WOLKITE UNIVERSITY

COLLEGE OF SOCIAL SCIENCE AND HUMANITIES

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

THE ASSESSEMENT OF COMMUNITY PARTICPATION IN FLOOD DISASTER MITIGATION:THE CAUSE OF DALE WOREDA, AWADA KEBELE, CENTERAL SIDAMA ZONE, SIDAMA REGION, ETHIOPIA.

A SENIOR ESSAY SUBMITTED TO THE DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR BACHELOR OF ART DEGREE IN GEOGRAPHY AND ENVIRONMENTAL STUDIE.

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A senior essay submitted to the department of Geography and Environmental studies in the partial fulfilment of the degree of bachelor of art in Geography and Environmental studies entitled “The Assessment of community participation in Flood Disaster Mitigation:The Cause of Dale Woreda, Awada Kebele, Centeral Sidama Zone, Sidama Region, Ethiopia.

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Declaration

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Alemayehu Adana and Fentanesh Wasie do here by declare to Wolkite University Department of Geography and Environmental Studies that this thesis is a product of our original research work, and it has not been submitted to any other university for any academic degree. Any materials and information in a report other than our own are duly acknowledged

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ACRONYMS

CSA: Central Statistics Agency of Ethiopia

DWAR: Dale woreda Administration Report

ERCS: Ethiopia Red Cross Society.

FSCDB: Self-closing Flood disaster Barriers

NGO : Non-governmental Organization

Abstract

This research was conducted on community participation in flood disaster mitigation in Dale woreda, particularly Awada *Kebele. The main objective of this research was to assess community participation in flood disaster mitigation, the current situation and future fates, indicate the cause and consequence of flood disasters, and find a possible solution for those problems. The method of data collection includes both primary and secondary data. The primary data was collected from Dale, particularly* Awada Kebele, *using interviews and from households using questionnaires and field observation. The secondary data was collected by reviewing available documents such as books, websites, and published materials. Furthermore, the research findings indicate that to mitigate or reduce a factor in the flooding disaster in Dale woreda, especially* Awada *Kebele,. In addition to that, the researcher was recommended by other researchers to conduct research related to the flooding disaster.*

Key words: *flood, disaster, mitigation, community participation,*

CHAPTER ONE

1. Introduction

1.1. Background of the study

Community participation refers to the involvement of people in any project to solve their own problems or to develop their socio-economic conditions. They participate in setting goals, and preparing, implementing and evaluating plans and programs. The United Nations (2009) defines participation as the collective action by the various strata of people or interest groups. Basically, it is a dynamic group process in which all members of a group contribute, share or are influenced by the interchange of ideas and activities toward problem-solving or decision-making (Banki, 2011, cited in Samad, 2011).Community participation in flood disaster can be done in many issues of Disaster management. The community participation can be develop from the mitigation, preparedness, respond including rehabilitation and reconstruction. Refer to the Huge Bangkok Thailand Flood 2011, a community participation very need for flood waste management. The Village Disaster Preparedness Team is a community- based organization formed to assist the Government in dealing with flood disaster. The Village Disaster Preparedness Team was established in 2013 and is under the control of the Kecamatan and is the implementing unit at the Village level (Allen, Katrina M. 2006). Globally, flooding disaster is the most frequently occurring destructive natural events, affecting both rural and urban settlements as well as developed and developing countries (Santosa, 2006). But, the degree of vulnerability to flooding disasters especially occurring highly in developing countries where necessity tends to force the poor to occupy the most vulnerable areas. On the other hand, the vulnerability of developed countries to flooding disaster increases with economic growth and the accumulation of properties in flo in flood prone areas and in highly urbanized settings (WMO, 2009).

In addition to this, as WMO (2009), stated that, approximately 70% of all global flooding disasters are linked to hydrometer logical events especially flooding, which ranked the second highest natural flooding disaster in causing loss of lives in the world.

Flood disaster is natural occurring processes that are difficult to prevent, but can be managed in order to reduce its social, environmental and economic impacts. Flooding is a threat to life and leads to damage of properties. It is therefore, very important that flooding risks be taken in to account during any planning processes (Amon, 2013).In other words, a flood disaster is an over

flow of water that submerges land, which is usually dry. It is a covering by water of land not normally covered by water. The word may apply to the inflow of the tide. Flooding may occur as an over flow of water from water bodies, such as a river , or lake, in which the water over tops or breaks levees, resulting in some of that water escaping its usual boundaries or it may occur due to an accumulation of rain water on saturated ground in an areas flood (EU,2007).

Over past decades, high deaths are recorded in Africa due to flooding disaster as result of population settlement pattern than a consequence of climate change. In addition to this, floods displaced 2.5 Million people in Africa in 2009 and more than a Million in 2007 (Bariweni, 2012). Besides, over all African flood disaster fatalities increased by a factor often from 1950 to 2009 and over 15,000 people died during the decade 2000 to 2009 (Cutter,2006). On the other hand, the settlement in flood prone areas also increased by a factor often over the same period and the frequency and severity of flooding disasters in most parts of African country has increased considerably (Frederick, 2010).

Flooding disaster in Ethiopia is mainly linked with the natural topography of high land mountains and low land plains with natural drainage systems formed by the principal river basins. On the other hand, most flooding disasters in the country occur due to the over flowing of rivers that causes run off and inundation along their banks in low land plains. (ASERCS ,2006), stated that, heavy rains across the country caused further flooding disaster in different parts of the country including South Omo valley, Dire Dawa, Amhara, Afar,Sidama, Somali, Tigray, Gambella and Oromia regions. Flooding is inevitable in some areas of Ethiopia especially in Sdama region during the main rain season which extends from June-to-September. According to local authorities, following flooding along the Gidabo river in Sidama region in the south east, rescuers used motor boats save some 4000 agro-pastoralists trapped in loka locality. Hundreds of families had been surrounded when the Gidabo River burst its banks. In initially, the rescuers were able to move 1,800 people away from danger (ERCS, 2007).

In addition, flooding disasters in the study area occur during the June-to-September rainy season. As a result, the flooding disaster in the study area of Kebele caused property damage, destroying hundreds of homes, trading stalls, and cutting key road linking lines, further complicating rescue efforts in the area of Kebele (Dale woreda administrative office of Kebele, 2024).

1.2. Statement of the Problem

Flooding disaster is one of natural occurring hazard, which threatens as well as kills human life, damage properties, vulnerable economy and destroyed environment and ecological structure. Through, urban flooding disaster is the inundation of land or property in a built environment, particularly in make densely populated areas, caused by rainfall over whelming the capacity of drainage system, such as storm sewers (Bekele, 2008). In Africa, floods are also the most dominant natural phenomenon that damages people's lives, shelter and the sources of their livelihoods. For example, in 1998, continuous heavy rains in Southern Africa caused huge damage to Mozambique's largest hydroelectric dam, the CahoraBassa (Getao, 2006).

In Ethiopia, large parts of the country are regularly devastated by flooding. In 2006, for example, unprecedented floods affected some parts of Adigrat and Dire Dawa cities, as well as the South Oromo, Amhara, Sidama and Somali regions (Ayalew, 2007). This resulted in the destruction of and damage to the physical, economic and social environments, including loss of human lives, crops and livestock, accelerated land degradation, disruption of infrastructure and telecommunications, destruction of human settlements, displacement of people, as well as the resultant psychological trauma (Abaya, 2008).

Besides to this Dale woreda is one of the Rift Valley land area which can exposed flooding hazards. Therefore, there are some studies that have been conducted in relation to flood disaster. For example, related topics such as the strength and weakness of coping mechanisms to deal with flood health risk in Gambella region (Abaya , 2008).

In the study area, there was a lack of active community participation, and they did not focus on flood disaster mitigation, the current situation and future fates, low household participation, social operational problems, financial problems, and other related problems. The flooding disaster occurred during the June-to-September rainy season, and as a result, they damaged property, destroying hundreds of homes, trading stalls, and cutting key road linking lines, further complicating rescue efforts in an area (Dale Woreda Administration report 2015). In fact, by identifying the aforementioned problems, the community demands effective and optimal non-structural flood mitigation. Typically, non-structural measures are those not only involving physical construction but also using knowledge, practice, or agreement to minimize the risks and impacts, policies and laws, public awareness, training, and education in particular (J. Dekens,

2007). Due to these issues, our study was an attempt to fill the gap between flood disasters and their mitigation practices by identifying and recognizing the problems that flood disasters pose to the environment and human beings and creating awareness regarding flood disaster mitigation practices for the community. These three issues are very important to reducing and eliminating the adverse impact of flood disasters on human beings and property in the current situation and future fates of the area through the application of protection and control methods, building community awareness regarding flood disaster mitigation, and community participation.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of the study is:

To assess the community participation in flood disaster mitigation; current situation and future fates in Dale woreda, in case of particularly Awada Kebele .

1.3.2. Specific Objectives

The specific objectives of the study are:

- . To investigate the attitude of local people on community participation as flood disaster mitigation in the study area.
- To find out the possible ways to mitigate flood disaster in the study area.
- To identify the current situation of community participation in flood disaster mitigation in the study area.

1.4. Basic Research question

1. What is the attitude of local people on community participation as flood disaster mitigation in the study area?

2. What are the possible ways to mitigate flood disaster in the study area?

3. What is the current situation of community participation in flood disaster mitigation in study area ?

1.5. Significance of the study

The study was used to minimize the risk of a flood disaster economically, socially, and environmentally. It may be used to raise awareness among the communities about flood disaster mitigation or flood disaster management activities. The study also uses it to prepare municipalities, planners, and vulnerable communities to protect their lives, properties, and environment from flood disaster risk. It would encourage others to do more research on flood disaster mitigation and contribute to the existing literature on flooding disasters.

1.6. Scope of the Study

The research was conducted in Dale woreda particularly Awada kebele . The conceptual delimitation of this study was community participation flood disaster mitigation current situation and future fates.

1.7 Limitation of the study

Despite the success of the study in several aspects, it still has some limitations as a result of the following constraints: Few respondents to the reflect question that are targeted to the study lack written documents that are related to the topic. Lack of experience in conducting research. It is difficult to access the concerned body at the right time.

1.8. Organization of the Study

The study is divided in to five chapters through which the first chapter deals with background of the study, statement of the problem ,objective of the study, basic research question, significance of the study, Scope of the Study, and Limitation of he study. The second chapter emphasis on the review related literature. The third chapter of the study deal with description of the study area and research methodology of the study, and the fourth deals with data analyzes and interpretation. The last chapter deals with conclusion and recommendation

CHAPTER TWO

2. Review Related Literature

2.1 Conceptual Definition

Community Participation in Flood Disaster Management is an effort to foster a sense of ownership and enthusiasm for various community development activities based on their involvement in planning, implementation and evaluation of development (C.Samuel,2009).

Community participation in flood disaster management planning in Songkar Village through the involvement of metal and community emotions has been done well, can be seen fromthe presence of community members in the meeting almost all invites to attend. When discussing and giving suggestions, as well as community ideas is quite active, although not all provide ideas and inputs in disaster management and when asking for indication of responsibility for the work given informants to quickly answer the duties and responsibilities. This illustrates that the informant is very active in attendance in the meeting and responsible for the work given.(D. Fitriani and O. Oktorie 2019).

Social Work could play vital role to enhance community participation by using its method and techniques as it devoted to enhance human well-being and help to meet the basic human needs of all people, with particular attention to the needs and empowerment of people who are vulnerable, oppressed and living in poverty (Mathbor,Golam M, 2007).

Flood disaster is a natural event or occurrence where a piece of land (area) that is usually dry land, suddenly gets submerged under water. Some flood disaster can occur suddenly and re code quickly. Others take days or even months to build and discharge. Flood disaster is extremely dangerous and has the potential to wipe away an entire city, coastal line or area and cause extensive damage to life and property. It also has great erosive power and can be extremely destructive even if it is a foot high. When flood disaster happen in an area that people live the water carries along objects like; bridges, cars, furniture and even people. It can wipe a ways farms, trees and many more heavy items (e-school today, 2010).

Globally, flooding disaster is the most frequently occurring destructive natural events, affecting both rural and urban settlements as well as developed and developing countries (Santosa, 2006). But, the degree of vulnerability to flood disaster especially occurring highly in developing countries where necessity tends to force the poor to occupy the most vulnerable areas On the

other hand, the vulnerability of developed countries to flooding disaster increases with economic growth and the accumulation of property in flooding prone areas and in highly urbanized setting (WMO, 2009). In addition to this, as WMO (2009), stated that, approximately 70% of all global flooding disasters are linked to hydro meteorological events especially flooding, which ranked the second highest natural flooding is aster in causing loss of lives in the world.

Over past decays, high deaths are recorded in Africa due to flood disaster as result of population settlement patterns than consequence of climate change. In addition to this, flood displace 2.5 million people is Africa in 2009 and more than a million in 2007. Besides, over all Africa flood disaster fatalities increased by a factor of ten from 1950 to 2009 an over 15,000 people died during the decade 2000-2009. On the other hand, the settlement in flood prone areas also increased by a factor o ten over the same period and the frequency and severity of flooding disasters in most part of African county has increased considerably (Frederich ET.al, 2010).

Flooding disaster in Ethiopia is mainly linked with the national topography of high land mountains and low land plains with natural drainage systems formed by the principal river basins. On the other hand, most flood disasters in the country occur due the over lowing of river that causes run off and inundation along their banks. ASERCS(2006), stated that, heavy rains across the country caused further flooding disaster in different parts of the country including south Omo Valley, Dire Dewa, Amhara, Afar, Somali, Tigray,Sidama, Gambella,and Oromia regions.

Flooding disaster has many definitions. Among the different definitions Meyer (2009), defined flood disaster is the accumulation of water with in a water body and the over flow of excess water on to adjacent flood plains, or it is an over flow of in land or tidal waters, an usual and rapid accumulation of run off or surface waters from any source. In addition to this, flood disaster is an over flowing or irruption of a great body of water over land surface that temporarily inundates an area. Furthermore (Manandhar, 2010) also defined, flooding disaster is a general and temporary condition of partial or complete inundation of normal dry land areas from the usual and rapid run off surface waters which may result from rainfall, rivers, ice melt and so on. In general, Bariweni et.al (2012) in this manner that is, flooding disaster occurs when ponds, lakes, and river beds have no capacity to hold additional water due to sedimentation or other related factors, and also it occurs when soil and vegetation cannot absorb or infiltrate all the water may come from rainfall or other sources.

2.2. Causes and Consequence of Flooding Disaster

Flooding disasters are caused by many factors such as a heavy rainfall, highly accelerated snow melt, severe winds over water, unusual high tide, tsunamis, or failure of dams, levees, retention on ponds, or other structures that retained the water. In other way flood disaster can be exacerbated by increased amounts of in previous surface or hard ground cover that not allow the water to pass through as well as by other natural hazards such as wild fires, which reduce the supply or the amount of vegetation cover that can be absorb rainfall (Bariweni et.al,2012).

Climate change and increasing need for dwellings and industrial properties have a tendency to increase the risk of flooding disaster, and many development activities which are situated in flooding plains can increase the risk and impacts of flooding disaster (Elliott and Leggett, 2002). It is generally accepted that many land use change practices or changes in land use patterns such as expansion of settlements including road construction, deforestation, and different practices in arable and grass land management have great contribution to increase the frequency and severity of flooding disaster (Wahren et.al, 2009). In addition to this, Kimaro (2003) supported this idea, land use and land cover changes have different effects on the local hydro logical cycle depending on the nature of the land use cover that existed and that which results after change. It is always agreed that to find out possible solutions to flood disaster problems, an understanding of the long-term factors that contribute to increase flood disasters are important including unplanned urbanization soil erosion, and deforestation and so on. Then to mitigate flooding disaster, it is important to adopt water shed scale best management practices based on the specific physical characteristics of the water shed such as soil, land use and slop condition (Khalequzzaman, 2006). In addition to this, to mitigate flood disaster proper city, both government and people have to adopt water shed-scale best management practices which includes flood plain zoning planned urbanization, restoration of abundant channels to controlled run off near construction sites and improvement flood warning or preparedness's systems (Tim, 2003).

2.3. Types of Flooding

2.3.1. Over Bank Flooding

It occurs, when the water with in a river over flows its banks and spreads across the land around it. Sometimes the area covered is wide and flat, water tends to spread out be slow moving and may not appear to travel at all. This kind of flooding can take days to dissipate. In mountains

areas, where water flows together through step valleys, the flood water tends to move faster and longer for a shorter duration (Nola, 2012).

2.3.2. Flash Flood

They are characterized by a rapid rise of faster moving water. Faster moving water is extremely dangerous. Commonly water moving at a feet per second (2.7m/sec) is a common speed for flash floods. Flash floods carry debris that elevates their potential to damage structure and injury people (Pelling, 2009).

2.3.3. Ice Jam Flooding

In cold temperature, bodies of water are often frozen, heavy precipitation can cause chunks of ice to push together and create a dam in what known as ice jam flooding. Behind the dam water begins to pill up, spilling over to the plains nearby, eventually the wall of ice breaks, and fast moving water rushes downstream much like a conventional flash flooding, destroyed objects in its path. The water can carries huge chunks of ice which can increase damage to surrounding structures (Orellana, 2007).

2.3.4. Coastal Flooding

It occurs along the edges of oceans, and is driven predominantly by storm surges and wave damage. This kind of damage is usually connected to hurricanes, tsunamis or tropical storms (Cutter, 2006).

2.4. Effects of Flood Disaster

2.4.1. Effects on Economy

During flood disaster (especially, flash flood), roads, bridges, farms, houses and Automobiles are destroyed. People become homeless. Additionally, the government deploys firmer, policy and other emergency apparatuses to help the affected. All these come up at heavy cost to people and the government. It usually, takes years for affected communities to be re built and business to come back to normally (Pelling, 2009).

2.4.2. Effects on Environment

The environment also suffers when flood disaster happen, chemical and other hazardous substances and up in the water and eventually contaminated the water bodies that flood send up

in. Additionally, flood disaster causes kill animals and other insects are introduced to affected areas destroying the natural balance of the Eco-system (Kundzewicz, 2009).

2.4.3. Effects on Society/people

When flood disaster occurs, many people may kill, many other can become homeless. Water supplies and electricity can be disrupted and people struggle and suffer as a result. In addition to these, flooding disaster brings a lot of diseases and infections including military fever, pneumonic plaque, dermatopathia and dysentery. Sometime insects and snakes make their ways to the area and cause a lot of havoc (Manandhar, 2010).

2.5. Protection and Control of Flood Disaster

It refers to all methods uses reduce or prevent the determinant effects of flooding water. Some methods of flood disaster control have been practice since Ancient time. These methods include; planting vegetation to retain extra water, terracing hill sides to slow flow downhill and the construction of flood ways (man-made cannels) to divert flooding water. The other techniques include the construction of levees, lake dams, reservoirs and retardation ponds to hold extra water during times of flooding. In general, the most important flood disaster protection and control methods are listed below (Frederick, 2010).

2.5.1. Construction of Dams

It associated with reservoirs designed completely or partially to aid in flood disaster protection and control. Many large dams shall have flood disaster control reservoirs in the rainy or summer melt season, to allow a certain amount of space in which flood water can fill. (Encarta, 2008)

2.5.2. Diversion cannels

Flood disaster can be controlled by re-directing excessive water to purpose built cannel or flood ways, which in turn divert the water to temporary holding ponds or other bodies of water where there is a lower risk or impact to flood disaster (Santosa, 2006).

2.5.3. Self-closing Flood Disaster Barriers

The self-closing flood disaster barriers (SCFDB) is a flood disaster defense system designed to protect people and property from in land water way floods caused by heavy rain, gullies or rapid

melting snow. SCFDB can be built to protect residential properties and whole communities as well as industry areas (Khal, 2006).

2.5.4. Gorge Defense

In many countries gorges are prone to flood disasters and are often currently managed defenses such as levees, bards, reservoirs and weirs are used to prevent gorges from bursting their banks. When these defenses fail emerge measures such as sand gags, hydro sacks, or portable inflatable tubes are used (Elliott, 2002).

2.5.5. Building the awareness of the community

In many developing countries, drainage systems are chocked with litter and people have little knowledge of the effect that can have during a rain. When it rains, water ways and culverts are blocked by massive chunks of litter and debris, and water finds its way into the streets ad in to people home. Education is therefore, very important to inform and caution people on the dangerous of flood disasters, what cause flood disasters and what can be done to minimize its impact (Meyer, 2004)

2.6. Community participation in Flood Disaster Mitigation

Community participation in flood disaster mitigation should aims to balance the competing objectives of managing flood disasters for human needs as well as biodiversity values. Many authorities, municipal councils, emergency services and flood disaster affected communities should involve the flood disaster management and flood disaster mitigation. Local community knowledge and experience should play a key role in preparing for flood disaster and reducing damage caused flood disasters. Local flood disaster issues are responsibility of municipal councils, while land holders are accountable for flood and flood disaster management on their own property (Bradshaw, 2007).

Community participation has been recognized as the additional element in flooding disaster mitigation necessary to reverse the worldwide trend of exponential increase in disaster occurrence of and loss from small- and medium-scale disasters, build a culture of safety, and ensure sustainable development for all. This paper gives a brief orientation on the why, what, who, when, how, and so what of community based flooding disaster mitigation. Recent experiences and practices, particularly those in the flooding Disaster Mitigation Program, showcase significant elements from which lessons are drawn. Positive impact affirms the validity

of the community based approaches to flooding disaster mitigation, notwithstanding the difficulties, complexities and challenges faced to initiate, sustain and replicate (Jeffrey, 2010).

Major benefits of the community based assessment, mitigation planning and implementation processes underscored include building confidence, pride in being able to make a difference, and enhanced capabilities to pursue disaster preparedness, mitigation as well as bigger development responsibilities at the local level. Additionally, individual and community ownership, commitment and concerted actions in flooding disaster mitigation, including resource mobilization produce a wide range of appropriate, innovative and do-able mitigation solutions, which are cost-effective and sustainable. Good practices in the community based approaches to disaster mitigation highlight key success factors such as applying best practice methodologies of community development to community based flooding disaster mitigation, tapping traditional organizational structures and mechanisms (including formal and informal community leaders), and capability building activities with the community disaster committees and volunteers. The importance of various forms and channels of public awareness and education using local dialects, values and culture and partnerships of the community with various stakeholders such as community based organizations, community leaders, local government units, higher level government, NGOs, less vulnerable groups, and donors were also noted. (William J. 2005).

CHAPTER THREE

3. STUDY AREA DESCRIPTION AND METHODOLOGY

3.1. Description of the study area

3.1.1. Location

Dale is one of the Woreda in sidama region of Ethiopia. Part of the sidama region located in the Great Rift valley , The Relative location of Dale is bordered on the south by Aleta Wendo and Chuko , on the west by Loko Abaya, on the North west by Boricha, on the North by Shebedino, and on the East by Wensho. The major Town in Dale is Irgalem. Parts of Dale woreda were separated to create Loko Abaya and Wensho woreda. The Absolute Location of Dale is $6^0 39'$ to $6^0$50'N latitude and $38^0$18' to $38^0$31'E and the elevation of Dale woreda 1600m-2800m above sea level. The Awada kebele 2km far from dale woreda.The Absolute Location awada kebele $6^0$37'to $6^0$48'N and $37^0$17'to 37^0 29'E.The relative location on the North by Shebedino,on the south by Aleta wondo ,on the East by Wensho,and West by Boricha.(CSA, 2007).

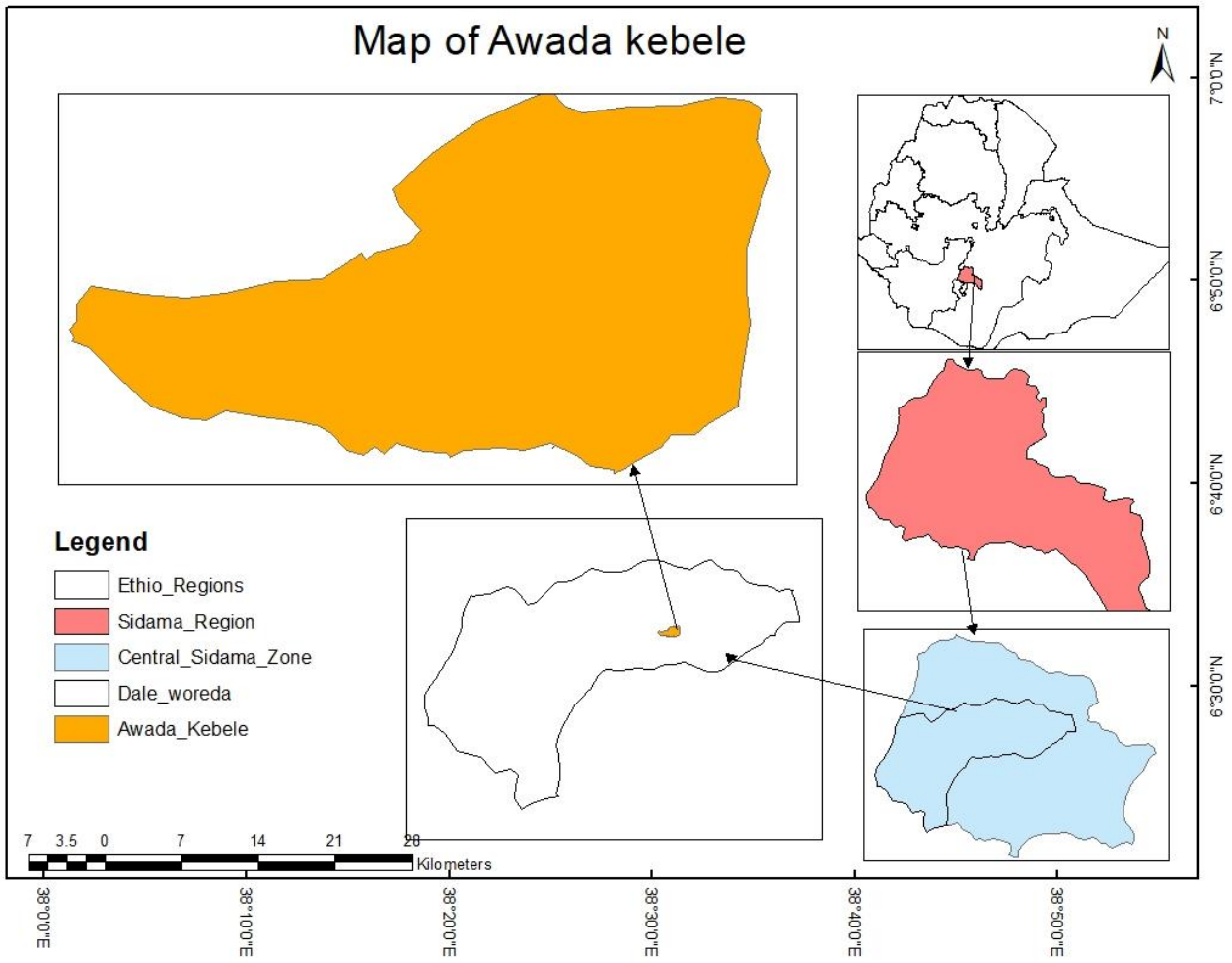

Figure 1: Study area map

Source: (Researchers,2024)

3.1.2 Climate

The climatic condition of awada kebele is waina dega. The mean annual rain fall amount ranges between 1200mm and1599mm, with 15^{o}c-19.9^{0}c Coverage annual temperature .the seasonal rain fall pattern that extends from the first rain period march-june and the second rain season july-october.The coldest and warmest months are December to march.

3.1.3. Topography

The topographic feature of awada kebele is plain and other part up and down features,lie the latitude 1800-2000m above sea level (CSA, 2007)

3.1.4. socioeconomic activity

The woreda serves as administration, industry, trade and weekend recreation center. There are 109 manufacturing industries, 2334 whole sale and retail trades, 2561 service trades, 4 fuel stations, 56 garages in the woreda. Concerning financial institution, there are one government and 13 private banks, and three micro finance organizations. The economic activity rate for both sexes is 58.2% and 66.8% for males and 49.8% for females, while unemployment rate is 21.4% for both sexes16% for males and 28.4% females. The average annual revenue of the municipality within 2007-2011 periods was 328,527,581birr. The main sources of revenue were taxes land leases and rent, and service charge. Dale woreda has major potential for industry, agro-industry processing and recreation area. Dale woreda has economic linkage with several regions and towns. The woreda is destination for agricultural inputs and manufacturing and commercial products from Djibouti port. The woreda gets grain, livestock supply from Aleta wondo, Chuko and Shebedino while Amara and Oromia were the main supplier of natural resource (fuel wood ,charcoal). Oromia SNNPRS and Amhara regions are the main surplus labor supplier for the districts (WWW.mwu D.gov.et/web/Dale/cultural-attractions. Retrieved 20 March, 2013).

3.2. Target population of study Area

Awada kebele is one of the commercial areas of the Dale woreda, in national state of Sidama region. The total population of Awada kebele is about 6087. Among the total number population.3000(49.6%) are males and 3087(50.4%) are females.the total household of Awda kebele are 900 from this 880 are male and 20 are female. The economic activities of the

residential of the study area are mainly based on commerce (trade) and labor work. chafe is the major market place and there are huge industries like Agroprocessing industries, beverage factors, and Aufata (The Dale woreda administration office of Awada kebele census 2007).

3.3. Research Methodology

3.3.1 Research Design

The research design method used to implement the study is the descriptive method. A descriptive investigation is important to describe the study area, like attitude of local people on community particitation as flood disaster mitigaton , occupational status, climate, social effect, economic effect, the capacity to flood disaster mitigaton. Moreover, an interview schedule was prepared for households, and all the formative material was in English and translated into the local language of the study area for understanding of each question and to promote an appropriate response. To achieve the objective of the study the researchers was follow mixed research approach. both quantitative and qualitative research can support each other towards a better understanding of the issue under study. In quantitative approach the researchers collected data would be analyzed and interpreted through statically procedure by using table and percentage. While the qualitative research approach the researchers was concerned to describing the phenomena in qualitative analysis like word and statement.

3.3.2.Types of Data and sources of Data

To attain the expected objectives of the research researchers were use both primary and secondary source of data.

3.3.2.1. Primary sources

Primary sources was used to get primary data for the study. Primary data was collected through questionnaires, field observation, focus group discussions and key informants interview.

3.3.2.2. Secondary source

Secondary data was collected from the valuable data documents published and unpublished recording in different times in municipal office and other related organization found the town. It also includes books and report.

3.3.3. Sampling techniques and Sampling Size Determination

3.3.3.1. Sampling techniques

The researchers have used a simple random sampling technique because of probability sampling, where every item has an equal chance of being selected from each population.

The researchers prepared simple random sampling because the target population in the study area has a homogeneity of economic activities, language, cultures, and religion, as well as a way of life and group of people. Simple random sampling of the study is free from different kinds of bias and minimizes the sample errors.

3.3.3. 2. Sampling Size

According to Dale woreda has **36** kebeles from these, the researchers were selected from Awada Kebele. The researchers were using the purposive sampling method to select the sample kebele due to the familiarity of the selected kebele, and in the sampling kebele, there is a problem of flood disasters and a lack of community participation in flood disaster mitigation, which is increasing time to time. There are a total 900 households in Awada Kebele. From this, the researchers selected **90** respondents by using simple random sampling techniques. The purpose of calculating sample sizes correctly is to ensure that the conclusions gained after analysis can be applied to the full population under investigation. Every member of the population has an equal chance of being selected. Yamane's formula (1967) is among the most widely used.

$$n = N/1 + N(e^2)$$

When n = Sample size

N = Total population

e = Error of tolerance

The researcher's confidence level is 90% with margin of error 10%.

Given:

e = 10% N = 900

Solution:

$$n = N/ 1 + N (e)^2$$

$$= 900/ 1 + 900(0.1^2)$$

$$= 900/ 1 + 900 (0.01)$$

$$= 90$$

3.4. Methods of data collection

Questionnaire:

To gather the relevant information, the researchers used both open-ended and closed-ended questionnaires to ask the respondents a list of questions that were predetermined by the researcher. The close-ended types of questions would be applied, and the respondent could choose their answer from a list of alternatives. While the open-ended question would ask for the respondent's opinion on the paper,.

Interview:

In addition to the questionnaire, the researchers employed an unstructured interview. The reason researchers use unstructured interviews is to collect information from the two land management officials,three kebele administration officials one environmental protection official three woreda agricultural official.the purpose of,the interview is prove the ideas of the interview about the phenomena of interest.

Observation:

The observation was used to get first-hand information. The researchers observed different flood mitigation systems used by the members of the study area. The reason that the researcher used this is to increase the reliability of the study.

3.5.Ethical Consideration

The researcher has certain ethical standard consideration suggested by (*kvale, 2009*).these includes informing the participants about the purpose of research, voluntary participation, confidentiality, avoiding dependent relation and etc. The researcher would conduct after getting full willingness and consent from the participants, participation in interview voluntarily.

3.6. Data Analysis and Interpretation

The descriptive methods of data analysis are used after the necessary collection of primary and secondary data. The collected data shall be analyzed simultaneously with the internal consistency of the data. The data analysis and interpretation process involved both qualitative and quantitative methods. Information collected from open-ended questioners and interviews was analyzed qualitatively, and information collected from closed-ended questioners was analyzed quantitatively by using percentages and tables.

CHAPTER FOUR

4.1. Data Analysis and Interpretation

This chapter deals with the data analyzes and interpretation parts of the study which consist respondents characteristics across sex, age, marital status, education background and occupation as well as respondents analyzes community participation on flood disaster mitigation current situation and future fates.

Demographic Characteristics

Table 1: Sex composition of respondents

Sex	No of respondents	%
Male	50	55.5%
Female	40	44.5%
Total	90	100%

Source field survey, 2024

With regard to sex composition as shown on the above table 1: 50 (55.5%) and 40 (44.5%) numbers on respondents are male and female respectively. From these the researcher concluded that, the participation of male is higher than female. The above analysis shows that the majority of respondents are male. So it indicates that the roles of male participation to mitigate flood disaster is higher that female.

Table 2: Age composition of the respondents

Age interval	No of respondent	%
15-20	10	11.1%
21-30	25	27.8.%
31-40	40	44.5%
Above 40	15	16.6%
Total	90	100%

Source field survey, 2024

As shown on the table 2: the total number of 90 respondent's age composition, an age interval 15-20 consist about 10 respondents (11.1%) under this interval. About 25 (27.8%) number on respondents are under 21-30.about 40 (44.5%) number of respondents are under 31-40 intervals. The remaining 15(16.6%) are the above age of 40 intervals. From these the researcher concluded the majority of the respondents between the ages of 31-40 intervals.

Table 3: Marital status the respondents

Marital status	No of respondent	%
Single	20	22.2%
Married	65	72.2%
Divorce	5	5.6%
Total	90	100%

Source field survey, 2024

As shown the table 3: out of 90 respondents 20(22.2%) of them were single, followed by 65(72.2%) were married. The rest of 5(5.6%) were divorce. From this data the researcher interpreted that, the majority number of respondents were married following to this single or unmarred were took the second rank.

Table 4: Educational background of the respondents

Educational status	No of respondent	%
Primary education	5	5.6%
Secondary education	17	18.9%

Certificate	25	27.8%
Diploma	31	34.5%
First Degree	6	6.6%
PH. Degree	0	0%
No schooling	6	6.6%
Total	90	100%

Source field survey, 2023

As indicated from the table 4: 5(5.6%) respondents are primary education, 17(18.9%) of the respondents are secondary education, 25(27.8%) of the respondents are certificate, 31(34.5%) of the respondents are diploma, 6(6.6%) are first degree and 6(6.6%) of the respondents are no schooling. From these respondents the researcher interpreted that 34.5% of respondents are diploma. So, highly participate other respondents.This data shows that the educational status of majority respondents was diploma and their participation also higher than the others.

Table 5: Occupational status of the respondents

Occupation	No of respondents	%
Daily labor	15	16.6%
Civil servant	25	27.8%
Merchant	41	45.6%
Others	9	10%
Total	90	100%

Source field survey, 2024

According to data shown on table 5: about 15(16.6%) respondents are daily labors, whereas 25(27.8%) of the respondents are civil servants, 41(45.6%) are merchants and 9(10%) of the respondents are others. In this analysis the occupational statuses of majority respondents were merchant.

Table 6: Do you have a attitude of local people on community participation as flood disaster mitigation in the study area

Do you have a attitude of local people on community participation as flood disaster mitigation in the study area?	No of respondent	%
Very unaware	35	38.9%
unaware	25	27.8%
Neither aware or unaware	20	22.2%
aware	7	7.8%
Very aware	3	3.3%
Total	90	100%

Source field survey, 2024

Table 6: indicates that the respondents give information about the attitude of local people toward community participation in flood disaster mitigation, as they explain to 35 (38.9%) of the respondents that they are very unaware that they responded, 25 (27.8%) of the respondents lack community awareness, and 20 (22.2%) responded. Neither aware nor unaware, 7 (7.8%) respondents responded aware, and 3 (3.3%) very aware respondents gave additional information, like lack of soil conservation and lack of planting trees. Based on this analysis, the very unaware attitude of local people toward community participation as flood disaster mitigation in the place. Because of the low community participation in the flood disaster mitigation area,.

Table 7: Response to social effects of flood disaster

Response	No of respondent	%
Death	35	38.9%
Displace society from original place	27	30%
Occurrence of different disease	20	22.2%
Others	8	8.9%
Total	90	100%

Source field survey, 2023

As shown on table 7: 35(38.9%) of respondents believed that, the social effect of flood disaster is death, 27(30%) of the respondents that responded displace society from their original place, 20(22.2%) of the respondents gave response occurrence of different disease and the rest 8(8.9%) of the respondent said that, flood disaster brings break down of social networks. this indicated that, the main social problems of flooding disaster is death and displacement of society from their original places.

Table 8: Response to economic effect of flood disaster

Response	No of respondents	%
Destruction of homes	34	37.8%
Poverty	17	18.9%
Destroyed infrastructure	20	22.2%
Inflation	19	21.1%
Total	90	100%

Among the table 8: 34(37.8%) responded that economic effect of flood disaster is destruction of homes, 17(18.9%) of responded poverty, 20(22.2%) and 19(21.1%) responded that, destroyed infrastructure and inflation respectively. the above analysis shows that, the key effects of flooding disaster in the study area is destruction of homes as well as destroyed infrastructures like roads.

Table 9: Response to prevalence of flood disaster

Response	No of respondent	%
Minimum	15	16.6%
Medium	30	33.3%
High	45	50%
Total	90	100%

Sources field survey 2024

According to the above table 9: 15(16.6%) of the respondent responded that, prevalence of flood disaster is minimum, 30(33.3%) and 45(50%) of the respondents responded medium and higher respectively. As a result, the prevalence's of flood disaster is high. Because it demolished different recourse's and wealth's of the community of the study area.

Table 10: Response to seasonal occurrence of flood disaster

Seasons	No of respondent	%
Winter	25	27.8%
Summer	45	50%
Tsedey	20	22.2%
Total	90	100%

Sources field survey, 2024

50% of respondents flood disaster more occur summer seasons. This indicated that, flood disaster more occur summer rather than winter season. As a result, flood disaster has great impact at that area during summer season.

Table 11: To find out the possible ways to mitigate flood disaster in the study area.

Do you have a possible ways to mitigate flood disaster in the study area?	No of respondent	%
Very unfamiliar	45	50%
Unfamiilar	20	22.2%
Somewhat familiar	10	11.1%
Familiar	9	10%
Very familiar	6	6.7%
Total	90	100

Table 12 indicates that the respondents give information about the possible ways to mitigate flood disasters, as they explain to 45 (50%) of the respondents who are very unfamiliar that they

responded, 20 (22.2%) of the respondents who are unfamiliar, 10 (11.1%) responded somewhat familiar, 9 (10%) responded familiar, and 6 (6.7%) very familiar respondents gave additional information, like a lack of possible ways to mitigate flood disasters in the study area. Based on this analysis, the location is very unfamiliar with potential flood disaster mitigation measures. Because the possible ways to mitigate flood disasters in the study area are very unfamiliar, researchers concluded that 45 (50%) are the most common.

4.2. Interview Responses

4.2.1. Response to environmental effect of flood disaster

According to the respondent's idea, flood disasters have their own environmental effects. From these effects, soil erosion, collapse of hill sides, and land degradation can change the structure of the environment, such as by cutting the town roads, destroying the town plan, and increasing the number of gorges in the environment. In addition, damage to habitats, food chains, species diversity, and natural recreation resources.

4.2.2. Respondents on community participation mitigate the current situation of Flood disaster

The interviewee responded that the community should work together to mitigate the current situation of the flood disaster by using different activities. From these activities:

- **Tracing:** The communities of **Awada Kebele are** constructing tracing in order to minimize the problem of flood disasters through group form (DWAR, 2024).
- **Environmental clean:** currently, the major activities of the kebele members participating in environmental cleaning activities include channels, bridges, streets, and places that are highly vulnerable to garbage (DWAR, 2024)
- **Planting trees** is also one of the other available ways to resist flood disasters. Mostly this practice occurs in places that are highly exposed to flooding and degraded areas (DWAR, 2024).

- **Building channels**: To reduce the current problem of flood disasters, communities and administrative officers work together to build channels or flood ways to minimize the risk of flooding disasters (DWAR, 2024).

- Table 12:Respondents on community participation mitigate the current situation of Flood disaster

community participation mitigate the current situation of Flood disaster	No of respondent	%
Tracing:	20	22.2%
Environmental clean	30	33.3%
Planting trees	25	27.8%
Building channels	15	16.7%
Total	90	100

4.2.3. Respondents on community participation to mitigate flood disaster for future fates

According to the responses of the Kebele administration office, there are different mitigation methods in order to minimize the future fates of flood disasters in Kebele. From these mitigation programs:

- Relocation: temporarily moving the affected community away from flood-prone areas.
- Strengthening flood protection structures for the future.
- Elevation: raising the building above the flood level by landfill or making basements .
- Flood walls: concrete or steel walls to keep the flood out.
- Dry flood proofing means sealing the property to prevent flood water from entering using water-proof sheeting, shields, sand bags, and other materials that prevent water from entering doors.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The study tries to investigate community participation in flood disasters, their current situation, and their future fates in Dale woreda, awada Kebele. The result of this study shows that, mostly, the cause of flooding disasters in the study area is topographic structure, the absence of environmental protection, and a lack of community awareness. It is known that flood disasters have different effects on communities, such as social, economic, and environmental effects. The data seem to suggest that the social effects of flooding disasters are death and displacement of society from its original place; the economic effects of flooding disasters are destruction of homes and destroyed infrastructure; and the environmental effects are collapse of hill sides, soil erosion, and land degradation. According to the responses of respondents who are members of the study area, flood disasters occur during the summer season rather than the winter and winter seasons. As a result of this, the communities are highly exposed to flooding disasters. According to the responses of respondents, the possible ways to mitigate flood disasters are very unfamiliar.

The participation of the communities in mitigating flood disasters is also medium. The respondents suggested mitigation programs for flooding disasters in the current situation in the study area. These mitigation programs include tracing, environmental cleaning, planting trees, soil conservation, and waste management. In addition to this, the community uses different alternatives to mitigate flood disasters in the future, like elevating the building, strengthening the flood protection structure, using steel walls, and preparing land for filling.

Generally, this study indicated that flooding is a natural occurring hazard that threatens as well as kills human life, damages properties, vulnerable economies, and destroys environmental and ecological structures in the study area.

5.2. Recommendation

Based on the results of the study, the following possible recommendations are suggested for solving some of the problems that have been observed while conducting this research:

- Most of the communities lack awareness about the causes of flood disasters, especially waste management and the absence of proper environmental protection. Because of this community's awareness, the benefits of waste management and proper environmental protection are very important.
- Based on the respondent's idea, some communities used wood and sand floors to minimize flood disasters. So, use cement and metal sheeting rather than wood or sand floors to divert old water.
- During the winter, flood channels are filled with sand and deposit soils. So, the communities should be digging and cleaning the channels before the rainy season starts to draw the floods away from their dwellings.
- In the communities, the involvement of the government, volunteers, and other nongovernmental organizations (NGOs) is very low. So, as to this, the local authorities should strengthen their interaction with the government create a suitable environment for voluntaries and other NGOs.
- The local administration officer should facilitate and enhance information about environmental protection.
- The Kebele administration offices have not described a flood disaster mitigation policy. So, the administration office should develop a flood disaster mitigation policy.

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APPENDIX

Wolkite University

College of social science and humanities

Department of geography and environmental studies

Dear the respondent, This question was prepared for the fulfillment of a BA degree in geography and environmental studies. The main goal of this questionnaire was to assess community participation in flood disaster mitigation in the current situation and in the in the future.. Awada kebele in the case of Dale woreda. Your response would have been vital, and you are not to write your name; simply put a tick or mark for your answer to the yes or no question and write the answer. The questionnaire would be translated into the Sidamic language.

Part- One

Demographic characteristics

Sex: A. Male B. Female

Age: A. 15-20 B. 21-30 C. 31-40 D. Above 40

3. Marital status: A. single B. Married C. Divorced

4. Educational background

A. Primary education C. Certificate

B. Secondary education D. Diploma E. First degree

F. PH degree G. No schooling

5. Occupation : A.Daily labor B. Merchant C. Civil servant D. Other specify

Part-two

Questions related with the study:

6. Are you a member of Awada Kebele ?

Yes B. No

7. What are the social effects of flood disaster**?**

A. Death

B. Displace society from their original place

C. Occurrence of different diseases

D. Specify any other_____

8. Do you think, flood disaster have economic effects on the communities?

Yes B. No

9. If your answer is yes, what are the economic effects of flood disaster on the communities?

A.Destruction of homes C. Destroyed infrastructure

B. Poverty D. Inflation

10. What is the prevalence of flood disaster effects in your environment?

Minimum B. Medium C. High

11. By which season flood disaster more occur in your environment?

Winter B. Summer C. Tsedey

12. Do you have a attitude of local people on community participation as flood disaster mitigation in the study area?

YES No

13. Do you have a possible ways to mitigate flood disaster in the study area?

Yes No

Interview forAwada Kebele administration office

1 What are the environmental effects of flood disaster?

2 What is the community participation to mitigate the current situation flood disaster?

3. What is the community participation to mitigate flood disaster for future fates?