



**THE REPUBLIC OF TÜRKİYE
SOCIAL SCIENCES UNIVERSITY OF ANKARA
THE GRADUATE SCHOOL OF SOCIAL SCIENCES**

**CONSEQUENCES OF CLIMATE CHANGE AND GENDER VULNERABILITY:
CASE STUDY IN SOMALIA**

Master's Thesis

Nasra NOAH

Master's Degree of Disaster and Humanitarian Aid Management

February 2024



**THE REPUBLIC OF TÜRKİYE
SOCIAL SCIENCES UNIVERSITY OF ANKARA
THE GRADUATE SCHOOL OF SOCIAL SCIENCES**

**CONSEQUENCES OF CLIMATE CHANGE AND GENDER VULNERABILITY;
CASE STUDY IN SOMALIA**

Master's Thesis

Nasra NOAH

Prof. Dr. Ash Akay

Master's Degree of Disaster and Humanitarian Aid Management

February 2024

APPROVAL PAGE



DEDICATION/ACKNOWLEDGEMENTS

First and foremost, I am incredibly appreciative of my wonderful professor and thesis advisor, Prof. Dr. Aslı Akay, who has supported me at every turn throughout my studies and has always guided me with her knowledge and experience.

I am deeply appreciative of the assistance provided by my colleagues and friends who supported me throughout the process of writing and collecting data for my thesis. I would like to express my gratitude to my friend Abdalle Abdisalaan for his invaluable support in the areas of design and data processing.

I would want to sincerely thank my family, particularly my mother, for their invaluable support throughout my research and for helping me successfully complete my master's degree.

TABLE OF CONTENTS

DEDICATION/ACKNOWLEDGEMENTS	i
TABLE OF CONTENTS	ii
ABSTRACT	iv
ÖZET	v
ABBREVIATIONS	vi
LIST OF FIGURES	vii
LIST OF TABLES.....	viii
INTRODUCTION.....	1
1. CLIMATE CHANGE IN SOMALIA.....	4
1.1. Geographical Location of Somalia	4
1.1.1. Catastrophic Climate Changes in Somalia	8
1.2. Climate Change and Gender Vulnerability	9
1.2.1. Gender disparities in the effects of climate change.....	14
1.3. Climate Change and Gender Effects in Somalia.....	22
1.3.1. Domestic Workload.....	24
1.3.2. Health Problems and Female Suffering	24
1.4. Somali Women and Climate Change Challenges	26
1.4.1. Inequality.....	28
1.5. Resilience and Adaptation	29
2. LITERATURE REVIEW	32
2.1. Socio-economic Vulnerability and the Equity Dimension	38
2.2. Ignoring Women’s Contribution to Environmental Resource Management.....	39
2.3. Peeling Through Different Layers of Vulnerability: Potential Impacts of Climate Change	40
2.4. Poverty, Natural Calamities, and Women’s Behaviors.	42
2.5. Gender Vulnerability Index.....	43
3. RESEARCH METHODOLOGY AND DATA COLLECTION	45
3.1. Objectives	45
3.2. Data Collection	45
3.3. Hypothesis	46
3.4. Reliability of the Study	47

3.5. Ethical Considerations	47
3.6. Limitation of the Study	47
3.7. Sampling and Target Population	47
3.8. Data Analysis	48
3.8.1. Descriptive Statistics	48
3.8.2. Regression Analysis.	51
3.8.3 Correlational data analysis	53
3.8.4 Qualitative Analysis	53
3.9. Research Finding	56
3.10. Results.....	60
3.11. Conclusion	62
3.12. Recommendation	63
REFERENCES	66

ABSTRACT

Climate change has far-reaching repercussions in Somalia, with a special emphasis on the disproportionate burden felt by women. This study examines the impacts of climate change on Somali women, who have endured preexisting discrimination and a lack of empowerment. The findings of the study clearly demonstrate that drought and climate change have had a significant and detrimental effect on women, who lack the necessary aptitude and capability to effectively withstand and adapt to rapid climatic changes. Women exhibit a somewhat lower educational attainment, encounter limited employment opportunities, experience lower income levels, and confront higher degrees of poverty. It is traditionally seen as the job of women to provide sustenance and care for their children, aging relatives, and other members of the family. Pregnant and lactating women have unique nutritional needs and are more vulnerable in a context characterized by food insecurity.

Keywords: Climate Change, Gender, Vulnerability, Somalia.

ÖZET

Somali'deki iklim değışikliğı meselesinin yaygın etkileri bulunmaktadır özellikle kadınların yaşadığı orantısız etki vurgulanıyor. Bu tez çalışma iklim değışikliğinin halihazırda yaygın ayrımcılık ve yetkisizleştirmeyle boğuşan bir grup olan Somalili kadınlar üzerindeki etkisini açıklamaya amaçlamaktadır. Buna göre kuraklık ve iklim değışikliğinin, hızlı iklim değışikliğine direnme ve dayanma konusunda yeterli kapasite ve donanıma sahip olmayan kadınlar üzerinde ciddi etkiler yarattığı açıktır. Kadınların nispeten daha düşük bir eğitim seviyesine sahip olduğu, daha az iş olanağıyla karşılaştığı, daha düşük gelir düzeyine sahip olduğu ve daha yüksek düzeyde yoksullukla karşı karşıya olduğu belirtilmektedir. Geniş ölçüde bu toplumda bir ailede çocuklara, yaşlılara ve ailenin diğer fertlerine geçimlerini ve bakımlarını sağlamak kadınların görevi olduğu genel kabul görmektedir. Oysa ki, hamile olan ya da emziren kadınların kendilerine özgü beslenme ihtiyaçları bulunmaktadır ve gıda güvensizliği ile vücut bulan bir yapıda daha savunmasız hale gelmektedirler.

Anahtar Kelimeler: İklim Değışikliğı, Cinsiyet, Kırılganlık , Somali.

ABBREVIATIONS

DRR	: Disaster Risk Reduction
FGM	: Female Genital mutilation
GBV	: Gender Based Violence
GDP	: Gross Domestic Products
IPCC	: Intergovernmental Panel on Climate Change
NCPA	: National Climate Adaptation Action
SNCCP	: Somali National Climate change Panel
UNDP	: United Nation Development Program



LIST OF FIGURES

Figure 1. Somalia’s Geographical Location.	5
Figure 2. The amount of Rainfall in 2021	7
Figure 3. How Climate Impacted the Female Lives.....	17



LIST OF TABLES

Table 1. Educational Background	48
Table 2. Age Distribution.....	48
Table 3. Gender of the Participants.....	49
Table 4. Do the Reoccurring Droughts in Somalia be An Indication of Serious Climate Change Issues?	49
Table 5. In Time of Drought Women Move From Their Homes to Search Pasture For Their Animals This Increases Hardship in Their Daily Life	49
Table 6. Disasters are a Threat to Everyone But, They Often Impact Women Disproportionately and the Fatality Rate is Much Higher For Women	50
Table 7. The Government Must Play a Major Role in Controlling the Effects of Climate Change and Building Resilience Community	50
Table 8. Model Summary.....	51
Table 9. Climate Change is Disproportionately Harsh to Vulnerable Groups, the Majority of Whom are Members of Rural Communities, Especially Women	51
Table 10. Model Summary	52
Table 11. Climate Change Consequence Effect Female (Drop Out of School, Early Marriage, Selling or Forced Marriage) more the rest of the communit.	52
Table 12. Climate Change is Disproportionately Harsh to Vulnerable Groups, the Majority of Whom are Members of Rural Communities, Especially Women	53
Table 13. The Environmental Issues and Consequence.	54
Table 14. Gender Socio-Economic Sensitive Issues	55
Table 15. Gender-Based Adaptation or Coping Strategies Adopted by Abaarso Community	55
Table 16. The effect of the Climate Change on Women	55
Table 17. What is the Essential Gender-Based Adaptation and Mechanism Need to Implement?	56

INTRODUCTION

Climate change is widely acknowledged as a significant human concern that presents severe global dangers. The effects will be particularly bad for the world's poor, disproportionately impacting their means of subsistence. Seventy percent of individuals living below the poverty line are women. Consequently, they are the ones who are most likely to experience the greatest hardships when natural disasters occur. Simultaneously, women are frequently disregarded as potential participants in addressing climate change and, consequently, in ensuring the protection of all individuals.

Somalia has experienced significant drought and other extreme climate events, especially in the last three decades of the 20th century, because of its vulnerability to severe droughts resulting from shifting climatic circumstances. The pastoralist groups dwelling in various regions of the country have experienced a growing predisposition to enduring poverty in recent decades. Women are disproportionately affected by droughts produced by climate change due to their frequent exposure to the negative effects of climate fluctuation and change. This has restricted their opportunities to make a living in difficult and unpredictable circumstances.

In Somalia, gender inequality in social, economic, and political systems make women more vulnerable to disasters and climate-related repercussions than males. Men usually have more influence over how money is distributed, property ownership, credit availability, decision-making, and food sources. Women have restrictions in their ability to access and manage natural resources, financial assets, and most critically, they have limited mobility and restricted access to information.

A worsening climate will have a higher impact on vulnerable communities that lack coping and adaptation skills. Climate-induced crises will exert substantial impacts on societies of communities' globe. Communities lacking sufficient resources experience significant consequences from climate impacts, hence heightening their vulnerability to climate-related emergencies. This also heightens their vulnerability to climate-related emergencies. The impacted groups would be particularly and visibly affected. Natural disasters can have significant severity in both the northern and southern regions, affecting individuals of both genders. Nevertheless, it could result in negative socioeconomic consequences, especially in less developed rural regions and among disadvantaged individuals.

Inequality based on gender is pervasive in emerging nations. Although constituting around 80% of Africa's agricultural labor force, women continue to face disadvantages and lack privileges. It is imperative that the adverse consequences of the changing climate led to the deprivation of disadvantaged segments of society.

This study analyzes the gendered impact of climate change on women who already possess pre-existing vulnerabilities, particularly in respect to gender. Additionally, it assesses susceptibility across several domains and the ability of women to contribute to climate change. This study presents suggestions for enhancing the integration of a gender perspective in climate change and climate change adaptation policies and activities.

The study primarily examines gender equality, with a particular emphasis on the impact of climate change on women, who are the most marginalized and overlooked demographic in society. The analysis also considers the involvement of women in climate change adaptation, as well as the examination of relevant policies such as National Adaptation Programs of Action (NAPAs). The evaluation encompasses global policy frameworks and objectives such as the Hyogo Framework, the United Nations Framework Convention on Climate Change (UNFCCC), and the Millennium Development Goals (MDGs).

The number of people affected by change of climate and temperature is experiencing a significant surge, especially in the northern hemisphere, where the most impoverished nations are located. These countries lack the resources to develop resilience or effectively address and mitigate the impacts of climate change. The objective of the study is to determine the effects of intensifying climate change on the susceptibility of different genders.

The tenuous nature changes and temperature elevation present a substantial peril to the lives and future opportunities of young girls. They have a higher degree of disadvantage, have lower levels of education, and are marginalized from political and decision-making procedures. The climatic crisis disproportionately affects women, resulting in a higher mortality rate among them compared to males.

This study consists of three chapters, the first of which will introduce climate change in a global framework and examine how circumstances imposed by climate change are influencing the universe and all living things. The subsequent chapter delves more into the ramifications of climate change on Somalia, emphasizing how these consequences have exacerbated the difficulties faced by the local population. Droughts that occur on a regular basis and their impact on the people of Somalia, which has been plagued by civil conflicts and a lack of competent governance for the past two decades. The second chapter will analyze other research

dissertation on the subject before discussing the literature review on changing climate and its impact on female.

The methodology involves conducting a comprehensive analysis of existing literature and material that explores the relationship between gender and climate change. The study utilizes both qualitative and quantitative data, primarily sourced from primary sources.

Collection, analysis, and data interpretation, as well as the final presentation of study results and conclusions, are all included in the fourth and last chapter of the research methodology. Through an evaluation of how climate induced crisis impacted the lives of females, the formality of the research will be assessed. Examining how gender vulnerability is impacted by environmental changes is the primary purpose of this study. Research will pay careful attention to how gender vulnerabilities in Somalia have been worsened by climate change and by pre-existing gender problems.

1. CLIMATE CHANGE IN SOMALIA

The IPCC has forecasted that Africa will experience catastrophic consequences due to the phenomenon of global warming. According to the IPCC, the climate crisis will lead to increasingly severe water and food shortages in Africa, putting 75–250 million people at risk by 2030. Furthermore, the agricultural productivity of rain-fed crops will experience a 50% reduction across the entire continent. Unpredictable weather will provide significant challenges in densely populated areas with low elevation. According to the UK's Office of Meteorology in East Africa, the absence of extended rainfall in early 2011 was highly concerning in relation to the existing evidence of climate change. The office attributed the failure of the 2010 brief rains to the natural consequences of the La Nina weather pattern. The consequences of increasing greenhouse gas concentrations due to ongoing global warming. Additionally, according to certain research, Somalia's severe humanitarian issues are also correlated with the climate (Busby, 2011).

Despite signs of climate change being felt in the eastern African region, including Kenya and Ethiopia, Somalia is still experiencing a significant climate catastrophe. The lack of environmental research and studies, as well as any mitigation or adaptation strategies, make matters worse. Developing nations have been the most susceptible to the impacts and challenges of climate change due to their limited capacity to adapt, inadequate technological resources, poverty, and ineffective governance, exacerbating the climate crisis. The nation's long history of civil wars and political unrest has left its citizens on the verge. Those who are incapable to fulfill their basic requirements for existing. The country was submerged in instability and conflict after the central government's collapse in the 1990s.

1.1. Geographical Location of Somalia

Located on the Horn of Africa, Somalia is in the far eastern region of Africa. The area in question extends all the way to the Gulf of Aden, beginning at a point that is located just below the Equator but extending farther. Due to its strategic positioning between Africa south of the Sahara and the nations of Arabia and southern Asia, it holds significant geopolitical significance. Somalia's environment is predominantly marked by aridity and high temperatures, leading to the existence of thornbush savanna and semidesert landscapes. Consequently, the people of Somalia have created economic survival tactics that are equally challenging and rigorous. Apart from a topographically diverse coastline region in the northern half of the

country and several prominent river basins, the majority of the nation's terrain is notably level, without any natural obstacles that would impede the movement of nomadic communities and livestock.

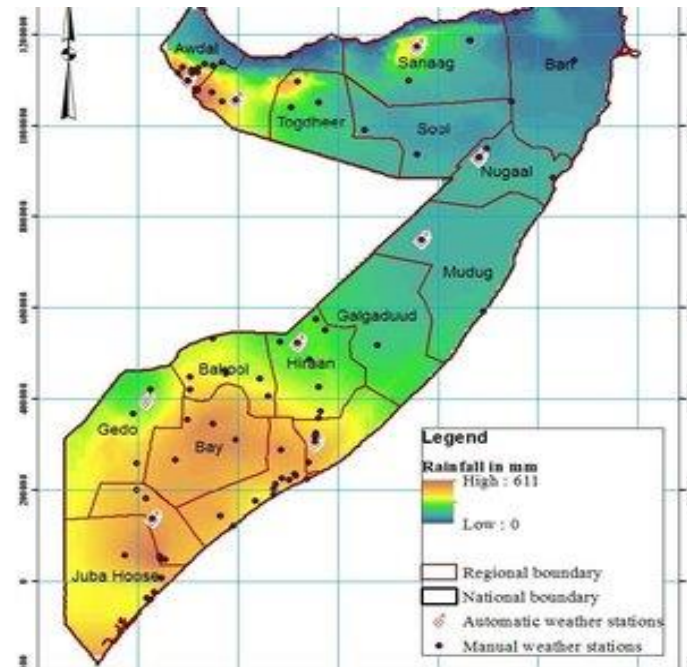


Figure 1. Somalia's geographical location. (Source: Relief web)

Somalia exhibits five main types of global ecosystems, including Crop and Settlements (1%), Grass and Shrub (36%), Desert and Semi-Desert (38%), and Interrupted Woods (14%). Crops, charcoal manufacture, and livestock are the three principal producing industries. The dominant economic activity in the area primarily revolves on the exportation of livestock, mostly live animals, and associated products. The population is mostly composed of Agra-pastoralists, who are either nomadic or semi-nomadic, accounting for 59% of the total. Farmers, on the other hand, constitute the remaining 17% of the population.

The nation of Somalia has seen significant hurdles in its hydrological cycle due to fluctuations in climatic patterns, which have been further exacerbated by prolonged periods of political instability and security issues. The dependence of over 70% of Somali society's livelihood on agricultural and animal production systems is being jeopardized by the shifts of weather and climate. Inadequate agricultural and pastoral practices, in conjunction with soil degradation, exacerbate the repercussions of climatic shocks on the community's livelihood, particularly in terms of sustaining food security. The agropastoral communities are experiencing a situation where their means of subsistence are becoming unsustainable owing to the diminishing productivity of their land, which may be attributed to the occurrence of drought

and other compounding environmental variables. The Awdal area, as an illustrative case, has been recognized to have a significant impediment in terms of successful adaptation due to the absence of accessible climatic information (FAO 2011).

There are still severe droughts and flooding around the nation, which have repeatedly resulted in losses of thousands of lives and property. Due to recent climate change and protracted severe droughts, more than one million people in Somalia have been displaced.

With only 60% of the people working in farming and pastoralist activities, light rains have made most of the area suitable for pastoralists. In addition to providing the majority of their money from exports, livestock and traditional animal keeping are essential to human existence. Since access to water and pasture are essential for their livelihoods and there are reports of Somali nomads living in the country, many people there are particularly impacted by water stress.

Somalia has experienced an increased frequency and severity of droughts in recent decades. According to the United Nations, a drought in Somalia resulted in 943,000 people being displaced from their homes between November 2016 and October 2017, and it is anticipated that this figure will increase. The Sendai Framework (2015–2030) emphasizes how challenging it is to achieve sustainable development in the absence of the creation of contemporary climatic systems. Based on forecasts, the consequences of climate change would impede economic expansion, rendering poverty reduction unattainable and exacerbating socioeconomic inequality.

The climate crisis negatively impacted fundamental livelihoods, food security, health, and other socioeconomic issues. The anticipated rise in the reoccurrence and severity of extreme weather pattern due systematics changes ecosystem health and safety in Somalia, as the country lacks a sufficient adaptation strategy. Given that the nation is still embroiled in a lengthy civil conflict, Somalia's capacity to deal with disasters like extended droughts and floods remains crucial and unpredictable (Ogallo, L. A.,)

Uncertainty in food and livelihoods, inadequate marine and coastal management, and the dumping of hazardous waste along the coast by developed nations are major concerns. The country's main worries are natural disasters, inadequate environmental management, and the failure to mitigate the drought. The country is currently experiencing a wave of climate change that is being accelerated by high-speed ongoing deforestation. Approximately five trees are felled to get a single bag of charcoal, hence accelerating the pace of deforestation. Between 1990 and 2005, the deforestation rate caused by agricultural and charcoal production was estimated to be approximately 13.9 percent, equivalent to 1,151,000 hectares (Abdi, M. (2022).

Rural populations are more vulnerable to climatic shocks and crises because of extended climate change's buffering mechanism. Due to the loss of fertile soil and land clearing caused by significant floods and long-lasting droughts, agriculture production has reached its lowest point. Strong winds and floods are driving the rapid erosion, although soil erosion and loss of soil fertility also had a role (Warsame et al., 2021). A considerable decline in agricultural production, already hampered by water scarcity and pest infestations, has been brought on by rising temperatures. About 40% of the GDP of a nation with a traditional pastoralism system comes from livestock. The economy's second-most significant sector is agriculture.

Somalia yield production mostly relies on rain-fed. Due to lack of rain and prolonged drought agricultural production is unable to meet the daily need of farmers. Because of this country economic remained to fragile vulnerable to climate induced problems. a combination of deforestation, soil degradation, escalating aridity, excessive grazing, water scarcity, and insufficient waste management, Somalia is currently experiencing an extended climatic crisis. Climate change and land degradation are two serious environmental issues that can make agricultural and livestock farming unsustainable. Conflict within a nation may result from further land deterioration. Conflicts like this also hinder and interrupt sustainable farming methods, which contributes to land degradation.

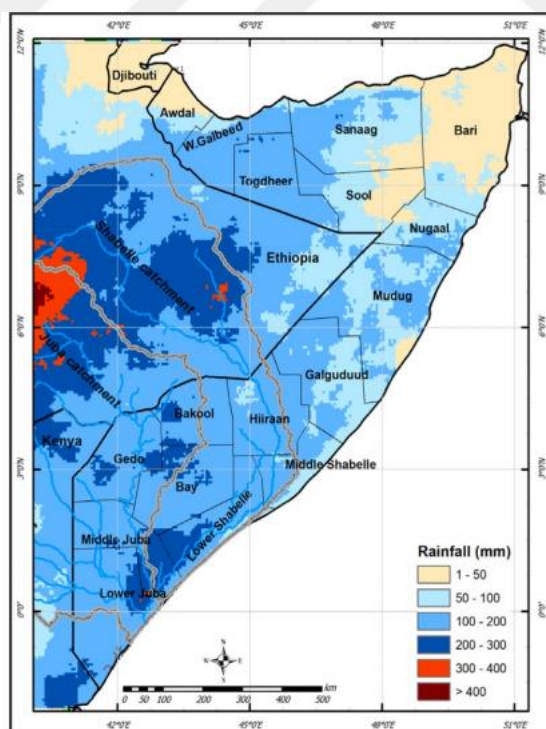


Figure 2. The amount of rainfall in 2021 (Source: FAO).

Despite this, drought issues plague every nation in the horn of Africa. The worst-affected country is still Somalia. By 2022, an estimated 80% of the country will experience severe drought conditions, leading to the displacement of around 1.4 million individuals. The arrival of additional people had a substantial effect on the impoverished living conditions of the host town, exacerbating the existing struggle to provide essentials due to limited resources. Since the start of 2022, Somalia's severe food insecurity has gotten worse, posing a problem for about 4.8 million people, or 31% of the country's total population. More than 6 million individuals (or 38% of the population) were affected by food shortages as food security deteriorated. Situations of crisis and famine increase gender vulnerability and suffering (Abdi, M. (2022).

In Somalia, the impacts of global warming have already caused harm and made life more difficult for a certain gender and elderly population. Numerous females were compelled to evacuate their residences and permanent dwellings since they could no longer afford to meet their children's essential daily requirements (Warsame et al., 2021).

1.1.1. Catastrophic Climate Changes in Somalia

More than 6 million individuals (38% of the population) were affected by food shortages as food insecurity escalated. Somalia has endured prolonged and repeated droughts throughout its history. In the past twenty years, there have been signs of discernible change in environmental circumstances because of climate change. Three factors—pastoralism, population density, and Somalia's protracted civil war—have combined to make the effects of the drought there disastrous. Overall, Somalia endured droughts because of the climate crisis, which threatens livelihoods and food security.

Drought is one of the biggest concerns of the climate crisis. It is highlighted as the main causes of food shortages, hunger, malnutrition, starvation, and displacement of people. Food scarcity during drought are the biggest threats due to loss of crop production, starvation and livestock death, and water shortages. A significant issue in Somalia is food insecurity. Between 2011 and 2017, a prolonged, terrible drought that devastated livestock production, crops, and livelihoods in general severely impacted rural areas. 2018, due to the drought, more than 2.9 million people experienced food insecurity crises and emergencies in 2020 (UNCCD, 2020). In those years, a second wave of drought followed, killing animals, and claiming lives since the nation had not yet fully recovered from the harm of the year before. Due to this, many people were displaced between villages and towns and their means of subsistence were destroyed (Warsame et al., 2021).

Millions of livestock dead due to lack of water and pasture leading huge economical loss and widespread financial crisis. As the country extensively depends on humanitarian aid, there has been gap for those aids since the Ukraine war started. Women and children are disproportionately affected by drought as they are very sensitive to drought. Prolonged famine causes severe malnutrition among women and children, which eventually costs the lives of many.

The assessment of a country's susceptibility to climate change is typically based on scientific research that evaluates both the physical sensitivity and the vulnerability of the built environments. The comprehension of the societal dimensions of vulnerability is constrained by their inherent intricacy and the difficulties linked to their quantification. Social fragility is commonly evaluated by considering individual attributes and is partially shaped by differences in both social and spatial elements (Cutter et al., 2003).

1.2. Climate Change and Gender Vulnerability

The term of 'gender' will be narrowed down to emphasize certain elements of (in)'Gender' is perceived as the expression of the ever-changing and situation-dependent connections between females and males. The term 'gender' is a socially learned concept that is used to identify women and men. 'Gender relations' refers to the socially created patterns of interactions between women and men. Frequently, gender is commonly perceived as the cultural distinction between females and males, rooted in the biological categorization of individuals into male and female. Nevertheless, there are reservations regarding this concept as it only categorizes human society into two distinct domains, so disregarding the variations and distinctions that exist among women and among men. The shift from emphasizing differences to emphasizing relationships developed (Connell, 2002). When gender is defined in this manner, it becomes an ambiguous ideological and cultural concept that is also perpetuated by tangible actions, hence attributing significance to biological distinctions between sexes. Simultaneously, gender is influenced by the societal constructs of masculinity and femininity.

Gender, as defined by Moser and Moser (2005), refers to the socially created roles, taught behavior, and expectations that relate to individuals who identify as female or male. According to Wisner et al. (2004), the interaction between gender and power dynamics in different institutional settings influences one's vulnerability to injury or danger.

The Hyogo Framework, implemented by the United Nations in 2005, provides a precise definition of vulnerability. Vulnerability refers to several factors affected by socioeconomic, and ecological heighten the population's responsiveness to the effects of dangers.

According to Enarson (2012), the hazards that are associated with natural disasters need to be linked to the vulnerability that individuals face in their everyday lives.

There is a correlation between gender, which is an essential component of social organization, and the social situations in which people experience disasters.

The most visible way that fragility in crisis contexts is associated to suitability in daily life is unequal access to resources because of structural inequities embedded in society. It is possible to evaluate the progression of gender vulnerability in crisis situations, as stated by Blaikie (2004), by analyzing the underlying reasons, persistent stresses and ongoing hazardous circumstances that are present inside a community. The primary factors that lead to gender vulnerability in cultures are the limited access and control that women have over power, institutions, and resources, together with the pervasive presence of paternalistic attitudes that uphold male supremacy in political and economic systems (Chakrabarti, 2009). These variables are also among the primary contributors to gender vulnerability. In many instances, macroeconomic issues like rural urbanization and migration, labor force pressure, and deforestation is associated with detrimental socioeconomic and ecological consequences such as a vulnerable local economy and physical environment (Fordham, 2003). Such conditions include deforestation, urbanization of rural areas, and migration of rural populations. Women who have social and economic disadvantages in their daily lives are more susceptible to being vulnerable or greatly impacted by a disaster under such conditions. Gender challenges are not indicative of crises associated with disasters, but rather they easily eliminated in the society, functional, and observable in everyday life at the personal, familial, and communal levels. Additionally, they are institutionally represented and influenced by social and cultural norms.

Gender vulnerability is a concept that has various aspects. Previous research has identified the five primary components of gender vulnerability as being the physical, economic, social, political, and cultural dimensions. The phrase "physical dimension" pertains to the disparities in the biological and physiological characteristics between males and females, which might increase the probability of these persons encountering a disaster and affect their capacity to cope with it. This dimension is further explained by the inclusion of elements such as pregnancy, physical impairment, old people, and malnutrition. The primary factor that determines women's ability to handle disasters is the economic inequality they face in terms of their access to and control over economic resources compared to males. This component refers to the disparity in access that exists between women and men in terms of labor opportunities, markets, and productive assets. The word "social dimension" pertains to inability or lack of aptitude. Based on the attributes of interpersonal connections and societal frameworks, it is

incumbent upon both males and females to endure the adverse consequences of a calamity. The dimension refers to the discrepancy in the availability of training, education, and familial support between women and men. The political aspect of vulnerability relates to the disparity in women's and men's abilities to access and influence decision-making power structures. This component pertains to the disparity in women's and men's access to leadership and decision-making processes. The cultural component refers to the differences between genders that are shaped by culture and religion, leading to constraints on women's capacity to properly manage disasters.

Due to persistent and widespread disparities that promote poverty, gender cannot be ignored in an investigation of the distributive effects of the environment on human flourishing (UNEP, 2007). Women face the consequences of environmental degradation disproportionately to males, and a vicious circle occurs between this fact and climate change.

Different people experienced climate change effects differently. According to academics and scholars' "vulnerability" refers to situations in which communities and their assets are weak and exposed to damage or loss. By sensitivity and capacity to adjust to the negative effects of climate change, vulnerability is related to coping and adaptation methods. Resource availability, distribution, and regulatory agencies are the three key elements that affect vulnerability, according to Furgal (2006). The main causes of vulnerability are politics, access to power, and economy.

The relationship between sex, poverty, and fragility is an essential topic in the discussion about climate change adaptation and gender. Gender discrimination manifests in diverse ways across the globe, influenced by factors such as society, culture, economy, and politics. Multiple publications indicate that social norms and gender roles increase the vulnerability of gender to poverty and climate disasters (Cannon 2010, Skutsch 2010).

In accordance with the UNDP Human Development Report from 1995, women and men are disproportionately affected by poverty. Considering the fact, women are disproportionately impacted by poverty.

Differentiating elements include wealth, social status, age, and a variety of other social and economic aspects. There are many factors that contribute to women's vulnerability, this encompasses their dependence on resources from nature, their restricted availability of belongings, and their land ownership. The work of Adger and Tompkins (2004) the disparities lie in prosperity, socioeconomic status, age, and various other economic and social factors. Dependence on natural resources, being refused There are disparities based on wealth, social status, age, and a variety of other social and economic factors. Women's vulnerability is usually

related with factors such as dependence on natural resources, being denied access to property, and ownership of land.

There will always be concerns about the exclusion of women and other underrepresented groups from positions of authority and political decision-making, project implementation, and program sustainability.

In general, women and men have various degrees of access to social, economic, and political resources, both inside the household and in society. This is because gender roles and cultural circumstances establish those responsibilities and obligations. In addition, women and men have varying degrees of access to these resources. The effectiveness of these factors to foresee and defend against disasters is, in turn, affected by these attributes. When it comes to strengthening efforts connected to disaster prevention, relief, and rehabilitation, having an awareness of these conditions that are unique to gender and the ensuing goals can be of tremendous assistance. This can be accomplished by contributing to the development of protection and mitigation strategies that are sensitive to gender and culture and are based on coping mechanisms, knowledge, and resources. Therefore, the extent to which the inclusion of women in disaster risk reduction (DRR) initiatives in the constructed environment is essential for mitigating their susceptibility to disasters relies on the distinct characteristics of the social (including cultural and religious), economic, and political factors particular to the region in which it is being implemented. It is crucial to recognize the importance of inclusiveness. Comprehending the significance of women's involvement in reducing the risks associated with disasters in the constructed environment is essential, particularly within a distinct social, economic, and political framework. The notion that climate change is not gender-neutral but rather has gender-specific consequences and impacts is a recurring topic in the realm of research pertaining to gender and climate change. The primary contention is not just that men and women will have distinct experiences due to climate change, but also that women would be disproportionately affected by the consequences of climate change compared to men. Due to their societal responsibilities as caretakers and their position as one of the most impoverished and vulnerable groups in society. Gender, environment and development scholars have consistently argued for several years that women suffer greater harm from all types of environmental degradation compared to men. This is due to the reality that women are among the most vulnerable and impoverished members of society as a concrete example, there is a significant correlation between the percentage of female survivors and the gender disparities that exist in the aftermath of natural catastrophes such as typhoons, droughts, and floods. According to figures supplied by the World Health Organization (WHO), women have a

fourteen-fold higher probability of dying from natural disasters compared to men (World Health Organization 2003). Due to climate change, women are facing growing challenges in maintaining a satisfactory standard of living. They need to travel a considerable distance to obtain clean water and firewood, and they may have to spend more time producing and gathering food in conditions that are not favorable. The occurrence of food insecurity and food shortages is a natural and unavoidable result of climate change. Women tend to go without food in order to ensure that their children are able to consume food, which can be detrimental to their own health (Cannon 2021).

Women are more prone to poverty, forced marriages, human trafficking, and labor exploitation. Additionally, they experience greater difficulty in recovering from tragedies. The primary cause of this is their susceptibility to economic instability. Women exhibit lower levels of literacy and education in comparison to men. They face restricted access to productive resources like land and income-generating possibilities. Moreover, women have a higher likelihood of being disproportionately represented in the farming and unofficial industries, which are especially susceptible to the consequences of natural disasters. Consequently, women make up a far larger proportion of the unemployed or those engaged in low-paying jobs compared to men. Their minimal participation in decision-making on work distribution, authority over home assets, and matters pertaining to their welfare intensifies their economic fragility. As a result of the fact that women are expected to take care of their families and their households, in addition to the social constraints that restrict their mobility, it is less likely that women will have the opportunity to travel in search of employment that has the potential to generate cash.

Assessing the susceptibility of human-environment systems to extreme events is an essential step in mitigating the adverse effects of climate change when it comes to the environment. The disproportionate impact that it has on women and men should be taken into consideration, and it is essential to put into action measures that will improve their capacity for adaptation and resilience. Vulnerability analysis aims to identify the persons who are most susceptible to the impacts of climate change and to argue for policies that mitigate the adverse effects of climate change. As stated by Tiepolo et al. (2016), this is extremely important for the well-being of both sexes. Vulnerability is widely recognized as an analysis that is continuously evolving. It involves many empirical investigations that are applied differently in various systems. Additionally, a fundamental conceptual framework is necessary for this analysis. In 2015, the United Nations General Assembly formed an international working group with the aim of developing universal standards for mitigating the risk of natural disasters.

1.2.1. Gender disparities in the effects of climate change

The discussion surrounding the debate of "gender and climate change" recently acquired significant momentum. In rural areas, the gendered dimensions of climate change and its repercussions are not restricted to a binary split between women and men. Rather, they are multifaceted and multifaceted. According to Carr and Thompson (2014), they also consider other aspects, such as racial or ethnic background, social class, age, access rights, and economically privileged status. The authors Ravera et al. (2016) emphasized the significance of increasing the integration environmental hazards and its relation to change across a variety of scientific fields to create a more comprehensive and accurate knowledge of the impact that humans have on climate change. The gendered aspect of the implications of climate change is not only an academic problem; rather, it is a substantial practical worry (Pearse, 2017) that calls for specific interventions to mitigate the susceptibility of the population. To challenge commonly held concepts from the perspective of being oppressed, women's gendered experiences equip them with a distinct perspective that they can use to challenge prevalent beliefs. Fordham (2003) asserts that most of the gender study has focused solely on women because of the inclination to generalize experiences of disasters and the prevalence of men in executive roles to a greater extent than women. This is because men and women are frequently ignored in the process of catastrophe management for the entire organization. It has been observed that gender-based biases and cultural differences predominantly impact women. Furthermore, it is important to acknowledge that pre-existing socio-structural biases contribute to women being consistently more susceptible to security and safety risks in the aftermath of a disaster. Several factors, including political, economic, and socio-cultural conditions, play a role in determining the severity of disaster consequences. However, it is important to acknowledge that incorporating gender into disaster mitigation plans and efforts requires acknowledging the distinct roles and places of women and men in society. The impact of climate change has a gendered dimension, as substantiated by multiple research projects, and its impacts disproportionately affect women and marginalized segments of society. The discussions center on the idea that women will be more impacted by climate change than men. According to the findings of the study, women are more vulnerable to all types of environmental deterioration than males are because of the responsibilities and obligations they feel toward society. The additional responsibility of caring for youngsters and the elderly, in addition to providing for the family, falls primarily on the shoulders of women. In addition, their social standing and economic might are both quite low. Women's survival rates in natural catastrophes including

storms, droughts, and floods have been shown to be strongly correlated with gender inequality. According to the World Health Organization (WHO), women are 14 times more likely than males to die in a natural disaster. According to research done in 2007 by Neumayer and Plumper, women found it challenging to maintain a regular level of living since the climate had a negative impact on their lives: They had to go great distances to obtain safe water, and fuel, and they would invest a lot of time in cultivation and food collection in difficult circumstances. One of the unavoidable consequences of climate change is the occurrence of food shortages. This is because mothers often must forego their own meals in order to provide for their children during times of food scarcity (Cannon 2021)

Gender interactions are contingent on the specific context and frequently undergo modifications in response to changing circumstances (Moser, 1993, p230). Gender relations worldwide consistently involve an inherent imbalance of power between women and men, notwithstanding differences observed between cultures, locations, and historical periods.

Gender inequality is a highly prevalent kind of inequality, as stated by the UNDP in 2005. Hence, gender functions as a social hierarchy, akin to other tiers like race, class, ethnicity, religion, location, and age, all which impact gender roles, and interpretations. This implies that the variations among women also require specific attention.

While this book attempts to acknowledge and address the variations during its content, it will nonetheless generalize about women. Zillah Eisenstein's conclusion is that gender oppression exists, regardless of the differences in gender (1994, p8). In numerous civilizations, women are often perceived as occupying low roles and their capabilities are sometimes overlooked.

A case study from a developed nation demonstrates how the social and economic harm brought on by natural disasters might increase a country's susceptibility to climate change. Women make up 80% of all refugees and 70% of the world's poorest population, making them the group that has been relocated due to climate change the most frequently. The majority of women who are displaced are either in camps or on the move, and they are the ones who are most likely to be victims of violence based on their gender. Nevertheless, according to UNIFEM, governments and international aid organizations engage in discussions about these concerns only infrequently. The crisis environment has significantly increased pre-existing gender vulnerability and has brought women to the verge of breaking. Climate change has undesirable effects on gender, including preexisting vulnerability and preconceived gender roles, which negatively affect women's health and well-being Terry (2009) and Neumayer and Plumper (2007) state that social gaps between the sexes frequently make women more

susceptible to the negative health impacts caused by changes in the climate. This is consistent with the findings of both scientists.

Regarding health, the primary repercussions are related to gender-based and sexual violence (SGBV), and an escalation in SGBV can result in greater mortality rates and the spread of diseases, particularly among women. It is possible that climate change will make it more difficult for people to obtain medical treatment, particularly for women who are pregnant or breastfeeding. Due to several social and physical changes, women are more susceptible to the health effects of climate change (McMichael, 2013). Unfavorable weather, for example, can have a negative impact on pregnancy, resulting in dehydration, malnutrition, respiratory and gastrointestinal illnesses. (Omonijo et al.,2012).

Several natural disasters that were brought on by climate change also had a detrimental effect on the public health system, resulting in the reduction of the number of medical and health services that were available. Hurricanes and floods, for instance, severely harmed the infrastructure, which included hospitals and schools. According to Nishat and Rahman (2017), girls are more inclined than boys to leave school to help with household responsibilities during times of distress and upheaval within the family. Ishaya and Abaje (2008) Sea level rise and salinization can also have a negative impact on women's health by increasing mortality rate. Traditionally women are tasked with doing housework and providing for families and water collection. Limited access to potable water necessitates that women allocate additional time to procure water for both their personal need and those of their family. Sultana (2014) expressed concern about the impact of climate change on women's gender, in South Asia, especially in countries where traditional norms and the patriarchal system are powerful. These cultural practices contribute to the rise of gender inequality which forces women to always be vulnerable and discriminated against. The lack of resources and ownership power of women has caused continuous discrimination that has led the acceleration of further fragility and vulnerability of women to climate change and other problems. The decision to sell, buy, own, and use land is the right of men only. The ability to sell and own belongs to men while women are often used to take care of household items, men mostly decide and manage productive assets. With men deciding what and when to sell, this limits women's ability to cope with environmental stress. According to Sultana (2014), it is important to examine and debate the problems of land ownership and inheritance to lessen the vulnerability of women to climate change and to enable them to profit from the land rather than be treated as visitors in their own nations. This is especially important in cultures like Bangladesh where sons often receive most the family's

wealth due to religious customs and Islamic inheritance laws that continue to discriminate against women.

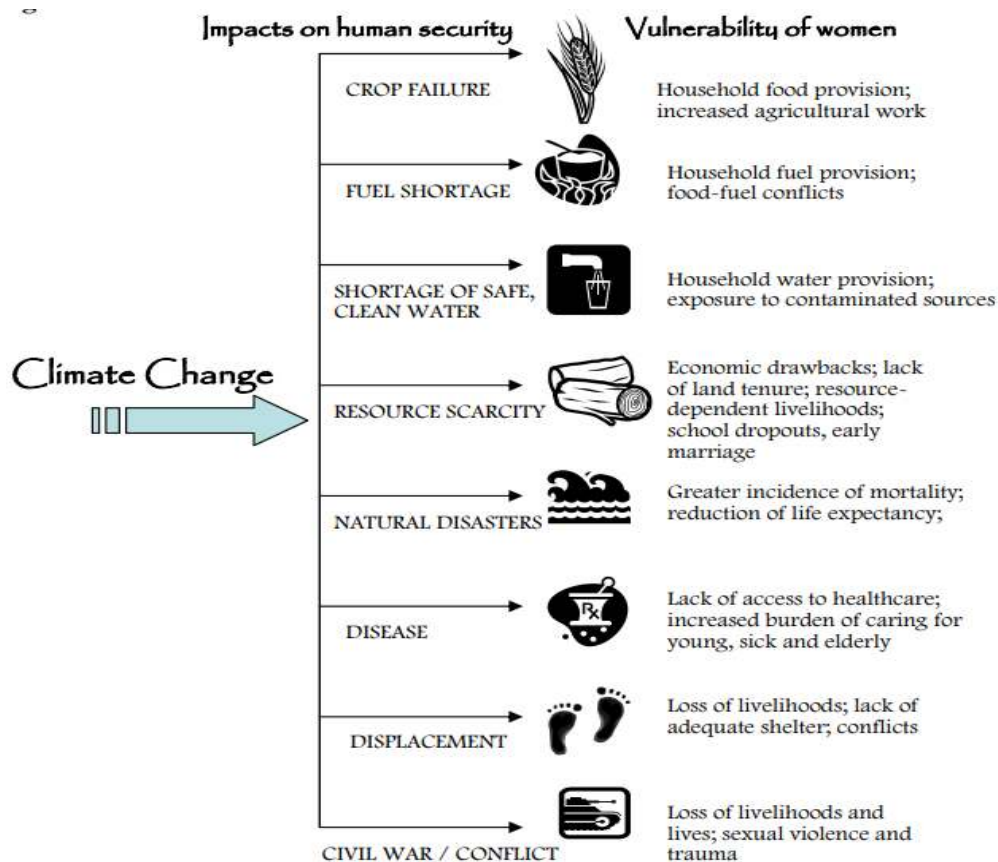


Figure 3. How climate impacted the female lives. (WEDO, 2008)

Human Rights Watch recently claimed an association between climate change and child marriage. A 2015 human rights poster with the slogan "Marry your house before you sweep it" is an illustration of how climate change is elevating child marriage. The ongoing loss of money for families and the high payment required to marry young girls are factors that encourage marrying off.

Analysis of the relations between capitalist and colonial inequalities has been welcomed in recent studies on climate justice. This serves to question the westernized and Eurocentric environmentalism that has reigned for an excessive amount of time. In spite of this, there is a discomforting lack of Analysis of gender interactions in mainstream literature and policy discourse. When looking at the attitudes and experiences of women, it is seen that the socio-cultural content of 'local cultures' is generally isolated, therefore there is limited access to information to understand the aspects of gender relations in climate policy, especially those that shape inequality of power and access to resources.

According to researchers that study these topics, environmental degradation and climate change have had a substantial influence on women and vulnerable populations during the past 20 years. This is particularly true for women in developing nations who lack the necessary resources to handle the challenges posed by the harsh climate.

Even though the Gender and Climate Change Research Institute has issued a dire call to action to stop gender blindness at the highest levels Water, sanitation, of academia and politics, there will inevitably be flaws. To discover the immediate needs of women in developing nations as part of the political agenda, it is important to understand and deal with issues like gender vulnerability and climate change. women who struggle with patriarchal ideologies and structures.

It is completely unknown and undiscussed what specific difficulties and effects climate change may have on gender. Most policy documents and research publications on climate change do not mention gender. The existing research on the relationship between gender and climate change has primarily concentrated on the effects of climate change on women in underdeveloped countries. This research has overlooked the experiences of women in developed countries and neglected to address the underlying sexist power dynamics and discursive frameworks that shape climate politics. It is appropriate to point out that there are insufficient studies and research on the linkages between gender and climate change. Gender blindness is incredibly prevalent and well-documented in everyday environments. Local women's organizations in the North are conducting research and campaigns to increase awareness of the effects of climate change in their communities. Insufficient attention has been given to studying the relationship between gender and climate in industrialized nations, resulting in a lack of proper research on the effects of climate change on developing countries or the southern hemisphere. It has been demonstrated that when resources and safety have decreased, disasters have destroyed livelihoods, and there are more migrants and refugees, climate change can lead to conflicts between and within countries. Due to their domestic responsibilities and societal positions, women are more susceptible to environmental variations, which amplify the effects of climate change. Women are expected to fulfill multiple responsibilities concurrently. In numerous underdeveloped nations, women predominantly serve as the principal providers of sustenance. Moreover, they often assume the responsibility of tending to young children and the elderly. Obtaining access to vital resources such as water, food, shelter, fertile land, and fuel becomes increasingly challenging, leading to a rise in the workload carried out by women. Numerous impoverished families, the majority of which are

led by women, are finding that living is becoming increasingly challenging because of the terrible environment conditions.

As a result of drought, desertification, and erratic rainfall, women are needed to exert more effort to maintain livelihood. Women's ability to work, get education or training, or participate in the political system is constrained under such circumstances. Girls are compelled to leave school because of the climate to assist their mothers in gathering water and wood. Reduced educational chances for women might result from loss of resources for their livelihood, relocation, and migration, which also heightens the general risk that women experience.

Even though everyone is affected by climate change, regardless of race, ethnicity, gender, or income level, its consequences are mostly felt by underdeveloped countries and people, and it exacerbates already existing inequality. Climate change will exacerbate persistent instability in countries with numerous weak governments and vulnerable populations. Poor populations may be particularly vulnerable to those clustered in high-risk locations, according to the IPCC's conclusion.

Gender-based sociopolitical factors lead to unfair possibilities for coping with climate change. Aspects that cross cultural boundaries are assessed along with dynamics, gender-specific cultural behavior, and climate effects. There has been a significant amount of progress made in the field of climate change and gender studies in terms of providing instances of how structural gender inequality operates. Structured inequality can be seen in political and economic aspects, but it's also critical to comprehend gender vulnerability.

In 2007, the UN Framework Convention on Climate Change (IPCC) stated that their adaptation capacities are limited, and they heavily depend on climate-sensitive resources such as inland water and food supplies. O'Brien (2007) states that there is a clear relationship between how individuals or groups are affected by climate change and the consequences of those changes.

Women who live in the countryside face several issues due to climate change, including economic collapse, unable to maintain food, unable to gain access to education, and increased poverty (Nyantakyi-Frimpong and Bezner-Kerr, 2015, for example). Recent studies have demonstrated how the climate catastrophe causes additional economic and health issues that are typically unrelated to the climate.

The definition of vulnerability is "the characteristics of an individual or group and the circumstances in which they live that affect their ability to anticipate, adapt to, prevent and get over from the effects of natural hazards," Wisner et al. (2004: 4 and 11). They claimed that to establish a connection between sensitivity to natural disasters and the ability to withstand and

adapt, "the risk must be linked to the susceptibility and fragility of many people caused for their normal existence." Determine, distinguish, and understand the motivating factors that increase or decrease vulnerability at all scales in accordance with them describe "the risk involved in disasters must be linked to the vulnerability of many people created for their normal existence." Analyze, differentiate, and comprehend the driving forces that amplify or diminish susceptibility at various levels in accordance with their depiction. (Cutter, 2003: 7)

Barriers to access to clean water, sanitation and health are a huge burden on women and make their lives difficult. These burdens have doubled the normal work of women, along with the reproductive health challenges faced during crisis, resulting in women not having access to health care during childbirth and (Patt et al., 2007). As we all know, in many norms and cultures, women are responsible for housework, children and taking care of elderly, and this often results in women not migrating to seek shelter and work when a disaster occurs. Women also face indirect problems when natural disasters occur. Women are more active and less active, they are not able to make decisions, and their access to information is very limited, these limitations make them more vulnerable to climate induced crisis.

Neumayer and Plumper (2007), In a sample of up to 141 countries from 1981 to 2002, the impact of catastrophe strength and its relationship with women's socioeconomic status were evaluated in relation to changes in the gender gap in life expectancy. It has been found that after natural disasters, women's life expectancies are shorter than those of men. Or, to put it another way, women often die in greater numbers or at younger ages because of natural disasters. Natural disasters reduce the gender gap in life expectancy in most nations since female life expectancy is typically greater than male life expectancy. The main findings are (a) that women live shorter lives than males do, and (b) that catastrophes and climate change make women more vulnerable and impoverished. (c) Women who have more economic power would be better equipped to tolerate how climate change affects both sexes. In conclusion, women are more susceptible to disasters and severe weather than men are, and the mortality rate has not changed for women. This is because of the socioeconomic structure of the country.

138,000 people were killed by the cyclone that struck Bangladesh in 1991, the majority of whom were women over the age of 40. (1993; Bern et al.). In a direct and proportional way, domestic and sexual violence both increase during and right after the crisis. During prolonged droughts, numerous females are compelled to discontinue their education as their tuition funds are diverted towards the purchase of essential household items. To ensure the survival of their families, girls may also need to engage in ongoing extra work.

Research conducted in Malawi in 2001 found that many women marry relatively early, and many of these young ladies opt to marry older males who have several partners. They are frequently compelled to sell sex in return for cash or gifts, which has hastened the spread of AIDS throughout the nation (Malawi Government, 2001).

The environment is negatively impacted by climate change in significant ways. In terms of the economy, politics, and social spheres, the world is becoming increasingly unstable as a result of climate change. Food shortages have been linked to droughts brought on by both sea level rise and a general lack of water. (Dryness throughout conventional crop cycles and risks to agricultural land on low-lying terrain).

The two most well-known definitions of vulnerability, according to Füssel (2010), are "contextual vulnerability" and "outcome vulnerability." "The interpretation of contextual vulnerability, which is often used, focuses on the growth of human reaction power and characterizes vulnerability as the outcome of the system of exposure, sensitivity, and adaptation. whereas "Outcome" interpretations frequently concentrate on technological solutions that could lessen damage.

Unganai & Murwira, (2010), Women in poor nations lack the requisite capability to address the climate catastrophe due to political and societal barriers that impede their access to the essential technology and information needed for climate adaptation. Otzelberger (2014) argued that climate change effected food security by traditional food sources less predictable and less accessible to women. Rural women face persistent losses in income and productivity. Feminist researchers such as Macgregor (2010) have argued that women's vulnerability to climate change has contributed to low levels of education, the absence of social mobility and the inability of women to contribute to decision-making and the process of power distribution. There are broad social inequalities that make women more vulnerable and vulnerable to climate problems.

The IPCC (2007c) vulnerability is described as the output of the system in terms of adaptive capacity which is referred to as "Outcome". These types of definitions are used to describe system vulnerability (e.g. country vulnerability) Nevertheless, certain assessments might be expanded to evaluate and comprehend the susceptibility of different genders to the impacts of environmental change.

Identifying the sociocultural factors that contribute to vulnerability is difficult because of their density and the problems associated with measuring them (Cutter et al. 2003). In a defined culture, vulnerability is frequently viewed as a set of traits as well as social and environmental injustices.

Women are not informed about the climate issue or new forecasts, which is one of the contributing factors to the rise of repercussions experienced by women in society as a result of gender vulnerability. Women have minimal political clout because they don't have political representation to speak for their concerns. Strong, complicated relationships are hard for women to forge because of the prevalent poverty that exists in their society.

Identifying the sociocultural factors that contribute to vulnerability is difficult because of their density and the problems associated with measuring them (Cutter et al. 2003). It is commonly accepted that the already present, severe social inequalities will become even worse due to climate change. Vulnerability will have a negative influence on two key areas: the security of one's source of income and fundamental adaptability factors, such as wealth and education.

According to estimations women from underdeveloped countries are likely to walk 6km every day to get potable water (UNFPA 2002) In drought-stricken areas, women must walk much longer distances to get water that can be used at home.

Women can often be more susceptible to climate change than men because of deeply rooted cultural norms and values. Most of the time, wives or other family members must provide their consent before a woman can leave her house. When there are natural hazards, even traditional dress standards like long gowns may discourage women from being active. (Nellemann et al. 2011)

Women often face challenges about their societal roles and obligations in the context of climate change, which can significantly affect their overall well-being. For instance, it is well known that sea level rise can result in water-borne illnesses, which can particularly harm women because they are typically responsible for fetching water for the home. 2008; Brody et al. Malaria risk frequently rises when women oversee water collection during droughts (Denton 2002). Additionally, the wells where the ladies search for water are filthy and unhygienic. This socioeconomically deprived group may have health issues because of increased exposure to water pollution brought on by floods.

1.3. Climate Change and Gender Effects in Somalia

Climate change has exacerbated gender-based violence (GBV), which has already significantly increased in the heavily patriarchal culture and in a tradition where violence against women is seen as normal or a form of punishment. The frequency of rape, homicide, domestic violence, and female genital mutilation (FGM) has increased recently. Normal gender disparity in Somalia makes women more vulnerable to the consequences of the climate

catastrophe. Women play a very small part in politics in Somalia. Unable to part of the system, power-sharing and political, academic, and educational arenas. The sharing of economic power is lopsided. Every day, violence is committed against women and girls. Female genital mutilation is a common practice, as is marrying off females at a young age. However, because of the crises brought on by climate change, resource shortages, and livelihood stress, many cultural norms in Somali society have changed, and the number of rape cases and forced marriages has skyrocketed. To understand why such cases are out of control, let's examine each case in isolation (Lwanga-Ntale et al 2020).

Prior to the formulation of adaptation strategies, an analysis revealed that women had a higher susceptibility to the impairment of change in climate compared to men. For instance, the risks posed by climate change increased the burden that women needed to prioritize. Women were also deemed to be at a disadvantage by the study due to their lower levels of education and the limited resources they had accessible to them. No gender components were incorporated in the adaptation plans, even though gender was only briefly discussed in the exchange of concerns with proposals to guarantee gender equality in all activities through gender analysis. Climate change impacts a significant portion of the Somali population, but its effects are not experienced equally by both genders. The most susceptible categories have been recognized as youth and women, and several factors have contributed to this situation. Women exhibit a higher propensity than men to possess the attributes that render them particularly susceptible to the impacts of climate change. Climate change poses substantial dangers and concerns for the majority of disadvantaged women in Somalia. Climate-related difficulties have had a disproportionate impact on Somali women because wide inequality in country's leadership and power distribution in decision-making, limited access to resources, and lack of control over those resources. The insufficient representation of women in public and private sector planning, policy development, and implementation has contributed to climate change vulnerability. Women must find a method to feed their family, which necessitates access to solid fuel and safe drinking water during droughts. Women suffer from malnutrition because of droughts or floods, and they frequently feed their minuscule families and children first.

Numerous case studies have demonstrated that women are crucial in helping people rebuild their lives after a disaster. According to additional studies, many communities are now prepared to see women take the initiative in lowering cyclonic risk. However, barriers prevent women from assuming important leadership roles at the community level because the specific vulnerabilities of women mentioned above that have not been addressed.

1.3.1. Domestic Workload

When a disaster strikes, women are disproportionately impacted by how the family's workload is divided. Because they must manage finances, provide for the family, and care for the elderly, women's everyday responsibilities increase as the male or fathers are unemployed. Most caregivers for people with disabilities are female. A significant portion of female respondents talked about how their spouses' usual behaviors changed during the flood; many of them cook at home or look after the kids (Alam 2007). However, recent research has documented the shifting allocation of work.

1.3.2. Health Problems and Female Suffering

The adverse effects of climate change, including but not limited to droughts, floods, and intense rainfall, can significantly impact the health, socioeconomic status, and overall well-being of women and children. Because they have less opportunities to participate in disaster preparation planning, if flooding occurs because of climate change, women and children will be the demographic most susceptible to fatalities and injuries. Under varying climatic conditions, there may be an escalation in the incidence of cholera and diarrhea, starvation, and heat-related deaths. Pregnant women and fetuses are highly vulnerable to malaria, which can lead to maternal anemia, and perinatal mortality (Dampney, 2007). The consequences change of climate patterns make effects the accessibility of certain medicinal plants may have repercussions on the well-being of impoverished women in countryside, who predominantly get traditional herbal remedies for their healthcare requirements.

Women's conceptions of social security and their experiences with poverty are impacted by their lack of access to clean water. Not only is water a necessity, but it is also essential to life. farming operations, especially in remote northern regions where hand-dug wells and small-scale irrigation systems are used. Women and girls are primarily in charge of providing houses with water in Somalia, Ghana, and many other nations, especially in Africa. When transferring and obtaining products, women frequently travel great distances. Drink plenty of water every day. It is their time, energy, and health. Because it directly affects women, officials do not prioritize the distribution of water to houses. (WMC, 2004).

Women are also marginalized because of patriarchal culture and gender inequality. Gender. The division of labor continues to limit women's participation in typical socioeconomic activities, resulting in regional gender inequality. Despite NGO efforts to eliminate disparities between genders. Women's place in Somalia remains subordinate defined duties based on

certain cultural norms. Inequality is also greatly influenced by poor educational opportunities, particularly for women and girls. Denying or limiting access to education for already disadvantaged social groups, such as those with disabilities and women, perpetuates alienation and exclusion through restriction. Inability of such groups to engage in political and power sharing, resulting in disempowerment.

Unbearable continues deterioration Climate forced a lot of females to migrate from their homes and permanent shelters since they were no longer able to meet the basic daily needs of their children. Recurrence of a multi-seasonal drought that has hit the country created persistent food insecurity, which could be turned to famine specifically in central and southern Somalia. The consequences are far-reaching, with severe and unending water shortages, significant numbers of livestock dying of malnutrition and disease, poor and frequent crop failures, and rising domestic and foreign food prices causing massive population relocation. It is anticipated that almost 5.2 million people faced acute severe food insecurity in May 2022 because of multiple poor rainy seasons that began in late 2020 and have severely damaged crop and livestock production. If humanitarian aid is not scaled up, the number of people facing food insecurity is expected to rise to 7.11 million (45% of the total population) between October and February 2023.

Approximately 60% of Somalia's population is pastoralist, according to the World Bank. Furthermore, livestock and animal raising account for 40% of the country's national GDP. Due to the relatively low rainfall, most of the land is currently only fit for pastoralists, even though farming and pastoralists employ around 60% of the people. Local communities place a high value on livestock and traditional animal husbandry. Agriculture is the economy's second most important sector. Agriculture in Somalia is heavily reliant on rain, making the country vulnerable to climate change. Three years of declining rains have put the country in a catastrophic drought that has nearly turned into starvation. Pastoralism, the country's principal source of income, has been severely impacted by the climate catastrophe. According to research, the major shift to wet and winter grazing patterns, loss of natural habitats, and recurrent droughts have all had a significant impact on Somali pastoralism during the last 30 years. Furthermore, as a result of political marginalization, commercial operations have taken over the grazing pasture (Warsame et al. 2009)

In the pastoral system, men own and manage the animals; formulate policies and decisions; They are the chiefs of families, lineages, and cousins, and they consider themselves to be "true herdsman." Women are compelled by social and cultural standards to assume a subordinate position in cattle production. They are deprived of ownership, excluded from

participating in positions of authority and decision-making, and frequently live under male dominance within their communities. Women participate in activities such as building houses, milking, managing flocks, small business, cheese, and butter production, while men's role was limited to livestock production, which mostly includes caring for and moving animals. pasture and water management. resources, water harvesting, animal trade, hunting, and security. In recent years, men's work has shifted to cities, with increasing participation in non-pastoral activities. However, in recent years most of the work is loaded on the shoulders of women, such as the production of handicrafts and the collection of firewood, which men believe to be "feminine women." Considering that in this era of hard work in the pastoral economy, girls needed to be taken out of school to be able to support their families, which resulted in fewer women in education. Often, women are not able to contribute to the decision-making of social events that concern the whole society. Climate change conditions have compelled women to exert greater effort and work for extended periods to earn family income and assume the role of breadwinners, since the depletion of natural resources and the decline of the pastoralism economy have occurred. On the other hand, women's coping mechanisms including sharing and trading of goods have been overpowered from their original purpose of serving in temporary situations to earn a permanent livelihood. Resource depletion also leads to disruption of families. Research showed that a portion of the income is used by men to buy *khat*, which helps men to overcome the psychological depression they face in the desperate situations sometimes caused by droughts and loss of animals (Ali& Mwasigwa).

Women in developing countries play a significant role in producing 45% - 80% of the total food output in agricultural, livestock, and aquaculture sectors. Women also have significant involvement in the retrieval of water and fuel. Gender norms dictate that women are primarily responsible for the contact, care, and utilization of natural resources.

1.4. Somali Women and Climate Change Challenges

Although climate change has a negative influence on most of the Somali population, its impact and effects are unequal for both genders. Women and girls have been highlighted as the most susceptible demographics, with various causes contributing to this situation: The fact that due to their relative poverty, Somali women are more vulnerable to the consequences of climate change than men. Climate change had a significant negative impact on Somali women, mostly due to existing gender inequalities in decision-making, resource access, and resource management. For instance, the increasing workload that women must prioritize is a result of climate change. The study also found that women had less access to resources and lower levels

of education than men. Due to their heightened susceptibility to the impacts of climate change, women should be prioritized in climate change research, as indicated by this study. Therefore, it is recommended that gender analysis be emphasized in such research.

The multitude of pre-existing vulnerabilities that women were already subjected to, coupled with the absence of Somali women in authoritative positions, the legal field, and other crucial sectors of higher leadership, have all intensified the repercussions of environmental change on women. More research is needed to find a solution to the problem of climate change and its implications on gender. Addressing the problem of climate change and its effects on gender is crucial. Women constitute the predominant demographic group experiencing negative impacts from climate change, although they are significantly underrepresented in efforts aimed at tackling this issue. Building an adaptable and resilient society is significantly hampered by a lack of knowledge. In the process of making decisions about climate change, women are conspicuously underrepresented. The climate change debate made little attempt to address current gender discrimination or the importance of involving women in environmental efforts. Even devastating calamities such as the floods in Mozambique have not succeeded in convincing policymakers about the need of prioritizing women in the heart of sustainable development. Notwithstanding the significance of global warming as a pressing concern and its potential for substantial consequences, this is indeed the situation. Women are disproportionately susceptible to the repercussions of climate change as a result of various contributing variables. Because of climate change, women must engage in laborious tasks like gathering food, water, and fuel; they also have less access to material and non-material resources than men do, such as knowledge and skills; and they have fewer opportunities to further their education. Women are more likely to remain poor and be consigned to a life of poverty since they have fewer opportunities to obtain an education and take advantage of basic services. a) Historically conceived Gender disparities limited women's opportunities to participate in decision-making processes and wield authority, confining them to predetermined societal roles. d) Women's food security is jeopardized since they must feed the kids and the rest of the family before eating.

With an absolute inequality score of 0.77, Somalia has the highest gender inequality rate in the world, earning the fourth-worst grade on the global gender inequality index. In every area of life, including work, health, and participation in the labor market, women in Somalia face substantial discrimination and inequality. This is a direct effect of Somalia's pervasive and firmly entrenched patriarchal culture. In Somalia, girls marry off at very young ages, and violence against women and girls is ingrained in the society. Under customary law, which

frequently replaces the state's judicial system, women are subject to a great amount of prejudice. (Beier & Stephansson, 2012).

1.4.1. Inequality

The informal institutional responses to climate change reveal a clear presence of gender inequality, since women are insufficiently represented in governing bodies, and climate policy has the potential to adversely affect associations for women. Climate change learning and response vary based on gender, including contemporary masculinity and femininity. There are also significant debates regarding the topic of women's agency and the politics of climate change information. Overall, gender analysis is the foundation of this research evaluation. The consequences of environmental deterioration, economic despair, and globalization are already disproportionately felt by women. Climate change is probably going to make their already vulnerable condition worse, increasing gender vulnerability and suffering twice as much.

Research on the susceptibility of genders to climate change and their ability to adapt encompasses a broad spectrum of theoretical and empirical foundations. Although these topics are conceptually and practically related, this review is thematically divided to highlight findings from the literature on gender-associated risks and gender-based adjustments in practice. Climate change vulnerability refers to the possible hazards of negative effects and challenges in coping with those effects. The term "adaptation" describes the steps made to combat climate change. These behaviors have historically been practiced due to gender, according to the gender survey.

circumstances that are unfair, which in turn leads to sexist vulnerabilities. The development of new chains of gender-based susceptible abilities is possible through adaptation techniques. Nevertheless, there is proof that women may adapt to climatically generated situations.

A small number of research that look at gender disparities and greenhouse gas emission trends and have ramifications for larger discussions on the causes of climate change. Another important group of topics discussed in the literature concerns gender inequalities in climate governance.

According to gender equality, the various cultures, goals, and needs of men and women should be equally valued and respected. The gendered approach to understanding climate change has been gaining an interest as equal consideration is needed to give appropriate adaptation strategies. This is an important factor in reducing vulnerability to climate change while protecting and improving the livelihoods of the poor, both women and men (Soussain, Burton and Hamilton 2003).

Gender inequalities remain in terms of land access, resource control, workforce command and access, capacity, income diversification techniques, and time allocation to agricultural or forestry-related tasks. States should actively advocate for gender-sensitive policies on land ownership. In order to foster and facilitate fair and equal access to land and resources, enhance efficiency, and effectively handle environmental and soil preservation, it is imperative to eliminate existing legal and structural obstacles. Women are compelled to engage in additional income-generating activities due to the lack of land ownership. Commercialization of agriculture necessitates that women seek new means of generating income. Women with limited education may rely only on communal resources if they lack the knowledge and skills to navigate bureaucratic systems and access credit facilities and work opportunities.

The unequal distribution of power between women and men results in their unequal access to environmental resources and chances for income diversification. As a result, women and men are affected differently by environmental vulnerability and security. The growing influx of male migrants to more prosperous regions has exacerbated the poverty that many rural women already face. Implementing policies that focus on rural development, creating markets for local products, diversifying livelihoods, and promoting good business activities are essential for achieving gender equality and effective resource management.

While Somalia has the highest gender inequality rate in the world with a score of 0.77 (absolute inequality), the country has the fourth lowest grade on the global gender inequality index. Women in Somalia are subjected to significant discrimination and inequality in every aspect of life, including their health, work, and involvement in the labor market. This is a direct result of the prevalent and deeply ingrained patriarchal culture in Somalia. Girls in Somalia get married at extremely young ages, and there is a pervasive culture of abuse against women and girls. Women face a significant amount of discrimination under customary law, which is frequently substituted for the judicial system of the state (Beier & Stephansson, 2012)

1.5. Resilience and Adaptation

According to Andersen et al. (2014), "Adaptation refers to the intentional efforts used to enhance adaptability while lowering susceptibility in response to challenging crises or shocks. These "deliberate acts" can be carried out by families and people on their own or as policies and programs by institutions and governmental bodies. The commonly accepted notion is that the goals of climate mitigation, catastrophe risk management, and poverty reduction are to enhance resilience to hazards and tackle concealed vulnerabilities. Rainfall affects women's activities because the majority of their activities are related to sustaining livelihoods that depend

on the environment and natural resources. However, rainfall has decreased by 35% since 1991, reducing the rainy season and increasing the frequency of droughts (Diagne, 1997). The best method for examining the connection between gender and climate change is through the development process, which considers all information on women's health, education, and training to enhance their socioeconomic status. Studies should be carried out in fields where women are most involved, such as agriculture, animal husbandry, fuel collecting, and water and fuel collection. From this perspective, it is possible to foresee how gender will be impacted by climate change, particularly in developing nations.

Although women are disproportionately vulnerable to the impacts of climate change, it is crucial to acknowledge that there is limited understanding of their unique capacities and contributions to disaster risk reduction and management (including mitigation, preparedness, response, and recovery). In reality, the knowledge and experience they obtained through managing natural resources at the family and community levels has given them specialized abilities that help with catastrophe adaptation and resilience-building.

In locations where people depend on rain-fed agriculture and natural resources—they are the most susceptible to climate change—gender considerations give better guidance for women and men developing adaptation potential.

I. P. O. C. (2001) stated that the impact of climate change will be unevenly distributed across locations, generations, ages, classes, income groups, occupations, and genders, but it also reaffirmed that inequality hampered access to food. Global inequality will increase dramatically if climate change's effects and causes continue. Therefore, ensuring that every community, especially low-income rural women, participates in discussions about and research on climate change is a matter of justice and respect for human rights. When formulating choices and policies regarding climate change, their voices must be heard and considered (UNDP 2008).

Numerous case studies show the importance of women in disaster recovery. There is evidence that many communities are increasingly open to having women take the initiative in risk reduction. Due of the vulnerabilities of women that have been mentioned above but have not been addressed, women are unable to hold significant leadership roles in their communities.

Efforts to adapt and implement disaster risk reduction (DRR) measures should be carefully aligned with the specific requirements and concerns of impoverished and marginalized groups, with a particular focus on women. This is crucial to prevent any unintended exacerbation of the existing situation. Examples of gender-aware disaster risk

reduction (DRR) and adaptation planning include promoting the diversification of economic and livelihood alternatives for the disadvantaged, as well as using technology that is sensitive to gender differences. The utilization of current climate financing institutions, such as the Green Climate Fund, has the potential to facilitate the promotion of comprehensive adaptation and disaster risk reduction measures that simultaneously contribute to socioeconomic development.

There are two aspects that determine the impact of a disaster: the susceptibility of the community and the natural dangers that are there. As previously stated before. Women are disproportionately affected by the many disasters brought on by climate change due to their socioeconomic status and the responsibilities they play in society. Women are already more vulnerable, and gender inequality only makes things worse. Gender inequality also manifests itself in other areas of the economy, such as the allocation of work responsibilities and the disparity in wages. Vulnerability, a lack of assets, inadequate education, and financial constraints have all contributed to women's incapacity to cope with and lessen the impact of climate change. Programs must prioritize addressing the diverse range of hurdles and challenges related to gender disparities. For mitigation and adaptation plans for climate change to be effective, it is also critical to create and execute capacity-building initiatives that are sensitive to gender issues. All disaster risk management policies, plans, and decision-making processes must incorporate a gender perspective. This includes things like training and education, information management, early warning systems, and risk assessment. When addressing the impacts of climate change on agriculture, it is crucial to take gender into account. Failure to do so may result in government policies and development programs aimed at helping farmers adapt to climate change inadvertently reinforcing gender inequality. Public policies should be more adaptable to the choices made by local communities about their livelihoods, while also considering the potential impact of these choices on power dynamics and gender dynamics.

2. LITERATURE REVIEW

Dalfelt (1998) examined the insufficient research on the effects of environmental change on gender categories fragility, attributing this to gender blindness and negligence. The persistent issues hinder the formulation of development strategies and contribute to the sluggish reaction of international organizations to the difficulties presented by the changing climate. . This is partially a result of the lack of accuracy in climate change predictions, particularly at the regional level, though this is getting better.

Thulstrup et al (2020) Women's workloads and vulnerabilities could increase because of the environment's deterioration, which restricts their access to limited resources. Planners continue to strongly rely on women to play a vital role in coping mechanisms despite rising pressure on them since gender analysis is either absent or done badly. It is feasible to infer that women are typically in charge of safeguarding the environment since they are "naturally closer" to males than to other genders.

Enarson (1998), Gender vulnerability has a historical and cultural backgrounds as an institution and a society, that created more challenges and negative consequences, just as the consequences of climate change have affected women more than their male counterparts.

Lambrou and Piana's (2006) study, it was argued that women must respond to climate change by modifying their control over land and finances, obtaining credit and security measures, reducing dependency rates, improving their well-being and mobility on their own, and securing property rights. According to Brown (2008, p. 3) female migrants who have been displaced internally are exposed to climate-related conditions face a greater probability of encountering violence based on gender comparing to their contemporaries. Women and individuals belonging to racial minorities are at a higher risk of encountering physical harm or aggression. The ActionAid and IDS report (Mitchelle et al. 2007, p. 10) provides evidence supporting this claim, as it includes testimonies from multiple women expressing their primary concerns of facing eviction or being compelled to go alone. The state of women's health and the dispersion of social networks also contribute to other difficulties with safety and security.

Fetching water which has higher contamination probability becomes a time-consuming and difficult chore. Waterborne diseases can be expected to be more common among nutritionally disadvantaged women. Women have increased psychological stress as a result of specific societal limits, such as feeling embarrassed to use public restrooms or getting judged by men when wearing wet clothing (Rashid and Michaud 2000).

According to Kolmannskog (2009) on climate change and migration in Somalia and Burundi, many pastoral families with men went in search of job as a result of the extreme drought circumstances. Women who were left behind ran the risk of being expelled from their families and communities and experiencing sexual assault.

Climate change transcends the realm of being solely an environmental issue. This issue is complex and has effects on various aspects of the economy, society, and politics. Mearns and Norton (2010) contend that the social aspects of climate change should be carefully examined, with a particular emphasis on gender-related concerns. Resurreccion (2013) highlights that traditional documents on climate change adaptation and mitigation have placed significant emphasis on gender mainstreaming. In addition, it is imperative to prioritize and acknowledge women's involvement in every aspect of sustainable development.

An analytical model created by Wisner, and Fordham, (2007) emphasizes the relationship within climate change and security-related concerns for people. Emerging conflicts endanger the safety of people, while climate change affects access to water, food, and health care. Massive displacement caused by rising sea levels. According to Alston (2014) study of the impacts of climate change on women, major issues have been brought about in certain areas of Bangladesh by high rates of school dropout and violence against women. According to the report, there has been a rise in violence against women, and women have been disproportionately affected by food shortages and a drop in the number of girls attending school. As dowries were viewed as a source of money in society during the climate crisis, child marriage was an unexpected significant conclusion of the study.

When Alston (2014) explored how climate change affects women, they revealed that high rates of school dropouts and violence against women had led to serious concerns in the same areas of Bangladesh. The report indicates an increase in violence targeting women, with women being disproportionately impacted by food scarcity and a decline in female school enrollment. As dowries were viewed as a source of money in society during the climate crisis, child marriage was an unexpected significant conclusion of the study.

In general, women have less access to the tools needed for disaster mitigation, preparedness, and recovery. Because of gendered labor divisions, women are usually overrepresented in the unofficial and farming industries, areas are more vulnerable to disasters. In addition to caring for children, the sick, the old, the home, and property, women are typically in charge of numerous reproductive tasks like obtaining food and energy for the family and many caregiving tasks (Enarson, 2000).

Long droughts have not killed female pastoralists off, and some have learned to become resilient as they deal with difficulties. Empowering African female pastoralists reveals that their susceptibility is caused by a combination of environmental, socioeconomic, and political issues rather than only climate change.

According to Denton (2000), the correlation between gender-based power disparities, global inequality, and the substantial environmental issue It is worthwhile to investigate the threat posed by the harmful effects of environmental degradation, which are expected to have far-reaching ramifications for both genders. The solution to this inquiry is not readily apparent. As a result of their impact on entire communities, climate change-related events like hurricanes and floods do not impact on the lives of men and women similarly. Furthermore, ecosystems and catastrophic climate events are not constrained by geographical bounds. The planet is a significant worldwide issue that encompasses a diverse range of ecosystems, populations, and societies. Therefore, the management, protection, and long-term sustainability of the subject necessitate the involvement of multiple stakeholders. Environmental discusses can be seen as a reflection of an imbalanced global economy, in which larger nations and men possess the authority to define the conditions of their involvement and contributions towards tackling growing environmental concerns. This can be read as making climate negotiations a reflection of this imbalance. Conversely, women, smaller nations, and economically disadvantaged countries find themselves marginalized, lacking the agency to modify or exert influence over the breadth of these deliberations. Typically, women bear the burden of supporting economies by expending energy in sectors such as agriculture, forestry, and industry. The field of environmental management exhibits a significant gender bias, thus necessitating the inclusion of gendered divisions of labor within conservation efforts to promote enhanced equity. Climate change is commonly seen as a scientific phenomenon, but its consequences extend beyond the realm of science and have significant repercussions for human societies. Thus far, there has been a predominant focus on the economic aspect, leading to contentious discussions and the emergence of power dynamics. Hence, affluent nations persist in evading the fundamental concerns.

Indicators are categorized based on their conceptual association with susceptibility. Adaptive capacity indicators assess the extent of access to several aspects, including technology (including access to meteorological data, agricultural advisory services, irrigation facilities, and farming machinery. In addition to social networks, which include membership in local social groups, other factors that contribute to a person's well-being are asset and income diversity, as well as access to human resources. The household head, who assumes primary responsibility

for making production decisions inside the home, is characterized by individual-specific attributes such as education and age. It is postulated that all indicators pertaining to adaptive capability exhibit an inverse correlation with susceptibility. Climate fluctuation, such as the reliance on seasonal crops, is a significant factor to consider. Exposure indicators variables provide a representation of the observed outcome. The impact of climate change on households, such as the potential effects on a specific household, can be examined. compelled to undergo a temporary displacement because of a climate-induced event. The term "event" refers to a specific occurrence or happening that takes place within a given. (Eakin & Bojorquez-Tapia, 2008).

The idea of vulnerability encompasses multiple dimensions and hidden factors that cannot be directly ascertained as stated by the Intergovernmental Panel on Climate Change (IPCC, 2001). Vulnerability is a comprehensive measure that is influenced by three primary factors: exposure, vulnerability, and responsive capability. Vulnerability can be measured using indicators that indicate three different aspects.

Vulnerability indices play a crucial role in the identification of individuals who are most susceptible to adverse impacts at a localized level. Therefore, the computation of vulnerability indices has been a prevalent method in current research (Hahn, Riederer, & Foster, 2009).

The execution of specific to gender adaptation and mitigation plans and initiatives for climate change entails various challenges and obstacles, as is typical with any intricate matter.

Dankelman (2002) and Terry (2009) argue that the customary characterization of the underlying structure in climate change problems is predominantly perceived as 'masculine'. Women in poor nations play the key role in providing, managing, and utilizing energy within their families. However, the organizations that make choices regarding energy regulations are predominantly male dominated.

Singh et al. (2010) proposes that there is a notable absence of discussion and inclusion of the presence of women-related concerns in the political agenda can be traced to the underrepresentation of women in government. The omission of women in the formulation of policies frequently leads to a distorted decision-making procedure and outcome.

The global climate change is undeniably exerting a pervasive influence worldwide. The occurrence of extreme weather events, together with their increasingly frequent rate, has intensified the issue of global climate change, presenting it in a more severe and urgent context than ever before. Therefore, these effects are anticipated to affect the lives of the most impoverished individuals disproportionately and distressingly in the so-called developing and

industrial nations of the world. It is widely recognized that climate change has distinct and significant effects on both men and women, leading to various adverse repercussions and disruptions in their lives. This also encompasses the indisputable reality of the feminization of poverty. Women constitute the bulk of the world's poorest individuals. This is the reason why they are disproportionately more susceptible and vulnerable to the negative effects of climate change (Dasgupta, 2010; p.62)

According to the Asian Development Bank's estimate, more than 95% of households led by women are living below the poverty line (Asian Development Bank, 2001). Both men and women experience poverty, but women are disproportionately affected due to their social status, roles, and connection to the environment. The essential factors for self-protection, such as the house quality, an elevated location, and sufficient food storage, pose more challenges for impoverished women.

Women and children constitute the most susceptible demographic. During a disaster, this susceptibility intensifies. Disasters, regardless of their nature, do not show bias. However, due to the socially created gender roles, women are often identified as the group that is more susceptible to harm and damage during disasters. Due to limited access to resources, women are disproportionately affected by the gendered division of labor. They bear the primary responsibility for home tasks and are unable to freely migrate in search of employment after a disaster (World Bank 2005). The varying effects of disasters on males and females are mostly due to the prevailing gender disparities that are evident. A study undertaken by the London School of Economics reveals that, based on a sample of 141 nations from 1981 to 2002, natural disasters tend to result in a higher average mortality rate for women (Muhbuba,2012).

Women are more susceptible to issues with their sexual and reproductive health. The study demonstrates the negative reproductive consequences, including miscarriage, preterm birth, and problems during delivery. Typically, individuals need to traverse considerable distances and endure extended periods of waiting in queues to obtain relief, all while their damp clothing adheres to their bodies. Gender discrimination frequently leads to the neglect of post-disaster rehabilitation efforts. Weather forecasting networks or early warning systems frequently neglect to consider women residing in coastal regions. Women's restricted access to information hinders their ability to effectively mitigate hazards (Islam, M. R. 2012).

Women and girls actively participate in significant roles prior to, during, and following disasters. The active participation of women boosts the potential efficacy of disaster prevention or mitigation efforts. Due to their varied knowledge of their household and surroundings, they are able to actively participate in the evaluation of vulnerabilities and capacities. Women's

involvement is the most prevalent and impactful in safeguarding children, the elderly, and other vulnerable populations. Once more, in the event of any calamity, whether it be natural or caused by humans, and when the need for evacuation arises, it is the women who step forward to take charge of the preparation process. Women also have significant involvement in the development and execution of physical strategies to reduce the impact of catastrophes. Women store fuels, matches, dry food (such as rice, peas, puffed rice, flattened rice, and molasses), ropes, and medicine at home and create portable mud stoves for future use. Women frequently gather firewood and store it in dry locations for future use. In addition, they also stockpile provisions such as animal feed, seeds, blankets, and valuable items. They are the pioneers in delivering medical assistance to the wounded, be it during a flood, earthquake, or cyclone, preceding any government relief efforts. Women and girls participate and are also aided in search and rescue operations. In rural communities, women typically manage poultry and other modest assets. In the event of a calamity, they sell these assets to fulfill household financial requirements. Other typical survival techniques include selling other important possessions, mortgaging assets, borrowing against assets, or borrowing from neighbors. If their survival is not guaranteed by these actions, they resort to different occupations such as bricklaying, sewing, manufacturing jute bags, selling ash, selling fish and vegetables, selling rice cakes, and working as domestic workers. There is no doubt about the importance of rebuilding and improving the physical infrastructure of a community following a disaster. Women and girls are actively involved in these efforts, alongside males, playing an equal role. However, women provide significantly more than just this to their communities (Rahman, M. S., 2013).

The primary environmental concerns of many developing countries, especially those in the Sahel region, revolve around vulnerability and adaptation to the detrimental effects of climate change. Various locations and countries exhibit varying degrees of susceptibility to climatic changes, resulting in corresponding variations in the vulnerability of communities and services impacted by these changes. The anticipation is that climate change would impact various domains, such as habitats, animals, terrestrial and aquatic ecosystems, and therefore the generation of commodities and services that rely on these natural resources. Climate change is expected to cause significant and negative alterations in soils, arid-lands, coastal zones, and tropical and boreal forests (Downing et al. 2000). Furthermore, wetlands and animals that are susceptible to harm would face significant endangerment.

Climate change poses a significant risk to human security overall. An important focus in the ongoing discourse on climate change is to ensure that both decision-makers and key stakeholders have a clear understanding of the many forms of vulnerability to climate change

that women and men experience, as well as the gender-specific consequences of these vulnerabilities. Robert Watson, the chair of the IPCC, defines 'vulnerability' as the degree to which a natural or social system is prone to being harmed by climate change. This vulnerability is determined by the severity of climate change and the system's sensitivity to climate variations. Therefore, a highly susceptible system is characterized by its great sensitivity to even small changes and its limited capacity to adjust (Olmos 2001: 3).

Climate change is expected to worsen current deficiencies in water resources. The Niger, Senegal, and Lake Chad River basins have witnessed a significant reduction in water levels, amounting to a decrease of 40-60 percent (Agreement, P. 2015). Additional water shortages will exacerbate challenges for women in the fields of health and sanitation, particularly for rural women in Africa who predominantly reside in regions with limited water resources. These women are already disproportionately affected by water scarcity. Heightened water pollution resulting from human activity amplifies susceptibility to diseases such as trachoma and scabies. Rivers and dams have increasingly become primary locations for the disposal of agricultural and industrial waste. However, it is important to note that these water sources are sometimes the sole option available to women and children.

In West Africa, fluctuations in seasons and climatic conditions necessitate that women and children rely on water sources from contaminated ponds, as they tend to deplete during the arid season, hence heightening their vulnerability to waterborne illnesses.

2.1. Socio-economic Vulnerability and the Equity Dimension

Developing the essential capability to help the least-developed countries manage extreme occurrences, such as significant flooding, is undeniably crucial.

There is currently no scientific evidence that directly links individual extreme climate events to climate change. Given the potential significant impact of extreme events on human beings in the future, the high likelihood of climate change being associated with an increase in extreme climate events, and the similarity between the effects of day-to-day climate change and these extreme events, it is prudent to monitor and develop strategies to manage such extreme events.

Addressing the management of resources in a sustainable manner, amidst the backdrop of global economic change and financial constraints resulting from structural adjustment programs, presents numerous distinct issues. The significant obstacles that women encounter in areas such as transportation, land access, income, resources, agriculture, education, health services, credit facilities, and various structural, technological, and cultural barriers can largely be attributed to ineffective policies that do not consider gender and the persistence of patriarchal

traditions. Gender disparities persist in terms of land access, resource control, labor command and access, capacity, income diversification techniques, and time allocation to agricultural or forestry operations. States should actively advocate for the implementation of land tenure policies that consider gender considerations. To promote fair and equal access to land and resources, increase production, and effectively manage environmental and soil conservation, it is necessary to remove existing legal and structural obstacles (Denton, F. 2000).

Developing the essential capability to help the least-developed countries manage extreme occurrences, such as significant flooding, is undeniably crucial.

There is currently no scientific evidence that directly links individual extreme climate events to climate change. Given the potential significant impact of extreme events on human beings in the future, the high likelihood of climate change being associated with an increase in extreme climate events, and the similarity between the effects of day-to-day climate change and these extreme events, it is prudent to monitor and develop strategies to manage such extreme events.

Women have frequently been recognized as the most susceptible demographic that is frequently exposed to the dangers of climate change (ADB, 2009; Gupta, 2015), despite the fact that they have actively contributed to initiatives addressing climate fluctuations (Arora-Jonsson, 2011). Women and men experience distinct forms of pain because of climate change. However, they possess a range of diverse experiences, abilities, and knowledge that are effectively utilized to adjust to the challenges posed by climate change (Demetriades and Esplen, 2008). Hence, it is crucial to highlight the acknowledgement of the distinct roles played by women and men in evolving weather patterns.

Nevertheless, the concerns regarding the impact of climate change and the measures taken to adapt to it have not been well addressed in relation to gender (Terry, 2009).

2.2. Ignoring Women's Contribution to Environmental Resource Management.

Climate change is expected to exacerbate the disparities between the affluent and impoverished populations worldwide. There is a widespread consensus that women in developing countries are among the most impoverished and marginalized segments of society. Several human activities are expected to exacerbate the current state of environmental deterioration and contribute to the accumulation of greenhouse gas emissions in the atmosphere. These factors include energy intensity, deforestation, vegetation burning, population increase, and, eventually, economic growth. The involvement and engagement of women can either facilitate or impede progress in any of the situations. Rural women, specifically, have been extensively recorded as playing a crucial role in the management of the environment and natural

resources. Women's significant participation in agriculture, as well as their reliance on biomass energy, positions them as crucial stakeholders in promoting environmental sustainability. Therefore, women and their economic activities are especially susceptible to the dangers presented by environmental degradation (Denton 2001). Diversifying energy resources and using alternative fuels for household usage are crucial components of adaptation methods.

Proactively implementing preventive actions in advance yields more advantages compared to responding to unforeseen calamities. To strategize these efforts, it is crucial to consider various sectors of production, such as agriculture and fisheries, and analyze the allocation of work across genders. Additionally, it is essential to assess the varying levels of susceptibility that women and men have when it comes to the adverse impacts of climatic events. Constructing this study necessitates further investigation, although it would empower policymakers to implement strategies to address environmental deterioration, with the objective of reducing the susceptibility of the individuals impacted by it.

Impoverished women typically bear the brunt of the consequences resulting from the escalating deterioration of the environment and the depletion of natural resources. This is due to their engagement in and dependence on livelihood activities that directly rely on the natural environment. For instance, the deterioration of the environment in rural areas might lead to an increase in the distances women must travel to find clean water and firewood for their daily household tasks (Denton, F.2002).

2.3. Peeling Through Different Layers of Vulnerability: Potential Impacts of Climate Change

It has been recognized that the effects of climate change will be harshest in tropical countries in the South and will affect the poor the most. This insight has led some to claim that women are more vulnerable to the effects of climate change for several reasons. According to Hemmati and Rohr (2007), women represent a disproportionate share of the poor and are likely to be disproportionately vulnerable to the effects of climate change (2007:7).

The base data report from the Swedish Defense Agency aims to highlight the key gender-related challenges in climate adaptation from a Swedish standpoint. It acknowledges that since climate adaptation is closely interconnected globally, any gender inequality that exacerbates climate issues in other countries can have significant indirect consequences in Sweden (Hansson, 2007:9). Oldrup and Breengaard assert that in poor nations, the demands of women are frequently disregarded, and their involvement in climate change procedures and discussions at the national level is inadequate (2009:47). Women's virtuousness serves as a

counterbalance to their vulnerability. Women are perceived as being more attuned to danger, better equipped to adapt their behavior, and more inclined to endorse radical policies and initiatives regarding climate change.

Climate change poses a significant risk to human security overall. An essential focus in the ongoing discourse on climate change is to ensure that both decision-makers and important stakeholders possess a comprehensive understanding of the many forms of vulnerability to climate change experienced by women and men, as well as the gender-specific implications of these vulnerabilities. Robert Watson, the chair of the IPCC, defines 'vulnerability' as: This presents a danger to the ability of the population to obtain fundamental human rights such as food security, access to clean water, a sustainable means of living, limited exposure to health risks, and education. Although it may be challenging to provide specific illustrations, there is undoubtedly a strong correlation between human security and environmental change. In particular, land degradation is intricately linked to both economic instability and food insecurity. The continent of Africa is extremely susceptible to the impacts of desertification and desiccation because 85 percent of its water resources are allocated for agricultural activities. This agriculture plays a critical role in providing food subsistence and ensuring food security for millions of people. According to UNEP/IUC (2001a), agricultural yields may decrease by as much as 10% in some circumstances. Currently, numerous women are compelled to adopt expedited methods in food preparation due to energy poverty, leading them to rely on less nutritious meals as a means to cope with the growing scarcity of fuel. As a result, they must decrease the amount of energy they use while searching for fuel and food.

Although health risks associated with global warming persist, women are confronted with more imminent health hazards compared to males, mostly due to their involvement in the gendered division of labor. Due to their direct exposure to traditional fuels, fuel-collectors and cooks experience respiratory issues resulting from indoor pollution. They are highly exposed to malaria, which is prevalent in many parts of Africa, due to their role as water collectors. Women are equally susceptible to acquiring waterborne illnesses, such as dysentery, diarrhea, and cholera, as men. The latter, referring to waterborne diseases, are prevalent in several regions of Africa, particularly in very impoverished areas, where access to safe drinking water is completely absent. Due to their poor income situation, they are prone to experiencing heightened nutritional issues. The rise in poverty and food insecurity will lead to issues concerning anemia, which is prevalent among pregnant women, as well as health risks that are exacerbated by the lack of resources in both prenatal and postnatal care.

2.4. Poverty, Natural Calamities, and Women's Behaviors.

Chant, (2010:1) argues that the claim that women constitute 70% of the impoverished population is based on personal accounts rather than rigorous factual or statistical evidence. Typically, it is linked with what she views as the highly problematic claim regarding the 'feminization of poverty', a phrase that has been disputed by numerous scholars. Gender and poverty are separate manifestations of disadvantage. In her article 'Gender and the Poverty Trap', Jackson highlights the discrepancies in the notion that all households led by women are impoverished as the lack of validity in the time-series data used to make conclusions about the poverty of households led by women. This lack of validity is attributed to the significant variability within the groups being studied.

Women are already suffering significant costs due to globalization, economic downturns, and environmental deterioration. The already fragile status of these people is expected to be exacerbated by climate change, rendering them even more susceptible. Greater endeavors should be undertaken to adopt a people-centric approach in climate negotiations, and to ensure that women are rightfully included in the realm of sustainable development. Women have shown a strong inclination towards environmental resource management and have contributed significantly to the accumulation of valuable indigenous environmental knowledge. It is crucial to recognize the importance of this knowledge in domains such as medicine and other related areas. Policymakers have consistently acknowledged this understanding, although they have made less attempts to apply it or integrate it as an essential component of mainstream policy. This initiative would enhance women's capabilities and provide them with more opportunities to fully utilize their potential. If indigenous wisdom is not integrated into mainstream policy, the situation will persist when one is surrounded by a river yet nonetheless succumbs to dehydration.

Adaptation projects should not only aim to identify and analyze the various levels of vulnerability in different regions and populations, but also to ensure that appropriate incentives are in place to enable both women and men to collaborate and contribute to the creation of a sustainable future by leveraging their respective strengths. The lack of visibility and the reduction of women's roles have been identified as significant factors contributing to the pronounced gender imbalances, especially in developing countries. Although modifications at the micro-level are commendable, they are insufficient to address the much-needed policies at the macro-level. Climate change policy should facilitate developing countries in effectively adopting smart and clean technology to mitigate greenhouse gas emissions from the outset. The

notion of 'no regret' is becoming a core principle in climate negotiation policy. Policymakers in the climate discourse must guarantee that marginalized populations are included by providing women and men with the chance to enhance their skills, reduce their susceptibility, and broaden their sources of income (Denton, F.2002).

2.5. Gender Vulnerability Index

Vulnerability is a complex notion that consists of multiple underlying factors that cannot be directly measured through household surveys. As stated by the Intergovernmental Panel on Climate Change (IPCC) in 2001, vulnerability is determined by three factors: exposure, sensitivity, and adaptive capability. The three elements of vulnerability can be quantified using vulnerability indicators to construct a vulnerability index. Vulnerability indices are useful for identifying those who are most susceptible to harm or danger within a specific geographic area (Hinkel, 2011). Consequently, the computation of vulnerability indices has become a widespread procedure.

Rural women in rural areas have adverse consequences resulting from climate-related dangers, in addition to assuming greater responsibilities for domestic and agricultural tasks (Food and Agriculture Organization, 2018), rural women in underdeveloped nations are considered very susceptible due to their reliance on the natural environment for their livelihoods.

To mitigate the negative impact of climate change, it is crucial to assess the vulnerability of the human-environment system to extreme events. This assessment should consider the differential effects on women and men and should lead to the implementation of measures aimed at enhancing their adaptive capacity and resilience. The objective of vulnerability analysis is to identify the most susceptible individuals and advocate for measures that mitigate the impact of climate change. This is crucial for the overall welfare of both genders. Vulnerability is widely recognized as an analysis that is always evolving. It involves much empirical research (Vincent, 2004) that are applied differently in various systems and require a fundamental conceptual framework.

Prior to conducting vulnerability analysis, it is necessary to clearly define the system under study, including the features of concern, the system itself, the hazard, and the temporal reference. These factors are crucial for the analysis. The system encompasses all entities that are susceptible to harm, such as communities, geographical areas, and households. The attributes pertain to the infrastructural or socio-economic framework that is impacted by a hazardous event, such as health, education, and food security. The temporal reference is the

timeframe during which vulnerability exists, and the hazard represents the potential source of danger to human beings and their well-being. It is crucial to consider all four components, while also acknowledging that the system encompasses territory inhabited by actual humans with their unique characteristics (such as gender and ethnic group) Belcore, et al,2020).



3. RESEARCH METHODOLOGY AND DATA COLLECTION

The main purpose of this study is to examine the consequences of climate change on gender vulnerability. Research will closely examine the intersections between pre-existing gender struggles and how climate change has exacerbated gender vulnerabilities in Somalia.

3.1. Objectives

The aim of this study is to investigate the repercussions of climate change on gender experiences by providing a comprehensive analysis of climate change and its influence on gender susceptibility. Vulnerability factors will be analyzed in the context of climate change and additional vulnerability elements, including physical and social vulnerability will be evaluated. Gender relations and the current climate change issue in Somalia will be deeply and expensively discussed. The study will include socioeconomic inequality as well as the overall exclusion of women from positions of authority and political decision-making. An evaluation will be conducted to determine if there is a significant association between gender disparity and women's heightened vulnerability to climate change. The study will focus on analyzing the key social vulnerability group, which is 'women'. The arguments that assert a substantial connection between gender inequality and women's more vulnerable to climate change will be supported by reviewing other's scholarly research. The ability of women to react to and adapt to climate change is the most important consideration.

3.2. Data Collection

The data collection procedure encompassed two distinct types of inquiries that were specifically directed towards specific individuals, such as students pursuing studies in environmental studies, activists advocating for human rights and women's rights, and other organizations actively involved in addressing environmental issues. The previous cohort included a group of female participants who performed interviews and collected data on the influence of climate change on their experiences. The groups were chosen by a random sampling method based on their relevance to the issue at hand. The age range of the fifty women who participated in this data collection was 20 to 50. The majority had no formal education, while 15 claimed to have completed high school or could read and write. Others state to have witnessed a number of severe droughts that left them with agonizing memories. With regards to the provided data and report, it is possible to ascertain the impact of climate change on

women, who have little agency in addressing the challenges posed by climate change. The impact of climate change on women's lives is evidently significant.

3.3. Hypothesis

Climate change is a worldwide occurrence that has extensive effects on human civilizations and the natural world. Climate change has been recognized as a significant peril to Somalia's progress and stability. The impacts of climate change are not uniformly experienced by all individuals in society, with women being more susceptible due to their socioeconomic circumstances. This hypothesis seeks to investigate the correlation between climatic change and the susceptibility of different genders to vulnerability in Somalia. Our hypothesis is that climate change worsens the vulnerability of women in Somalia by impacting their socioeconomic position, including education, health, and economic factors. In addition, we put forward three sub-hypotheses that seek to elucidate the mechanisms by which climate change impacts women in Somalia. The initial sub-hypothesis posits that gender disparity in climate change in Somalia is intensified by lower educational attainment and exclusion from decision-making processes. The second sub-hypothesis posits that climate change disproportionately impacts women in Somalia, leading to outcomes such as school dropout, early marriage, and coerced or transactional marriages. The third sub-hypothesis suggests that climate change amplifies the vulnerability of women to environmental hazards, such as droughts, floods, and storms, by increasing their exposure and sensitivity. This, in turn, diminishes their ability to adapt and heightens their vulnerability based on gender.

- H1: Climate change exacerbates gender vulnerability in Somalia by affecting the socioeconomic status (education, health and economic) of women.
- H2: Lower educational levels and exclusion from decision-making exacerbate gender inequality in climate change in Somalia.”
- H3: Climate change affects women (drop out of school, early marriage, selling or forced marriage) more than men in Somalia.”
- H3: Climate change increases the exposure and sensitivity of women to environmental hazards, such as droughts, floods, and storms, which reduces their adaptive capacity and increases their gender vulnerability.

3.4. Reliability of the Study

The survey's reliability is assessed to ascertain its accuracy in obtaining valid results. In this research, Cronbach's alpha technique was used to assess the overall internal consistency dependability of the data. Cronbach's alpha is a statistical metric used to assess the internal consistency or the degree of association among variables. In essence, the dependability of a measure pertains to its stability in assessing a certain notion, and Cronbach's alpha serves as a method for ascertaining the degree of internal consistency. The reliability coefficient obtained for the tests is 0.940, which is typically deemed acceptable for ensuring the reliability of the test results. In this research used two scales, namely the "Gender vulnerability Scale" and the "Climate change Scale." An examination of alpha reliability was conducted.

3.5. Ethical Considerations

Obtaining complete permission was ensured from the institutions, and persons involved in the data collection process. Participants were invited, and everybody who decided to take part in this research did so voluntarily and without pressure. The participants received a comprehensive explanation on the objective's topic, and data collection process. The personal information of the participants has been diligently safeguarded, ensuring the preservation of their honor and reputation, while avoiding any secondary dissemination of their data.

3.6. Limitation of the Study

Financial and time constraints were among the limitations encountered throughout the study. In fact, the issue of climate change in Somalia requires data collection and practical studies, which require both money and effort. During this research, financial limitations were encountered because, when conducting the interviews, the interviewees believed that they would be paid or paid after the collection of information, as is often done by NGOs, which conduct research. One additional obstacle encountered during this study was the limitation of time. The subject matter is characterized by its extensive scope and intricate nature, necessitating a comprehensive examination from several perspectives.

3.7. Sampling and Target Population

The data was gathered from three different groups: students majoring in environmental studies at Hargeisa University, local ministry officials working on environmental issues, and environmental activists, and the third group is persons working on gender development and

women's empowerment. The FGS was the second category that was collected during the data collection. 178 sample for questionnaire and 40 females for focus group discussion.

3.8. Data Analysis

The data analysis was conducted using SPSS software version 21. A regression and correlation analysis were performed in order to assess the credibility of the hypothesis.

3.8.1 Descriptive Statistics

Table 1. Educational Background

		Frequency	Percentage %	Valid %	Cumulative %
Valid	High School	9	5.1	5.1	5.1
	Bachelor's Degree	78	43.8	43.8	48.9
	Master's Degree	83	46.6	46.6	95.5
	PHD Or Higher	8	4.5	4.5	100.0
	Total	178	100.0	100.0	

Table 1 presents the relevant data or information. The proportion of individuals holding a Master's degree was 46.6%, while those with a Bachelor's degree accounted for 43.8%. Both groups had a median grade point average of 3.00. The proportion of high school graduates within the group amounted to 5.1%, while individuals holding a Ph.D. constituted 8.8% of the total of 178 participants.

Table 2. Age Distribution

		Frequency	Percentages%	Valid %	Cumulative %
Valid	18-30	114	64.0	64.0	64.0
	31-40	52	29.2	29.2	93.3
	41-50	7	3.9	3.9	97.2
	51-60	2	1.1	1.1	98.3
	61-Above	3	1.7	1.7	100.0
	Total	178	100.0	100.0	

According to the data presented in Table 3.2, it can be noticed that 64.0% of the participants fall within the age range of 18-30, while 29.2% are between the ages of 31-40. Additionally, respondents aged 41-50 constitute a percentage of the sample, while those aged 51-60 make up just 1.1%. Finally, the remaining group of participants, accounting for 1.7% of the total, are aged 61 aged.

Table 3. Gender of the Participants

		Frequency	Percentage %	Valid %	Cumulative %
Valid	Male	101	56.7	56.7	56.7
	Female	77	43.3	43.3	100.0
	Total	178	100.0	100.0	

Table 3 indicates sex distribution of the respondents, according to data the 56.7% with mean of 1.47 where male while 43.3 percentage were female.

Table 4. Do the Reoccurring Droughts in Somalia be An Indication of Serious Climate Change Issues?

		Frequency	Percentage%	Valid%	Cumulative %
Valid	Strongly Disagree	16	9.0	9.0	9.0
	Disagree	6	3.4	3.4	12.4
	Neutral	24	13.5	13.5	25.8
	Agree	48	27.0	27.0	52.8
	Strongly Agree	84	47.2	47.2	100.0
	Total	178	100.0	100.0	

Table 4 presents the relevant data or information in a tabular format. Based on the replies provided by the participants, it was found that 84 individuals, accounting for 47.2% of the total, strongly agreed with the notion that the recurring drought in Somalia serves as a significant signal of climate change. Additionally, 48 participants, constituting 27.0% of the sample, expressed agreement with this perspective. On the other hand, 24 respondents, equivalent to 13.5% of the participants, maintained a neutral stance regarding their views on this matter. Among the sample of 178 participants, a total of 6 individuals (3.4%) conveyed their dissenting views. Based on the feedback received, it can be inferred that there is a significant link between apprehensions pertaining to climate change and the frequency of drought occurrences.

Table 5. In Time of Drought Women Move From Their Homes to Search Pasture For Their Animals This Increases Hardship in Their Daily Life

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagreed	9	5.1	5.1	5.1
	Disagree	10	5.6	5.6	10.7
	Neutral	19	10.7	10.7	21.3
	Agree	59	33.1	33.1	54.5
	Strongly Agree	81	45.5	45.5	100.0
	Total	178	100.0	100.0	

Table 5 presents the frequency distribution of respondents' opinions regarding the impact of droughts on women's daily lives. Out of the total respondents, 81 individuals (45.5%) highly agree, while 59 individuals (33.1%) believe that droughts provide additional challenges

for women in their daily activities. The participants were divided into three groups: a neutral group consisting of 19 individuals (10.7%), a group of 10 individuals (5.6%) who disagreed, and a group of 9 individuals (5.1%) who strongly disagreed. The analysis of the data distribution reveals a discernible correlation between drought conditions and the exacerbation of women's vulnerability. The evidence shown above suggests that women faced greater challenges in adapting to the impacts of climate change as a result of economic and social disparities, which therefore made them more vulnerable owing to their limited access to resources.

Table 6. Disasters are a Threat to Everyone But, They Often Impact Women Disproportionately and the Fatality Rate is Much Higher For Women

	Frequency	Percentage	Valid %	Cumulative %
Strongly Disagree	9	5.1	5.1	5.1
Disagree	25	14.0	14.0	19.1
Neutral	27	15.2	15.2	34.3
Agree	60	33.7	33.7	68.0
Strongly Agree	57	32.0	32.0	100.0
Total	178	100.0	100.0	

Table 6 presents the relevant data. Based on the data obtained from participants, it was found that 60 individuals, accounting for 33.7% of the sample, expressed agreement with the notion that women bear a disproportionate burden of the impacts of climate change, leading to an elevated mortality rate. A total of 57 participants, accounting for 32% of the sample, expressed strong agreement with the statement, whereas 27 individuals, representing 15.2% of the sample, remained undecided. Out of the total sample size of 25 participants, 9 individuals, accounting for 5.1% of the participants, expressed strong disagreement. Climate disasters pose a significant threat to all individuals, albeit with a disproportionately higher fatality rate among women, as indicated by the distribution of available statistics.

Table 7. The Government Must Play a Major Role in Controlling the Effects of Climate Change and Building Resilience Community

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	14	7.9	7.9	7.9
Disagree	7	3.9	3.9	11.8
Neutral	10	5.6	5.6	17.4
Agree	40	22.5	22.5	39.9
Strongly Agree	107	60.1	60.1	100.0
Total	178	100.0	100.0	

According to the data presented in Table 3.7, a total of 40 respondents, accounting for 22.5% of the sample, expressed agreement with the statement. Additionally, a strong agreement was seen among 107 respondents, representing 60.1% of the total sample. A total of ten

respondents, accounting for 5.6% of the sample, expressed a negative viewpoint toward the statement. Fourteen respondents, accounting for 7.9% of the total, expressed strong disagreement. The individuals involved in this investigation emphasized the importance of government engagement in addressing climate change and promoting resilience.

3.8.2. Regression Analysis.

Economic and social inequality means that women have fewer assets and less means to cope with the negative effects of a changing climate. lack of asset owning make women more depend on others and tends to increase their vulnerability.

Table 8. Model Summary

Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	
1	.667 ^a	.444	.441		.832	
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	97.516	1	97.516	140.768	.000 ^b
	Residual	121.923	176	.693		
	Total	219.438	177			

The table shows that the regression model is statistically significant ($F(1, 176) = 140.768, p < .001$). This means that the model explains a significant amount of variance in the dependent variable. The second table you provided is a summary of the regression model. It shows that the model has an R-squared value of .444, which indicates that approximately 44% climate change problems are increasing of economic and social inequality. The standard error of the estimate is 1.007, which indicates that the model has a good fit to the data. H1 has been accepted according to the P value.

Table 9. Climate Change is Disproportionately Harsh to Vulnerable Groups, the Majority of Whom are Members of Rural Communities, Especially Women

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.508 ^a	.258	.254	1.097		
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	73.617	1	73.617	61.122	.000 ^b
	Residual	211.979	176	1.204		
	Total	285.596	177			

Table - The independent variable accounts for 25% of the changes, indicating that women will be more vulnerable to the effects of climate change due to their lower social status,

lower levels of education, and poorer economic standing. The statistical significance of the regression model is shown by a p-value of less than .001. The regression model is statistically significant ($P < .001$).

Climate change effects women live in multiple socio-economic (health, education and financial freedom) dimensions.

Table 10. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.553 ^a	.306	.302	1.125		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.241	1	98.241	77.615	.000 ^b
	Residual	222.770	176	1.266		
	Total	321.011	177			

Table 4.11 presents evidence indicating that the regression model has statistical significance ($F = 77.6158$, $p < .001$). The model exhibits an R-squared value of 0.302, suggesting that around 30% of the variation that women are in poorer social status, poverty, and limited economic access can be explained by the model's predictors. Based on the obtained outcome, the null hypothesis (H_0) is rejected in favor of the alternative hypothesis (H_1).

Table 11. Climate Change Consequence Effect Female (Drop Out of School, Early Marriage, Selling or Forced Marriage) more the rest of the communit.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490 ^a	.240	.236	1.039

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.114	1	60.114	55.709	.000 ^b
	Residual	189.914	176	1.079		
	Total	250.028	177			

The findings indicate that the regression model exhibits statistical significance ($F(1, 176) = 55.709$, $p < .001$). This implies that there exists a notable correlation between climate change and adverse outcomes experienced by females, such as school dropout, early marriage, and instances of selling or forced marriage, which surpasses the impact on males. Based on the R-squared value, it may be inferred that 24% of the adverse effects experienced by women can be attributed to climate change.

3.8.3 Correlational data analysis

Table 12. Climate Change is Disproportionately Harsh to Vulnerable Groups, the Majority of Whom are Members of Rural Communities, Especially Women

		5. Climate change is disproportionately harsh to vulnerable groups, the majority of whom are members of rural communities, especially women.	Climate change disproportionate impact in
5. Climate change is disproportionately harsh to vulnerable groups, the majority of whom are members of rural communities, especially women.	Pearson Correlation	1	.667**
	Sig. (2-tailed)		.000
	N	178	178
Climate change disproportionate impact	Pearson Correlation	.667**	1
	Sig. (2-tailed)	.000	
	N	178	178

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3.12 presents the correlation coefficients pertaining to the relationship between two variables, namely the disproportionate impact of climate change on vulnerable groups, predominantly consisting of individuals from rural communities, particularly women. In this particular instance, the correlation coefficient between the two variables is determined to be 0.667. The data suggests a moderate positive link between climate change and the disproportionate burden experienced by vulnerable groups. The observed association exhibits statistical significance at the 0.01 level (two-tailed), indicating that the likelihood of it being a chance occurrence is low.

3.8.4 Qualitative Analysis

Abarso is a little settlement situated in the northern section of the Marodijeh region, positioned to the southwest of Somalia. It is nestled within a narrow valley that originates from the nearby mountains. Previously, the region was mostly dedicated to agriculture and animal husbandry. The local population would engage in field work during the rainy season and focus on raising livestock, particularly sheep and cattle, which are well-suited to the area's environment. Prior to the onset of climate change, this region experienced a period of prosperity that was subsequently altered by the environmental shifts. Persistent droughts have resulted in substantial alterations to both livestock and agricultural productivity. A significant number of individuals have relocated from the community over the past two decades. Soil erosion refers to the process by which soil loses its nutrients and undergoes environmental changes.

The focus discussion organized to Abaarso community. It was shown that climate change is felt too hardly although the common understand as climate change is still underestimated. Total of 40 participants participated the discussion organized at Abaarso community in the northwest of Hargeisa city, Somalia.

During the focus group discussion, a set of five questions was posed to the participants. The purpose of the focus group discussion (FGD) was to analyze the environmental barriers encountered by women in the local community, as well as to identify the root causes of these challenges and the associated problems. Focus group discussions (FGDs) were conducted. The replies provided by the participants have been documented in the following format.

It's clearly understood that climate change has negatively impacted the lives of women and more impropriety increased the struggle of females. During the data collection its clearly understood that the respondents showed their understanding and attitudes about climate change.

To confirm the relationship between climate change and gender vulnerability. In the village of Abaarso, which has been significantly impacted by climate change, we conducted an interview and a conversation with a few of the women that reside there. The interview in question took place over the course of two days, specifically on the 15th and 16th of the eighth month of the year 2023. The question was posed to women regarding the ways in which climate change has impacted them economically, socially, and health-wise. Recordings and analyses were performed on each of these reports.

Table 13. The Environmental Issues and Consequence.

The impact type	Suffered repercussions	Sector
Drought, low seasonal rainfall, and water scarcity	Both humans and animals become sensitive and susceptible to deasses and illness, this causes higher rate of death mortality (reduced disease resistance in animals) Agriculture production is low due to high irrigation water demand. Grazing excessively of grass on some areas of grassland conflicts with scarce grazing and other resources. decreased water levels in the wells Lack of water, spread of pests and high heat all reduce agricultural production. The pressure on people with loans is increased by the stagnation of local trades and small companies. Mass movement and influx immigration (most of the children drop out of the school at this time, especially girls.	Water Agriculture Land
Temperature elevation	Difficult to work and continue normal daily.	
Floods	Advanced gullies, plant loss, irrigation canal ruin, and land degradation are all results of soil erosion. Crop losses and lost acreage due to floods	Homes and shelter devastation Health Food and agriculture

Table 14. Gender Socio-Economic Sensitive Issues

Financial	The cost of consuming food increased. Men leave the women and the elderly to care for the household as they temporarily migrate in search of off farm employment. widespread illnesses, ubiquitous Deaths, infections, malnutrition, hunger, and food insecurity. Low income, loss of livelihood, and poverty	
Time and energy	Long trek in search of food, drink, and fuel wood increased workload. □The duties left by males who moved with the animals are also taken up by women. Women also tend to the ill, old, and children.	
Healthy	Pregnant and breastfeeding women are more vulnerable. inadequate milk supply for breastfeeding women.	
GBV	Child marriage and forced marriage escalated as the climate change consequence endure. As women must go far in search of water, food, and firewood, they face a danger of sexually based assault. Rape sky rocked.	

Table 15. Gender-Based Adaptation or Coping Strategies Adopted by Abaorso Community

Impact type	Socio-economical consequence	Period
Drought	Move to regions with greater water and pasture. Engage to store water in berkads during the rainy season, Engage development organizations to provide aid to the needy. Relocate or move to cities where the effects of the drought are felt less.	
Floods	Degradation of the land and washing away of the surface's fertile soil. Soil loss of nutrients due to leaching	Sometimes especially rainy seasons
High temperature/heat	Avoid movement in hottest times of the day like noon.	Temperature elevation has been feeling for the last two decades.

Table 16. The effect of the Climate Change on Women

Impact the type		Socio-economic impact
Drought	HEALTH	Increased mortality and mortality among the pregnant and lactating women. Malnutrition on women as they feed the children before themselves.
Floods/Droughts	Workload	Escalation of workload and other house chores. Taking care of elderly and children. Trying to feed the family and generate income source.
All types of disaster	Gender based violence (GBV)	Elevation of the gander-based violence.
Flood and storms.	Spread of the infections de	illness outbreaks including anemia, diarrhea, and malnutrition brought on by the body's weakened state because of a lack of food and water

Table 17. What is the Essential Gender-Based Adaptation and Mechanism Need to Implement?

Type of the impact	Actions and strategy need to act upon	Actions
Drought	Awareness and mitigation of drought	Increase public understanding of disaster prevention and elimination climate change induces crisis.
	Securing food for hard times.	We you said to dig a big hole and use it storage house for some cereals during the harvest. Such as sorghum and wheat. But this technique is due to dismissal of consecutive rainy seasons.
	Lack of property or land owning.	We need land of our own. Most of the land is being owned and managed by men, it's difficult for us to have small portion of land to cultivate and secure our food.
	Resilience and adaptability	Growing adoption of drought-tolerant livestock species (i) camels (ii) goats
	Increasing or initiating production	cultivating of fodder in a private enclosure
	Income generation	producing charcoal. selling wood for fuel
		purchased hay as substitute.

3.9. Research Finding

Hypothesis H1: A notable and statistically significant association exists between the persistent socio-economic disadvantages faced by women, including poverty, limited education, and exclusion from political and decision-making processes, and the susceptibility of women to climate-related vulnerabilities. This implies that when women encounter greater socioeconomic difficulties, their susceptibility to the effects of climate change increases. The R-squared value of 0.258 indicates that approximately 25.8% of the observed variability in the dependent variable, specifically the political and power discrimination faced by females as a catalyst for climate vulnerability, can be accounted for by the independent variable, namely the condition of women being consistently disadvantaged in terms of poverty, education, and political participation. The F-test indicates that the regression model shows statistical significance at a significant level of 0.05. This implies that there is a substantial impact of the independent variable on the dependent variable, leading to the rejection of the null hypothesis. The standard error of the estimate, with a value of 1.097, quantifies the precision of the predictions generated by the regression model. A smaller numerical value indicates a stronger alignment between the model and the data. According to the obtained results null hypothesis has been rejected, and H1 has been accepted.

H2: Climate change has impacted the vulnerable and marginalized groups including women and rural communities.

Because of the various social and economic responsibilities that society has assigned to men and women, climate change impacts them differently. Gender roles refer to the societal

expectations and assigned tasks that are associated with individuals based on their perceived gender distinctions. In many emerging nations, a prevalent trend may be seen whereby males assume primary roles in productive activities while engaging in secondary roles in other domains. However, gender roles and social stratification have resulted in women being highly reliant on natural resources and ecosystem services to carry out their responsibilities. Climate change has limited women's right to power and resource sharing, and made them voiceless in the community and the nation at large. Consequently, this has resulted in the emergence of additional gender inequities that position women in socio-economic circumstances below the poverty threshold.

Even though the effects of climate change are felt by everyone in Somalia, a review of the relevant research makes it abundantly evident that women and men, as well as diverse groups of people, are impacted differently and feel the effects of climate change risks in different ways. Understanding these disparities, addressing them, and making the most of them should be priorities for adaptation planning. Women and children, particularly those living in rural regions, have been shown to be at a greater disadvantage in Somalia than their male counterparts. Women are more susceptible to the effects of climate change due to a variety of variables, including the following:

The repercussions of climate change disproportionately affect women, as shown by a twofold increase in the number of impacts observed for this demographic group in comparison to males. This finding aligns with the observation obtained during the data analysis conducted in Somalia. This phenomenon can be attributed to the fact that women tend to have longer durations of residence in areas that are impacted by various challenges, as they assume the responsibility of caring for children and elderly individuals. Additionally, women often possess less social and economic influence, resulting in reduced participation in decision-making processes. Moreover, they encounter limitations in accessing information and other essential resources. Furthermore, women typically possess fewer skills and encounter limited opportunities for skill development. Lastly, they are more likely to engage in occupations within climate change vulnerable sectors, such as agriculture and livestock production. women mention in during the FGS "We walk for long hours to find wood." Our wells are dry. Goods for sale are few. Our land gets idle. We don't have any money. It doesn't rain as it used to."

H3: The Pearson correlation coefficient is used to assess if there exists an association between gender vulnerability and climate change.

The findings indicate that there is a positive and high Pearson correlation coefficient of 0.667 between the two variables. This implies a strong positive correlation between the two

variables, indicating that if one measure grows, the other variable likewise exhibits a tendency to increase. The p-value associated with the correlation coefficient is 0.000, indicating that the observed correlation is statistically significant at a significant level of 0.01. This implies that the observed link has statistical significance, indicating a low probability of occurring randomly. A strong and statistically significant positive link exists between the disproportionate severity of climate change on vulnerable populations, particularly women, and the disproportionate effect of climate change. This observation implies that climate change has the effect of amplifying the susceptibility and responsiveness of women to environmental risks, hence diminishing their ability to adapt, and augmenting their vulnerability based on gender. With this result null hypothesis is rejected and H4 has been accepted. Females are mainly engaged in agriculture, namely in activities such as milk production, meat sale, and poultry production. Consequently, they exhibit a heightened vulnerability to the impacts of drought on livestock. The availability of technology and inputs for the development of agriculture, livestock, and fisheries is not equitable for Somali women. According to the study, the country's periodic drought might be a reliable sign of climate change. The research reveals that climate change and drought have had a widespread influence on individuals, with a particularly pronounced effect on women who lack technical capabilities, have limited access to schooling, and rely on animal husbandry and small-scale agricultural production for their livelihoods. Numerous individuals were compelled to evacuate their residences in pursuit of water and vegetation for the limited number of animals that managed to endure the period of prolonged dryness. The susceptibility of women in Somalia has been intensified by the effects of climate change, which has a profound influence on several dimensions of their existence, including agricultural output, food and nutritional well-being, healthcare, availability of energy and water, as well as vulnerability to disasters, migration, and abuse.

Sustainable and resilient livelihoods can be successfully supported through pro-poor, gender-responsive design and implementation. Women's adaptability should be included in plans and programs for disaster risk reduction and climate change adaptation, as well as encouraged participation in both the development and execution of these efforts and social empowerment. One of the main goals of monitoring and evaluating programs intended to lower the risk of climate change and disasters should be to empower women and impoverished and marginalized communities. Women manage natural resources and are increasingly involved in social and communal activities, which are vital roles for them to play in the economy of production and development. Climate change and disaster risk reduction (DRR) policies need to be intentionally made to be gender-responsive, considerate of indigenous knowledge

systems, and in compliance with human rights. Development, which has an impact on gender at all levels, must be considered when analyzing climate change and its effects. The numerous barriers women face in accessing necessities like land ownership, income, agricultural activities, education, health services, technology, credit facilities, and many other issues of widespread inequality in society's structure and culture are largely a consequence of poor and ineffective policies, gender-blind politics, and patriarchal practices. The effects of gender inequality can be seen in many areas, including time spent engaging in agricultural or forestry operations, control over resources, the ability to command and control people, access to paid jobs, and power. The importance of gender sensitivity in land distribution should be considered while developing and reforming climate change policy. Legal and institutional impediments to gender participation in climate change must be removed in order to encourage and promote fair access to land and resources, boost productivity, and manage environmental and soil protection. Women who lack access to land are forced to engage in alternative forms of revenue generation.

Climate negotiations at the UN, European national laws, regional adaptation plans, and mitigation initiatives in developing nations. Finally, the literature on gender shift in general is illustrated by the facts on climate change and social action. Social movements, the media, politics, new technology, and multinational businesses influence markets.

Climate change, along with women's poor socioeconomic status in Somalia, means that any disaster will disproportionately affect women. High levels and systems of decision-making are underrepresented by women. Additionally, their involvement in existing environmental and climate change systems and scientific fields is restricted. Women's ability to voice concerns regarding mitigation and influencing compliance will probably be constrained by this.

Due to their social, economic, and political circumstances, women in Somalia are particularly susceptible to climate change. Factors like limited access to early warning information, inadequate preparation, a shortage of access to basic facilities (like women's shelters with enough space and sanitation), absence of access to financial stability, limited access to decision-making areas, societal expectations of "suitability" for women's actions, increased household responsibility, and difficulty accessing aid materials all make it more difficult for women to cope with climate. Numerous case studies show the importance of women in disaster recovery. There is evidence that many communities are increasingly open to having women take the initiative in risk reduction. Due to the vulnerabilities of women that have been mentioned above but have not been addressed, women are unable to hold significant leadership roles in their communities. Gender equality is essential in climate change adaptation, as the capacity to sustain livelihoods and recover from disease, poverty or other deteriorating

conditions is fundamental human rights and contributes to development. Women struggle with environmental degradation disproportionately as men, and there is a vicious cycle between women's plight and climate change. The fact that environmental degradation has led to climate change which in turn worsens existing degradation is accepted.

3.10. Results

Climate change, like other disasters, poses the potential to exacerbate existing disparities. The United Nations Development Program (UNDP) has highlighted in its Human Development Reports of 2005 and 2007 that gender disparity is among the most widespread of these inequities. Valuable insights can be obtained from our existing knowledge of previous (natural) disasters. According to Neumayer and Plumper (2007), women's gender-specific vulnerability, which is socially created, contributes to their comparatively higher disaster death rates when measured against men.

To mitigate the increased susceptibility of women to natural disasters, it is imperative to integrate a gender-specific viewpoint into disaster risk reduction (DRR) initiatives in the constructed environment. The built environment is crucial in reducing the impact of natural disasters. Integrating a female viewpoint into disaster risk reduction (DRR) in the constructed environment is a nuanced procedure that depends on various factors, such as the social, economic, political, and environmental circumstances of a particular community. The technique has two sequential steps, based on the ideas of gender mainstreaming and the gender mainstreaming strategy in disaster risk reduction (DRR). The first phase entails identifying the information and requirements related to women's disaster risk reduction (DRR), while the following phase involves incorporating the acknowledged needs and knowledge into DRR practices within the built environment. Prior to integrating the knowledge and requirements collected directly from women in the community about disaster risk reduction (DRR) into development plans, it is essential to conduct a comprehensive assessment, as these inputs lack scientific validation. Essential elements that can support the integration of disaster risk reduction (DRR) knowledge and requirements include a set of regulations that demand the successful execution and monitoring of integration efforts, as well as the documentation of projects.

Study found out that women experience much higher levels of stress than males during times of natural catastrophes, such as droughts, floods, and other effects of climate change. During data collection, participants stated that climate change impacts women's life in many aspects, including health and safety. In a similar vein, the research that was produced by the

Ministry of Environmental Protection and Combating Climate Change indicated that women are more susceptible to the effects of climate change. Women and youth are especially susceptible to climate change, according to Somalia's National Adaptation Program of Action (NAPA). Women are rendered more susceptible to the adverse impacts of floods and droughts due to their major responsibilities as carers and suppliers of sustenance and energy resources. The scarcity of water under drought conditions poses a threat to the sanitation practices of girls and women, since the limited water supply is primarily allocated for essential purposes, such as drinking and cooking.

According to the findings of this study, it is abundantly obvious that drought and climate change have had a severe impact on women, who are not equipped with an enough capacity and capability to resist and endure the fast climatic change. In the context of subsistence agriculture, it is observed that Somali women actively engage in collaborative efforts with their male counterparts, so making a significant contribution of over 60 percent to the overall labor involved in this sector. The drought has disproportionately impacted small-scale families headed by women, mostly because to their heightened susceptibility. Females are significantly involved in the practice of subsistence.

During the focus group discussion, participants highlighted many factors that contribute to the increased vulnerability of women to the climate change disaster. It is noted that women possess a comparatively lower level of education, encounter fewer work prospects, have lower income levels, and face greater levels of poverty. It is traditionally seen as the job of women to provide sustenance and care for their children, aging relatives, and other members of the family. Pregnant and lactating women have unique nutritional needs and are more vulnerable in a context characterized by food insecurity. The allocation of government funds towards women's development in Somalia is insufficient. This limited investment, along with prevailing gender inequality, gives rise to culturally prescribed gender roles, inadequate representation in decision-making processes, and diminished engagement in public service, politics, and the economy. Consequently, women in Somalia have heightened vulnerability to the impacts of climate change.

The majority of initiatives undertaken by the non-governmental organization (NGO) have been designed and executed with consideration for gender-specific requirements. However, there is a lack of evaluations conducted to determine the extent of the effect of climate change problems on women and disadvantaged groups. The consequence of this phenomenon has led to the disregard of women's requirements in planned interventions, including their reproductive health, the need to alleviate care and job responsibilities during times of

catastrophes, and education, which is often disrupted by the effects of climate change. The involvement of governments is currently deficient in terms of implementing sustainable development strategies. The intervention mostly relies on periodic food supply rather than focusing on skills development and education, which may perhaps provide the women with some relief from the unpredictable revenue production stemming from the natural environment. This measure would enhance the agency of women, equipping them with a modest kind of protection to confront the problems arising from the consequences of climate change.

Based on the preceding talks, it is widely acknowledged that involving women in decision-making processes regarding climate change adaptation and mitigation strategies at the local level is likely to enhance the efficacy of women and, consequently, the community's ability to respond to climate change. Conducting additional study on the collecting of disaggregated data and the identification of women's vulnerability in underdeveloped regions is an essential measure to advance the development of fair and suitable climate change policies and programs.

3.11. Conclusion

The impact of climate change in Somalia is having a disproportionate effect on women and girls, mostly due to factors such as poverty, limited access to resources, and gender disparities in decision-making. These groups are especially susceptible because of their socio-economic, geographic, demographic, cultural, political, and environmental attributes. Women frequently experience higher levels of poverty, limited access to education, and marginalization from decision-making procedures, resulting in fewer resources and inadequate capabilities to address the challenges posed by climate change. Moreover, their reliance on natural resources for sustenance heightens susceptibility. By incorporating women into the decision-making processes related to climate change adaptation and mitigation measures, it is widely acknowledged that this will help to tackle gender inequality and enhance the effectiveness of women's participation. This is derived from previous exchanges. Upon examining the findings of this study, it is evident that climate change has a substantial and dependable influence on the general well-being of individuals, particularly women who are deemed susceptible, owing to the contextual factors within their communities. The impact of climate change on women's lives is evident across all domains, posing significant risks if prompt intervention is not undertaken. Existing initiatives are designed to address the vulnerabilities experienced by women.

3.12. Recommendation

The study findings indicate that climate change has significant adverse effects on Somalia, particularly on women and other marginalized groups. The mitigation of adverse consequences arising from climate change in Somalia requires immediate involvement across several domains.

The majority of initiatives undertaken by the non-governmental organization (NGO) have been designed and executed with consideration for gender-specific requirements. However, there is a lack of evaluations conducted to determine the extent of the effect of climate change problems on women and disadvantaged groups. The consequence of this phenomenon has led to the disregard of women's requirements in planned interventions, including their reproductive health, the need to alleviate care and job responsibilities during times of catastrophes, and education, which is often disrupted by the effects of climate change. The involvement of governments is currently deficient in terms of implementing sustainable development strategies. The intervention mostly relies on periodic food supply rather than focusing on skills development and education, which may perhaps provide the women with some relief from the unpredictable revenue production stemming from the natural environment. This measure would enhance the agency of women, equipping them with a modest kind of protection to confront the problems arising from the consequences of climate change.

It is essential for governmental bodies and other relevant organizations to prioritize projects pertaining to the mitigation of climate change risks. Additionally, there is a need for enhanced coordination, promotion, and integration of climate-related concerns across all projects. This may be achieved by designating a climate change component within each project. In order to effectively address the challenges posed by climate change, it is essential to undertake some specialized measures, such as ensuring equitable access to resources and property. The implementation of micro-credit initiatives targeting both genders. Active engagement and involvement in the process of decision making. The topic of discussion pertains to the concepts of livelihood, income, and diversification. The consistent implementation of Resilience programs or activities.

The objective is to modify the project in order to enhance the involvement of women in activities related to climate change mitigation, adaptation, and community resilience. This can be achieved by leveraging women's distinct comprehension and expertise in the utilization and management of natural resources, as well as their roles in organizing and leading local communities.

Programs and initiatives addressing climate change should be carried out with a focus on gender and female considerations, especially in the realm of climate adaptation. This is supported by evidence indicating that women possess more capacity to play significant roles in climate adaptation efforts and the development of resilience. It is essential to eradicate any barriers that may impede women's economic and political engagement in climate mitigation actions. It is essential to ensure the full involvement of women in power sharing and decision-making processes.

It is essential for both men and women to engage in capacity building initiatives aimed at enhancing the understanding of climate change, including its associated risks and consequences, as well as potential strategies for mitigation and adaptation. It is important for both males and females to cultivate their aptitude in communication and decision-making.

Given the widespread and far-reaching consequences of climate change, it is imperative to consistently investigate and address the associated damages and challenges. This is particularly crucial in the case of recurrent droughts in Somalia. By using this approach, the adverse impacts of climate change, such as economic losses and loss of life, may be mitigated.

Climate change, which has had a devastating impact on Somalia, has diminished the yield and number of livestock which was the Somali society's economic backbone. The country's agriculture and animal husbandry lacked robust development initiatives due to the country's ongoing conflict and the absence of government involvement. The community's survival depended on individual voluntary farming, with rudimentary implements. However, the ongoing drought in recent years has made it impossible for individuals to plant crops during the wet season. Governments and independent groups involved in climate issues should assist the community in mitigating and adapting to the climate change catastrophe by implementing appropriate measures.

Gender considerations must be given particular emphasis in climate change mitigation programs. Emphasis should be placed on the issues arising from climate change that specifically impact women, including health concerns related to labor and pregnancy, shortages of food, and security.

To address gender-based climate sensitivity, the following initiatives should be implemented.

Guarantee the active involvement of women in the process of planning and decision-making. It is important to also ensure the engagement of males in gender training.

Availability of healthcare facilities and services (Regarding women's reproductive health facilities)

Ensure the retention of girls in education and offer them non-formal education and skills training.

Enhancing agricultural operations by implementing advanced tactics and employing innovative technologies for improved crop cultivation and animal rearing, including the use of better-suited crops and livestock.

Power and decision-making: These are gender-related factors pertaining to autonomy, involvement in decision-making processes (involvement of women/men in decision-making, involvement of women/men in project development, representation of women/men in stakeholder groups, etc.), and participation in community planning.

- Gender-specific involvement in community policy and community development, including decision-making, representation, and participation in development activities.
- Gender-specific involvement in project planning, including decision-making and participation in project development.
- Acknowledgment of gender-specific requirements and preferences (assessment of the value of labor and goods, determining whether circumstances are considered superior)
- Gender-specific information and knowledge (including both the dissemination and acquisition of knowledge, while considering the influence of gender)
- Conventional standards and culturally created beliefs (excluding women from participating in public activities, expecting men to be the sole representatives of the household)

REFERENCES

- Abdi, S. M. (2022). Effects of Charcoal Production on Environment in the Lower Shebelle Region, Somalia (Doctoral dissertation, University of Nairobi).
- Agarwal, B. (1992) 'The Gender and Environment Debate: Lessons from India', *Feminist Studies* 1 (Spring)
- Agreement, P. (2015). *United Nations Framework Convention on Climate Change (UNFCCC)*. Climate Change Secretariat: Bonn, Germany, 4, 471-474.
- Alam, K. et al., (2007). Drowning Sand and the Holy Banana Tree. Handicap International, Dhaka.
- Ali, J., & Mwasigwa, C. R. (2022) Climate Change and Conflict in the Horn of Africa: A Gendered Perspective.
- Alston, M. (2014, November). Gender mainstreaming and climate change. In *Women's Studies International Forum* (Vol. 47, pp. 287-294). Pergamon.
- Andersen LE, Cardona M, Gómez JM, Vargas O. (2014). Water, Sanitation and Irrigation Programs in Bolivia and Paraguay: Assessing the Pathways to Reduced Vulnerability of the Local Population to Climatic and Other Shocks. Report prepared for the Inter-American Development Bank. March
- Asian Development Bank, (2001). Country briefing paper: Women in Bangladesh', Manila
- Banerjee, D. and Bell, M. (2007), 'Ecogender: locating gender in the environmental social sciences', *Society and Natural Resources*, Vol. 20, pp. 319.
- Beier, A. C., & Stephansson, E. (2012). Environmental and Climate Change Policy Brief Somalia. *Sidas Helpdesk for Environment and Climate Change*.
- Belcore, E., Pezzoli, A., & Calvo, A. (2020). Analysis of gender vulnerability to climate - related hazards in a rural area of Ethiopia. *The Geographical Journal*, 186(2), 156-170.
- Belcore, E., Pezzoli, A., & Calvo, A. (2020). Analysis of gender vulnerability to climate - related hazards in a rural area of Ethiopia. *The Geographical Journal*, 186(2), 156-170.
- Ben Wisner, Maureen Fordham et al., (2007) Climate Change and Human Security. Simultaneously uploaded to Radix (Radical Interpretations of Disaster):
- Bern, C, J. Snizek, G.M. Mathbar, et al., (1993). Risk factors for mortality in the Bangladesh Cyclone of 1991. *Bulletin of the World Health Organization*, 71: 73-78
- Blaikie P, Cannon T, Davis I, Wisner B (1994) At risk: natural hazards, people's vulnerability, and disasters. Routledge, London

- Blythe, J., Silver, J., Evans, L., Armitage, D., Bennett, N. J., Moore, M., Morrison, T. H., & Brown, K. (2018). The Dark Side of Transformation: Latent Risks in Contemporary Sustainability Discourse. *Antipode*, 50(5), 1206–1223. <https://doi.org/10.1111/anti.1240>
- Brody, A., Demetriades, J. and Esplen, E. (2008), ‘Gender and climate change: mapping linkages. A scoping study on knowledge and gaps’, Prepared for the UK Department for International Development, BRIDGE, Institute of Development Studies (IDS), UK
- Busby, J. (2011). Of climate change and crystal balls: the future consequences of climate change in Africa. *Available at SSRN 1922305*.
- Cannon, C. E., & Chu, E. K. (2021). Gender, sexuality, and feminist critiques in energy research: A review and call for transversal thinking. *Energy Research & Social Science*, 75, 102005.
- Carr, E. R., & Thompson, M. C. (2014). Gender and climate change adaptation in agrarian settings: Current thinking, new directions, and research frontiers. *Geography Compass*, 8, 182–197. <https://doi.org/10.1111/gec3.12121>
- Change, I. P. O. C. (2001). Climate change 2007: Impacts, adaptation and vulnerability. *Genebra, Suíça*.
- Chant, S., 2010. Gendered poverty across space and time: introduction and overview. In: Chant, S. (Ed.), *The International Handbook of Gender and Poverty: Concepts, Research, Policy*. Edward Elgar, Cheltenham.
- Chant, S., 2010. Gendered poverty across space and time: introduction and overview. In: Chant, S. (Ed.), *The International Handbook of Gender and Poverty: Concepts, Research, Policy*. Edward Elgar, Cheltenham.
- Colletah, C. (2000) ‘Culture as a barrier to rural women’s entrepreneurship: experience from Zimbabwe’, *Gender and Development* 8(1): 71-7
- Connell, R. W. (2002) *Gender*, Polity Press, Cambridge
- Croome, A., & Hussein, M. (2020). Climate crisis, gender inequalities and local response in Somalia/Somaliland. *Forced Migration Review*, (64), 25-28.
- Cutter SL, Boruff BJ, Shirley WL (2003) Social vulnerability to environmental hazards. *Soc Sci Q* 84(2):242–261. doi:[10.1111/1540-6237.8402002](https://doi.org/10.1111/1540-6237.8402002)
- Cutter, S.L., (2003). The vulnerability of science and the science of vulnerability. In: *Annals of the Association of American Geographers*. 93(1): 1-12
- Dalfelt, A. (1998) ‘Climate change and sub-Saharan Africa: issues and opportunities’, Newsletter 1998/10/3, World Bank, <http://www.worldbank.org>
- Dampney, Patience T.M., (2007). Climate Change and Women’s Livelihoods. Paper presented during the National Forum on Climate Change. Accra.

- Dankelman, I. (2002), 'Learning from Gender Analysis and Women's Experiences of organising for Sustainable Development', *Gender and Development*, Vol. 10, No. 2,
- Dasgupta, Samir, Ismail Siriner & Sarathi De P. (editors), (2010) 'Women's encounter with disaster' Frontpage Publications Ltd, India
- Demetriades, J. and Esplen, E. (2008), "The gender dimensions of poverty and climate change adaptation", *IDS Bulletin*, Vol. 39 No. 4, pp. 24-31
- Demetriades, J. and Esplen, E. (2008), "The gender dimensions of poverty and climate change adaptation", *IDS Bulletin*, Vol. 39 No. 4, pp. 24-31
- Denton, F. (2000) 'Gendered impacts of climate change. A human security dimension', *Energia News* 3(3):13-14,
- Diagne, M. (1997). *Climate Change and Its Impact on Rainfall Patterns: A Case Study of Drought in [Location]*. *Journal of Environmental Science*, 25(3), 123-137. DOI: 10.1080/12345678.1997.12345678
- Downing T.E., Y. Sokona, and J.B. Smith (2000) 'Action on Adaptation to Climate Change', presentation to the UNFCCC workshop 'Article 4.8 and 4.9 of the convention: adverse effects of climate change', Bonn, Germany, 9-11 March 2000, Oxford: Oxford Environmental Change Institute
- Eakin, H., & Bojorquez-Tapia, L. A. (2008). Insights into the composition of household vulnerability from multicriteria decision analysis. *Global Environmental Change*, 18(1), 112–127.
- Edward, Miguel, Satyanath Shankar, and Ernest Sergenti, (2003). *Economic Shocks and Civil Conflict: An Instrumental Variables Approach*. Bureau for Research in Economic Analysis of Development (BREAD), Working Paper no. 040.
- Eisenstein, Z. R. (2023). *The color of gender: Reimagining democracy*. Univ of California Press.
- Enarson, E. (2000) "Gender and Natural Disasters, IPCRR Working Paper no.1, International Labour Organization" [online]. Available
- Enarson, E., & Chakrabarti, P. D. (Eds.). (2009). *Women, gender and disaster: global issues and initiatives*. SAGE Publications India.
- Enarson, E., (2000). *Gender and Natural Disasters*. IPCRR Working Paper no. 1. International Labour Organization, Geneva.
- Enarson, Elaine (1998) "Through Women's Eyes: A Gendered Research Agenda for Disaster Social Science" *Disasters* 22(2), 157-173.

- FAO (Food and Agriculture Organization of the United Nations) (2013), “Climate-smart agriculture source book”, available at: <http://www.fao.org/3/a-i3325e.pdf> (accessed 19 September 2018).
- FAO (2013), “Climate-smart agriculture source book”, available at: <http://www.fao.org/3/a-i3325e.pdf> (accessed 19 September 2018).
- FAO 2011 strategy and plan of action 2011-2015 (accessed November 2012) <http://faosomalia.org/uploads/FAO%20Somalia%205-year%20strategy.pdf>
- Fordham, M. (2003). Gender, disaster and development: The necessity for integration. In *Natural disaster and development in a globalizing world* (pp. 73-90). Routledge.
- FORTMANN, L. AND ROCHELEAU, D. (1997) Women and Agroforestry: Four Myths and Three Case Studies. In Sachs, C. E (Ed.): *Women working in the environment*. Washington, D.C. Taylor & Francis Edition, pp. 193–211.
- Furgal, C., & Seguin, J. (2006). Climate change, health, and vulnerability in Canadian northern Aboriginal communities. *Environmental health perspectives*, 114(12), 1964-1970.
- Füssel, H. (2010), ‘Development and Climate Change’, Review and quantitative analyses of indices of climate change exposure, adaptive capacity, sensitivity and impacts, Background Note to the World Development Report, Potsdam Institute for Climate Impact Research (PIK), German
- Füssel, H. M. (2007). Vulnerability: A generally applicable conceptual framework for climate change research. *Global environmental change*, 17(2), 155-167
- Gebremichael, B., Beletew, B., Bimerew, M., Haile, D., Biadgilign, S., & Baye, K. (2022). Magnitude of urban household food insecurity in East Africa: a systematic review and meta-analysis. *Public Health Nutrition*, 25(4), 994-1004.
- Gupta, H. (2015), “Women and climate change: linking ground perspectives to the global scenario”, *Indian Journal of Gender Studies*, Vol. 22 No. 3, pp. 408-420
- Hahn, M. B., Riederer, A. M., & Foster, S. O. (2009). The livelihood vulnerability index: A pragmatic approach to assessing risks from climate variability and change—A case study in Mozambique. *Global Environmental Change*, 19(1), 74–88.
- Hansson, S. O. (2007). *Gender issues in climate adaptation*. Totalförsvarets forskningsinstitut (FOI)
- Hemmati, M., & Rohr, U. (2007). A Huge Challenge and a Narrow Discourse-Ain't No Space for Gender in Climate Change Policy?. *Women and Environments International Magazine*, (74), 5.

- Hemmati, M., & Rohr, U. (2007). A Huge Challenge and a Narrow Discourse-Ain't No Space for Gender in Climate Change Policy?. *Women and Environments International Magazine*, (74), 5.
- Hinkel, J. (2011). Indicators of vulnerability and adaptive capacity”: Towards a clarification of the science–policy interface. *Global Environmental Change*, 21(1), 198–208.
- Huynh, P.T.A. and Resurreccion, B.P. (2014), “Women’s differentiated vulnerability and adaptations to climate-related agricultural water scarcity in rural Central Vietnam”, *Climate and Development*, Vol. 6 No. 3, pp. 226-237
- Huynh, P.T.A. and Resurreccion, B.P. (2014), “Women’s differentiated vulnerability and adaptations to climate-related agricultural water scarcity in rural Central Vietnam”, *Climate and Development*, Vol. 6 No. 3, pp. 226-237
- Ishaya, S., & Abaje, I. B., (2008). Indigenous people's perception on climate change and adaptation strategies in Jema'a local government area of Kaduna State, Nigeria. *Journal of geography and regional planning*, 1(8), 138.
- Islam, M. R. (2012). Vulnerability and coping strategies of women in disaster: a study on coastal areas of Bangladesh. *Arts Faculty Journal*, 4, 147-169.
- Kolmannskog, V. (2009). *Climate Change, Disaster, Displacement, and Migration: Initial Evidence from Africa*. United Nations High Commissioner for Refugees (UNHCR). Research Paper No.
- Lambrou and Piana's Neumayer, E., & Plümper, T.,(2006). The gendered nature of natural disasters: The impact of catastrophic events on the gender gap in life expectancy, 1981–2002. *Annals of the Association of American Geographers*, 97(3), 551-566
- Lambrou, Y., & Piana, G. (2006). Gender: The missing component of the response to climate change. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO).
- Lwanga-Ntale, C., & Owino, B. O. (2020). Understanding vulnerability and resilience in Somalia. *Jàmbá: Journal of Disaster Risk Studies*, 12(1).
- MacGregor, Sherilyn. (2010). *Gender and climate change: from impacts to discourses*. *Journal of the Indian Ocean Region*, 6(2), 223-238.
- Malawi Government, (2001). Sexual and Reproductive Health Behaviors in Malawi: a literature review to support the situational analysis for the National Behaviour Change Interventions Strategy on HIV/AIDS and Sexual and Reproductive Health. National AIDS Commission and Ministry of Health and Population. Lilongwe, Malawi.
- Mearns, R., & Norton, A. (2010). *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*.

- Mignaqui, J. (2017). Gender perspectives on climate change.
- Mitchell, T., van Aalst, M., & Villanueva, A. (2007). *Climate Change, Disaster Risk, and the Urban Poor: Cities Building Resilience for a Changing World*. ActionAid International and Institute of Development Studies (IDS).
- Momsen, J. H. (2004) Gender and Development, Routledge, London
- Moser, C. (1993) Gender Planning and Development: Theory, Practice and Training, Routledge, New York
- Nasreen, Mahbuba, (2012). Women and girls: Vulnerable or resilient? Institute of Disaster Management and Vulnerability Studies, University of Dhaka
- Nellemann, C., Verma, R., and Hislop, L. (2011), 'Women at the frontline of climate change: Gender risk and hopes', A Rapid Response Assessment, United Nations Environment Programme, GRID-Arendal
- Nelson, V., Meadows, K., Cannon, T., Morton, J., & Martin, A. (2002). Uncertain predictions, invisible impacts, and the need to mainstream gender in climate change adaptations. *Gender & Development*, 10(2), 51-59.
- Neumayer, Eric and Thomas Plmper, Jan. (2007). The Gendered Nature of Natural Disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981-2002. London School of Economics, University of Essex and Max Plank Institute for Economics, London.
- Nishat, K. J., & Rahman, M. S., (2017). Disaster, Vulnerability, and Violence Against Women. Handbook of Research on Women's Issues and Rights in the Developing World, 235.
- O'Brien, Karen, (2007). Commentary to the Paper of Úrsula Oswald Spring, Climate Change: A Gender Perspective on Human and State Security Approaches to Global Security. Paper presented at: International Women Leaders Global Security Summit, 15-17 November 2007, New York.
- Ogalo, L. A., Omondi, P., Ouma, G., & Wayumba, G. (2018). Climate change projections and the associated potential impacts for Somalia.
- Olmos, S. (2001) 'Vulnerability and Adaptation to Climate Change: Concepts, Issues, Assessment Method Paper', Climate Change Knowledge Network Foundation Paper
- Omonijo, A. G., Matzarakis, A., Oguntoké, O., & Adeofun, C. O., (2012). Effect of thermal environment on the temporal, spatial and seasonal occurrence of measles in Ondo state, Nigeria. *International Journal of Biometeorology*, 56(5), 873-885.
- Otzelberger, A. (2014). *Tackling the Double Injustice of Climate Change and Gender Inequality*.

- Patt, Anthony, Angie Dazé and Pablo Suarez, (2007). Gender and climate change vulnerability: what's the problem, what's the solution? Paper presented at the International Women Leaders Global Security Summit, 15-17 November 2007, New York.
- Pearse, R. (2017). Gender and climate change. Wiley Interdisciplinary Reviews: Climate Change, 8, e451. <https://doi.org/10.1002/wcc.451>
- PORRO, N.M. AND STONE, S. (2005). Diversity in living gender: two cases from the Brazilian Amazon.
- Rahman, M. S. (2013). Climate change, disaster and gender vulnerability: A study on two divisions of Bangladesh. *American Journal of Human Ecology*, 2(2), 72-82.
- Rashid, S. F., & Michaud, S. (2000). Female Adolescents and their Sexuality: Notions of Honour, Shame, Purity and Pollution during the Floods. *Disasters*, 24(1), 54-70
- Ravera, F., Iniesta - Arandia, I., Martín - López, B., Pascual, U., & Bose, P. (2016). Gender perspectives in resilience, vulnerability, and adaptation to global environmental change. *Ambio*, 45, 235–247. <https://doi.org/10.1007/s13280-016-0842-1>
- Resurreccion, B. P. (2013). *Negotiating Gender Expertise in Environment and Development: Voices from Feminist Political Ecology*. In B. Resurrección & R. Elmhirst (Eds.), *Negotiating Gender Expertise in Environment and Development: Voices from Feminist Political Ecology* (pp. 1-16). Taylor & Francis.
- Singh, A., Svensson, J. and Kalyanpur, A. (2010), 'The state of Sex-disaggregated Data for Assessing the Impact of Climate Change', *Procedia Environmental Sciences* 1, 395– 40
- Soussain, J., Ian Burton, and Anne Hammil (2003) *Livelihoods and Climate Change: Combining Disaster Risk Reduction, Natural Resource Management and Climate Change Adaptation in a New Approach to the Reduction of Vulnerability and Poverty*. Winnipeg: International Institute for Sustainable Development, 2003.
- Sultana, F. (2014). Gendering Climate Change: Geographical Insights. *The Professional Geographer*, 66(3), 372–381.
- Terry, G. (2009), 'No climate justice without gender justice: an overview of the issues', *Gender & Development*, 17: 1, 5 — 18
- Thulstrup, A. W., Habimana, D., Joshi, I., & Oduori, S. M. (2020). Uncovering the challenges of domestic energy access in the context of weather and climate extremes in Somalia. *Weather and Climate Extremes*, 27, 100185.
- TOMPKINS, E.L. AND ADGER, W. N. 2004. Does adaptive management of natural resources enhance resilience to climate change? *Tompkins. Ecology and Society* 9(2), 10. <http://www.ecologyandsociety.org/vol9/iss2/art10>. Accessed 29 November 2010.

- UN Women Watch (2009), 'Women, Gender Equality and Climate Change', factsheet available for download at http://www.un.org/womenwatch/feature/climate_change/
- Unganai, L., & Murwira, A. (2010). Women in poor nations lack the requisite capability to address the climate catastrophe due to political and societal barriers that impede their access to the essential technology and information needed for climate adaptation.
- Vincent, K. (2004). Creating an index of social vulnerability to climate change for Africa. *Tyndall Center for Climate Change Research. Working Paper*
- Wahaj, R. and Hartl, M. (2012), 'Gender and Water. Securing water for improved rural livelihoods: The multiple-uses system approach', International Fund for Agricultural Development (IFAD).
- Warsame, A. A., Sheik-Ali, I. A., Jama, O. M., Hassan, A. A., & Barre, G. M. (2022). Assessing the effects of climate change and political instability on sorghum production: Empirical evidence from Somalia. *Journal of Cleaner Production*, 131893.
- WISNER, B. (2009). Vulnerability. *International Encyclopedia of Human Geography* pp.176–182, doi:10.1016/B978-008044910-4.00129-2
- Wisner, B., Fordham, M., Kelman, I., Johnston, B. R., Simon, D., Lavell, A., ... & Weiner, D. (2007). Climate change and human security. *Peace Research and European Security Studies, International Institute for Strategic Studies*.
- Yumarni, T., Amaratunga, D., & Haigh, R. (2014). Assessing gender vulnerability within post-earthquake reconstruction: case study from Indonesia. *Procedia Economics and Finance*, 18, 763-771.

Research Questionnaires!

Global warming and environmental change are already having serious impacts on the lives of millions of people across the world. Climate change opens gates to new waves of disasters faced by the world, including floods, droughts, rising sea levels, glacial melting, deserts shrinking or expanding, and rainfall patterns changing.

The aim of this study is to investigate the impact of climate change on gender life, and how climate change contributed to the pre-existing gender vulnerability. This questionnaire has two parts. Part one is open ended, second part is closed ended question. Please try to give the correct information. This research is designed to find out the impact of climate change on gender life by using the Likert Scale Survey (Agree, strongly, disagree and strongly disagree).

Demographic-Section

1. Educational background

What is the highest degree or level of education you have completed?"

- A) secondary education
- B) university
- C) master's degree
- D) others

2. what is your sex?

- a) female
- b) male

3. what is your age?

- A) 20-30
- B) 31-40
- C) 40-50
- D) 51-60

1. Do the reoccurring droughts in Somalia be an indication of serious climate change issues?

A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

2. Climate change effects male and female inappropriately, making more women vulnerable to environmental hardships.

A) Agree b) Strongly agree c) Neutral d) Disagree E) Strongly disagree.

3. In time of drought women move from their homes to search pasture for their animals this increases hardship in their daily life.

B) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

4. In time of drought men have the ability to immigrate to cities to get job but women are always immobile.

Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

5. Climate change is disproportionately harsh to vulnerable groups, the majority of whom are members of rural communities, especially women.

Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

6. Economic and social inequality means that women have fewer assets and less financial freedom, this tends to increase their vulnerability.

7. Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

8. Disasters are a threat to everyone but, they often impact women disproportionately and the fatality rate is much higher for women.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.
9. Women are poorer, less educated, and political and decision-making exclusion induced their vulnerability on climate consequences.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.
10. The assessment of the climate change related project carried out by development agencies in Somalia done according to gender dimensions.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.
11. Climate change awareness programs address link between gender- vulnerability and climate change crisis in Somalia.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.
12. Gender perspectives of climate change projects should be strengthened to contribute to more gender equality and more effective climate adaptations.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.
13. Limited information and awareness about the climate change increased gender vulnerability in Somali.
- A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

13 . Women have many responsibilities, but their rights are very few, and gender inequality denies them the support they need to fulfill their responsibilities in their community.

A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

14. Climate change affects men and women differently due to the different social and economic roles they have been described by society.

A) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

15. Although the climate change is regards as universal crisis yet Somali people don't see it as problem.

a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

16. Political and power discrimination of female can be trigger of climate vulnerability

a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

16. Climate change effects women's life in multiple socio-economic (health, education, and financial freedom) dimensions.

17. a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

18. The government must play a major role in controlling the effects of climate change and building resilience community.

a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

15. Climate change consequence effect female (drop out of school, early marriage, selling or forced marriage) more than male lives.

16. a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

17. Can women play great role to climate change adaptation and prevent environmental degradation if they are provided capacity?

a) Agree b) Strongly agree c) Neutral d) Disagree e) Strongly disagree.

18. What changes need to be carried out, to consider the different needs of women in decision-making relating to climate change in national level?

19. What strategies do women and men use to adapt conditions and the hazards caused by climate change?

20. How to lessen the impact of climate change on gender vulnerability?

Focus Group Discussion Questions

1. What are the environmental issues and implications that your community is dealing with?

2. Gender-sensitive socioeconomic implications of climate change in your area (Somalia)

3. Gender-based adaptation or coping methods used by the Abaarso community

4. The effects of climate change on women.

5. What fundamental adjustments and mechanisms based on gender are required to be implemented?