flood and 14% after the flood whereas after the flood widowed takes the largest proportion, 43% compared to 9% prior to the flood. Divorced obtains 6% after the flood. The largest proportion of widowed after the flood may attribute to the death of one of the partners.

**Table 4.5: Marital Status of Respondents (Pre and Post Flood)**

Marital Status	Pre Flood		Post Flood	
	Frequency	%	Frequency	%
Single	28	28	14	14
Married	63	63	37	37
Divorced	-	-	6	6
Widowed	9	9	43	43
Separated	-	-	-	-
Total	100	100	100	100

Source: Field survey, 2011

Regarding to the number of children, as shown in (Table 4.6), after the flood, 46% of respondents' number of children ranges 1-2 compared to 26% before the flood. 3-4 obtains 19% after the flood compared to 18% the time before the flood. 29% of the respondents had 5 and

above children before the flood while 13% after the flood. This implies that number of children for sample households has shown a decreasing trend. 27% and 22% of respondents do not have children before and after the flood respectively.

**Table 4.6: Number of Children (Pre and Post Flood)**

Number of Children	Pre Flood		Post Flood	
	Frequency	%	Frequency	%
1-2	26	26	46	46
3-4	18	18	19	19
5 and Above	29	29	13	13
None	27	27	22	22
Total	100	100	100	100

Source: Field Survey, 2011

In terms of occupation, most of the respondents of this study were found to be traders and daily laborers except few. Only 6% of the respondents were government employee before as well as after the flood. The highest percentage (72%) before the flood was taken by own business/ trader and daily labor. Unlikely, 75% goes to daily laborer after the flood. The rest 15% were unemployed (house wives and students) before the flood and it comes down to 4% after the flood. The same percentages of sample households (3%) were retired before and after the flood. From this one can conclude that the highest proportion of respondents earn their means of living from daily labor because those who had been traders could not perform their previous job due to lack of startup capital. As a result, casual labor becomes the most important means of living for the victims.

**Table 4.7: Respondents' Occupation (Pre and Post Flood)**

Occupation	Pre Flood		Post Flood	
	Frequency	%	Frequency	%
Government employee	6	6	6	6
Own business (trade)	52	52	12	12
Daily laborer	20	20	75	75
Private sector employee	4	4	-	-
Unemployed (Housewife's, students)	15	15	4	4
Retired	3	3	3	3
Total	100	100	100	100

Source: Field Survey, 2011

### 4.3 Impact of the 2006 Flood

In the evening of August 5, 2006 Dire-Dawa experienced the worst flood devastation in the history of the city. The main aim of this study is, therefore, to look at the coping strategies of flood-displaced victims. Hence, it is important to see the major damages of the flood from the victims' perspective. Accordingly, I have asked them to list down the major impacts of the flood on their life.

#### **Box: 2 Self Reported Damages of the 2006 Flood**

- Loss of family members
- Loss of home and all valuables
- Health problem
- Loss of job
- Displacement and its consequences

Source: Field survey, 2011

Having the above view of victims on flood damages, respondents were asked to rank the impacts of the flood in terms of their severity (see Table 4.8). Hence, all of the respondents similarly indicated that loss of family members/relatives was the most severe one. In the case of loss of assets, 92% of victims ranked it as the most severe while 8% as moderately severe. Psychological problem ranked by 69%, 13% and 18% of respondents as the most, moderately, and least severe respectively.

More than half of sample households ranked loss of job opportunities as the most severe, 6% and 30% ranked it as moderately severe and least severe respectively. No fewer than three fourth of respondents ranked displacement as the most severe impact of the flood while 19% as moderately severe and 4% as least severe. With respect to health, 56% of victims ranked it as the most severe, 17% as moderately severe and the rest 27% leveled it as the least severe impact. From this one can conclude that loss of family members/relatives, loss of assets and displacement were the major negative impacts of the flood from the victims view point.

**Table 4.8: Flood Effect Severity Ranking**

Variables	Level of severity						Total
	Most severe		Moderately severe		Least severe		
	F	%	F	%	F	%	
Loss of family members/relatives	100	100	0	0	0	0	100
Loss of assets	92	92	8	8			100
Psychological problem (e.g. stress)	69	69	13	13	18	18	100
Loss of job opportunities	64	64	6	6	30	30	100
Displacement	77	77	19	19	4	4	100
Health problem	56	56	17	17	27	27	100

Source: Field Survey, 2011

Even if displacement is one of the negative impacts of the flood, it has its own positive impact in other way. In this regard, respondents were further asked to write down the positive and negative impacts of displacement in the questionnaire. As a result, those who were not owners of a house become fortunate to have their own house. In addition, they were living in flood prone area but now they moved to a safer place. On the other hand, loss of livelihood opportunity, high cost of transportation due to distant location, loss of long established social tie and difficulty to adapt to the new area of residence were mentioned as the negative impacts of dislocation.

#### **4.4 Vulnerability Context of Flood-Displaced Victims**

In the context of disaster, vulnerability is related with the capacity of people to resist and cope with the impact of a disaster. The vulnerability of peoples' determined by the context in which they live. In this case, context refers to the environmental, social and economic situation of a given locality. Here under, the above mentioned sources of vulnerability will be discussed in relation to the place where this study has taken place (*Jerba*, *Mariam sefer* and *Gende* resettlement camps). I will present the environmental context in terms of the physical disposition (access to basic urban services) and sanitation condition of the resettlement camps.

##### **4.4.1 Location of Residences**

The location of the two resettlement camps (locally called *Jerba* and *Gende*) is found on the outskirts of the city while *Mariam sefer* is in the inner city. Location by itself has its own opportunities and constraints, for instance distance and related cost of transport. To better understand location related challenges the respondents were asked the advantages and

disadvantages of their previous and current residences. As shown (in Table 9), the majority of respondents (those who are settled in *Gende* and *Jerba*) were not in a conducive location. Accordingly, 95% of the respondents reported that they are not beneficial in the current residential place in terms of accessing transport service, basic urban amenities such as school, health stations and proximity to city center and working place. Furthermore, the result from the FGD showed that the respondents are facing difficulties to get medical treatment as the health stations are far away from their place of residence which made them unable to afford cost of transport. Some of the respondents were forced to quit their previous jobs as a result of high costs of transportation. One of the participants in FGD from *Jerba* resettlement camp explained the problem she has got from cost of transport as follows:

*I was living near to Bukar (a coffee processing and exporting company) and working there. But now I am compelled to stop working there because it is far from my current place of residence. I found the cost of transportation unbearable. Now I only depend on my husband's income who is working as a daily labor.*

Among the respondents, very few of sample households (5%) are advantageous in the current residential place as the place is close to city center where they can easily access transport service and other basic urban amenities (in *Mariam sefer*). On the other way round, since they are very close to the main road, they are vulnerable to transport related accidents, and noise pollution. In the case of availability of job opportunities, customers and working place, all of the respondents are disadvantaged in the current residential place. But, for all respondents (100%) their previous place of residence was found to be suitable in terms of the variables mentioned. For instance, it was full of job opportunities, customers as well as working places as it was very near to the largest market places in Dire-Dawa, *Qefera* and *Ashewa*. However, in the case of safety and social interaction, for all respondents (100%) both residences were found to be suitable. Table 4.9 shows the responses of respondents about the suitability of the pre and post flood location of residence.

**Table 4.9: Respondents’ Assessment of the Suitability of Pre and Post Flood Residential Areas with Respect to Selected Variables (Multiple Responses)**

Variables	Percentage of respondents reporting the suitability of residential areas as			
	Suitable		Not suitable	
	Pre flood residential area	Post flood residential area	Pre flood residential area	Post flood residential area
Access to transportation	100	5	-	95
Proximity to school	100	5	-	95
Proximity to health centers	100	5	-	95
Proximity to working place	100	5	-	95
Proximity to city center	100	5	-	95
Availability of recreational place	100	5	-	95
Availability of job opportunities	100	-	-	100
Availability of customers	100	-	-	100
Availability of working place	100	-	-	100
Safety	100	100	-	-
Good social interaction	100	100	-	-

Source: Field Survey, 2011

#### 4.4.2 Sanitation of the Camps

When we look the sanitation condition at the three resettlement camps, compared to the other two resettlement camps, *Mariam Sefer* was found to be good. It is located in the inner city where drainage and waste disposing systems are properly installed. Furthermore, the rehabilitated victims in *Mariam Sefer* were only 26 which made the installation of the above mentioned public amenities easy. While, in the rest two resettlement camps lack of drainage and proper waste management system are the leading contributors for the unhygienic situation of the communities under the study. Victims were asked whether the sanitation condition of their residence is dangerous or not, except for those victims who are settled in *Mariam Sefer*, all sample households in *Gende* and *Jerba* resettlement camps replied that the situation is dangerous. I personally observed that the surrounding environment is covered by a waste which comes from each household home. Hence, victims are becoming vulnerable to various types of contagious diseases like respiratory and intestinal infections.

#### **4.4.3 Status of Social Ties**

Social capital taken as an informal safety net to ensure survival during the period of crisis and it also compensate for a lack of other types of capital. However, disaster disturbs the whole social system and pre-disaster form of life so victims are no more able to hold the informal support mechanisms (Skoufias, 2003). This is also the case in the communities studied. They are displaced from the place where they lived for a long period of time and alienated from their neighbors resulting in a disruption of long established social ties. Respondents were asked if there was any mutual support mechanism developed among them to recover from the effect of flooding after resettlement. Remarkably, in the FGD, they responded that they have not developed such a mechanism for they all are in the same predicament. Even if this is the case, those victims who are able to construct separate cooking place share with others who have limited capacity to do that. Apart from this, since most of them are daily laborers, information sharing about employment opportunities is a manifestation of their good social interaction.

#### **4.4.4 Availability of Services**

In the aftermath of the 2006 flood, victims were resettled in three selected areas of the city as one intervention mechanism. However, the existences of public amenities are very poor and since victims themselves are poor, they are unable to install such services privately. For instance, in all resettlement camps all respondents reported that there is no telecommunication service. This would have its own impact on their day to day life. Even though, three of the resettlement camps provided with common water pipe, respondents in *Gende* and *Mariam Sefer* resettlement camps had difficulties due to unavailability of water on regular basis. The situation in *Jerba* resettlement camp was the worst one where the installed common water pipe is not functional due to disrepair. The absence of public services such as drainage system, water in three of the camps clearly shows the poor living condition of the victims.

#### **4.4.5 Economic Situation of Flood-Displaced Victims**

Almost all of the respondents in the case study area earned their means of living from the informal sector of the economy. Since most of them are with low level of educational background, it was tricky for them to get better paid jobs. As a result, the majority were engaged

in notable informal activities such as street vending, casual labor and some of them in petty trading and wood carrying.

The current income situation of the respondents is getting worse than the previous one. I have asked them to put their current income in a comparative manner with the previous to see if there is a change. Accordingly, the table under shows the trend of their current income compared to the pre-flood status.

**Table 4.10: Comparison of Income (Pre and Post Flood)**

	<b>Income status</b>			
	Increased	Decreased	Constant	Total
Frequency	-	92	8	100
%	-	92	8	100

Source: Field Survey, 2011

As it is clearly depicted in (Table 4.10), about 92% of the respondents reported that their income has shown a decreasing trend while a constant trend was observed among 8% of the respondents. The death of a bread winner, the failure to perform their previous job due to lack of startup capital and transportation cost problem, lack of job opportunity in the current residential place were mentioned as leading factors behind the decreasing of their income. Few of them indicated that previously they were able to rent their house to supplement their income but now they could not do that as they have only one room in which they live.

Respondents were also asked whether they were able to meet their family needs with their current income, all of them reported that they could not meet due to low return from the activity they engaged in and the current escalating price fluctuations of commodities in the country coupled with the other variables mentioned above. Aged people who relied on pension also found themselves in the trap of poverty as they were not able to meet household subsistence given their present income. Obviously, this shows that the flood victims are vulnerable to economic fluctuations.

I made an interview with a 58 years old woman living in *Gende* resettlement camp who had lost her son during the flood and she is now living with her three children. She explained her living situation after displacement as follows:

*I used to lead a good life before the flood. I had a small shop and three houses to rent. But currently I am opposite to my previous living condition. After the relief program has ended up we are supposed to do everything by ourselves. But I got a meager income which is not enough to meet daily subsistence. Honestly speaking, there are even days when we are totally unable to have three meals a day.*

#### **4.4.6 Major Constraints to Cope with the Impact of Disaster (after resettlement)**

**Box 3: Self reported Constraints to cope with the impact of disaster after resettlement**

- Lack of income
- High cost of living
- Loss of previous job
- Lack of job opportunity in the new area
- Distant location and high cost of transportation
- Absence of basic services like water, health stations.....

Source: Field Survey, 2011

The information in Box 3 shows that lack of income; high cost of living and transportation cost were reported as the constraints respondents faced on their attempt to cope with the devastating effect of flood. They were also asked whether they could perform their previous job. In this regard, 88% said “No” while the rest “Yes”. The respondents were also asked the reason why they were forced to stop their previous job. Accordingly, 92% of the respondents reported that their major reason was lack of startup capital, while the other 67% of the respondents said that transportation cost was the foremost problem. No fewer than 50% of respondents relate the difficulty with absence of demand. The result from FGD also revealed that lack of startup capital and distant location made respondents unable to perform their previous job.

As it is mentioned earlier, the majority of respondents were engaged in casual labor and petty trade but the big problem now is the current residential place does not provide them such employment opportunities. Those who experienced traumatic event- loss of lifelong savings, home and family members are becoming psychologically unhealthy. In addition, the resettlement camps lack basic urban services such as water which exposed sample households for additional

expenses and sanitation problem. Currently, as respondents reported, none of the above mentioned constraints have been given solution.

## **4.5 Asset Ownership and Availability**

Why wealthier people suffer less and, why poor people suffer more? This is a question to be asked in the analysis of the impact of a disaster. Obviously, rich people who have access to the various forms of asset are in a better position to avoid the impact of disaster than poor people with meager access to resources. In the context of disaster, access to assets is significant to achieve quick recovery. Here I will have a discussion on four types of assets (physical, human, social and financial) ownership of studied communities.

### **4.5.1 Physical Capital**

Physical capital sometimes which is called produced capital includes basic infrastructures such as shelter, water, energy, communications and production equipments (Meikel et al., 2002). Therefore, the physical asset of the studied communities will be discussed in relation to housing and related facilities such as toilet, kitchen, water tap, and electric meter reader, and access to affordable transport.

#### **4.5.1.1 House Ownership and Related Facilities**

According to the data (in Table 4.11), before the flood fairly more than half of the respondents were living in rental house while 45% of them had their own house. Currently, in collaboration with various governmental and nongovernmental organizations the city administration has provided the victims a single room house constructed in 105 Sq.m allotted land.

The respondents were asked about the quality of a house they have now compared to the pre-flood house. Three fourth of the respondents reported that there is a variation in terms of construction materials, and size. That is, previous houses for the majority were constructed with wood and mud; but in terms of size pre flood houses were with more than one room and big compound. The current houses are made of cement blocks, have very narrow size without compartments and within small compound. Therefore, a single room serves as a sleeping unit, dining room and even cooking place in time when they could not do outside, for instance, because of rain and wind.

**Table 4.11: House Ownership (Pre and Post Flood)**

House ownership	Pre Flood		Post Flood	
	Frequency	%	Frequency	%
Owned	45	45	100	100
Rented(Kebele/government)	-	-	-	-
Rented(private)	55	55	-	-
other	-	-	-	-
Total	100	100	100	100

Source: Field Survey, 2011

In relation to ownership of housing related facilities such as toilet, kitchen, water tap and electric meter reader, prior to the flood, 60% of respondents had them communally and 40% owned privately (see Table 4.12). After the flood, all of the respondents have their own toilet and electric meter reader. Only 12% of the respondents were able to install water privately while the rest 88% rely on single public water tap. The sample households did not have separate kitchen as a cooking place. Since they do not have proper kitchen they use open spaces near to their house. However, it is very difficult to use open spaces when the weather become windy and rainy. Participants in FGD in all resettlement camps reported that the big problem they faced now is inadequate provision of water. At *Gende* and *Mariam sefer* resettlement camps they do not get water on regular basis especially in day time so they found it difficult to wake up and fetch water at mid-night.

**Table 4.12: House Related Facilities**

House related facilities	Pre Flood				Post Flood			
	Private		Communal		Private		Communal	
	F	%	F	%	F	%	F	%
Toilet	40	40	60	60	100	100	-	-
Kitchen					-	-	-	-
Water tap					12	12	88	88
Electric meter reader					100	100	-	-

Source: Field Survey, 2011

As it is argued, the situation in *Jerba* resettlement camp is miserable for the installed public water tap is not functional due to disrepair. As a result victims are compelled to rely on private water sellers whose costs are not affordable for the majority. Parallel with this, obtaining water from distant location and heavy loads of water threatens women's and children's health. Dire-Dawa is known for its warm weather condition. As a result, availability of water is a significant

asset for the residents of the city. To the contrary, the inadequate provision of water in the place where the flood victims reside has its own impact for the unhygienic situation of victims which in turn had greater impact on their health.

#### **4.5.1.2 Access to Transport Services and Affordability**

Access to transportation service is one of the physical assets fundamental to the functioning of productive activities in all economic and social sectors. Nevertheless, a number of residents could not afford transport costs. In the study area, all of the respondents indicated that they cannot afford Bajaj transportation cost. Even if Dire-Dawa is a secondary city of the country, it lacks public bus transport. The only means of transportation available in the city is Bajaj which has equivalent price as taxis in Addis Ababa. As a result, victims are forced to use walking as a means of transport because they do not have any affordable means of transportation alternatives. It is very terrible to use walking in Dire-Dawa as a means of transport in which warm weather condition has been prevalent. One male participant in FGD from *Gende* resettlement camp narrated as follows:

*Our children have to walk long distances in the very warm climate of Dire-Dawa. Those who are in high school could wake up early in the morning before the sun gets very hot and begun walking. The big problem is we cannot send our little children to school because how could they be able to walk long distance? If things continue like this, I do not think that children in this camp can achieve their destination via education.*

#### **4.5.2 Human Capital**

Human capital represents the skills, knowledge and health that together enable people to pursue various income generating activities (Rakodi, 2002). Thus, human capital is the most accessible and indispensable for the majority of poor people who have less access to other forms of assets. Obviously, it is highly determined by the availability and accessibility of human capital development services such as health and education centers. As it is mentioned earlier in all resettlement camps there is no a health center as well as schools which are the pillars of human capacity development. This section deals with issues of human capital in the studied sites

More than 85% of the respondents had the ability to send their children to school before the flood while 12% were not able to send. Amazingly, 92% of the victims were unable to send their children to school after the flood. The respondents reported that expenses for student uniform, books and transport costs as schools are far away from their current residence were the main factors which halt them not to send their children to schools. With regard to health service, the majority of the respondents cannot afford even cost of public health centers. In addition, the situation is getting worse as the health stations are far away from their place of residence which made them unable to afford cost of transport when medical treatment is highly needed. One of the participants (male) in FGD from *Jerba* resettlement camp narrated as follows:

*In this resettlement camp there is no a health station. We are supposed to go to a health station which is found far away from our residence. We are no more able to afford cost of Bajaj transportation let alone costs for health. In case if there is an emergency, we cannot easily get medical treatment as there is no telecommunication service in this camp to call ambulance.*

#### **4.5.3 Financial Capital**

Financial capital in the urban context mainly comprises of access to credit services, savings, remittances and pensions (Rakodi, 2002). Salary and wage are main source of income for the majority of respondents. Those who are retired get their income from monthly pension payment. Not less than 10% of the respondents have remittances as a source of income from their daughters living in Djibouti. As far as saving is concerned, all of the respondents reported that they are not able to save. On the contrary, before the incidence of flood they were able to save. They further indicated that these days, it is difficult even to cover the daily household subsistence given the current income situation of the respondents.

Credit service is seen as a means for achieving household priorities (e.g. paying school fees, meeting funeral expenses), reducing vulnerability (e.g. a sudden drop in consumption, income or assets) and/or increasing income (Matin et al., 2002). Even if this is the case, unfortunately there is no credit schemes established for displaced victims. The only option available for victims whenever they need to borrow money is their neighbors but currently victims are not active in

this regard. One of the participants (male) in FGD from *Jerba* resettlement camp narrated the above case here under:

*If you need to borrow money here you could not find anyone who is able to lend you because we all lost what we had. What we have now is just from hand to mouth. When I am in need of financial support, I should look for other people whom I knew previously.*

#### **4.5.4 Social Capital**

It is widely recognized that ‘in time of crisis and hardships social capital is found to be a critical and valuable asset which can contribute for the well being of people’ (Meikle, 2002:41). Sharing scarce facilities like kitchen, water is evident in the studied communities as good social relationship. As in the case of Ethiopia, participation in social groups like *Equb* (local saving group) and *Idir* (burial association), and *Mahber* (religious group) and reciprocity are the manifestation of social capital. Only 62% of sample households actively participate in *Idir* for it helps them to get support in the form of money and relieve in time of death of family/relative. The rest do not participate due to lack of income. The respondents do not have *Equb* because they could not afford the monthly or weekly contribution needed for *Equb*. I made an informal discussion with a woman aged 29 in *Marim Sefer* resettlement camp and she said the following about *Equb*:

*Prior to the flood, I was a seller of tea and coffee on the streets. By that time I was able to participate in Equb with my colleagues and we used to save 30 birr per week. I remember that I bought a refrigerator by the money I got from Equb. But now Equb is unthinkable, I only have the memory.*

#### **4.6 Mediating Processes**

All the respondents reported that they had no any relations with NGOs and other organizations after they resettled. The result from the FGD and key informant interview with chair person of Dire-Dawa DPPA bureau also indicated that sample households have not got any kind of support after the immediate relief program/ resettlement. Despite the presence of many problems in

resettlement camps that needs improvement; currently there are no NGOs or other governmental organizations working with flood-displaced victims.

I have also asked the chair person of Dire-Dawa DPPA bureau whether they have developed support mechanisms like micro credit schemes for victims to facilitate recovery and ensure sustainability of their livelihoods. Unfortunately, despite the construction of houses and 1,500 birr given for each victim households, the administration has not developed any kind of supporting mechanisms. Furthermore, he explained that still the city administration is constructing 75 houses for those victims who did not get.

## 4.7 Coping Strategies

This part presents the strategies developed by displaced flood victims of Dire-Dawa to cope with the extreme flood devastation. In the context of disaster, coping strategies has three phases- pre, during and post disaster coping strategy. Thus, the focus of this study was on post crises coping strategies. Having this in mind, the post crises coping mechanisms will be discussed in relation to economic, social or organizational and cultural coping strategies under this section.

### 4.7.1 Economic Coping Strategies

Economic coping strategy mainly consists of diversification of livelihood activities, saving and credit schemes, engagement of members of the family in income generating activities. This means taking children out of school to help generate extra income and reduction of expenditure can be taken as economic coping strategy (Hurearea et al., 2010). The part here under will have a discussion on the above mentioned economic coping strategies in the context of the place where this study has taken place.

**Table 4.13: Food Related Coping Strategies Adopted (Multiple responses)**

Strategies	Percentage of participants adopting this measure
Rely on less expensive foods	76
Reducing meals	93
Purchasing food and other items on credit	68

Source: Field survey, 2011

Whenever people lack the capacity to meet their basic necessities like food, they are forced to employ a number of strategies in response to shortage. As a result, 93% of respondents modify their consumption pattern. That is, prior to the flood victims used to take three meals a day but now the frequency of taking food for the majority reduced to one or two a day and in extreme cases none of the meals a day. This finding is consistent with the findings of the study taken on disaster victims in Philippine and Nepal (Thapa, 2005, Regiant, 2005). In addition, a study taken by Rahmato (1987) on the “Survival Strategies” used by peasants (i.e., sedentary agriculturalists) in *Wollo* during the 1984/85 famine revealed that reduction of number of meals per day was found to be one of the coping mechanisms.

As far as the quality of food is concerned, 76% of sample households rely on cheaper and lesser quality foods. For instance, before the flood, as it is common in Ethiopia, they used to consume *Teff* but now due to financial constraints maize and sorghum become their staple food. Purchasing food and other items on credit is also one of the coping strategies used by 68% of the respondents. Those traders whom they knew previously allow them to take food and other items on credit.

**Table 4.14: Job Related Coping Strategies (Multiple Responses)**

Strategies	Percentage of people adopting this measure
Engaging children and other members of a household in livelihood activities	83
Having more than one job	91

Source: Field survey, 2011

As it is well known, victims found themselves on the trap of poverty overnight as a result of flood devastation. Apart from this, due to complicated displacement aftermaths, the victims could not lead a sound life. As far as child labor is concerned, those children who lost their parents during the flood were compelled to act as a breadwinner for their little siblings. The same holds true even for those who have parents. Degefa (2008) in his study in two slum areas in Addis Ababa revealed that children working in informal activities are common in response to food shortage. In this study, flood-displaced victims were asked whether other members of their family were engaged in livelihood activities. About 96% of the respondents replied ‘Yes’ while

the rest 'No'. Women and children were involved in notable informal activities. Street vending, petty trading and housemaid were common for girls and women where as boys worked as 'Hamal' (it is like loading and unloading of goods) and in some extreme case they were involved in begging. The chair person of Dire-Dawa DPPA (disaster preparedness and prevention agency) bureau witnessed the involvement of victims' children in begging as a last resort: he explained as follows:

*Unlike the previous time these days one can see child beggars all over the street in Dire-Dawa. I personally came to know that they are children of the victims. But it is beyond the capacity of our city administration to find solutions as we are now very much concerned on provision of houses.*

As one economic coping strategy, respondents were involved in more than one job to earn meaningful income. For instance, males used to work as a guard at night time while in day time they worked as daily laborer. The situation for women is very different, they engaged in activities like wood carrying, *Enjera* baking and washing clothes in other people's home and some of them in street vending which have serious implication on their time and energy. That is, they are undertaking the new income generating activity in addition to other domestic duties: looking after the elderly, children and the sick, preparing food, obtaining water, cleaning, and washing. Young girls were also involved in multiple responsibilities. They were responsible for taking care of their little siblings, preparing food, and obtaining water. In addition to this, they get involved in selling potato (boiled) on the streets. From this, we can understand that the impact of flood is highly imposing its burden more on children and women than other groups of the society.

#### **4.7.1.1 Cut on Expenditure**

The result from FGD depicts that respondents were able to hold social ceremonies like *Mahber* (religious groups), social gatherings with people with the same place of origin, but now they cannot do that as it is beyond their capacity. Apart from this, the respondents also avoid participation in *Idir* and *Equb*. Amazingly, as it is well known chewing chat and drinking is common among residents of Dire-Dawa, now sample households totally removed expenditure on chat even if they got it hard to stop chewing chat. A study taken by Gaillard et al, (2008) in

Philippine found that people cut expenditure for smoking; drinking and gambling after the incidence of flood. In addition, all of them cancel the celebration of birthdays, anniversaries, various religious festivals and other special occasions. A 62 year old man in FGD in *Mariam Sefer* resettlement camp narrated his case with regard to expenses for religious festivals as follows:

*Prior to the flood I was a well known old man who could able to invite people to my home to celebrate EID. But now I am not on that social status. Rather I am thinking these days about a piece of bread for a day let alone having meat on holidays.*

Respondents were asked whether they have borrowed money for recovery after the flood, only 11% borrowed money while the rest did not. They got this financial support from relatives and neighbors whom they knew in the previous residential place. In the time of disaster and food shortage, disposal of assets is the most important means of coping strategies adopted by the victims of disaster. In the context of my study area, only 6% of respondents used dawning of assets as a coping strategy. This clearly depicts that victims have lost all of their assets, and they do not have remains on their hand to be sold. But, it was found that one of the respondents sold her wedding ring which resembles her lifelong commitment to her husband. In addition, walking as a means of transport was found to be one coping strategy in response to unaffordable transport cost.

## **4.7.2 Social/Organizational Coping Strategies**

Social/organizational coping strategy is mainly related with social support networks. It might be within the household, between extended family members (living near or far), within neighborhoods, and with wider groups that have a shared identity (religious, geographical, commercial, etc.). It also incorporates organizational- governmental or nongovernmental support.

### **4.7.2.1 Kinship Support**

A social and kinship tie plays a crucial role in minimizing vulnerability, especially at the time of crop failure and loss of all properties due to disasters (Ribot, 2009). In the case of my study I also came to know that many households have got help from their relatives. With respect to

relations with relatives, 15% of the respondents replied that they had good contact with their relatives while the rest did not have. The respondents were asked the contribution of their relatives in their attempt to come out from the effect of flooding. They responded that their relatives were helping them in terms of cash and installation of water pipe (for few respondents only). For instance, those respondents who have relatives in the country side have got help in the form of food. Sorghum and maize transfers from the adjacent rural areas were found to be decisive supports of relatives. It was also found that sample households have got help from their kin in finding labor or others jobs. As in the cases of those households who have poor families/relatives, they did not get support because their kin's were poor too.

#### **4.7.2.2 Neighbor's Support**

From the very begging, residents of Dire-Dawa have played a remarkable role in helping unfortunate victims. The support soon after the flood in the form of providing shelter, food, love and care were paramount. Such kinds of support keep proceeding in the aftermath of resettlement. Respondents of this study were also asked whether social groups like *Idir*, *Equb* and *Mahber* which have been formed with Neighbors and sometimes with people from the same place of origin have a contribution in their attempt to recover from the impact of the flood. No fewer respondents who were members of a *Mahber* have got financial support. On the other hand, people with the same place of origin have been developed supporting mechanism for long time. So victims were helped by people with the same place of origin in the form of money, and emotional support. Likewise, even if sample households are unable to help each other financially in the resettlement camps, they are cooperative in sharing scarce facilities in the camp, taking care of children of one another and moral support is also there. One of the respondents in *Jerba* resettlement camp narrated the emotional support of her neighbors as follows:

*I lost two of my children by flood. I remember them when I see children playing around my home. I always feel bad when I think of my unfortunate life. But my neighbors are really helpful. They solace and give me courage by their advice and moral support. Even they made a coffee and talk other issues in view of making me forget my heart felt pain.*

#### **4.7.2.3 Support from Charity and other Organizations**

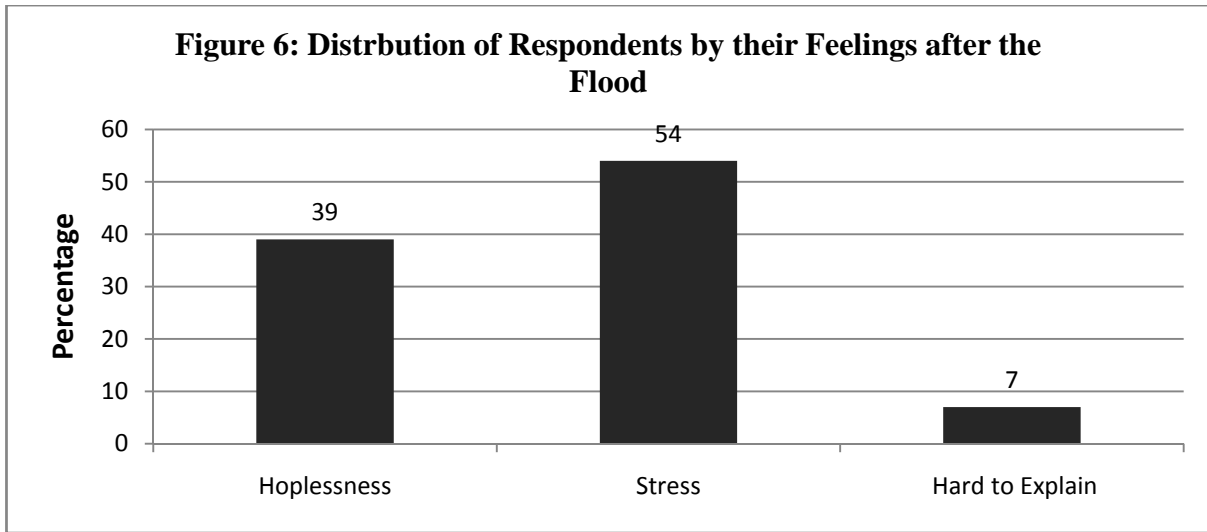
After the incidence of the flood, Government, UN Agencies, NGOs, communities, social and trade groups, individuals, corporations, enterprises, university students, military forces, civil servants and others were engaged in lives saving activities by providing food (cooked and non cooked), non-food items (mattress, blanket, bed sheet, clothes, Jerry cans, cooking pots, tea pots, basins, bucket, plates, cups, soaps, etc), medicines, potable water supply and other basic requirements (DPPA, 2006). I have also made an interview with head of Emergency Housing Project. He explained that after the flood, victims were resettled in the houses constructed in *Mariam sefer*, *Gende* and *Jerba* resettlement camps. *Harerghe* Catholic Secretariat, *Aayat* Real Estate Enterprise, community housing fund (CHF) and Ethiopian evangelical church (EECMY) were notable organizations that have made indispensable contribution in the construction of houses for those victims who have lost their houses. However, the relief program came to an end after victims resettled in the three selected resettlement camps.

#### **4.7.3 Cultural Coping Strategies**

People after disaster suffer not only from physical or economical but also psychological upset which may have long lasting effect on their life (Skoufias, 2003). ‘*Derash*’ magazine which is prepared on August 5, 2007 for the memory of tragic flood devastation that had happened on August 5, 2006 in Dire-Dawa city put the situation of victims’ survivors psychological problem as follows:

*The scar left by the flood especially among those that had lost everything- family, home, and above all their hope is too deep to heal easily. In some extreme cases, the traumatic experiences of some of these survivors would naturally require psychiatric treatments in order to enable them to come to terms with the reality (Derash magazine, 1999:29).*

However, those who are suffering from this problem have developed a number of mechanisms that would help them avoid the trouble. These coping mechanisms are called cultural coping strategies which mainly consist of religious activities, and emotional support of friends or others. As can be seen from Figure 6, more than 50% of the respondents have had stress after the occurrence of flood while 39% of them associate their feeling with hopelessness. 7% of them found their feeling after the flood hard to be explained.



Source: Field Survey, 2011

Inevitably, the above mentioned feelings can occur for victim survivors' because suddenly they had lost their parents, neighbors, and all of their assets accumulated over long period of time. I made an informal talk with one person. He is 32 years old. He narrated the unforgettable events as follows:

*I become nervous when I remember all the events that had happened during the incidence of flood- neighbors calling my name to salvage myself and my family members, the dead bodies all over the place, a man shouting and crying as a result of loss of all of his family ..... I cannot get it out of my mind.*

The result from key informant interview showed that victims lost their hope due to loss of their lifetime savings overnight. Apart from this, the exertion of hopelessness as a result of loss of family is found to be paramount. One of the participants in FGD from *Gende* resettlement camp is a teacher in elementary school. He has got married two years before the incidence of the flood. He explained his case as follows:

*I totally lost my hope. On that day I went to visit my friend with my wife and child. We returned back home at about 8:00pm in the evening. It was raining. The flood comes while we were in deep sleep. Then after, I lost my wife and little baby. You can imagine how it is painful; to tell you the truth I am no more eager to live in this world.*

**Table 4.15: Perception on Flood Damage Manageability**

	<b>Manageable</b>	<b>Moderately Manageable</b>	<b>Unmanageable</b>
Frequency	-	4	96
%	-	4	96

Source: Field survey, 2011

On the other hand, sample households were asked their perception about the manageability of flood damage. Accordingly, 96% of the respondents perceived the flood damage as unmanageable while fewer than 5% of the respondents labeled it as moderately manageable. None of the respondents perceive flood damage that could be manageable. The result from the FGD also showed that they do not know when they will return back to the way they used to live before the flood. The narration by male participants here under from *Gende* resettlement camp confirms the above results:

*It is very hard to me to guess the time I will fully achieve recovery and start the way of living I had before the flood. Because I totally lost my lifelong savings and I am struggling with the current unbearable living condition so how could I think now returning back to the previous way of living? Given the current escalating living condition it is unimaginable.*

In countries like Ethiopia who have strong base on religion, spiritual activities have great importance in time of difficulties. Calling the name or relying on support from almighty God is paramount for the communities studied. As mentioned earlier, hopelessness and stress were the major problems victims faced as a result of the wound left by the disastrous flood of the August 5, 2006. Sample households were asked the coping mechanism they employ to avoid the above mentioned feelings. Christianity followers pray more often to keep away the bad feelings they encountered while Muslims hold ‘*Dua*’ (equivalent with praying). A participant in FGD from *Gende* resettlement camp explained her case here under.

*I believe in Allah. He is the one who gave me what I had. To tell you the truth I lost one of my children during the flood. I always complained and felt bad. But when I see others I tell myself that I am fortunate because I know one guy who lost six of his family members at a time and he is alone now. Even if I lost my child, I am thankful to Allah for he blessed me with a cute baby now.*

I made an interview with a 37 years old woman in *Jerba* resettlement camp and she narrated the importance of praying as follows:

*I grew up in Dire Dawa. More often I went to the Holy Savior Church as it was close to my house. I lost what I had during the flood. As a human being I can lose my hope because I do not have anything at hand right now. It was all taken away by the flood overnight. Sometimes I fall in stress and even lose the spirit of praying. But, when I faced with such an evil spirit I go to church and stay there till I get calm. Then after, I will get relief.*

#### 4.8 Outcome of Coping Strategies Developed

**Table 4.16: Perception Ranking on the Effectiveness of Coping Strategies Developed (Multiple Responses)**

Coping strategies	Percentage of respondents			
	The Least effective	Effective	Intermediate	The Most effective
Rely on less expensive foods		22%	13%	
Rely on help from a relatives or friends				100%
Borrow food from neighbors	32%			
Purchase food on credit	45%	12%	26%	
Reducing meals	78%			
Praying				100%
Borrowing money			11%	
Engage children in livelihood activities	85%			
Selling assets			5%	
Support from charity organizations/ and other institutions		100%		
Having more than one job		36%	28%	
Walking as means of transport	67%			
Cut on expenditure	45%			
Rely on emotional support of friends / families				100%

Source: Field survey, 2011

Table 4.16 shows that for all sample households the social/organizational and cultural coping strategies are found to be the most effective one. These are support from relatives and friends, praying, and emotional support of friends and families. On the other hand, food related coping mechanisms such as reducing meals, borrowing food from neighbors, and purchasing food on credits are labeled as the least effective strategies. On the other hand, 22% and 13% of respondents reported that dependence on less expensive food was effective and moderately effective mechanism respectively. Amid the economic coping mechanisms, engaging children in livelihood activities, walking as a means of transport, and cutting on health, religious festivals, and other special occasion expenditures were grouped under the least effective strategies categories. On the other hand, having more than one job was taken as effective by 36% of respondents while 28% labeled it as moderately effective. Among the economic coping strategies selling asset and borrowing money were taken as moderately effective strategies.

Sample households were also asked why some of strategies chosen were the most effective for them. All followers of religion reported that praying was the most effective for them because they believe that their creator was the one who has helped them in all round of life after the flood. Praying gives them hope, help retain their previous courage to achieve better life, and help avoid evil spirit that comes to their mind when they start to think about the devastation that happened to them during the flood. A 32 years old guy explained how God was helpful to him in time when he lost hope and audacity as follows:

*As known all what we had was taken away by the flood within a period of hours. In the aftermath of the flood I lost my motivation to search for a job and I used to sleep the whole day even without having a meal. But now thanks to almighty God I am able to struggle with several fronts of life to lead better living. But no one gave me this courage; it is God who makes me brave enough.*

To this end, resorting to less expensive food was found to be effective for sample households. Participants in FGD reported that it would help them to save money so as to buy enough food and other necessities because their meager income does not allow them to meet other needs if they rely on costly food. On the other hand, purchasing food on credit was also categorized under effective strategies by few of the respondents. People interviewed indicated that there are days

when they are unable to buy food so they are forced to buy food on credit from traders whom they knew previously.

Borrowing money from favorite lenders such as relatives and friends, enable victims to spend for immediate necessities. One of the interviewed said that borrowing money gave her a chance to buy some necessities until she got job. Support from charity organizations/ and other institutions, and having more than one job were also taken as effective mechanisms. As it is mentioned earlier the majority of respondents were living in rented house. As a result they are thankful to all governmental, nongovernmental organizations and other institutions as they helped them become home owners. Engaging in sideline income generating activities was also effective for it gives them a chance to earn additional cash.

Obviously, the impacts of crisis disproportionately affect women and children than other groups of people. In response to destruction of previous way of living, the involvement of children in the economic market to secure additional income becomes evident. In the case of my study area many children are in the process of dropping the school and were forced to contribute for household income as being domestic servant, working as ‘*Hamal*’ (loading and unloading goods) , street vending, and collecting fuel wood. However, it is mentioned as least effective coping mechanism. Respondents were asked the negative impact of this strategy and they replied that even if they got additional income from their children, they feel bad because their children could not go to school due to their unfortunate life. In addition, the transmission of poverty from parents to children is clearly manifested by the involvement of children in livelihood activities. One of the participants in FGD from *Gende* camp narrates her imagination on her child fate of life in the future as follows:

*My child is 16 years old. He is now working as ‘Hamal’ (loading and unloading goods) at Qefera (market place). I fall in stress when I think about my child’s destiny. Because he is not attending school now and these days one has to learn to achieve better living in the future. I do not know what to say, but I have a fear that he will lead a poor life if things could not get improved.*

As far as reduction of meals is concerned, respondents said that its effect on health is the possible impact of inadequate diet. For instance, children suffer from inadequate food. Crisis on food consumption pattern have adverse impact on infant mortality, life expectancy, and malnutrition (Potts, 1997). On the other way round, women respondents reported that reduction of number of meals in a family creates tension on them. Women are responsible to allocate reduced food supplies among family members. But if they do not have enough food at hand to feed their family, it imposes stress on women since they are the very responsible one to feed family members and look after the sick and little babies.

Borrowing food from neighbors and purchasing food on credit were also considered to have negative impacts. Because those who borrowed food are responsible to return it back as all victims are in the same trouble. In the case of purchasing food on credit basis, they are supposed to repay on the agreed time. If not, they feel ashamed and will not get such a support in other days. Above all, the possible outcome of relying on credit is debt.

With respect to cut on expenditure for special occasions, celebration of birthdays and religious festivals, the result from FGD indicated that most of them were able to hold such social events prior to the flood. It is very sad for them to stop such social events as a result of lack of ability. For instance, children of the studied communities were eager to celebrate their birthday as they did before but it is now beyond the capacity of their parents.

Respondents reported that it is very tiresome to use walking as a means of transport in the hot climate of Dire-Dawa. Since victims in *Gende* and *Jerba* resettlement camps are located far from the center of the city, they have to walk long distances to reach their work place, market place and so on. The effect is highly pronounced for women who are involved in wood carrying due to heavy loads. They take the wood to their clients in the city center and returned back home on foot. I had talk to a woman involved in wood carrying in *Gende* resettlement camp, she said:

*I was a housewife before the flood. But now I started selling firewood with my neighbors. We are supposed to go to Ashewa to sell the collected wood. I feel board of walking. Often I found it difficult even to eat food after I returned back home. For me it is not easy to walk. To use Bajaj is unaffordable and unthinkable because I am responsible to spend the money I got on home necessities.*

I have asked the respondents' opinion about which group of people is highly affected by the negative impact of coping strategies. Accordingly, 51% and 42% of respondents reported that the severity of coping strategies more pronounced for children and women respectively and 7% for elderly. In response to the 1990's economic crisis in some African countries a varieties of coping strategies has been developed and its impact was serious on women and children than other groups of the population (Potts, 1997). In order to earn money women involved in informal activities in addition to domestic duties such as cooking, cleaning, washing clothes, looking after children, elderly and sick. Children are also affected by: withdraw from school, forced to engage in informal activities and affected by inadequate diets (ibid).

#### **4.9 Factors that influence the choice of coping strategies**

One of the main objectives of this research is to investigate the influential factors behind the choice of coping mechanisms. Therefore, this part presents the factors that force victim survivors' to choose the earlier mentioned coping strategies. As it is indicated in various literatures, coping strategy is a mechanism in which victims practice to regain from the losses of a disaster within the existing resources.

However, peoples' strategies to counter off the effects of flooding/disaster are mainly affected by the resources people have, the magnitude of the flood people have to cope with, and their geographical locations (the opportunities and constraints provided by their residence) (Dewi, 2007). People who are economically stable can face lesser impact of hazard and can employ suitable mitigating measures compared to those who are poor in terms of financial resources. Accordingly, the communities studied were asked the factors that influence them to choose the earlier mentioned coping strategies which can have positive or negative outcome. Box 4 presents the factors that compelled victims to choose the earlier mentioned coping mechanisms.

**Box: 4 Self reported factors that influence the choice of coping strategies**

- Lack of income/ meager income
- flood damage /loss
- Cost of transport
- Low level of education
- High cost of living – cost for education, food and other necessities

Source: Field survey, 2011

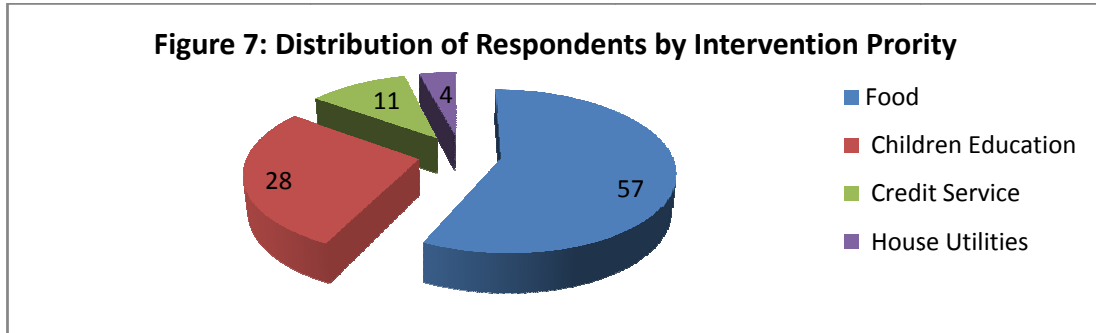
The respondents reported that the paucity of income was the main reason for taking children out of school and in view of augmenting household income victims use children involvement in livelihood activities as one coping strategy. In addition, due to the current high cost of living, their meager income could not buy the household subsistence. As a result, modification of consumption pattern (having one or two or none of the meals per day) was the only option available to them. Walking is also taken as one coping mechanism due to the location of their current residence which is related with distance and the resulting high cost of transportation.

Above all, it is flood damage that obliged studied communities to employ a variety of coping strategies despite their outcomes (positive or negative). For instance, relying on help from relatives, neighbors, and other organizations is mainly attributed to the devastating impact of the flood. Apart from this, few of respondents revealed that their low level of education was also responsible for their involvement in low paid jobs.

#### **4.10 Intervention Priority**

Finally victims were asked what they would prioritize if some nongovernmental and governmental organizations came to help them. Accordingly, more than half (57%) of the respondents' prioritized food while 28% children education. The remaining 11% and 4% needed credit service and house utilities respectively. In addition, they needed water and kitchens. The result from FGD also confirms the above result. A 36 years old male FGD participant in *Mariam sefer* resettlement camp said the following:

*To tell you the truth the current living condition is awful. We need support; everybody you see here is leading a dire life. Currently, household utilities do not bother me. If it is the will of God, I will get what I have lost during the flood but now our urgent need is food.*



Source: Field Survey, 2011

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

The main aim of this study was to explore post crisis coping strategies of the 2006 flood-displaced victims of Dire-Dawa. On this ground, the study intended to look at the challenges victims face to cope, the coping strategies employed and their outcome, and finally the influential factors behind the choice of coping mechanisms have been considered. To achieve the above mentioned objectives, data were gathered via questionnaire, key informant interview, focus group discussion and observation. In this section, the main findings of this study based on the intended objectives are summarized and concluding remarks are presented.

The impact of the 2006 flood in Dire-Dawa was terrible. People lost their family members/relatives, assets, and were displaced from the place where they lived for a long period of time. As a result, they are facing difficulties in running the daily lives in the aftermath of the flood. Respondents in *Jerba* and *Gende* resettlement camps are vulnerable to various health risks. The poor living condition of the respondents became worse with unavailability of water supply on a regular basis, absence of drainage and waste disposal system, absence of urban services such as telecommunication, health centers, and schools and lack of proper kitchen. Apart from this, lack of sufficient income coupled with the current high cost of living exacerbates the dire living conditions of the respondents.

Sample households at all resettlement camps are not in a conducive location for various reasons. Sample households in *Jerba* and *Gende* resettlement camps are not beneficial in accessing transport service, basic urban amenities such as school, health stations as they are located far from the center of the city. Furthermore, due to high cost of transportation victims are obliged to quit their previous jobs. Victims in *Mariam sefer* are better off in accessing transport and other urban amenities as the place is located in the inner city. However, since they are much closer to a main road, they are vulnerable to transport accidents and noise pollution. Apart from this, the current residential place of the respondents is not blessed with the availability of job opportunities, customers, and working places.

Regarding asset possession, communities at study areas are financially poor and have limited access to financial assets as credit schemes are absent. Likewise, the nonexistence of human development services like school and health stations in the study area have immense impact on educational and health status of the victims. Absence and distant location of schools coupled with high expenses for education including cost of uniforms, books made the victims unable to send their children to school. Similarly, the cost of health services is beyond their economic status for the communities studied.

As pointed out above, the people in the study area experienced a flood with great damage on properties and human life as well. Whenever people encountered destructive disaster, they are forced to choose a range of strategies that would help them to survive. Accordingly, the main livelihood options and strategies of the affected people in the study area in the post disaster period were wage labor, domestic labor and child labor in different sectors. In an attempt to overcome the challenges and increase household income, engaging children and other members of a family in informal activities, having more than one job, cutting on expenditure and walking as a means of transport were employed as economic coping strategies. Modification of consumption pattern, purchasing food and other items on credit and relying on less expensive foods were found to be food related coping strategies among the studied communities.

Immediately after the incidence of flood, victims were entirely dependent on the aids given by governmental and nongovernmental organizations. It was also found that very few of respondents were drawing down their assets like jewelry and some were found to be dependent on their kin, or neighbors to borrow food, money and other scarce facilities. Obviously, feelings like stress, hopelessness are commonly observed among victims of disaster as it disturbs the whole form of life. In my study area in response to such feelings, praying and emotional support of friends and relatives were found to be paramount for the survivors.

However, strategies employed by people might have positive or negative outcomes. In the context of my study area, the social/organizational and cultural coping strategies were found to be the most effective. They include support (in kind or cash) from relatives and friends, praying, and emotional support of friends and families. Dependence on less expensive food, selling assets (jewelry), borrowing money and having more than one job were also found to be effective. On the other hand, food related coping mechanisms such as reducing meals, borrowing food from

neighbors, and purchasing food on credits are labeled as the least effective strategies. Likewise, engaging children in livelihood activities, walking as a means of transport, and cutting on health, religious festivals, and other special occasion expenditures are grouped under the category of least effective strategies, too.

The involvement of victims in coping strategies that have desirable and undesirable outcome is driven by some factors. Total or meager income, the magnitude of flood damage, challenges in the aftermath of displacement such as high costs of transportation due to distant location, economic shocks like high cost of living, and victims' low level of education are reported as the leading factors for the choice of coping strategies.

Finally, the study revealed that food, children education, credit service, and house utilities are intervention priorities that are needed as noted by members of the studied communities.

## **5.2 Recommendations**

Based on the findings, the study has forwarded the following suggestions that need the involvement of various stakeholders:

- ✓ Those coping strategies which have undesirable outcome (reduction of meals, children's discontinuation of classes) should be considered and mechanisms should be designed by city administration and NGOs to avert the consequent problems.
- ✓ Proper installation of water, drainage and waste disposal system by city administration is highly needed to improve the poor living environment of victims and is vital to alleviate environment related health problems.
- ✓ Since two of the resettlement camps (*Jerba* and *Gende*) are located far from city center, schools and health stations should be introduced in the camps or nearby areas.
- ✓ Children of the flood-displaced victims who are involved in income generating activities should be supported by governmental or nongovernmental organizations to continue their education as it is very important not only to improve their human capital but also to prevent generational transmission of poverty.

- ✓ It is important to establish credit schemes for victims so as to enable them to diversify income generating activities and achieve quick recovery.
- ✓ Apart from provision of houses, disaster mitigation programs should incorporate the livelihood sustainability of victims in their plan. That means, the relief program should continue till victims achieve promising recovery.

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## Appendix 1

### ADDIS ABABA UNIVERSITY

#### CENTER OF REGIONAL AND LOCAL DEVELOPMENT STUDIES

#### URBAN DEVELOPMENT AND URBAN CHALLENGES IN EAST AFRICA PROGRAM

#### *Questionnaire*

I am a post graduate student at Addis Ababa University in the department of urban development and urban challenges in East Africa. I am conducting research on coping strategies of the 2006 flood victims of Dire Dawa in partial fulfillment of the requirements for the completion of masters program. Thus, this questionnaire is designed to collect information on the coping strategies of flood victims. Since the information you provided is highly valuable to the success of the study, you are kindly requested to give your genuine responses for the following questions. The information you give will not be used for any purpose other than the achievement of the objectives of this research.

**Thank you for your cooperation!**

Put a tick mark  on the space provided

#### Part I: General profile

Items	Alternatives
Age	_____
Sex	1. Male <input type="checkbox"/> 2. Female <input type="checkbox"/>
Educational Level	1. Illiterate <input type="checkbox"/> 2. Can read and write <input type="checkbox"/> 3. Elementary <input type="checkbox"/> 4. High school <input type="checkbox"/> 5. Diploma <input type="checkbox"/> 6. Degree <input type="checkbox"/>
Marital Status	1. Single <input type="checkbox"/> 2. Married <input type="checkbox"/> 3. Divorced <input type="checkbox"/> 4. Widowed <input type="checkbox"/> 5. Separated <input type="checkbox"/>
Region of birth	_____
Religion	1. Orthodox <input type="checkbox"/> 2. Muslim <input type="checkbox"/> 3. Protestant <input type="checkbox"/> 4. Catholic <input type="checkbox"/> 5. Other <input type="checkbox"/>
Household Size	_____
Occupation	1. Public sector <input type="checkbox"/> 2. Private sector <input type="checkbox"/> 3. Own business <input type="checkbox"/> 4. Retired <input type="checkbox"/>

**Part II: Background of the victims**

1. (a,) House ownership before a flood?

- 1. Owned
- 2. Rented from kebele/government
- 3. Rented from private/individual
- 4. Other specify.....

(b,) Is there any variation in the quality of house you have after the flood as compared to the previous one?

- 1. Yes
- 2. No

If 'Yes' in what ways? Elaborate

.....

2. How is your housing condition in relation to ownership of the following facilities before and after the 2006 flood?

Facilities	Before the flood		After the flood	
	Private	Communal	Private	Communal
Toilet				
Kitchen				
Water tap				
Electric meter reader				
Other				

3. What kind of change have you seen in your income after the flood as compared to the time before the flood?

- 1. Increased
- 2. Decreased
- 3. Constant

If it is increased, how?

.....

If it is decreased, why?

.....

4. (a,) How do you compare your health status/ condition before and after the flood?

.....

( b,) If you faced any kind of health problem after the flood, please mention the health problems that you encountered?

.....

5. In relation to the following, how is your livelihood condition before and after the 2006 flood?

Variables	Before the flood	After the flood
1. Household size		
2. Marital status		
3. Number of children		
4. Occupation		

6. Were you aware that your previous residential place is a flood prone area in Dire Dawa?

1. Yes       2. No

If yes, why you settled there?

.....

7. Would you mention the major damages of the 2006 flood on your livelihood?

.....

8. Please rank the following negative impacts of the 2006 flood.

Variables	Rank in terms of severity		
	Most sever	Moderately severe	Least severe
Loss of assets			
Psychological problem (e.g.stress)			
loss of relatives, families			
Loss of job opportunities			
Displacement			
Health problem ( injury)			

Other specify.....

9. In a comparative manner, how do you evaluate the suitability of the previous versus the present residential places in terms of these variables? (Put (✓) mark)

Variables	Suitable		Not suitable	
	Pre flood residential area	Post flood residential area	Pre flood residential area	Post flood residential area
Access to transportation				
Proximity to school				
Availability of job opportunities				
Availability of customers				
Availability of working place				
Safety				
Good Social interaction				
Proximity to city center				
Proximity to health centers				
Proximity to working place				
Availability of recreational place				

Other specify.....

**Part III: Challenges**

10. Did you have a job before the 2006 flood disaster?

1. Yes       2. No

If your answer is 'Yes', what kind of job it was?

11. Are you able to perform your previous job now?      1. Yes       2. No

If 'No', what kind of problem have you faced? (You can select more than one).

- 1. Transportation cost
- 2. Lack of capital
- 3. Lack of Demand
- 4. Lack of working place
- 5. High rent
- 6. Specify others.....

12. (a.) Were you able to send your children to school before the 2006 flood?

1. Yes       2. No

(b.) Are you able to send your children to school after the 2006 flood?

1. Yes  2. No

If 'No', Why? .....

What kind of options are you using now?

.....

13. Is the cost of transportation affordable?

1. Yes  2. No

If your answer for the above question is 'No', which means of transportation are you using?

.....

14. Is there adequate provision of water in the camp? 1. Yes  2. No

If 'No', from where do you get water?

.....

15. How do you evaluate electricity service in the camp?

1. Frequently interrupted  2. Rarely interrupted  3. Never interrupted

4. Not available

16. Is there telecommunication service in the camp? 1. Yes  2. No

If 'No', what kind of impact does it have on your everyday life?

.....

17. Are there services like school, health center in the camp? 1. Yes  2. No

If 'No', how do you see the impact of absence of such services?

.....

18. Have you faced security problem in the camp? 1. Yes  2. No

If 'Yes', mention the problem that you encountered.

.....

19. (a.) How do you evaluate the sanitation condition of the camp and its surrounding?

1. Good  2. Bad

(b.) Is it dangerous? 1. Yes  2. No

If yes, in what ways?

.....  
20. What are the major constraints you faced to cope with the impact of flood disaster after resettlement?

.....  
Currently, have you seen any improvement on the above mentioned problems that you faced?

1. Yes       2. No

If yes, which of the problems have been solved?

.....

#### **Part IV: Coping Strategies**

##### **3.1 Economic Coping Strategies**

21. What is your source of income? (You can choose more than one)

1. Salary/ wage   
2. Pension   
3. Own business   
4. Remittance   
5. Other.....

22. Do other members of a family engage in livelihood activities? 1. Yes  2. No

If 'Yes', what are the livelihood activities they engaged in?

.....

23. Are you able to save? 1. Yes  2. No

If 'No', why?

.....

24. Have you ever borrowed money after the flood disaster? 1. Yes  2. No

If your answer for the above question is 'Yes', from where did you borrow the money?

1. Bank   
2. Micro and small credit associations

- 3. Informal associations like Iquib
- 4. NGOs
- 5. Extended families
- 6. Neighbors
- 7. Specify others.....

25. What are your sources of expenditure for recovery after the relief program? (You can choose more than one).

- 1. Own saving
- 2. Loan
- 3. Kinship
- 4. Neighbors
- 5. Organizational /NGOs support
- 6. Other.....

26. What kind of coping strategies do you adopt to augment your income and faster recovery? (You can choose more than one)

- 1. Selling assets- e.g. jewelry
- 2. Engaging children in livelihood activities
- 3. Having more than one job
- 4. Cut on social, health expenditure
- 5. Specify others.....

27. Do you think that the above strategies have positive outcome?

- 1. Yes
- 2. No

If 'Yes', how?.....

If 'No', why?.....

28. Does your profession/livelihood activity generate sufficient income to meet the needs of your family for the period after the flood?

1. Yes       2. No

If your answer for the above question is 'No', please specify the reasons:

.....  
.....

29. What alternatives do you employ to overcome this challenge? (You can choose more than one).

1. Rely on less expensive food and other items
2. Borrow food from relatives/friends
3. Reducing meals and their portion size
4. Purchasing food and other items on credit
5. Specify others.....

30. Do you have the capacity to purchase/replace the necessary household assets that you lost during the flood?

1. Yes       2. No

If 'No', Why?.....

### **3.2 Social/Organizational Coping Strategies**

31. How do you see social interaction in the camp?

1. Good       2. Fair       3. Bad

32. Are there any social groups (e.g. Idir, Equb) in this camp?    1. Yes     2. No

33. (a.) In which social groups do you participate?

1. Idir

- 2. Equb
- 3. Specify other.....

(b.) with whom do you form such group?

- 1. Your kinsfolk/ relatives
- 2. Neighbors
- 3. Friends at work place
- 4. People with the same place of origin
- 5. Other.....

34. Do social groups have a contribution in your attempt to recover from the flood impact?

- 1. Yes
- 2. No

If 'Yes', in what ways?

.....

35. Do you have contact with your relatives living in the countryside and/or urban areas?

- 1. Yes
- 2. No

If 'Yes', do they have a role in your attempt to recover from the impact of flood disaster?

In what ways?

.....

44. Do you have contact with charity organizations/ other institutions? 1. Yes  2. No

If your answer for the above question is 'Yes', in what way are they helping you to come out from the effect of flooding?

.....

### 3.3 Cultural Coping Strategy

45. How do you label your perception about the devastating effect of the flood?

1. Manageable     2. Moderately manageable     3. Unmanageable

46. What is your feeling after the devastating effect of flooding?

1. Hopelessness     2. Stress     3. Hard to explain

4. Other.....

47. Which of the following coping mechanisms have you employed to avoid the above mentioned feelings? (You can choose more than one).

1. Praying

2. Relying on emotional support of friends, families

3. Specify others.....

48. How do you express the contribution of the above mentioned coping mechanisms?

.....

49. Would you mention the positive and negative impacts of dislocation?

Positive

.....

Negative

.....

**Part IV: Outcome of Coping Strategies Developed**

Coping strategies	Perception ranking on the effectiveness of coping strategies employed			
	Least effective	Effective	Intermediate	Most effective
Rely on less expensive foods				
Borrow food, or rely on help from a friend or relative				
Borrow food from neighbors				
Reducing meals				
Purchase food on credit				
Praying				
Borrowing money				
Engage children in livelihood activities				
Selling assets				
Rely on charity organizations				
Having more than one job				
Walking as means of transport				
Cut on expenditure				
Rely on emotional support of friends / families				

50. How do you evaluate the effectiveness of the above listed coping mechanisms in your attempt to recover from the impacts of flooding?

.....  
 .....

51. Why were the above mentioned coping strategies the most effective for you?

.....  
 .....

52. Would you mention the negative outcomes of the least effective coping strategies employed on your livelihoods?

.....  
.....

53. What factors influence you to choose the above mentioned coping strategies?

.....  
.....

54. In your opinion for which group of people is the severity/ negative impact of coping strategies more pronounced?

1. Elderly  2. Women  3. Children  4. Men

5. Disabled  6. Other.....

55. If some organizations/people come to help you, what would you prioritize for intervention?

1. Food

2. Children education

3. House utilities and furniture

4. Credit service

5. Specify other.....

## **Appendix 2**

### **Focus Group Discussion Guide**

1. Have you been a victim of flooding before? Yes No  
If yes, what makes the 2006 flood different and how do you see the impact of flood in your life?
2. How long will it take you to return back to the way you used to live before the flood?
3. What are the major constraints you faced after you resettled in this camp?
4. Are you able to meet the basic necessities of life? Why?
5. Is there any form of mutual support mechanism among you (in the camp) to recover from the impact of flood?
6. How do you evaluate the coping strategies you adopt? Which of them were effective? And how do you evaluate their effectiveness? Elaborate
7. Have you asked support from city authorities or NGOs after the relief program? If yes, what kind of support did you ask them and response did you get? If No, why?
8. Do you have any contact with NGOs or other institutions? Do they have importance to you? If yes, how?
9. Are you able to hold social ceremonies (wedding etc) these days? Elaborate.
10. What do you suggest for the improvement of you current living situation?

### **Interview Guide (For concerned city authority)**

1. What kind of support have you developed (e.g. micro credit schemes) for victims so as to faster recovery and ensure sustainability of their livelihoods?
2. Are there NGOs/ charity organizations working with displaced flood victims?
3. Does your office collaborate with other charity organizations which are engaged in helping displaced flood victims?

### **Interview Guide (For Key informants)**

1. What kind of challenge have you faced to cope with the impact of disaster after you resettled here?
2. How do you see the availability of services in this camp?

3. Would you tell me the coping mechanisms you choose? Which of them were effective for you? And Why?
4. Do the coping strategies you choose have a negative impact? How?

## **DECLARATION**

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

All the examiner comments have been duly incorporated.

### **Declared by:**

Name: Eleni Gebremeskel Habtu

Signature\_\_\_\_\_

Date \_\_\_\_\_

### **Confirmed by Advisor**

Name: Dr. Solomon Mulugeta

Signature\_\_\_\_\_

Date\_\_\_\_\_

Place and Date of Submission

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