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Role Of Education in Protecting the
Environment and Women's Rights at
Dagahaley Camp
Dadaab, Kenya

DAHABO ABDI IBRAHIM

York University

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Executive Summary

This paper examines the role of education as a response to environmental degradation and women's rights at Dagahaley refugee camp, Dadaab, North Eastern Kenya. It is a qualitative research study, comprising of individual interviews with four women including myself. One participant is currently in form-four (aged 23 years), while the others have already finished high school (aged 23 years, 31 years, and 35 years respectively). Semi-structured questions were the primary research methods. This study sought to better understand the relationship between environmental challenges (including climate change and air pollution) and women's rights, particularly in regard to accessing job opportunities and policy decision making.

Key themes emerging from the interviews are environmental changes, gendered impacts of these changes, women's agencies (representations, and importance of women's voice), and institutional responses from schools and NGOs.

It was recorded that environmental policies and practices in the Dadaab refugee limit women's roles in adapting and mitigating climate change. I conclude with recommendation for women to act as policy consultants in fields of education sectors and climate policy making processes to bring agents of change in the Dadaab refugee context.

Introduction

Education is fundamentally important. It offers every human being the possibility of acquiring the knowledge and skills to perform meaningful and empowering activities, either, individually or in society at large. Every person has a right to get a basic education, including refugees. I write this Major Research Project from Dadaab, a refugee camp in Northeastern Kenya. I am a female, Somali refugee who came to Kenya as an asylum seeker in 1992 due to civil war that broke out in my home country.

With these experiences, I turn to education and education research with the hope that it might offer a critical pathway to democracy and human rights against all sorts of discrimination, including environmental injustices. Education is so valuable to me. It promotes both individual and national development by contributing to increased productivity and a hope for the eradication of poverty, disease, and ignorance (Kigotho et al. 2016). It allows people to become familiar with the environment they live in, explore social and environmental issues, engage in problem-solving, and take action to improve their lives and the world. Education allows people to appreciate the environment that surrounds them while at the same time arranging for their own nest that protects them from sun and rain in a changing climate.

In the Dadaab camps women engage in environmental resource management on a day-by-day basis – they fetch water, harvest and prepare food, gather firewood, keep domestic animals, and conduct household chores, such as cleaning (Davis et al. 2015: 8). These activities are the front line of women’s work. Many families in the camps are single-parent households, primarily with widows or divorced women, and women struggle to fulfill the responsibilities of both parents. Without present fathers, women assume the position of head of the family, yet gender norms pose a barrier to being recognized as such gender. These restraints consequently prevent them from

seeking out opportunities to participate in the community, leading to less women in community decision-making processes about environmental mitigation and adaptation plans (Alvarez and Lovera 2016).

This project builds on my experiences as a marginalized female refugee and my resolute belief in education as an agent for lasting and meaningful change. I offer an exploration of environmental education and women's rights, seeking to better understand how women refugees in the Dadaab camp, such as myself, are disproportionately impacted by environmental and climate changes that are of both local and global origins. I bring attention to marginalized women's voices, including my own, and the distinctive and valuable insights that these perspectives can offer about the gaps and faults in our current environmental and educational systems, policies, and practices.

I want to underscore the resolve and resilience of marginalized women refugees who dedicate their lives to supporting families and communities within broader contexts of social and environmental precarity and decline. These changes impact lives and livelihoods. There is an urgent demand for change, and I turn to these avenues for amelioration in my concluding discussions with a focus on recognition, consultation, and education.

According to the 2014 United Nations International Strategy for Disaster Reduction, environmental degradation is "the reduction of the capacity of the environment to meet social and ecological objectives and needs" (Ali 2022: 2). It is important to note that these needs and objectives vary greatly throughout the world. Those who have the smallest negative environmental presence, such as those living in contexts of forced migration, are often the most impacted by ecological declines.

The four female refugees at the center of this study carry the burden of global and environmental changes, despite being the least responsible for this degradation. Their plight has

been inflicted by others around them, both in terms of their displacement and the environmental conditions they exist in. I argue that women are both more vulnerable and more resilient than men in refugee camps, such as Dadaab. Profound gender inequality exists in roles that women are forced to fill, specifically when they are relegated to living in the shadow of their male counterparts. The impacts of this disparity are widespread, preventing women from accessing environmental resources, being included decision-making spaces, and contributing to solutions to environmental declines.

I live in a patriarchal community where refugee women are not allowed to own property either here in Kenya or back in my home country, Somalia, due to cultural norms that have been inherited from my ancestors. Many still believe that when women get married, they belong to the family of their husband and are thus deprived of independence.

After many years of conflict in the Horn of Africa, exacerbated by natural disasters such as climate-related drought and famine, thousands of families were forced to flee their homeland and sought refuge in Kenya. The Dadaab refugee camps were set up in 1991 after the Somali government collapsed and the country turned into chaos. At one point, Dadaab was the largest refugee settlement in world, hosting more than a half million refugees from different nationalities, among them Somali, Sudanese, Ethiopian, Eritrea and Congolese. The camp was heavily congested, and refugees were denied and restricted movement out of the camp. There was, and continues to be, an apparent lack of adequate services such as healthcare, shelter, and food. As such, refugees struggle to meet their basic needs – they cut down trees to construct shelters, dig trenches to make soil bricks to build houses, and use plants as firewood to cook. Waste disposal is also a major issue in the camps. While all these activities take place at an unsustainable rate, neither the refugees nor the Government of Kenya have a conservation or

climate strategy to balance the impacts of these activities. The government of Kenya and UNHCR also never implemented environmentally friendly services such as the distribution of cooking gas, or the construction of environmentally friendly shelters.

I write this MRP during the COVID-19 pandemic. It has claimed the lives of too many people and has brought lots of barriers around the world. Of these impacts though, it is evident that the effects of the pandemic are undoubtedly gendered. For example, an estimation made by Save the Children states that over 2.5 million girls have been forced into marriage due to economic constraints that arose during the pandemic. Girls are forced to stay home because schools are closed, and this gives parents a chance to resolve their financial troubles through receiving a high dowry by marrying their daughter to rich men (Hannah 2020). Girls' dreams of the future have been lost in these practices.

1.1. Key Research Questions

As one of very few females in Dagahaley who has successfully completed formal education at the postsecondary level, I am interested in investigating girls' lives at the Dagahaley camp. I want to identify and raise awareness about the ways in which climate and other environmental changes disproportionately impact marginalized communities. As I have already noted, women and girls are often adversely affected by climate change. They face illness and sickness from water borne diseases such as cholera and dysentery, as well as heightened violence from relocation and a loss of privacy, including sexual assault and murder. However, girls and women rarely have a voice in climate change decision-making process, including mitigation and adaptation plans and responses.

In response, set within the Dagahaley refugee camp, this research has two main goals: My first goal is to gather women's voices and represent their experiences of climate and

environmental changes. My research will provide deeper understanding of the vulnerability of girls and women in the climate crisis.

My research questions are:

1. What environmental changes are happening in Dagahaley camp?
 - a) How do girls and women experience these changes?
 - b) How can women participate in reducing environmental degradations?
 - c) How might environmental restoration enhance women's rights?

My research paper will also focus on decision-making and action plans. I gathered a group of girls and women educators to discuss and come up with plans to promote women's rights and climate justice in schools. We explored ways to promote women's rights and climate justice in elementary and secondary schools. The research question guiding these discussions is:

What recommendations and actions are important for schools to take in response to climate change and women's rights?

2. Literature Review

2.1. Displacement and Environmental Degradation

In Dagahaley refugee camp, most refugees are from Somalia and migrated into Kenya in different ways, with the majority being conflict and climate refugees. Most people came from vulnerable positions and received assistance from UNHCR or other NGOs. A UNHCR report (Needham 2009) notes that many people from Somalia who have been forced to flee and relocate to Dadaab are pastoralists and farmers, indicating that they were impacted by the effects of climate change and inadequate food supply. Their demands for better water supply and pasture sometimes created conflict, which in turn increased the level of displacement. Famine continues to affect millions of

people in Somalia and Ethiopia who are struggling to rear livestock and raise crops, and as a result, more refugees are crossing into Kenya.

Largescale forced migration has caused the camps to rapidly expand due to the high influx of people, which creates a huge problem within the local community because the number of refugees crossing the border of Kenya brings a rapid increase in consumption levels. Such rapid movements demand extensive resources to overcome the challenges of hosting, including building and securing shelter from the rain and scorching sun. Somalian refugees mostly continue to practice their culture of keeping livestock to get milk, and as local people joined the refugees, the land is becoming increasingly overgrazed. Grass was also cut and put over the roof of plastic houses to mitigate rising temperatures in homes. These local practices have proven to be largely unsustainable. In addition to these local practices, global climate change has dramatically changed the rainy season in Dadaab refugee camps, which now fluctuate between little rain and drought. This results in famine and starvation, as well as rapid rainfall creating uncontrollable flooding and spreading of waterborne diseases (Thornton 2010).

Over the past 20 years, the Dadaab landscape has become clear of trees. Heavy rains have started since 1997, yet minimal rainwater manages to soak into the soil. The rest runs off quickly, causing further soil erosion. Dagahaley experiences frequent floods, with the most recent major one occurring in 1997 when El-Nino displaced thousands of refugees from their shelters and resulting in loss of property, overflowed latrines, and loss of life. During these floods, refugees endured shortages of clean water, outbreaks of diseases like cholera, typhoid, diarrhea and malaria, and a shortage of food in the camps. The increase in malnutrition and illness has disproportionately negative impacts on women, children, and elderly (Rono 2017). The Kenya

Red Cross Society (KRCS) reported that over thousands of people were displaced countrywide due to the heavy floods.

The lack of food forces refugees to remain poor and in precarious. Poverty is the main cause of malnutrition, and every household cannot afford to pay for food items due to financial problems. Floods are yet another obstacle for refugees in camps, as they heavily depend on receiving food from the World Food Programme, but during such natural disasters, food rations are unable to be delivered, or collected, and are often washed away.

Floods affect the roads that connect Dadaab camps including Dagahaley which impact the relief supplies deliveries. As trucks carrying monthly food are delayed, food distribution is held up and there is a consequential shortage of food supplies in the local market. This causes what little that is available in the Dagahaley market to increase in price, lowering the purchasing ability of the refugees and exacerbating their food insecurity (Shabir 2013). The destruction of the roads as a result of the floods disproportionately impacts women and girls because they are exposed to vulnerabilities related to gender stereotypes. For example, people from different camps travel on foot regularly to visit relatives, yet women are unable to do this without fear of rape, torture, or ridicule for travelling with men. This had happened to me some years back when my father's uncle passed away in the middle of the night at Hagadera camp, and all the men in the family gathered and decided to go on foot, but myself and other women had refused to go with them out of concern for our safety.

Over 550 million people around the globe face food insecurity problems, and many are worsening day-by-day. Food insecurity affects a number of refugee children and pregnant mothers; the rate of malnutrition in South Asia and Sub-Saharan Africa are very high. Hunger and starvation is a major obstacle that confronts the world today, and as millions of people who

were supposed to generate income to sustain their daily lives are locked down due to COVID-19, they are now even more vulnerable (Utuk and Daniel 2015).

Women and girls are the core pillars of the family and support one another to secure livelihoods by doing various jobs within the Dagahaley camp like selling milk, being greengrocers, and working as housemaids. However, many women have experienced violence while fulfilling these tasks. Women who sell milk experience many challenges with pastoralists as they travel far distances to look water and pasture for their animals. Women are supposed to collect milk but in going there, they face increased exposure and this can result in gender-based violence. While they are helping their families by collecting food and water, the environment is not friendly to them (Cameron 2009). Refugees have one of the highest rates of gender-based violence compared to the world average. I strongly agree with Narayan (2020) that both women and girls should have a right to equal opportunities and access to resources and technology to address climate justice. UNHCR and the government of Kenya continue to stress that civil society needs to play a key role in recognizing climate change, yet such universalized notions fail to recognize the ways in which women on the frontlines of climate change are silenced (Narayan 2020).

2.2. Role of Education in Environmental Ecosystem Protection

The education system enables public awareness of environmental ecosystems that are essential to our survival. The refugee community needs to understand that ecosystems need energy from sunlight, and there is a need to explain the processes of photosynthesis and their importance to our lives. Scientific awareness can gather communities including men, women, children, and elderly in the camps, and allow them to participate in enriching discussions that give a chance to voice their ideas and concerns about the environmental ecosystems in their surroundings. Also, the

education system can create a space that is very conducive to widespread environmental engagement in issues in Dagahaley Camp. It is also of crucial importance to recognize that the effects of climate change are not natural or neutral. Climate change unfairly discriminates, affecting those who are often most vulnerable.

Sustainable Development Goal (SDG) 13: Climate Action, includes a target on improving education and raising awareness about the human and institutional capacity for climate change mitigation, adaptation, impact reduction, and early warnings. This research study is, at its essence, a global commitment in encampment to meet these tasks and these efforts will ensure that all refugee schools can meet the UN sustainability goals in the near future (Morara and Peterlicean 2012).

I strongly believe that the best way to spread awareness is to call for active participation, particularly from disenfranchised groups. This study thus collaborates with a small group of women and girls in Dagahaley camp. My goal was to decorate the walls of the classrooms and craft a good design for a learning system that allows girls to be exposed to various aspects of their environmental surroundings. I want to guide young women to develop their capacity, to understand environmental protection and injustices. As the school comprises of parents and teachers as well, the role of education should also involve training for teachers and parent-teachers' associations (PTAs) in the response to climate change in the refugee camps (Sinclair 2001).

Climate change should be infused into the education curriculum. as it makes it more interesting and also compulsory for students of all ages to learn about this unique challenge. This section is an explicit message that implores policymakers to address climate change at all levels of schooling. It is one way that gives space for people in the camp to comprehend and act.

Currently, climate change issues are found in the curricula of secondary schools in subjects of Physical Geography, Physics, and Agriculture. However, it is viable to engage learners to utilize knowledge gained to improve their community, and not just to pass the examinations. The massive floods in Kenya destroy lives and property, and this destitution has caused people to live in fear of climate change. Therefore, the Ministry of Education, with the help of the Government, should learn from the survival of marginalized people, including marginalized refugee women and the Kenyan communities who were pastoralists and farmers, and add climate change action into Kenya curriculum. This is an important aspect to this research study because the local community in Dagahaley camp are Kenyans of Somali ethnicity. Their learners are already familiar with the environment, but with the help of education, they will be able to find local and global solutions to the issues.

According to Siegner and Stapert (2020: 3) it is believed that “approaching climate change education through social studies and language art promotes student engagement”. I really support this because when students creatively engage with learning material, they can develop clearer connections between classroom concepts and the real world. It is argued that teaching theory and practical learning are necessary to stimulate effective climate action better retain climate information. However, teaching pedagogies need to connect with the traditional languages and experiences of local communities in order for learners to understand the content that teachers deliver. NGOs who are concerned with education should ensure that schools provide learners with a friendly environment that permits them to engage with other learners at the school level and discuss the contexts and conditions of being climate refugees. These will bring an augmentative approach to environmental degradation. Moreover, school curricula should make students and communities aware of the threats of environmental degradation and encourage them

to act responsibly while motivating them to act for change. While teaching science in its relation to climate and environmental changes enables learners to be active listeners and develop cognitive skills in early stages of addressing environmental issues, a more wholistic approach to their education will ensure the sustainability of such knowledge applications (Blades 2006).

In response to what I have experienced in Dagahaley camp, there is a climate crisis emergency everywhere in the world, including Dagahaley, where many refugee-families have become homeless due to heavy rainfalls. Although they are permitted to use the schools as a temporary shelter during these crises, such emergencies often cause depression amongst refugee women and girls who have already adapted to life situations in the camp. In most cases, the humanitarian agencies offer inadequate support, as there are already funding constraints restricting their ability to act. As such, refugee communities should find ways to protect their environment, in order to take away the fear of disasters (Sinclair 2001). Refugee educators and agency staff have the responsibility to carry out effective research about environmental degradation and how ecosystems develop resistance to the impacts of climate change. Any outcomes will have to consider ways in which these solutions can be applied in the Dadaab context, but this is nonetheless feasible. Also, the government of Kenya must consider the marginalized communities living in the North-Eastern part of Kenya who mostly generate their income through agriculture and keeping livestock. They cannot be neglected as valuable taxpayers who contribute significantly to the development of the country. In Dagahaley there is lack of research that focuses on environmental changes in both primary and secondary schools, yet there is undoubtedly an interest amongst children who are trying to access to knowledge and skills to improve their reasoning and discussion skills (Byrne et al. 2014).

2.3. Causes of Environmental Degradation

Deforestation is the clearing of trees from forests in order for the land to be used for other purposes like residential areas, farming, and road construction. Trees are essential for domestic work such as cooking food, and building houses but, such actions result in huge losses of biodiversity and this may be a major contribution to climate change. Deforestation directly causes a loss of wildlife because cutting down trees reduces the availability of food, shelter, and breeding habitats for animals. The United Nations Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services published a report about the loss of wildlife around the world with a warning that millions of species of animals and plants are at risk of extinction, imploring a need to reduce deforestation.

In agreement with Mba's (2018: 2) *2010 Global Forest Resource Assessment*, trees are important in cleaning the atmosphere, by absorbing carbon dioxide emitted through greenhouse gases. They absorb and store carbon dioxide while less availability of trees decreases the ability to capture and store, therefore, contributes to the greenhouse effect on climate change. As the matter of fact, deforestation is the key responsible for anthropogenic CO² emissions (Inyang et al 2014). Trees all over the world also have medical properties that provide an important element of health care services. Trees can provide cancer-fighting medicine (Mu'azu Audu Zanuwa and Adamu 2004). Therefore, cutting trees, without replacement, exposes populations to a great risk. Deforestation in Kenya, particularly in Dadaab, is a course of concern though as poor air quality impacts health and weakens human development. Most African people depend on forest resources for income generation and again 100 percent of refugee population uses firewood and charcoal as cooking food while 90 percent use fuelwood. Despite this fact, the continent of Africa's deforestation was estimated at around 3.4 million hectares; this shows that around half

of the population in Africa is influenced by deforestation (Boafo 2013). Deforestation also leads to a reduction in rainfall where many refugees struggle with shortage of water and the boreholes within the camps. Food security and quality of life in the globe are therefore at a high risk of reaching a point of destitution, and it is time to take action (Klein 2019: 5)

Soil erosion is also another environmental factor that affects health and negatively impacts the rapidly growing population in the globe. Every year, thousands of farming lands are swept away by floods due to soil erosions. Such frequent change affects the crop reproduction, forest, and all-natural ecosystem. It therefore contributes to food insecurity because half of the food supplies come from the land and others from the ocean so soil erosion destroys the quality of the nutrients in the soil and reduces the natural productivity of farming, ecosystem, and trees (Pimentel 2006). This is particularly serious as in the Dagahaley Camp, as women rely on the agricultural industry to support their families. It is a source of self-empowerment and financial independence in the wake of becoming the sole provider for the household, proving how an adequate environment is therefore essential to their survival as female refugees (Oswald Spring 2013).

2.4. Importance of Tree Planting

Trees are very essential to human and animal life due to many factors that depend on it. It produces the oxygen we breathe, while also holding the potential to store harmful greenhouse gases in their leaves, trunks, branches (Desai and Harvey 2017). By destroying the trees, our lives become at risk of being harmed, and therefore, tree planting is the pathway to eradicate human mismanagement, actions, and self-destruction. It will manage to eliminate carbon dioxide and prevent global warming bring back lost nutrients like nitrogen and potassium to the soil, revitalize farming production, and decrease the prominence of soil erosion (Jagger and Pender 2003). The late Wangari Maathai, an environmentalist and Nobel prize winner, was very vocal for advocating

environmental social justice for women. She believed women's participation in matters affecting the environment contributes to equal social justice. Mathai formed the Green Belt Movement (GBM) in 1977, which engaged women in Kenya to plant 30 million trees. She rallied for women's participation in protecting the environment and called global leaders to support women who stood for change in environmental social justice. Currently, as a graduate student, we have taken inspiration from Mathai and implemented a tree planting initiative in schools and households. Our current goal is empowering refugee women to plant trees and participate in this process. Tree planting is the best solution to block out environmental crises within the encampment. It is very participatory and makes us more involved in reducing greenhouse gas emissions, preventing flooding, and reducing soil erosion, therefore contributing to the mitigation of the climate crisis (Thompson et al. 2004).

Trees also contribute to peacebuilding in the community. Culturally, these plants are of great relevance as elders are known to solve their problems under a tree. In this sense, social progress starts from trees and therefore everyone should be responsible to plant trees and restore what we have lost. It is a space for resolving conflict and when women can participate in tree planting initiatives such as the Green Belt Movement, trees nurture an environment of freedom from violence. Women are therefore able to benefit from being participants in this tree-planting initiative as they are able to feel greater security through the trust, belonging, shared notion of a common goal, participation, listening, and passion that this work facilitates (Kalungwizi 2018: 4). What I believe is that every person on the planet should empower women to plant more trees to represent a net carbon sink, which is defined as the use of natural resources, particularly forestry, soils, and oceans, to absorb more carbon in the atmosphere (Desai and Harvey 2017). This helps

to absorb more carbon dioxide from the air than people emit, which is essential to mitigating climate change impacts.

Tree planting will also reduce the distance women have to walk in search of firewood. Planting trees in both primary and secondary schools, as well as in every household in Dagahaley, can absorb rains and exchange atmospheric gases and thus play a major role in maintaining an ecological balance and improving the livelihood of the refugee people in the semi-arid regions. This can stop frequent disasters occurring in the Dadaab region as well as the world (Ekhuemelo et al. 2016). Tree planting can play a significant part in community and social values in the Dagahaley camp. The community will need a playground for their kids to socialize and interact among themselves, and feel at peace in a good-looking environment. It will, therefore, increase the quality of life, by bringing natural elements and wildlife habitats into urban settings. Also helps refugee children to have shade full of cool air when they are doing outdoor activities in the schools or with friends at the household level. The female initiative of the tree-planting project will build a strong bond amongst women and promote the comprehension of environmental issues (Elmendorf 2008). Tree planting is very vital in the camp areas because we build our home through the construction of trees at the same time provides additional necessities such as food and oxygen. We, therefore, gain herbal medicine from trees which give us relief from pains. It contributes to the most significant things in the environment by providing soil, water climate improvement, and quality air (Maathai 2004).

3. Research Methods

My research approach is qualitative in nature. I want to better understand and offer a voice to women who have been, and continue to be, systematically excluded within vulnerable refugee communities. Throughout this study, I actively engaged with my research participants from all

walks of life about their experiences and hopes for the future. I invited my participants to engage in in-depth individual interviews and focus groups. The research methods remained open and flexible, such that I might probe individual participants' experiences in more detail. We talked about our experiences to understand better the recurring challenges that we encountered in the camps. Much consideration is given to my research participants' explanations to provide information that can improve the social experiences of refugees' lives and guide environmental education and policy.

This is a study with and about women. The women participants are all local refugees living in the Daghaley camp. There are four participants including myself, all above 18 years old. As a female refugee, I also feature in the research and played a central role in approaching research participants. I reached out directly to women living in the same camp, my local community, to take part in this research. I approached women who I thought would have powerful environmental stories to tell; those who I know wish to play a greater role in environmental education and policy changes.

As previously mentioned, in the Dadaab camp, most refugees arrived in two waves: those who came in 1991 to escape the war and the abrupt environmental changes caused by higher temperatures and deforestation, and others who came as climate refugees later around 2008. In both cases environmental changes were implicated in forced migration. All of us have real-life experiences of environmental degradation and of the climate crisis, which has fundamentally affected our lives in one way or another. Climate collapse is thus real in our context; it is not a distant apocalyptic event to be avoided, but a part of our daily lives. My goal was to offer opportunities for us to talk about these experiences and better understand their implications.

I wanted to create a conducive environment in which participants felt confident to share their thoughts and opinions. As I am a refugee myself, this shared experience helped me to build an effective rapport and foster trust with interviewees. My prior knowledge and community standing as female teacher residing in the same camp was an added advantage to provide insights for this study. This distinct ‘insider’ positioning offered opportunities to explore questions and details which might otherwise be overlooked by those with more distant ‘academic’ positioning.

I followed York University’s human participant ethics procedures. Pseudonyms are employed throughout the study for the purpose of providing protection to participants’ identities. All the participants were informed about the purpose of the study and volunteered to participate in the study once ethics was approved. The participants can speak English well, hence English translation was not an issue.

The study focused on women who are currently students or finished their education and have experienced climate change in the camp as well as being climate refugees. My collection of data employed two research methods: in-depth individual interviews and focus group discussions. Tilley (2016) is supportive of combining these two methods:

When individuals who participated in one-on-one interviews engage in focus groups, they have within the group experience and respond to the research focus and questions in different way than when individually responding. (p. 51)

I recorded and transcribed both the focus group discussion and the interviews. My hope was that these methods would enable me to obtain further information and a wide range of different perspectives on my research questions. My interviews followed a protocol of asking previously planned questions and offering opportunities for discussion. I followed up with questions when needed with attention to additional details, using prompts such as ‘can you talk more about this?’,

‘what does this mean?’ or ‘how do you feel about this?’. I also encouraged the interviewees to ask me questions in return. The goal was to strike up a conversational tone in which we exchanged thoughts, experiences, and opinions with each other.

I transcribed audio recordings word-by-word. On a couple of occasions, I felt as though I needed some more details and so I re-approached participants and asked them to elaborate on some of the associated details and specifics. These additional details were added to the transcriptions and incorporated into the final data set. In this study, I used constant comparative methods to identify a series of provisional categories and then adjusted and consolidated these categories using each of the transcripts. This was an iterative process, starting with one transcript, moving on to the next, and then returning to the previous transcript when and where necessary. I used a colour-coding method to mark up the transcriptions. Each colour came to represent a particular emerging and finalized category. I drew upon my own experiences during this interpretive process. I was also conscious of the different audiences for this research, including women who are living in the camps and also those living in privileged positions for whom climate change is distant and abstract.

3.1. Participants

I interviewed three female participants: Arliyo, Nacii, and Marry. In the following sections I introduce each of the research collaborators and myself.

3.4.1. Arliyo

Arliyo is 23 years old. She was born in the Dagahaley camp and started her education (both primary and secondary education) as a refugee. Currently, she is in the final year of the Kenya National Examination and is expected to finish her secondary education at the end of April 2021. She comes from a family of eight. Her parents were originally from Somalia and came to Dadaab as asylum seekers. During our interviews, Arliyo shared her experiences of environmental and climate

changes in the camps, which she associates with flooding, loss of property, outbreak of diseases, increases in temperature, rape cases, and loss of life. She also spoke about refugees cutting down trees for various activities like fencing, cooking foods, and constructing houses for shelter.

Arliyo's education has been heavily impacted by COVID-19. She was supposed to graduate in December 2020, but due to the closure of schools and changes to Kenya's Curriculum, she is continuing her studies still. During the interview, I asked her about her perceptions of how women are involved in environmental management and policies. She said that women were often excluded in related decisions due to men's superiority. She also noted that women and children are most impacted by these changes. During her interview, I was struck by Arliyo's reaction to a proposed tree planting initiative. She really wanted to implement this in the schools and the community block, and spoke of many well-informed advantages including better air quality, more oxygen to breathe, clean water runoff from buildings, and shelter from heat.

3.4.2. Marry

Marry is 35 years old and was born in South Sudan. She came to Dagahaley as an asylum seeker in 1996 after civil war broke out in Sudan. She is a member of the parent teachers' association in Dagahaley camp. She is a single mother with two kids. She spoke of her experiences of climate change and the associated challenges within the camps. She was among the thousands of refugees who were displaced by the floods. During that time, her family had remained in Kenya for several days without a home and no people to guide them. These experiences were traumatic. She spoke about looking for ever-decreasing supply of local firewood and trees for constructing houses. She also talked about insecurity problems associated with displacement, including rape. She is deeply concerned about insecurities in the camps brought about by a lack of jobs and drug abuse, noting how most of the youth who finished higher education are still jobless and are turning to drugs.

Marry believes that climate change has changed women's lives, making them fearful, uncomfortable, and vulnerable. She remarks how the recent extreme heat waves had resulted in high levels of sweat, yet the UNHCR did not give soap to the refugees. This denial of dignity makes women vulnerable to abuse, particularly children in schools. She spoke of some women looking for men to exchange their bodies with in order to get money to buy soap for their family. She even said that girls drop out from the school if there is no soap because they are embarrassed by lack of personal hygiene and their stained clothing. The lack of soap also has had negative implications for containing the spread of COVID-19 during the pandemic.

During her interview, Marry spoke of women who were raped during the flooding and were given no support from the community nor the NGOs. They were denied psychosocial support or counseling. She empathizes with those dealing with the repercussions of this trauma, sharing how hard it is to cope with such violence and raise children if you don't have personal security and someone to guide you.

Marry also spoke about how her community depends on animals for fresh milk, which were adversely impacted by lack of pastureland and prolonged drought. Dry conditions and inhaled dust is another problem, as it enters the lungs and chest resulting in fits of coughing and causing cases of asthma to increase in the camps.

3.4.3. Nacii

Nacii was born in Somalia. She is 23 years old. She has six siblings plus parents. She started her education in Dagahaley and attended both primary and secondary in the camp, finishing her schooling a few years ago in 2017. She is among the thousands of refugees who came to Dadaab as climate refugees. In our discussion, she spoke about the experience of climate change as a woman and the challenges she encountered during the crisis. Her family were farmers and

depended on crops for their livelihoods, and unfortunately frequent droughts had completely decimated their yields. This resulted in her family, alongside thousands of others, trying to survive on a shortage of food and unsafe drinking water. She also talks about women experiencing floods in the camps and the associated insecurity problems, which can harm the dignity they have within local society.

Nacii spoke about refugee families and the ways in which they depend on women to be the breadwinners, as well as how climate change exacerbates women's fear of violence. In addition, during the crisis, the cost of living increases, which makes it even more difficult to support the family. Moreover, people are unable to work because flood water is everywhere. In order to overcome these growing financial insecurities, mothers are known to pressure or force their daughters into early marriage as a way of earning money for their families. For Nacii, her family has lived in a destitute situation for a prolonged period as her mother had been hospitalized for malnutrition and could only feed her children with the food that she received from the hospital.

3.4.4. Dahabo

My name is Dahabo, and I am 30 years old. I was born in Somalia in 1989 in a place called Mararey (Lower Jubba). I came to Dadaab as an asylum seeker in the year 1992 and live in the Dagahaley camp. I started my education journey here at Dagahaley and completed both primary and secondary education in the camp. I am a graduate student from York University through the Borderless Higher Education for Refugees (BHER) program. I experienced an abrupt environmental change in 1997, the first time that I ever saw heavy flooding. I especially remember the sound. Like Marry, my family was also displaced by floods. I use trees for various activities like cooking food, constructing a permanent house, and building a fence for my family's protection.

Every year now, the situation of weather changes has intensified, and the high heat has caused health problems in my skin. I find it difficult to concentrate on my studies when my body aches through hot sun. The heavy rains also destroy the roads in Dadaab and make it difficult to travel. I recall many times struggling to get to and from the BHER learning center due to a lack of vehicles, or increased fare for taxi services making the trip unaffordable. There is also the increased risk to security that others have mentioned. However, with good luck, I have always reached home safely.

I am in a single-parent family. I help my mother fetch water and with other domestic chores at home. During my childhood, I never learned about environmental changes and their effects. Since then, the Dadaab camps have had regular flooding that destroys everything that refugee households have. There is an accompanying outbreak of malaria and cholera that threatens lives. This is compounded by many believing in the myth of drinking the “soup-of-fish” as a way of preventing malaria. Fish from the river have a bad smell compared to those from the sea, and when one eats it, it is believed that the smell will keep mosquitoes from landing on the body of the person. My mother never liked “soup-fish”. We did not have money to buy a mosquito net.

4. Thematic Analysis

I analyzed the transcribed individual interviews through constant comparative methods and came up with four themes related to climate/environmental changes and women empowerment. These themes are: (4.1) Environmental changes; (4.2) Gendered impacts; (4.3) Women’s rights and agencies; and (4.4) Educational responses. Each of these themes is broken down into a series of subthemes. I illustrate these by drawing on extracts from interview data.

4.1. Environmental Changes

Dadaab is a rapidly changing environment. Both the temperature and wind speeds are high, meaning that dust is constantly blowing in the hot air. When we arrived in the 1990s, we started to build temporary and then permanent shelters to protect from the sun, winds, and rains, as well as for privacy and security. Nacii comments on changing environmental conditions in the Dadaab settlement:

Refugees have had an environmental impact in Dadaab - we dug the soil and made bricks for the house. Soil usage and erosion have occurred. There has been a change in weather - seasons of rain and increased sun heat. Trees dry then animals are unable to survive and disappear.

Marry comments on the ways in which local forested areas became a necessary resource for survival:

People are jobless, you will go and cut down the trees in order to burn charcoal for sell, construct a houses and cooking food for your survival.

Arliyo comments on her earlier experiences:

Environmental change has happened many times, particularly due to overpopulation. The number of refugees living in the camp increased rapidly. Unfortunately, no additional support was provided from UNHCR and WFP during the crisis. This affected me and many other women in the camps.

It is important to recognize that sustainable resource usage and management is extremely difficult in a refugee camp, as it is a place deemed temporary while the population grows rapidly during an emergency. At its peak, there were around half a million residents in Dadaab, with thousands

voluntarily repatriating to Somalia and then coming back after experiencing difficulties in their country of origin. This trend was particularly prominent among women and children.

Global climate change has also brought profound changes to all our lives. Everybody knows that the local weather has changed and can feel its effects. Since 1997, major climate-related problems such as intensified flooding, pollution and diseases like cholera and malaria have become more prominent, and we spoke about these in our interviews.

4.1.1. Flooding

The first time I experienced flooding was during the El-Nino floods in 1997-1998 when I was eight years old. This resulted in massive destruction of property, and the displacement of thousands of people. I remember the constant rain throughout the days and nights. It was nonstop and people were facing profound food insecurity because of it. As the camp flooded, we were forced to evacuate at short notice to higher ground as the only way to save our lives. As such, we took what we could and moved with our children.

Arliyo also recalls these experiences:

There is a lot of terrifying moments that makes one's life very stressful in a refugee camp. You are constantly thinking of your kids or sibling lives, other times you will think of the household property whether it is safe, or it will be looted by bandits. Loss of life, rape, loss of property and outbreak of disease make our life more terrified as a result of flooding.

Nacii comments on displacement in the camp:

Two years ago my family seek assistance with shelter and protection in the schools but they were already occupied to those who live near.

Marry spoke about her experiences of flooding in which the local school formed a refuge for families.

Frequent flooding in which the rain came very big and demolished all the houses and we became again displaced. Again, the camp where we move out from the camp to the schools to seek a place where to stay because the houses are damaged.

The camps most affected by flooding have been Dagahaley and Ifo, where families have been forced to evacuate to higher ground level to be safe. In the intense floods of December 2019, lots of food was swept away with heavy rain and the pit latrines were dismantled.

The frequency of flooding is increasing and most years this has exacerbated the already existing fragility of shelters in the camps. The road between the Garissa and Dagahaley camps become blocked during floods, hindering and stopping aid operations while public vehicles are also submerged and unable to move. It is only after several days that the UNHCR can start to provide support and ensure that refugees receive something to eat. This has now become a regular and familiar pattern.

During flooding, women rebuilt tents for temporary shelter, and this is usually alone due to gender roles. Men and women have different responsibilities from one culture to another. Somali men are not expected to do household tasks, because at an early age boys and girls are taught gender socialization. In my experiences men rarely help women during a crisis like flooding.

Recent flooding has impacted my learning at BHER, where taxis became stuck in middle of Ifo and Dagahaley. Whenever it rains heavily in Dadaab, transport usually doubles in price. For instance, I paid 10 US dollars to reach the BHER learning center, it is usually 5 USD.



Flooding in Dagahaley Camp, December 2019: Photograph taken by author

I and other students from Dagahaley have to travel to the BHER learning center for classes, but this is disrupted by heavy rains as it destroys the poor road and vehicles get stuck. On several occasions, I reached home much later than expected, at around 7PM or 8PM, which worried my family and placed me at greater risk.

Flooding also negatively impacts sanitation. The open pit toilets overflow and sewage becomes mixed with drinking water. Marry talked about this in her interview:

If it's raining here, you will see a lot of latrine waste going down and will come up being on the top of water in the blocks and everywhere in the camps.

The roads and the excrement from latrines became mixed and this results in widespread sickness.

I describe this in more detail in the following paragraphs.

4.1.2. Pollution

Pollution is a major problem in the refugee camp, now home to approximately 250,000 refugees and asylum seekers. Nacii comments on air, soil, and water pollution. She says:

Pollution impacts the life of refugees. That is soil pollution, air pollution, and water pollution are the most common in Dadaab camps. People in the camps depend on animal products while the animals feed on the grass and leaves of the trees. When there is soil pollution, the quality of soil fertility decreases which in turn causes poor production of grass and leaves. This affects the land productivity which leads to animal starvation.

Dadaab runs on cheap, low-grade diesel, which results in high air pollution. There are no air quality monitoring devices in the camps and air pollution is not taken seriously as a risk to people's health. When cell phones became common in the camps, then each section had an engine generator built for charging phones, but these run on diesel, which has dramatically impacted air quality. The increase of air pollution in the camps is also related to transportation and burning fossil fuels for electricity. In the past, Somalis used camels and donkeys for transportation, but the current population has now adapted to newer technology. When human beings and other animals in the camp inhale the gases emitted by cars and other diesel engines, it can cause harmful health implications.

Nacii notes:

Transportation also affects the environment since cars are using a lot of energy and petroleum.

Nacii connects airborne pollution with cardiovascular illnesses and the prevalence of asthma. I have noticed this myself. Lots of children and adults are now suffering with asthma. Nacii comments:

Air pollution as well causes an increase of airborne diseases such as heart diseases that causes risk of heart attacks. Most of the people are infected with asthma which I believe is caused by air pollution.

Marry comments about inhaling dust:

We don't have good houses which most people sleep outside and all these dusts you will inhaled in then; it will affect your lungs chest then you will have health problems.

The waste that families dispose outside of their compound also spoils the water when rain comes, causing significant water pollution. Nacii expressed her concerns about solid pollution from garbage pollution:

The local people fenced all dustbin areas that refugees have had and sold for new arrivals while others make garage and throw garbage blocked near roads which are so close to the blocks. There is a voluntary sanitation but when comes burning, it produces more smoke, therefore, it challenges the breathing system of human being. Although we had poor quality of firewood which we used for cooking.

Burning charcoal is another major cause of air pollution; the air is polluted by the fumes and the smoke produced by the burning. The camps are lacking efficient waste disposal and collection systems, which leads to the accumulation of waste products, most noticeably plastics. There are many factors that cause pollution in the globe, and these range from burning of fossil fuels, water contamination, and rampant deforestation.

4.1.3. Diseases: Cholera and Malaria

In the camps flooding and failing sanitation are fundamental elements in the spread of water-borne diseases that harm human life. The most important are sanitation facilities, water supply, climate change, and food. As a refugee, we lack safe water, adequate excrement disposal facilities, satisfactory living conditions, proper hygiene, and secure food preparation facilities. These can all lead to severe diarrheal diseases, causing preventable suffering for people and putting them into emergency situations, including acute sickness, dehydration, and even death. The connection between the rainy season, flooding, and sickness was brought up in the interviews. Nacii, for example comments:

Mostly, the temperature is increasing, the drinking water is too hot for us to drink but forced then it effects our stomach and starting diarrhea a turn automatically into cholera”.

Nacii thus connects the increase in drinking water temperature with sickness. Arliyo, more conventionally, connects sickness with unsanitary drinking water.

We experienced many diseases like cholera, dysentery, and malaria. It caused by dirty water and lack of mosquito nets. Me and two family members got sick from contaminated drinking water and went for medication in Dagahaley hospital, where the doctors treated us there for a week.

There have been various outbreaks of jaundice (caused by hepatitis E virus) that have been linked to inadequate latrines. Climate change is implicated in these changes in profound and different ways. More frequent and intense heavy rains are happening in the camps resulting in latrine sewage overflowing and contaminating drinking water. In addition, when refugees are displaced from their home, it is hard for them to secure a clean water source in their new location. During floods, no wheelbarrow works because we usually push wheelbarrows with Jerricans water, but when we roll the Jerricans (20liters) on the ground, the insecure lid across such a long distance means that

unfortunately the water becomes contaminated, and this will increase the number that falls with cholera. Medecins Sans Frontières (MSF) responds to water-borne disease outbreaks at the Dagahaley main hospital, but action should be taken to prevent people from falling ill beforehand.

The major risk of flooding is a cholera outbreak. As the environment is beyond our control, it is critical that we try to minimize the risk to refugees by training people in emergency response management and having disaster response organization in the camps to address the provision of clean water.

Another disease that is exacerbated by climate change is malaria. Rainwater retention blocks and pipelines explode during floods, acting as breeding sites for mosquitoes and increasing the number of malaria cases. Malaria epidemics have been linked to flooding since El Nino as the risk of outbreaks increases due to changes in human behavior, When temperatures are too high or the air is too humid, tents become very hot and at night people prefer to sleep outside, which increases exposure to mosquitoes. One of the problems with relocation is the lack of mosquito nets. These are not reissued by the humanitarian agencies upon displacement, yet are essential to protecting the population

4.2. Gendered Impacts of Climate and Environmental Changes

As previously highlighted, despite the international human rights law and other local laws prohibiting discrimination against women, women undoubtedly face systemic discrimination that prevents them from enjoying their rights. These barriers often push females towards unhealthy coping mechanisms, which further exacerbate their oppression. This was recognized by the interviewees. Arliyo, for example, said:

Women participation in the field of UNHCR and NGOs plays inequality and assume that men are better due to superiority men counterpart. Again, when they are proving NFI kits

(non- food items) for cash or meeting from NGOs men were allowed to participate no feedback.

4.2.1. Displacement and Relocation

It is estimated that more than 50% of the refugee population are women and girls. The majority of the women who arrived in Dadaab were first displaced from their homes of origin in Somalia, but then faced displacement again due to flooding in the camps. During the rainy season, many girls and women are at a greater risk of domestic violence and experience higher levels of stress and trauma. Relocation to another area is a challenging experience for women as they are unable to move with their belongings. Women are forced to make difficult options between carrying their children or household belongings.

In 2019, I experienced the flooding as female again. I had been busy collecting water the whole night to ensure the safety of my mother and nieces, and then spent the day collecting soil from higher ground level to make the room very dry. You can see my house in the picture below.



December 2019 my house; photograph taken by the author

As seen above, our house was filled with rainwater. I slept when the rain started and woke up in middle of the night. I bent down, something wet touched my legs, and was shocked when I switched on the light to see what is going on. I saw that the room was full of rainwater and rushed to my mother and sister to see whether they were safe. I tried to protect them and started to dig a hole to get clay soil to close the water that comes from the neighbor's side. That night I was running up and down endlessly. I thank God, who saved us from that hardship.

4.2.2. Domestic Responsibilities

During climate and environmental shocks, women are exposed to additional hardships that affect their health and psychosocial wellbeing. This is a result of the extra domestic responsibilities that they receive when these natural disasters occur. Due to climate changes, the delay of rainy seasons affect the family's wellbeing. During the dry season, the water levels in the boreholes significantly reduce, causing the water supply to the refugees to be strictly rationed. Sometimes, a household

may only get 40 liters of water for drinking, cooking, washing and all other uses. At times, there is even uncertainty that families will get the 40 liters the following day. During rainy seasons, people use rainwater to wash, therefore using less drinking water, but this is not possible during droughts. For example, today in the morning I had 40 liters of water, but there was little left by the next day. There is a way we refugees can get water from host communities, but it is both difficult to retrieve and overly expensive, with a rate of fifty Kenyan shillings for 20 liters.

Arliyo returns us to questions of women's rights:

Somali men believe that women belong to kitchen even if she went to higher education, but nowadays most of NGOs practiced and implemented in their offices because women were few or no women staff some fields like schools, UNHCR and in some organizations ad prefer to employ with men only and this increase drop out of girls at age with that reason.

To overcome this challenge, women walk long distances to fetch water and retrieve firewood for the respect of her family while her husband stays at home doing nothing. In the rainy season, women collect clothes to wash for rainwater, a task that I used to do in group with other women.



Photograph was captured from the UNHCR Website

4.2.3. Livelihoods and Work

In the Dadaab camps, refugees are often from very poor families whose lives were even further destroyed by the conflict. For climate refugees, many of them had lost everything that their family owned.

Nacii says:

Women are the breadwinner and it will create fear, rape, loss of property and sometimes loss of life.

Arliyo comments:

Women were not allowed to run offices and those who work follow instruction given by men.

Nacii comments:

Environmental change has impacted refugee's different particularly women in terms of; social, economic, and environmental change. Refugee depend on as a livelihood with animals purchasing/selling and WFP monthly food distribution which is not enough. Prolonged drought decreases the value of animals with result of no pasture contributes domestic violence in camps.

Marry said:

If you don't have support, no one to support it will bring a lot. People are jobless, you will go and cut down the trees in order to burn charcoal for sell it brings the firewood to sell it for income generation.

Inadequate resources and inequality in job recruitment processes force women to be left behind, and restricted movement in Dadaab push them towards poorly paid jobs, most notably housemaid work. Other women relied on humanitarian support, but this made them overly dependent on this

assistance. Also, COVID-19 impacted refugee life because shutting down inter-camp traveling, closing schools, and clamping down on social activities like wedding, burials, sports, and Quranic Centers' activities enforced stay at home orders, but restricted vulnerable groups tremendously. Those who work as housemaids could not go to work and earn money and school-age children who depended on the school feeding program went hungry. During this time, many remained jobless due to budget crisis in the camps. However, the increased family demands caused by climate change aftermaths, deep-rooted gender stereotypes, and isolation may prevent many women from completing their basic training and education at the Dadaab refugee camps and simply get married. I do recall that in 2013, UNHCR, Save The Children, Danish Refugee Council (DRC), Norwegian Refugee Council (NRC), Windle International Kenya (WIK), and many other groups based at Dadaab camps had little to no women employed in their offices, and this is evidence of the gender inequality that is still rampant within NGO offices. This blatant inequality discourages us as women, especially as we are already struggling from severe hardships while our peers, particularly pregnant mothers, are dying of malnutrition. Also, due to the prevailing impact of climate change, men take advantage of household vulnerabilities and seek to marry young girls who are underage in exchange for money. The family, in a desperate situation of financial insecurity, often does not understand the rights of girl to not to be married off and that it is against the law, and see this as a solution to their plight. Single women are also taken advantage during this time as they may find themselves married to a man that she would have not married if she would have had resources to survive independently. Climate change emergencies happen frequently in the Dadaab context and therefore, women should be empowered to have strong social, economic and cultural agency in the displacement context. Their skills and talents should be taken into consideration as they have the capacity to lead to live in prosperity in the future.

4.2.4. Sexual and reproductive health and rights

Women are disproportionately impacted by the climate and environmental changes that expose them to insecurity and health concerns. Refugee women are significantly affected as they are more vulnerable to abuse and exploitation. In particular, the women in Dadaab refugee camps are further exposed to undocumented sexual abuses due to the weak legal system and stigma that pervades this system. During the climate and environmental shocks such as the drought, floods, or food insecurity, refugee women are put under very difficult situations which force them to undertake risky activities. See the picture below.



Photograph was captured UNHCR Website

Marry comments:

First all is fear, loose of item, rape is going to occur because if your house being damaged with the water, you are going to sleep out and especially as a woman or a girl without no person to guide and am a single mother these fears will come out automatically because I will have no one to protect me.

Nacii commented:

Women undergone rape cases when they are displaced by flooding or look firewood however none of the humanitarian agencies visited the complainant.

Female refugees walk long distances to fetch firewood for cooking and for selling to generate small income to support their families. During this process, women too often encounter men who overpower and forcefully rape them. Also, many refugee women are sexually abused even in their homes due to the poor living conditions resulting from effects of climate change. Women are housed in makeshift shelters which cannot protect from intruders. The majority of the survivors do not report the case to the police because when the perpetrator is eventually identified and arrested, the police rarely take the case to the court.

Arliyo commented:

... any rape that occurs in the camps the police referred to solve tradition method called maslaha.

They delay in taking the case to the court is meant to allow elders to settle the matter. Elders of the survivor and the perpetrator negotiate the reparations for the assault, and the survivor's elders are typically paid some money, none of which goes to the survivor. Also, the affected women (survivors) are not involved in the meeting and their rights to participate in all matters affecting her life is denied. The experience I had was that once the two elders agree on the payment, the elders jointly ask the police to release the perpetrator. The police release the perpetrator with the condition of payment so that the police can a document that the elders do not want the case to proceed to the court. Sometimes, it happens that the survivor rejects the elder's proposal of solving the case through Maslaha, but the police do not listen to the survivor and instead close the case.

This undermines the trust the women have in the police and reduces the chance of women coming forward to report cases of sexual and physical abuses.

Nacii comments:

Rape cases can lead women to live with STIs then HIV where many women die after they lose hope from NGOs and community.

These negatively impact women's rights to protection and their rights to have a say in matters affecting their life are neglected. Since the number of illiterate women are high among the refugee women, men might also exploit this lack of skill to further strengthen their dominance in the community. Climate change also affects women's ability to make choices and exercise their reproductive rights. Women cannot express their feelings towards family planning with their husbands. Due to this lack of rights, women are often forced to complete difficult chores and feed their families while they are pregnant or breastfeeding. Every year, the majority of the women in refugee camps give birth. This exhausts women as they do not have access to nutrients or sufficient food to cope with the changes to their bodies.

4.2.5. Murder, Violence and Discrimination

Climate and environmental changes expose women to heightened protection risks such as life-threatening conditions like murder and psychosocial distress. The conditions created by the climate and environmental changes such as displacement, poverty, food insecurity and so on result in many women losing their life. When women are walking long distances in search for humanitarian assistance or to seek refuge in the refugee camps, they often encounter armed militia who tries to loot and rape them. Some of the women who resist to be raped are killed. Also, many refugee women face domestic violence within their homes. When men fail to provide family support,

women ask their husband either to provide or divorce, which can result in violent arguments between the husband and his wife as he beats his wife to silence her.

Marry comments:

Women are effected a lot because women will go furthest to look the firewood and at end of the day you will get raped inside the bush looking this firewood.

Rape cases are higher in Dadaab camps where women have undergone gender-based violence while traveling long distances alone or even at block level in front of her parents or husband. The perpetrator will threaten to kill the family if the assault is reported, and compounded by the distrust in authorities, this leads to discrimination and social stigma within the community. I remember long time ago while I was primary school, a woman from our section New Block was raped and people used to call her bad names until she registered for voluntary repatriation back to Somalia because she felt ostracized and attacked by the community's reaction. .

4.3. The Importance of Women's Voice, Agency, and Representation

Nacii comments:

To get an agency /projects that present environmental conservation in Dagahaley because long time there was an agency that works the environments and give communities trees to plant, mobilize and give little firewood for cooking family households but women can participate through employing agencies, training the effect and prevention of environmental degradation.

Nacii said:

Women can have a greater say if they're included in the decision making process by acknowledging their participation since women can fight against climate change by making

sustainable consumption. Since women can conserve the resources, their voice should be added to the policy implementation.

Women often work closest to the natural resources that are highly impacted by climate change and those who have education are never supported to build a strong relationship between the environment and the organizations that work in Dadaab. Women face many challenges that lead to living in destitution here in Dadaab camps, either from severe levels of gender-based violence to cultural norms that prevent us from owning property, working and making the decisions about our own life, as well as participating in solutions that mitigate climate and environmental change. Despite some improvement in girls and women's lives, which is made possible through the support of UNHCR and other Education partners like Windle International Kenya, the challenges remain the same. These mostly violate women and girls basic rights to security and safety, as seen through the increase in poverty and lack of education.

In the Dadaab setup, educated women tend to marry later and expect to have a number of children in the future, like myself. Women leading organizations will enhance refugee women's ability to make decisions, raise our ideas systematically, and act on them. Most women have the skills and talents to manage the environment, but we lack empowerment, freedom from violence, a mechanism that controls sexual and reproductive health, right of property ownership, housing, and a platform to amplify our voices and enable us to have collective action.

Marry comments:

I believe women voice have to listen and employed to work with organization at least 2, 3 or 4 to speak about women because they should understand what fellow women goes through.

Women can have greater say on environmental changes because they have the potential ability to make awareness within the refugee community and, they have ample time to invest community development. The kind of empowerment they need in the community development is to grow their knowledge of indoor and outdoor pollutants in the camp and be empowered to provide the support they see as necessary. They need financial assistance that can expedite the implementation of their goals and executive their objectives on environmental changes and community development in the camp. Moreover, female rights can be improved through educating community leaders, particularly religious leaders, NGOs, and human rights organizations, as well as the women themselves because they must know their rights and have prior knowledge on where to seek help in case their rights are violated. Finally, we can make women a agent of change in environmental responses in the camp through encouragement and support while giving them the opportunity to as they have good connections and networks within the refuge community and a robust knowledge about environmental management.

4.4. Educational Responses

Education is the one of the six interventions that make humans understand the cause roots and obstacles it has to human life without rushing to a solution. Therefore, education has a role to address the environmental change in the community at Dagahaley camp. It brings a fundamental change in the society through networking and offers different opportunities to the community such as raising public awareness, training teachers, developing community leaders, informing students on climate change education, providing emergency teaching materials, and organizing inter-agency and community discussions that contribute durable solutions in the local context.

In the Dadaab camps, different organization facilitate education programs in primary and secondary schools, but they should cooperate in order to adequately address climate change. As

the fight continues, empowered girls should be included as those who have knowledge and skills are valued.

Nacii comments:

Train with learners how to conserve the environment well and ways to protect themselves during flood.

She then adds:

Trained both teachers and PTAs and equip fully with resources to prevent/ measure the crisis.

UNHCR and other education partners should raise public awareness in the three camps, Dagahaley, Ifo, and Hagadera, on the importance of education and invite community members for training to address the impacts of environmental change.

Schools often become homes for thousands displaced people during climate emergencies, so teachers and policymakers should develop a good strategic plan to deliver quality education in a environment that is free from gender disparity and exclusion so that learning is not disrupted when such crises occur.

Education officers, school administration, parent-teachers' associations (PTA) and students should form a monthly platform for discussing participatory environmental change activities and collect ideas that identify the impact of environmental change in Dagahaley and ways in which they could implement solutions for mitigation and adaptation in the near future. These will help schools to offer the best plan for the Dagahaley community to be prepared in case of an emergency like flooding.

Moreover, education sectors should have regular communication with the community that lives the nearby to improve the number of opportunities granted to women and girls to practice

climate mitigation, adaptation, and risk management based on the science they have learned in school.

From my personal experience, it is known that schools are widely unprepared for environmental change. There is a demand for a system of inclusivity and action in the education sectors, and policymakers must increase the preparedness in the seven schools, including establishing refugee offices to coordinate the school's climate response planning, adequately train teachers, increase awareness amongst them, and then evaluate these plans to ensure that they are well-prepared.

5. Findings and Discussions

This study was guided by a series of questions including how do girls and women experience environmental and climate changes in the Dagahaley camp? How might environmental restoration enhance women's rights? How might environmental restoration enhance women's rights? What is the remedial courses of actions that education can take to further women's rights and protect the environment from being destroyed? How can women participate in reducing environmental degradation?

The interviews I had with the three female participants (one finalizing high school and three already finished) explore the female experience with environmental and climate change. We all witnessed massive destruction from natural disasters that destroyed temporary shelters we had, leaving us hopeless as well as homeless. Scarcity of water and retention water in the residential places contributed to diseases like malaria and cholera that made the hospitals full while some people died before they even reached the hospital.

Women play a critical role in climate change mitigation and adaptation. Refugees depend on natural resources for food, shelter, and firewood, but we are struggling to secure these

necessities daily. Women and girl's voice are key to resolving this issue. Providing work opportunities for females must be included in all climate decision making processes in the camps to avoid perpetuating gender inequalities. Restoring the environment will help girls get back in learning institutions and save them from having to be outside in vulnerable spaces gathering firewood, and in turn, rape case will eventually decline. We therefore agree that gender roles enforcing domestic responsibility reproduce discrimination both in the private and public spheres, which decreases our potential of doing many things at a time.

To add to that, women should be able to access the environment and its resources in a productive, sustainable way. Ecological restoration, particularly tree planting initiatives, are needed to support growing efforts in the camps to enhance women's rights rather than ignoring the talents and skills we have.

In our discussions related to education we explored forms of environmental clubs or science clubs that accommodate outdoor activities in school environments so that learners can connect with nature and understand ecologies. This also contributes to ways to protect the environment and learn about environmental conservation through practical experience. Education also offers opportunities for learners to explore social and environmental unfairness. By developing a good framework for resolving issues related to their social and ecological surroundings, their lifestyles will also be improved.

As I reflect on our discussions, I have an urgency to explore ways in which women can be empowered in environmental actions and decision-making. Before we had tree planting initiative in camp level and women was the central point. As a starting point, women should have the ability to launch their own initiative of a tree planting project. This will strengthen the community and their ecological knowledge. Moreover, the community will realize that the environment can

empower women, and with support from the humanitarian organizations, they can close the gender gap in the community. Afterwards, women will have the knowledge and experience to think critically about reducing environmental degradation through awareness, practice adaptation, and participate in efforts to mitigate environmental change.

5.1. Limitations

The qualitative paradigm was based on four women who have had experience being climate refugees. In the near future, my hope is that this study gives an opportunity for those who are involved in climate change policy and mitigation-adaptation processes to meaningfully connect with the experience of these four women. I also recognize that this is a small sample, and is only a particular window into the gendered environmental policies and politics of the camp. Nonetheless, the power of these stories lies in their perspective, relatability, and possibility to inspire.

Conclusion

Climate change is real, but we are lacking joint cooperation's between the community and humanitarian agencies surrounding the meaningful inclusion of women. Workshops, public awareness, and climate change lessons in the school curriculum are key tools for achieving sustainable development in the Dadaab contexts. Education programs should add climate change materials in the learning centers to enhance students' capability of prevention and safeguard their loved ones during crises and forward lessons learned. Education is one tool that can break the gaps and gives meaningful change to women lives and ecologies.

Much appreciation goes to three women (including myself) who gave consent to being interviewed. We had a great discussion that was informative and empowering. My desire is that this study will give chances for women to be included in meaningful and impactful climate

decision-making in the camps and their voice will be heard in the near future in order to be change agents for climate justice both locally and globally.

Recommendations

This is a study of education, environment, and women rights. In conclusion, I recommend the following strategies to bring about necessary changes:

1. There needs to adaptation measures to the camps through reforestation projects in the schools as well as in block-level community actions. Women and girls need to play a central role in leading these initiatives.
2. More female teachers are needed in schools and there needs to be active monitoring of whether the school meets the rights of women and girls in the classroom.
3. The school curriculum needs to be infused with environmental education, in which learners can understand better climate change and climate justice. Students need to learn about policies of environmental management and the central roles that women play in environmental management and responses.
4. In the camps, we need to develop strategies where women can hold empowered positions of policymaking and be change-makers in climate decision making. Women's and girls' voices should be put into consideration when climate matters arise.
5. Partnerships with the humanitarian organization and refugee communities in the camps need to focus on women's rights in environmental change.
6. Quality climate change education needs to be available for teachers, students, community members, and parents teachers' association. These should focus on positive environmental change, protection, and justice.

This research study took a sample from both the community and secondary schools under humanitarian organizations based at Dagahaley camp. There needs to be much more research on climate refugees, capturing their voices and experiences. Past researchers have not included refugees' local experiences enough in their studies. In the future, more studies are needed to understand what is going on in the Dadaab and the ways education sectors can contribute to a reduction of environmental degradation and women's rights in policy making process.

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Local Engagement Refugee Research Network

<https://carleton.ca/lerrn/>

lerrn@carleton.ca

 @lerring



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