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Gendered Health Implications of Drought in Sri Lanka

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Abstract: Health aspects can be observed in the gender condition during the dry season. Health conditions are perceived differently between men and women in the dry zone (WHO, 2014). The primary objective of this research is to examine the gender-based health impacts of drought. As a result,pathological conditions seem to have distinct effects on men and women. Health deficiencies influence gender status in both the short and long terms. This study was conducted through 20 semi-structured interviews and 6 focus group discussions in the Vavuniya DS Division of the Northern Province, Sri Lanka and the relevant literatures were used as the secondary data collection method. The research findings indicate that women and children are particularly vulnerable to malnutrition due to their limited access to food and water during droughts, leading to reduced physical and cognitive development, anemia, and increased susceptibility to infections such as diarrhea and respiratory infections. During drought periods, access to water sources can become scarce, significantly affecting women's health, especially pregnant womenand new mothers. Water scarcity can lead to decreased hygiene levels, thereby increasing the risk of infections like urinary tract infections and reproductive tract infections. The Ministry ofHealth, Sri Lanka (2019) discovered that 30% of women are underweight. Several reproductive health issues arise during a drought. Water scarcity can result in the spread of diseases like trachoma and scabies, commonly referred to as "water-washed diseases". The lack of awareness about drought among women hampers the development and implementation of targeted interventions and policies. Diseases, both short-term and long-term, attributed to drought, including mosquito-related diseases like dengue among females. Additionally, CKD is prevalent among male farmers in the study area. Mental health issues such as stress and climate anxiety also contribute to people's vulnerability. A comprehensive and culturally sensitive approach is necessary to promote gender equality. This entails fostering gender equality and women's empowerment while ensuring that women's perspectives are adequatelyrepresented in decision-making processes.

Key words: Gender, Health, Drought, Diseases, Vulnerability

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Introduction

Health aspects can be observed in gender condition during dry season. Health conditions are seen differently between men and women in the dry zone (WHO, 2014). This section examines how the health impacts of drought can be seen in the gender dimension. As such, pathological conditions appear to have different effects between men and women. Health deficiencies influence gender status on both short-term and long-term basis. They influence gender positionby focusing on drought conditions

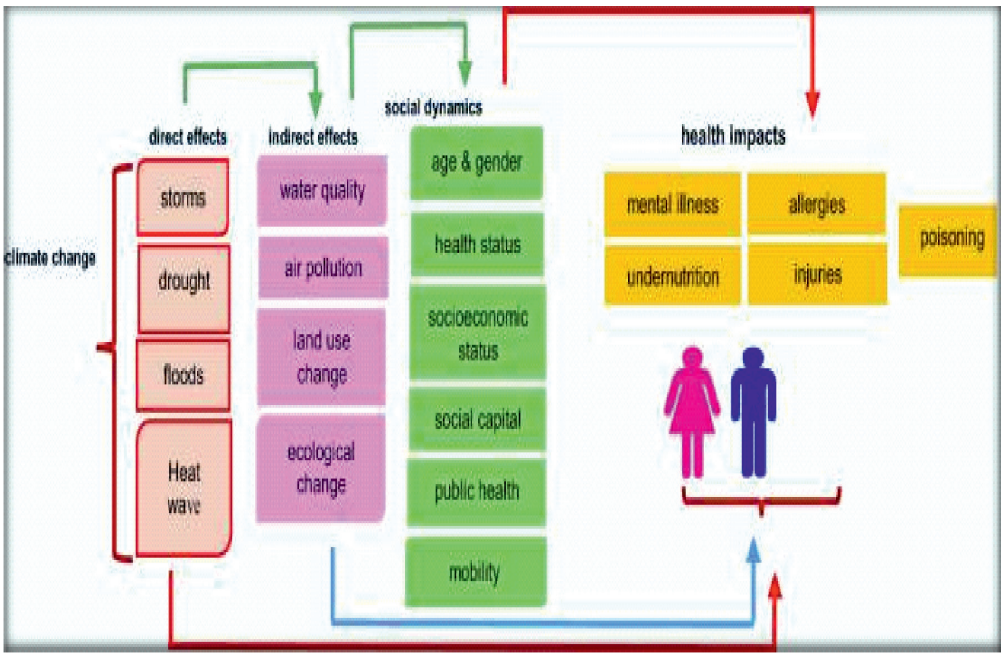
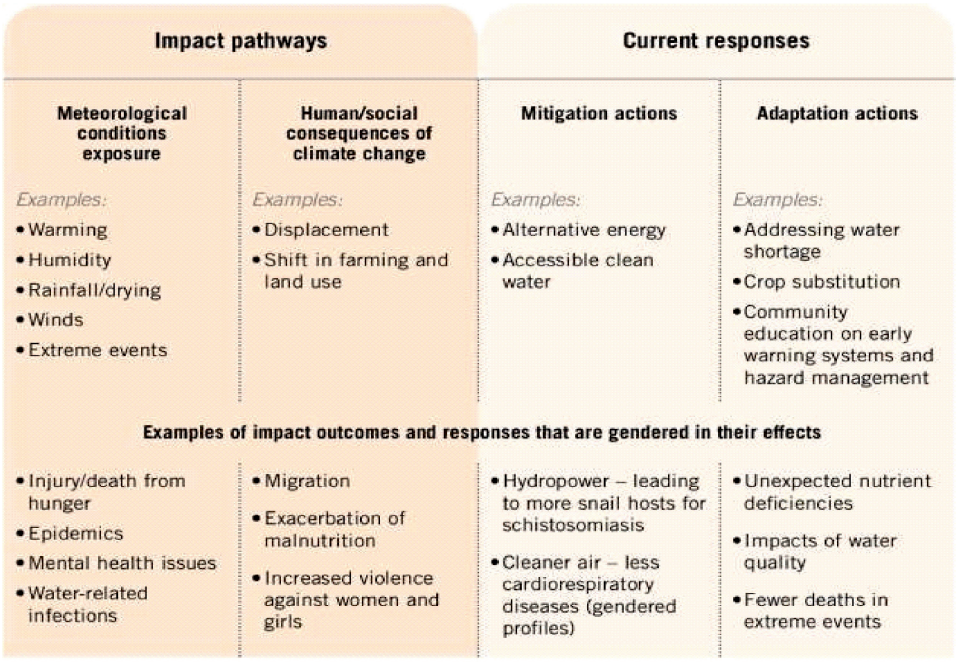


Figure 1: Climate change and Health

Source: WHO, 2014

Few studies are available on the consequences of droughts for human health, but all of them point to differing impacts on men and women (WHO, 2014). Drought already threat to health and well-being of the local populations. If drought arises, people in the particular places readyto cure the impacts of health than prevention from drought. They know it happened every yearbut careless the negative impacts even this is important for their livelihood. Drought can affecton health of humans, it has many harsh effects on plants, animals and environment. This can contribute to increased risk to human health (Kimberly, 2015).

The following table also clearly explained about the drought and gender-based health disparities.



Impact pathways		Current responses	
Meteorological conditions exposure	**Human/social consequences of climate change**	**Mitigation actions**	**Adaptation actions**
Examples: • Warming • Humidity • Rainfall/drying • Winds • Extreme events	*Examples:* • Displacement • Shift in farming and land use	*Examples:* • Alternative energy • Accessible clean water	*Examples:* • Addressing water shortage • Crop substitution • Community education on early warning systems and hazard management
Examples of impact outcomes and responses that are gendered in their effects			
• Injury/death from hunger • Epidemics • Mental health issues • Water-related infections	• Migration • Exacerbation of malnutrition • Increased violence against women and girls	• Hydropower – leading to more snail hosts for schistosomiasis • Cleaner air – less cardiorespiratory diseases (gendered profiles)	• Unexpected nutrient deficiencies • Impacts of water quality • Fewer deaths in extreme events

Source: Adapted from McMichael & Bertollini (2009).

Figure 2: Drought and gendered Health

Methodology

The study focused on the Vavuniya Divisional Secretariat Division, Northern Province, Sri Lanka. It employed both primary and secondary data collection methods. Primary data collection involved conducting 20 semi-structured interviews and 6 focus group discussions, while purposive sampling was used to gather data within the study area. The semi-structured interviews included 10 male and 10 female interviewees, while the focus group discussions comprised 2 male groups, 2 female groups, and 2 mixed-gender groups. Thematic analysis was utilized as the method for data analysis in this research.

Results and Discussion – (Malnutrition, Drought and Gender)

One of the main health aspects of gender due to drought in the research area is malnutrition. Women and children are particularly vulnerable to malnutrition due

to their limited access to food and water during droughts. Malnutrition can lead to a range of health problems, including reduced physical and cognitive development, anemia, and increased susceptibility to infections such as diarrhea and respiratory infections. In Vavuniya district, there is evidence to suggest that malnutrition affects more girls than boys. According to a survey conducted in 2019 by the Ministry of Health in Sri Lanka, the prevalence of malnutrition was higher among girls under the age of five in Vavuniya district compared to boys of the same age. Specifically, the prevalence of underweight girls was 18.9%, while the prevalence of underweight boys was 13.5% (Ministry of Health, 2021).

During drought periods, food and water sources become scarce, which can lead to reduced food intake and dehydration. This can affect both genders, but it is often women who bear the brunt of the impact. Women prioritize the needs of their family over their own needs, which can lead to inadequate food intake and malnutrition. Additionally, girls are more vulnerable to malnutrition during drought periods due to gender-based discrimination and the cultural norms and belief that boys need more food and resources than girls in order to grow and thrive, or that girls are more susceptible to illness and therefore require less food.

> *My family and I cook only with rice that is available at home. I have two sons and one daughter. Therefore, when there is less food, we give it to my husband and sons and leave the rest for me and my daughter. We make up for the lack of food by drinking water without food. Outgoing men may eat well, work hard, and be strong. We manage at home (40 years old woman, FGD #02, non-mixed group)*

There are several factors that could contribute to this disparity. One possible explanation is that girls in Vavuniya district are more likely to experience gender discrimination and face barriers to accessing food, healthcare, and other resources. Girls are expected to prioritize household chores over their own health and nutrition, and they may be overlooked in favor of boys when resources are limited.

> *I have never asked my son to do any household work. Instead, I always ask my daughter to do all the household chores because I don't want others to blame her after she gets married and moves to another house. If my daughter gets up late, I insist that she finish her household work before having breakfast. This is the way my mother socialized me, and I expect the same from my daughter. She is 19 years old now and has just sat the Advanced Level Examination, so I feel that this is the right time for her to learn how to manage the household. However, my son does not do any work, and I am the one who manages the household and ensures that my son gets his meals on time (53 years old, woman FGD # 04, mixed group).*

In Vavuniya, the combination of drought and gender disparities may be contributing to higher rates of malnutrition among girls compared to boys. Therefore, it is important to address both the effects of drought and gender disparities in order to combat malnutrition in Vavuniya DS Division.

Drought Impact on Women's Maternal Health and Child Development

Drought can also have a significant impact on women's maternal health in Vavuniya District. During periods of drought, access to water sources can become scarce, and this can have serious consequences for women's health, particularly for pregnant women and new mothers. Changes in behaviour in pregnant women can also increase exposure to night-biting mosquitoes: pregnant women leave the protection of their bed net at night to urinate twice as frequently as non-pregnant women. Although the important role of immunity and nutrition is recognized, it is suggested that physiological and behavioural changes that occur during pregnancy could partly explain this increased risk of infection (Lindsay et al, 2000). The lack of water can lead to a decrease in hygiene, which can increase the risk of infections such as urinary tract infections and reproductive tract infections.

> *When my wife was pregnant, she didn't have any high medical issues than normal pregnancy routines. But, after her deliver, it was C-section, she got urinary issue that is not normal and she has more than three months because of water hygiene issue. After that, I checked the water purity. It was polluted and we didn't aware about it (45 years old man, FGD # 06, non-mixed group).*

In addition, drought can lead to increased rates of infectious diseases, which can also have negative impacts on reproductive health. Women may be more vulnerable to infectious diseases during drought periods due to reduced access to sanitation and hygiene facilities (Lindsay et al, 2000). This can increase the risk of sexually transmitted infections, which can have serious consequences for reproductive health and fertility. The relationship between season and the occurrence of pre-eclampsia brings forth intriguing inquiries about the underlying mechanisms of this condition. One possible explanation is the influence of humidity and temperature on the production of vasoactive substances. Additionally, the dry and rainy seasons, by affecting agricultural yields, may have implications for the nutritional status of women, potentially contributing to the pathophysiology of pre-eclampsia (Wacker et al., 1998).

Midwife of the Sampalthoddam GN Division explained the following about the pregnant women and new mothers:

> *"Inadequate access to water can lead to dehydration, which can cause complications during pregnancy and childbirth. Pregnant women require adequate hydration to support fetal growth and development, and dehydration can increase the risk of preterm birth, low birth weight, and fetal distress. Dehydration can also lead to complications during childbirth, including postpartum hemorrhage and infection. There are handful issues I faced in the summer period. Additionally, the stress of drought can lead to increased rates of mental health problems such as anxiety and depression, which can further impact women's reproductive health" (Midwife, Sampalthoddam GN Division).*

Furthermore, the impacts of drought on women's reproductive health can be compounded by gender disparities. Women may have limited access to healthcare facilities and resources, which can make it difficult for them to access essential reproductive health services. Additionally, cultural norms and practices may limit women's decision-making power and control over their own reproductive health (Wacker et al., 1998). Ministry of Health (2019) in Sri Lanka found that there are 30% of women are underweight. Some of the reproductive health issues that may arise during a drought to the women include,malnutrition, dehydration, increased risk and infection and stress.

Drought can lead to food and water scarcity, resulting in malnourishment. Malnutrition can have significant effects on reproductive health, including delays in puberty, menstrual irregularities, and fertility issues. Dehydration can lead to reduced blood flow to reproductive organs, affecting hormone production, menstrual cycles, and fertility. Drought can also lead topoor hygiene and limited access to clean water, increasing the risk of infection. Infections such as sexually transmitted infections can significantly impact reproductive health. Additionally, drought can contribute to an increase in stress, which can affect reproductive health by causing hormonal imbalances, menstrual irregularities, and reduced libido.

Water Resources and Sanitation Facilities in the Drought

During periods of drought, the depletion of water sources poses challenges for households in upholding essential hygiene practices and accessing safe sanitation facilities. Moreover, when water becomes scarce, prioritizing its use for drinking and cooking often takes precedence over maintaining proper hygiene practices. Consequently, the scarcity of water can lead to the proliferation of diseases like trachoma and scabies, which are commonly known as "water- washed diseases" (WaterAid, 2009). In rural areas of Sri Lanka, access to sanitation facilities can be limited, particularly in drought-affected regions. According to a UN report (2019),

around 4.5 million people in Sri Lanka do not have access to basic sanitation facilities, and more than 600,000 people practice open defecation.

During droughts, the situation can become even more challenging. Many households may be forced to rely on unsafe water sources or limit their water use, which can make it difficult to maintain proper hygiene and sanitation practices. Additionally, dry conditions can increase therisk of waterborne diseases, which can have a significant impact on public health. The region is known for its agricultural production and relies heavily on water resources for irrigation and domestic use. The primary sources of water in the district are groundwater and surface water, including reservoirs and small tanks. Groundwater is the most significant source of water in Vavuniya, particularly for domestic use.The Jaffna limestone aquifer, which underlies much of the region, is a significant source of groundwater. However, the region's groundwater resources are vulnerable to contamination from agricultural chemicals and other pollutants, which can have a significant impact on waterquality.

Surface water is also an important source of water in Vavuniya. The region has several small tanks and reservoirs and rivers. These water bodies are used for irrigation and domestic purposes, particularly during the dry season when groundwater resources are limited. However, surface water resources in Vavuniya are also vulnerable to climate change and environmental degradation. Deforestation, soil erosion, and other land-use changes can lead to decreased water availability and quality. Additionally, climate change is expected to increase the frequency and intensity of droughts in the region, which could have a significant impact onwater resources and agricultural production.

The following information about the small tanks in the study area which are mostly use for agricultural usages such as irrigation and other livestock drinking water. These statistics highlight the important role that small tanks and reservoirs play in the water management infrastructure of the Vavuniya district. While they face a number of challenges, efforts are underway to improve small tank management and ensure long-term water security for small-scale farmers and rural communities in the region.

An elderly woman shared her experiences with small tank in the study area:

Earlier, those tanks were used for bathing, household domestic works, drinking water, and irrigation, but nowadays, people don't use them for their daily needs. When I was under 25 years old, I used to go to the Thampanai tank to bathe. I went there alone and bathed without fear of sexual harassment, even though I didn't know the meaning of this word at that time. However, nowadays, with the population growth in our area, I am scared to go there, even though I am 63 years old. No one uses it

for domestic or bathing purposes, and there is inadequate water for irrigation in the paddy fields. This tank has 100 acres of paddy land to provide water. I can say that I used that water to wash all my clothes there when I was a teenager, and I was never impacted by not having water to wash them. Nowadays, during summer days (usually from January to June), girls face challenges finding water for their sanitation. I can't imagine how they manage during menstruation (60 years old woman, FGD#02, non-mixed group).

Other women in her mid-thirteens explained about the menstruation in the summer days.

Napkins are available for purchase, and we can dispose of them, even though we need water to clean ourselves. However, we don't have enough money to spend on napkins alone, as we also have to consider our child's needs. I use the traditional clothing system, which also requires more water to clean and maintain proper hygiene. There is a Nochchimoddai tank near our village, but it is polluted, and no one uses it for daily needs. We can't even go there during menstruation, as older people say that the water is pure, and we shouldn't impure it. Additionally, during drought periods, the tank doesn't have enough water. Sometimes, when my husband goes to work, he helps me carry water from the ground water tap, but this doesn't happen regularly (37 years, woman, FGD#05, non-mixed group).

To address these challenges, there are a number of initiatives underway to improve sanitation facilities in drought-affected rural areas of Sri Lanka. For example, the government of Sri Lanka has implemented the National Water Supply and Drainage Board, which aims to improve access to safe water and sanitation facilities in rural areas. And, people use it though not for all the villagers (DMC, 2019).

Almost all families have traditional toilet facilities, and many projects have been implemented by INGOs and NGOs to provide access to this facility. As a result, women are not affected bythe lack of infrastructure, but water scarcity makes them vulnerable and forces them to spend more time searching for water. They are constantly thinking about how to get water for household use. In some families, women carry water from other places and give it to male members, as the men refuse to carry water, citing other work and the belief that women, as housewives, have more time to do it. However, this practice is unsafe and has both physical and mental impacts on women in the study area.

While droughts can present significant challenges to sanitation facilities in rural area, there are initiatives underway to improve access to safe water and sanitation facilities, particularly in drought-affected regions.

Diseases (short term and long term)

Due to the drought and lack of water, there are diseases emerge among humans, especially, children, women and elders. But the caring and bearing is men in the society. Women always give the priority to her husband and others. In Nature, women have a strength to save others without kind her selves. This attitude leads diseases to the women in dry season. Almost 90%of the burden of diarrheal disease is attributable to lack of access to safe water and sanitation (Pruss-Ustun et al., 2008). The health implications of drought and health related impacts are numerous and far reaching. Few drought related effects are short term and directly identify and long-term chronical illnesses can be created indirect health consequences that are not easy to anticipate and monitor.

- Cause stress, depression, anxiety
- Change the amount and patterns of certain diseases
- Intensify wildfires, and dust storms
- Intensify and heat waves

Women may be forced to prioritize water for household use over their own personal hygiene, which can increase their risk of contracting waterborne diseases such as cholera, typhoid fever, and diarrhea. There may be some physiological reasons for an increased risk among elderly women (Burse, 1979; Havenith et al., 1998). Social factors can also be important in determining the risk of negative impacts of heatwaves. In societies where women are responsible for caregiving, they may be more likely to contract and transmit diseases to familymembers, particularly if they do not have access to clean water and sanitation facilities. Womenwho are caring for young children may be at increased risk of contracting and transmitting diseases such as diarrhea and pneumonia, which can have serious health consequences for infants and young children.

Women and men may experience different barriers to accessing healthcare services during times of drought. For example, women may face greater societal restrictions on mobility and may have less autonomy over decisions related to their health. Additionally, health facilities may be located far from women's homes, making it difficult for them to access care. There is evidence that vulnerability varies by sex: more women than men died during the 2003 European heatwave, and the majority of European studies have shown that women are more at risk, in both relative and absolute terms, of dying in such events (Kovats & Hajat, 2008).

CKD, Climate Change and Gender

Recently, an epidemic of CKD of unknown etiology has been recognized, which has been linked with recurrent dehydration and heat stress. This disease may be a type of heat stress nephropathy (HSN) and could be an example of a disease that is accelerated by global warming(Glaser et al, 2016). Also prove that in the study area, the known one of the reasons for CKD is drought and heatwaves. Here, we present new proposals based on increased ionicity of drinking water due to fertilizer runoff into the river system, redox processes in the soil and features of 'tank'-cascades and aquifers. The consequent chronic exposure to high ionicity in drinking water is proposed to debilitate the kidney via a Hofmeister-type (example: protein-denaturing) mechanism (Darma-Wardana et al, 2014). There are mainly identify CKD patients in Vavuniya District in 2016 where 159 patients in selected two villages in the study area. These places are severely affected by drought every year (RDHS Vavuniya, 2016).

A woman informed her perspective about CKD as follow:

> *I ask my husband to drink water as much he can, but he doesn't follow that, he is a plantain farmer, every day early morning 3-6 o'clock he works in the land then, brought plantain kulai to the market to sell. It is his routine lifestyle. I prepare boil water and save it in the pot for natural cooling, even though, he avoids drinking water and asking plain tea. It is bad habit to him and now, he is CKD patient in Vavuniya District Hospital. Dialysis and monthly clinic is provided and he is in bed, no more plantain cultivation in our homeland now and I couldn't see my husband active participation anymore in past five months….(crying…) (70 years woman, semi-structured interview#09).*

The results of the survey by Niroja and Riswan (2020) indicated that men were more likely than women to have CKD risk factors, such as hypertension and diabetes. However, there wasno significant difference between men and women in terms of reported CKD symptoms. To further explore these findings, the qualitative data collected through these interviews revealedthat cultural and social factors may be contributing to the gender disparities in CKD risk factors. For example, men were more likely to engage in behaviors that increase their risk of CKD, such as consuming alcohol and smoking. These behaviors were often socially acceptable or even encouraged among men, but not among women. The research findings suggest that there may be cultural and social factors contributing to the gender disparities in CKD in the Vavuniya District. Men may be more likely to engage in behaviors that increase their risk of CKD due to social norms and expectations. This highlightsthe importance of addressing cultural and social factors when designing public health

interventions to reduce the burden of CKD in this region (Niroja and Riswan, 2020).

Mental Health and Gender in Climate Change

Stress and depression because of migration of husbands. They sometimes temporarily migrate many times permanent migrators for earning money because of severe droughts. They will come back home without any savings even they can't afford dress their children (World Bank, 2022). These times, women had double burden and breadwinner of the family. They should take care of their children, gardening and livestock also manage their family with economic issues. Men also confirmed that drought create women resilience in the society (65 years old man, FGD #03, non-mixed group - male). Women stay home and manage and coping with everything in the climate crisis situations. It started health issues to women.

> *I can manage my family with the support of my husband. I have three cows and some cattle that I need to take care of, but the main issue is water. There is a pond that we share with other villages, but they don't allow our livestock to drink from it. Since we recently settled here, we don't have our own well and instead use our neighbor's well for bathing and a pipeline for drinking purposes. Unfortunately, the ground water is contaminated and we can't drink it. Sometimes, the well water even appears brownish in color. Therefore, getting enough water for my cows is problematic, and some people have even suggested that I sell them and live quietly. However, this is the only source of income that we have to survive during drought situations. Handling everything alone will likely lead to physical and psychological problems (42 years old woman, semi- structured interview #08).*

They had affected in 2020 with COVID 19 and drought. That year was heating unusually and couldn't do anything outside. Farming related workers suffer more because of no job availabilities. People didn't do farming works widely and *cooley* who are working in others' land stay home without any future hope. That time, women overburdened and working 24/7 for cooking and other agricultural activities. This time drought and COVID 19 create stress for men than women. This time, women support men to survive and overcome with this issue. Women started gardening in their land with their small savings. It was going successful and continuing for their own fulfillments. The rural villagers didn't affect more by COVID 19 than urban dwellers. Therefore, it was great them to start small business based on their agricultural productivities.

> *Before pandemic, she was expecting for me to buy things in the shop. Now, it totally changed that she gives me money to buy needy things for our home. She also trained that*

using small amount of water for more beneficial home gardening. I own for five acres paddy land, because of drought and COVID 19, I couldn't do my work properly.Shame on me (48 years old man, FGD#03, non-mixed group).

In the face of drought, women and men experience distinct challenges that can have significantimplications for their mental health. The drought has resulted in a reduction in crop yields anda lack of access to clean water, leading to food insecurity, water scarcity, and malnutrition (Hallegatte, 2017; Hallegatte, Rentschler, and Rozenberg, 2020). Women are forced to walk long distances to fetch water, causing physical and mental exhaustion, and it also increases the risk of violence against women. Women are often more vulnerable to the impacts of drought due to their gender roles, social norms, and economic status. They are responsible for food preparation, water collection, and often must also take care of their families.

Figure 2: Climate Change and Mental Health

Source: Adaptation IPCC AR6 WGII Ch 7 (2022) & health2016.globalchange.govCh8 (2016)

According to the above graph applied to the Sri Lankan culture, gender-based violence and the stress of drought have caused a significant increase in mental health issues among women in Vavuniya DS Division. Women who are already struggling with poverty, social exclusion, and low self-esteem, are at high risk of developing depression, anxiety, and post- traumatic stress disorder (Smith et al, 2018). They often face stigmatization from their communities, and are at risk of being ostracized and excluded from social gatherings.

Sometimes, I feel like committing suicide because my husband is addicted to alcohol and becomes violent when he returns from the paddy field. He hits me in front of our children and demands sex whenever he wants. I am ashamed and physically abused by him. This has only gotten worse during the drought period and COVID. I am struggling with depression and anxiety and cannot continue to live with him. However, I am still alive because of my children and their future (44 years old woman, FGD #01, mixed group).

Besides, the drought has also created an economic burden on families, which can lead to high levels of stress, anxiety, and depression (Ridley et al., 2020). Men, who are often the primary breadwinners of the family, are struggling to make ends meet, leading to feelings of inadequacy, guilt, and helplessness. They may resort to alcohol and substance abuse as a coping mechanism, which can further exacerbate existing mental health issues.

In conclusion, it is evident by Smith et al (2018) that the drought situation has created significant challenges for both men and women, but particularly for women who are at high risk of experiencing gender-based violence and mental health issues. To address the situation, there is a need for gender-sensitive policies and programs that consider the unique needs and vulnerabilities of women, and also for mental health services to be made more accessible to those in need. By doing so, we can help alleviate the suffering of those affected by drought and ensure their mental health is protected.

Stress, Gender and Drought

Research suggests that both men and women face different types of stress related to drought. Women may experience stress related to water scarcity for household tasks, such as cooking and cleaning (Watts, Amann, Arnell et al, 2019). Women may also have reduced access to healthcare services due to a shortage of water, which can impact their health and wellbeing. On the other hand, men may experience stress related to reduced crop yield and income loss because of the drought. This could lead to financial difficulties and livelihood insecurity, which can cause significant stress and anxiety. Men may also have to migrate to find work, which canplace additional stress on their families and communities.

Therefore, it is important to recognize that the impacts of drought and stress can vary based on individual circumstances and cultural contexts (Howson, 2019). It is crucial to work towards sustainable solutions that address the specific needs of affected communities and promote resilience and adaptation to the challenges posed

by drought. Research suggests that drought can have significant impacts on both men and women, but the ways in which stress manifests may differ based on gender. For example, women may experience stress related to water scarcity for household tasks, such as cooking and cleaning, while men may experience stress related to reduced crop yield and income loss. However, women around the world will spend a collective 200 million hours collecting water. In addition to time spent collecting water, millions may also spend significant amounts of time finding a place to go. This makes up an additional 266 million hours of time each day lost because they have no toilet at home (United Nations, 2015). Nonetheless, it is important to address these issues and work towards sustainable solutions that benefit all individuals and communities affected by drought.

> *I usually use a certain amount of water for cooking, but I also want to ensure that my vegetables, food, and home are super clean. Every day, I clean the floor with water because my children use the floor to play and engage in other activities. Usually, I am able to maintain the house in a clean manner, but my husband is not like that. He often comes home without washing his hands and is not as diligent in keeping things clean. It makes me angry when I can't find enough water to cook, clean, and bathe, especially for the children. When the drought started, I used to go to my relatives' house nearby my village where the well never dries up. Sometimes, my neighbors also allow us to use their well because they also face similar issues during the drought season. I feel stressed and alone during those periods because my husband doesn't support me with these household chores and other necessary things (41-year-old woman, FGD#02, non-mixed group).*

Men, on the other hand, may experience stress related to reduced crop yield and income loss during drought. This can be especially challenging for farmers and agricultural workers who rely on crops and livestock for their income (FAO, 2015). Men may have to migrate to find work, which can place additional stress on their families and communities. They may also face challenges related to mental health, as financial difficulties and livelihood insecurity can cause significant anxiety and depression.

> *I have 200 cows and a poultry farm where 300 chickens are housed in one shed. I manage everything on one acre of land attached to my house. During the Maha season, my cows do not have proper grazing areas. Additionally, there is a problem in obtaining water for the cattle during drought due to the lack of rain. The available water is often used for small-scale paddy cultivation, leaving the cattle with limited water sources. The people who have leased the pond also do not allow the cows to drink water, making the situation worse. Additionally, there is a lack of grass for their food. As a result, more cows have to be sold during the drought period, putting a lot of stress on me since my*

livelihood depends on these animals. They are my source of income and losing themwould be detrimental (68 years old man, farmer, semi-structured interview #12).

However, it is important to recognize that the impacts of drought and stress can vary based on individual circumstances and cultural contexts (Watts et al., 2015). For example, in some communities, women have more opportunities to engage in income-generating activities, which can help offset the impacts of drought. Similarly, men have supportive social networksthat help them cope with the stress and uncertainty caused by drought. While the COVID-19 pandemic has impacted the lives of many, in some households, life has changed for the better over the past two years. However, this is not the case for everyone.

Climate Anxiety

According to SPARC (2022), climate change has indirect impacts on human health, one of which is the emergence of "climate anxiety". This term refers to the experience of anxiety associated with perceptions of climate change. Therefore, individuals who are aware of climate change can experience climate change anxiety, irrespective of whether they have directly encountered its immediate effects (Clayton, 2020). A recent study conducted by Ramadan andAtaallah (2021) found that between twenty to forty percent of Europeans expressed significant concern about climate change. Similarly, in a study conducted in Tuvalu, a nation highly vulnerable to climate change, Charlson et al (2021) reported that 95% of the participants expressed distress specifically related to climate change.

Climate anxiety arises from the sense of uncertainty, fear, and helplessness associated with the escalating environmental crisis of drought. Individuals worry about the long-term consequences of climate change, such as the loss of livelihoods, displacement, food and water scarcity, and the destruction of ecosystems and biodiversity. The vulnerability of agricultural-dependent regions, and marginalized populations further intensifies climate anxiety. Both, men and women affect by climate anxiety according to the drought situation in the study area of Vavuniya DS Division.

Dehydration and Gender during Drought

Dehydration is a condition that can occur when the body loses more water than it takes in. Thiscan be a serious problem for women, particularly in certain circumstances. In this essay, we will discuss the issues of dehydration among women. One major issue

of dehydration is that women are often not aware of how much water they need to drink. Women may not drink enough water if they are not aware of their body's needs.This can lead to dehydration, which can cause a range of problems, including headaches, fatigue, and dizziness.

> *My wife is a teacher and travels one hour every morning and evening to get to her school. Unfortunately, her school does not have good toilet facilities, and there is onlyone toilet available for staff. When she needs to use the toilet, she must retrieve the keyfrom the principal's office, which can be inconvenient. Consequently, she avoids drinking water during school hours to avoid needing to use the restroom. This routine can be tiring, and she falls ill more easily as a result. Meanwhile, my mother-in-law takes care of all the household work and our children (33 years old man, farmer and government officer, semi-structured interview #14).*

Another issue of dehydration among women is that they may not have easy access to clean drinking water. In many areas, women are responsible for collecting water for their families. This can be a time-consuming task, and the water that they collect may not be safe to drink. As a result, women may not drink enough water, which can lead to dehydration (Poudel-Tandukaret al, 2019). But in some places, men are doing and collecting water from the water center where selling purify water.

> *After discovering that our tap water was calcified, we started purchasing drinking water from the store. In our area, it is challenging to obtain piped water from the water supply authority. Although purchasing water from the store is easy, it does cost money. We need to fill a 20-liter water bottle twice a week for drinking purposes only. Since it is difficult for my wife to carry and pick up the water pot, I go to the store myself to fetch water. It costs us 80.00 for 20 liters of drinking water (27 years old man, semi-structured interview #16).*

Pregnancy is another circumstance in which women may be at risk of dehydration. During pregnancy, women's bodies require more water to support the growing fetus. However, some women may not realize this and may not drink enough water, which can lead to dehydration (Popkin et al, 2010). In the Tamil culture of the research area of the Vavuniya DS Division, breast breeding mothers don't allow to drink water because of health and body conscious. It isalso affected to high the women dehydration.

> *I am thirsty and want to drink water, but my mother won't allow me to. She says that if I drink too much, my stomach will become big and negatively impact my beauty. Thisis a traditional belief in my area. It is wet season, it doesn't matter much. However, during periods of drought, I find it very difficult to manage both myself and breastfeeding my child (30 years old woman having 1-year child, FGD #01).*

Women who are breastfeeding also need to drink more water than usual. Breastfeeding requires a lot of energy, and women need to drink enough water to keep their bodies hydrated.

Conclusion

The impacts of drought on health are also gendered, with women facing greater health risks due to their traditional roles as caregivers and food providers. This includes an increased burden of water collection, which can lead to physical injuries and illnesses, and greater susceptibility to malnutrition and disease. In the specific case of Vavuniya, which is an area prone to drought, gender-based differences in disease risk and access to healthcare are likely to be similar to those observed in other regions affected by drought. However, the specific diseases that are most common in the region will depend on factors such as environmental conditions, population density, and local public health infrastructure. CKD, dengue, diaherria and waterborne diseases are higher in the study area. CKD is more in men than women in the farming communities, they use pesticide then not handling it with water properly and use lack for drinking water impacted to them. Although, many women face increased risks of malnutrition, waterborne illnesses, and reproductive health problems during droughts, as they are often responsible for food and water procurement and may be forced to travel long distances to access these resources. Women may also be at greater risk of gender-based violence and exploitation during times of drought.

For women, drought leads to a range of stress-related issues. One of the most significant is water scarcity, which can impact household tasks such as cooking, cleaning, and hygiene. Women may have to spend longer periods of time fetching water, which can take away from other responsibilities such as caring for children or engaging in income-generating activities. Women may also have reduced access to healthcare services due to a lack of water, which can impact their physical and mental health. In contrast men have stress with maintaining household economy and economic hardships in the house and agriculture.

Recommendations

Women's participation in livelihood activities can help to enhance their economic empowerment and reduce their vulnerability to drought. Increasing women's participation in livelihood activities such as agriculture, livestock rearing, and

fisheries can help to ensure their economic well-being. For example, providing training and support to women in sustainable agriculture practices can help them to diversify their income sources and build resilience to drought. Education and training can help to enhance women's capacity to cope with drought and build resilience. Enhancing women's access to education and training in areas such as drought management, climate change adaptation, and sustainable agriculture can help to improve their livelihoods and reduce their vulnerability. For example, providing women with training in water management techniques can help them to better manage their water resources during droughts.

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