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Livelihood Vulnerability of Women in the Context of Climate Change Impacts: A Comparative Insight from Taltali Upazila of Barguna District

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Abstract

All of humanity is affected by the negative effects of climate change, though not equally. Women are more susceptible to the effects of climate change than men are because they depend more heavily on erratic daily means of subsistence, have lower coping skills, are more likely to be poor, and face social norms and obligations that prevent them from participating in climate change processes. The purpose of this research is to ascertain how the negative effects of climate change affect women's livelihoods. The results adhered to the methodology recommendations of the descriptive study design, both in terms of qualitative and quantitative aspects. Using probability sampling, or more specifically, simple random selection techniques, a sample of 364 respondents was selected to participate in the study. Key informant interviews (KII) and focus groups discussions (FGD) were used to gather qualitative data, while household surveys were used to collect quantitative data. The outcome demonstrates how women's livelihoods in coastal areas are being disrupted by climate change. It implies that gender norms that make women vulnerable to climate change must be eliminated, and that domestic abuse must be put an end to as soon as feasible. Furthermore, there is a severe lack of progress in the development of adaptable support systems to shield coastal women from the unpredictable effects of climate change.

Keywords: climate change, women, health, vulnerability, livelihood, violence

1. Introduction

The greatest threat facing humanity in the twenty-first century is thought to be climate change. Bangladesh is among the world's most climate-induced regions. Bangladesh is an impoverished nation with a high population density. Opportunities and services are mostly determined by geographical location, class, and gender (Adzawla & Baumuller, 2021). Since women make up almost half of the population, they represent a significant and improvable resource for the nation's social and economic advancement. About 80% of women reside in rural coastal areas in Bangladesh (BBS, 2013). The customary society is ruled by patriarchal philosophy, and the expected values and norms for female members of the community include subordination, dependency, and obedience (Onwutuebe, 2019). Climate change has a significant negative impact on resources and women in coastal areas. Numerous cyclones, floods, and droughts are having a detrimental impact on women's means of subsistence (Adzawla & kane, 2019). Vulnerability to health, income, education, safety, security, access to water and sanitation, and transportation issues as a result of climate change are just a few of the numerous challenges that women confront in their daily lives. During and after climate change, the majority of women living in coastal areas face extreme vulnerability in their daily lives. One major obstacle to their development is their lack of literacy. Most of them are ignorant about maintaining proper hygiene and health. The inability of women to receive adequate support from their male partners has a negative impact on their standard of living (Ajani, Onwubuya & Mgbenka, 2013). Women become helpless because society can't provide them better facilities during climate change. Because of the discrimination against them that begins at birth, women are not afforded equal opportunities by society and their family. Climate change and its dangerous effects have negative effect on society (Partey et al., 2020). Women's roles are established differently from men for this reason they face different obstacles than men in their livelihood (Bhadwal et al., 2019). The women perform the great majority of agricultural labor globally, taking time off from other responsibilities including cooking, cleaning, sewing, and water gathering. When it comes to allocating natural resources like water and many others, women are segregated from all of these. Excessive rainfall or severe drought puts these resources in jeopardy (Ajibade, Mcbean, & Bezner-kerr, 2013). Women in coastal areas are increasingly vulnerable to hunger and poverty. Sustainable adaptation and coping strategies are hampered by inequality. Women in the majority of developing nations, such as Bangladesh, encounter political, social, and economic obstacles

that impede their progress (Poudel et al., 2020). They lack access to sufficient information and pertinent strategies for adapting to climate change (Bougie & Sekaran, 2019). The women are experiencing insecurity in traditional food sources due to climate change. Due to the adverse effects of climate change, an estimated 90 million women in Africa will be considered hungry by 2050 (UNDP 2014). Due to its geographic location, Bangladesh is frequently ranked among the most vulnerable to climatic change (Akinbami et al., 2019). The remaining aspiration that thwarts the enrichment in Bangladesh will be persecuted by multiple negative impacts of climate change, such as salinity problems due to sea level rise, extreme temperatures, increased monsoon sedimentation, and completion in cyclone exorbitance (Asaduzzaman, 2015). Due to climate change, the majority of people living in coastal areas are extremely vulnerable; women are the most vulnerable category. The detrimental effects of climate change have an adverse effect on women's livelihoods. Climate change makes them more impoverished and disadvantaged (Chanamuto & Hall, 2015). When Cyclone Sidr hit, the husbands of the majority of the women lost their fishing boats. A large number of them worked as day laborers. Many cyclones caused women to lose their household animals, and as sea levels rise, most animals become ill from drinking contaminated water and contracting various diseases (Asrawor, 2018). Another issue is river bank erosion, which results in the displacement of numerous families. Most of the families in coastal areas experience excessive flooding as a result of sea level rise, forcing the occupants to relocate elsewhere (Rahman &Rahman, 2015). Women are thought to be the most defenseless and susceptible part in coastal areas (Assan et al., 2020). By reviewing numerous literatures, the researchers found that a little work has done regarding women vulnerabilities (Physical, economical etc.) during climate change. The study tries to find out the impact of climate change on women health; the socio-economic conditions of women in the selected study area; and the intensity of violence faced by women during climate change. Since women are the majority part of Bangladeshi coastal population, so studying the livelihood of women is a crying need in the present time.

2. Materials and methods

Situated in the southern region of Bangladesh, Taltali is an upazila within the Barguna district of the Barishal division. It is home to 88,004 people and covers 258.94 km2.This upazila is located close to the Bay of Bangle. There are seven unions in Taltali Upazila. One of them has been deliberately selected to be Sonakata, a union having a close relationship to climate change. It is

believed that this area would be most severely affected by climate change. The entire Sonakata union membership consists of 7000 women. Simple random sampling, or probability sampling, has been used to choose samples from the target population. Selected from a subset of a statistical population with an equal chance of selection, the sample is meant to be an objective representation of the target population. Using simple random sample procedures, 364 respondents were selected from the total population. This union was selected in recognition of a broader range of climate fluctuation experiences. With 8-10 women in each group, the study also performed three focus group discussions (FGDs). These ladies give a comprehensive overview of how climate change impacts their way of life. Lastly, Key informant interviews with five important informants who were well-versed in both the neighborhood and the problem of climate change were conducted. Purposive sampling techniques were applied to choose the participants for the Focused Group Discussion (FGD) and Key Informant Interview (KII). The following table 01 has been utilized to choose the appropriate sample size from target population.

Number	Sample	Number	Sample
440	205	4000	351
460	210	4500	354
480	214	5000	357
500	217	6000	361
550	226	7000	364
600	234	8000	367
650	242	9000	368
700	248	10000	370
750	254	15000	375
800	260	20000	377
850	265	30000	379
900	269	40000	380
950	274	50000	381
1000	278	75000	382
1100	285	100000	384

(Sekaran & Bougie, 2016 p.264)

This research data was collected using a combination of qualitative and quantitative techniques. Improved empirical validity and dependability were the result of this combined technique. This study used a hybrid research design that included exploratory and descriptive research methods. Quantitative methods used observation, experiment, and survey for gathering information, whereas salient, narrative, and contextually anchored information has been gathered through qualitative methods (KII and FGD). Key informant interviews, focus groups, and a household survey aimed at women were employed to gather the empirical primary data. The researchers collected secondary data from a number of national and international journals on women's livelihoods and climate change. This study has used Microsoft Word and SPSS to display and analyze data from a sample survey. It has also produced output tables containing statistics such as frequency and percentage. There is also a presentation that includes charts or graphs. The information acquired using the KII checklist was examined using thematic analysis.

3. Results (Quantitative)

3.1 Demographic information at a glance (Table 2)

		Frequency	Percent
Age	18-28	213	58.5
	28-38	89	24.5
	38-48	38	10.4
	48-58	22	6.0
	58-68	2	0.5
Total		364	100
Occupation	Housewife	280	76.9
	Day laborer	36	9.9
	Fishing	31	8.5
	Sewing	13	3.6
	No work (old person)	4	1.1
		364	100
	Illiterate	94	25.8
	Sign only	127	34.9

	Primary	124	34.1
Educational qualification	Secondary	19	5.2
	Higher secondary	0	0
Total		364	100
	2-4 members	38	10.4
	4-6 members	193	53.0
Family members	6-8 members	107	29.4
	8-10 members	26	7.1
Total		364	100

(Source: Field survey 2022)

The age, occupation, educational background, and family size of the respondents are displayed in Table 2. Notably, women in the age range of 18 to 28 make up the majority of this study's participants (59%) in terms of age. The women who were 28 to 38 years old made up 25% of the total respondents, and the remaining respondents made up 10% and 6%. Then, 76.9% of the respondents were housewives, followed by 9.9% day workers, 8.5% fishermen, 3.6% sewers, and 1.1% unemployed individuals who are mainly elderly. Only a small percentage of women (5.2%) completed secondary level, 34.9% know only signs, 34.1% have finished primary education, and 25.8% are illiterate. At last, the majority part (53%) have 4-6 family members, 29.4% belong to 6-8 members consisted families, 10.4% people have 2-4 members in family, and 7.1% respondents have 8-10 members in their families.

3.2 climate change and women's vulnerability (Table 3)

Types of climate change that people suffer most

	Frequency		Percent	
	Before	After	Before	After
Flood	110	39	30.2%	10.7%
Cyclone	178	110	48.9%	30.2%
River bank erosion	7	18	1.9%	4.9%

Salinity	110	39	30.2%	10.7%
Drought	18	12	4.9%	3.3%
Excessive rain	12	18	3.3%	4.9%
Total	364	364	100	100
	The frequency of cyclone			
	Before	After	Before	After
Once in a year	181	3	49.7%	0.8%
Twice in a year	126	84	34.6%	23.1%
Thrice in a year	57	148	15.7%	40.7%
Once in two years	84	23	34.6%	6.3%
Thrice in two years	57	106	15.7%	29.1%
Total	364	364	100	100
	Types of diseases women suffer most			
	Before	After	Before	After
Water-borne	166	304	45.6%	83.5%
Food-borne	17	19	4.7%	5.2%
Vector-borne	17	18	47.8%	4.9%
Air-borne	7	23	1.9%	6.3%
Total	364	364	100	100
	Water-borne diseases women suffer most			
	Before	After	Before	After
Diarrhea	225	304	61.8%	83.5%
Cholera	104	166	28.6%	45.6%
Allergies	34	19	9.3%	4.7%
Psychological impairments	1	7	0.3%	1.9%

Total	364	364	100	100
		Hygiene problem		
	Before	After	Before	After
Unavailability of menstrual pad	167	99	45.9%	27.2%
Lack of clean cloth	84	93	23.1%	25.5%
Lack of pure water	76	119	20.9%	32.7%
Lack of washing soap	37	84	10.2%	23.1%
Total	364	364	100	100

(Field survey 2022)

The pre- and post-cyclone conditions in the research area exhibit a substantial difference, as outlined in Table 3. In the past, cyclones occurred once a year, which was extremely concerning, according to 49.7% of respondents; however, this frequency has drastically changed to only 0.8% of the time currently. Following that, 34.6% reported having dealt with cyclone toxicity twice a year in the past; however, during these days, the percentage decreased from 34.6% to 23.1%. There is a rise in the proportion of respondents (15.7%–40.7%) who are at risk of being affected by a cyclone three times in a year. Numerous participants reported seeing a cyclone once every three years, a percentage that dropped sharply from 34.6% to 6.3%. More often than formerly, cyclones now occur once every three years (15.7%-29.1%). The research area's women suffered cyclones at a rate of 48.9%, out of all the difficulties caused by climate change. However, at this moment, the cyclone's intensity is decreasing from (48.9%-30.2%). Extreme salinity and flooding issues have historically affected women in the research area. Yet there have been numerous changes made to this circumstance. From 30.2% to 10.7%, the salinity and flood intensity dropped. The monsoon's heavy rains and the dry season's drought have made the study region extremely permeable. Comparing the current state of affairs to the previous one, the drought is still between 4.9% and 3.3%. On the other hand, the percentage of excessive rainy days has grown somewhat from 3.3% to 4.9% due to unchecked climate change. These scenarios are particularly prevalent in Bangladesh's coastal regions. Additionally, there is an increase in the

issue of river bank erosion (1.9%–4.9%) compared to previous. There is a noticeable shift in the correlated scenario of diseases that women are more tolerant of due to climate change. Water-borne infections are the leading cause of illness among women, accounting for 45.6% to 83.5% of all disorders. From 4.7% to 5.2%, there is a modest increase in food-borne illnesses. The infection rate of vector-borne illnesses, on the other hand, drops from (47.8%–4.9%). Then, from 1.9% to 6.3%, there was a little increase in the infection rate of airborne infections. Water-borne infections primarily affect women, as has been previously established. Women are more affected by Diarrhea among the many water-borne illnesses. However, the likelihood of contracting Diarrhea is increasing from (61.8%–83.5%) when compared to previous years. From 28.6% to 45.6%, a significant region is affected by the cholera epidemic. Psychiatric issues somewhat rose (0.3%–1.9%) and allergy difficulties decreased (9.3%–4.7%) after that. Due to climate change, women have numerous hygienic issues. Menstrual pads were extremely scarce, among other issues, but these days the percentage has dropped from 45.9% to 27.2%. From (23.1% to 25.5%), the issue of clean cloth marginally increases. A further significant issue is the scarcity of clean water. Between 20.9% and 32.7%, there is an even worse shortage of clean water than previously. Next, from 10.2% to 23.1%, there was a shortage of washing soap.

3.3 comparative pictures of ownership of asset, income, and the intensity of violence (Table 4)

Ownership of asset				
	Frequency		Percentage	
	Before	After	Before	After
Livestock	67	63	18.4%	17.3%
Poultry	17	201	4.7%	55.2%
Fishing boat & net	130	81	35.7%	22.3%
Trees	77	9	21.2%	2.5%
Agricultural land	73	10	20.1%	2.7%
Total	364	364	100	100
Income distribution scenario due to climate change				
	Before	After	Before	After
Agriculture	114	92	31.3%	25.3%
Fishing	73	153	20.1%	42%

Labor wage	41	92	11.3%	25.3%
Service	4	3	1.4%	1.3%
Business	6	7	1.3%	1.4%
Fish cultivation	126	17	34.6%	4.7%
Total	364	364	100	100
The intensity of violence				
Physical	201	193	55.2%	53%
Psychological	97	91	26.6%	25%
Verbal	33	18	9.1%	4.9%
Sexual	28	60	7.7%	16.5%
Economic	5	2	1.4%	0.5%
Total	364	364	100	100
The sources of violence				
Husband	225	217	61.8%	59.6%
Mother-in-law	104	87	28.6%	23.9%
Father	34	53	9.3%	14.6%
Relatives &outsiders	1	7	0.3%	1.9%
Total	364	364	100	100

(Field survey 2022)

The above Comparatively, Table 4 demonstrates how an asset's ownership changes. This represents a modest decline in cattle ownership from 18.4% to 17.3%. Coastal women, on the other hand, have taken a keen interest in poultry farming, with the percentage rising from 4.7% to 55.2%. The fishing net and boat, however, declined from (35.7%-22.3%). Women's trees, which are valued possessions, were destroyed by the hurricane. But from (21.2%-2.5%), the loss of trees is reduced. Apart from that, there has been less loss of agricultural land (20.1%–2.7%) than there was previously. Subsequently, women engage in diverse income-generating pursuits to support themselves. Most of the ladies in the above table worked alongside their husbands to cultivate fish. However, their fishing pond overflowed as a result of the flood, which prevented fish farming. Between 34.6% and 4.7%, this scenario has diminished. From (31.3%-25.3%), the sources of income from agriculture have declined. River fishing has increased from 20.1% to

42% over the previous year. Alternatively, labor wages rise from 11.3% to 25.3%. The business and service sectors essentially remain unchanged. Climate change is accompanied with physical abuse of women by their male spouses. From 55.2% to 53%, there is a modest decline in physical violence, Psychological violence somewhat decreases from (26.6%–25%). Less verbal aggression occurs (9.1%–4.9%). Between 7.7% and 16.5% was an increase in sexual violence. Then, from 1.4% to 0.5%, there was a small decline in economic violence. The majority of husband abuse involves women. Back then, it made up 61.8%, but now it only makes up 59.6%. Mother-in-laws are a significant source of violence, however their percentage has somewhat declined from 28.6% to 23.9% in the past. From 0.3% to 1.9%, there was a modest increase in aggression from family members and strangers, and the father's violence climbed from 9.3% to 14.6%.

4. Results (Qualitative)

The Qualitative data of the study discussed below is summarized in the following sub-headings:

4.1 Declining Agriculture and food production

The negative effects of climate change hinder agricultural productivity. Agricultural land is typically harmed because of the issues that women encounter when there is an abundance of rainfall. They occasionally cannot plant in all seasons because to the unpredictable nature of the rain. Following climate change, another issue is a lack of water for plants (Dasgupta et al., 2015).This is illustrated in the narration that follows: "We have ceased planting because to the drought and excessive temperatures. It deters us from working in agriculture, and it used to keep us from taking advantage of vital resources for farming that are climate-friendly (*FGD, Sonakata Union*)". In addition, the majority of individuals experienced crop loss due to agricultural land degradation. Most crops get harm from water logging in the agricultural field as a result of excessive rain. "We have a limited amount of land, yet during the rainy season, we become victims of climate change because of heavy rain and occasionally drought, according to a woman's account. We have severe water scarcity during droughts, which puts agriculture productivity at risk (*KII, Sonakata union)"*. Extremely low temperatures and changes in precipitation patterns deplete the water supplies and soil moisture. In Taltali upazila's Sonakata union, these occurrences exacerbate food insecurity and poverty.

4.2 Decreasing financial conditions

Because of the poor feed circumstances, women are constantly inflating the number of livestock animals they own (Dicker et al., 2021). The productivity of draught ability in coastal women's agricultural operations is stifling their earnings when it comes to stipend (Eastin, 2018). According to the quotation that follows, this is true: "I am a divorced woman whose husband left us several years ago. I work as a day laborer and as a maid in another house. I sent my three children through the sale of fish and cattle, but now I have nothing left. The cattle die and the fishing pond overflows (*FGD, Sonakata union*)".

Women's livelihoods face significant challenges due to climate change (Ferdous et al., 2020). Women work mostly in agriculture, raising domestic animals, and other related fields to support themselves. A woman stated, "Our area has a poor embankment, so there are a lot of problems created when our houses become flooded during the normal tide of the river." After these kinds of issues, we confront a critical time when our domestic animals pass away and our vegetable crops are wasted (*KII, Sonakata union*). The aforementioned quotation acknowledges that climate change is having a negative impact on rural women's socioeconomic growth and level of income. According to some women, they raise vegetables for their own food, such as tomatoes, onions, and carrots (Friedman, Hirons, & Boyd, 2019). Their vegetable intake is disrupted by variations in the climate. Because of their families' low financial standing, the majority of women work in some capacity and women are losing out on involved income-generating activities because to climate change.

4.3 Declining water sources

This study demonstrated that the production of cattle, agriculture, and residential use all experience a considerable shortage of water in coastal areas due to climate change. Long-distance water collection is the responsibility of women, who are seen as the primary careers (Gaard, 2020).Carrying the load of fetching water for families falls on women and girls. “We have to travel a considerable distance to gather clean water for drinking. We are surviving extremely hard days but a tube-well was donated by an NGO (*FGD, Sonakata union).* No drinking water sources, particularly tube-wells, are available to women in Sonakata Union. Paying 70000-80000 taka is the price they must spend to install a tube well on their own. In relation to their income, this sum is really ironic. The women living in coastal areas that are vulnerable due to climate change are feeling despair due to climatic variance and women's

livelihoods are at risk due to the lack of water in their local locations, as water is deemed essential for their livelihood activities (Goh, 2012).

4.4 Deteriorating health conditions

Since women are thought to be the most sensitive population during climate variance, numerous reviews of the literature confirm that climate change is harmful to women's health. The intensity of water-borne infections increases with rising water levels and an increase in the frequency of floods (Huyer et al., 2015). Multiple malaria and diarrhea infections are acutely contagious in women. During climate change, women were unable to manage their menstrual hygiene. Because of the financial difficulties following the climate change; they were unable to purchase pads. Women can occasionally contract numerous water-borne illnesses by consuming tainted water (Jaka & Shava, 2018). The majority of homes in Sonakata union exchange water sources with animals due to the lack of water for daily use and livestock, which eventually leads to health complications from drinking contaminated and hazardous water. The majority of ailments are caused by the lack of rainfall, according to a woman who described how humans and animals share water sources (*FGD, Sonakata union*). Following natural disasters, nutritional issues affect rural mothers and their children. One person described how drinking tainted water causes us to get different water-borne illnesses. At that point, there was a serious risk to our health. Most often, we have menstrual issues. We were unable to adequately maintain our hygiene since there was muck on the floor (*FGD, Sonakata union)*

4.5 Raising violence against women

In the Sonakata union, the majority of the women stated that their mother-in-law and husbands are the main sources of their abuse. The reason for this is that following a flood or other natural disaster, poverty tends to rise. To bring money from their father's house, their husband puts pressure on them. Some men get easily seduced by others and abandon their first wife. Most women experience psychological problems after that. The spouses of many of the ladies claimed to have bitten them. However, other women voiced the belief that "We obey their husband's orders because we have to die, our parents are dead, and the husband is our last asset though they occasionally bite us, they also love us too" *(FGD, Sonakata union).* The superstitious mindset and inferiority complex that the women in Sonakata Union exhibit are depicted in the above sentences. They continued, saying, "In addition to having to travel great distances to gather water, some of the girls in our community experience verbal abuse at the hands of strangers

during that period *(FGD, Sonakata union)* ". Another woman shared that "An addicted man broke into my house with malicious intent, and my husband not being home, my house was poor-organized. The man fled when my son abruptly cried out (*KII, Sonakata union).* The negative effects of climate change are demonstrated by these occurrences. Climate change has a detrimental impact on every woman in this group. They used to put up with these kinds of issues and many of them think that domestic violence is normal. As a result of poverty brought on by climate change, women's livelihoods are eventually surrounded by financial crises and increased violence (Jost et al., 2016).

5. Discussions

Several studies notify that health is directly threatened by climate change and also has an impact on how women live and interact with their surroundings. This may exacerbate already-existing vulnerabilities and inequalities faced by women, girls, and other segments of the disadvantaged community (Lama, Hamza, & Wester, 2021). climate change effects on women economic activities. It hinders their economic development. Women cannot take part in their family incomes. It impedes sexual and reproductive health and rights, exacerbates pre-existing disparities, and increases health risks. These harmful consequences are not gender-neutral; women and girls are often disproportionately affected. Climate change could erase years of progress in world health. Due to health implications of climate change, women and communities may find it more difficult to access sexual and reproductive health services, which could put further strain on already overburdened health systems (Lawson et al., 2020). A more climate-resilient future requires allowing everyone to participate in the development of climate solutions (Louis & Mathew, 2020). By doing that, people can build a more healthy future for all people.

The majority of the female participants in this study are young. Many women are housewives. In coastal areas, the majority of them are living in precarious situations and lack literacy. Their means of subsistence are negatively impacted by climate change. According to the results, there are still risks in the places where they live even though the intensity of floods and cyclones has decreased. In addition, there are less salinity issues than previously. An important component is the research area's cyclone frequency, which indicates that a cyclone occurs three times a year, which is quite concerning. Furthermore, three times in two years are also apparent. Women who suffered water-borne infections both during and after climate change, among other illnesses. However, there is a decrease in infections carried by vectors. Women are more commonly

affected with cholera and diarrhea among the several water-borne illnesses. Among the obvious hygienic issues that women in that area encounter are a shortage of clean water and soap to wash. Following the effects of climate change, women are becoming more involved in the lucrative industry of chicken rising. However, because cyclones despoil their forests and farmland, agricultural output is hindered. Numerous spouses experienced the loss of their fishing vessel, which had an adverse effect on their family's earnings. To provide for their families, many women took up manual labor. Occasionally, they receive high-interest loans from different non-governmental organizations to purchase fishing nets and hire boats. In addition, women frequently experience abuse from their spouses and other strangers, which is extremely harmful to their physical and mental health. They experienced a great deal of verbal and physical abuse even though they were living with their father. Their precarious situations are caused by poverty and climate change. Despite these obstacles, women always strive to work at different jobs, such as sewing, in order to support their families.

6. Conclusions

This study proved that the loss of important assets for a livelihood brought about by climate change. It makes rural women more vulnerable to food insecurity, which ultimately pulls them into the poverty trap (Ryley et al., 2019). In the Sonakata union of Taltali upazila, climate change consumed the happiness of rural women. Climate variance emerged as a crucial factor in both poverty and penetrability for women within this union. Women’s weak adaptive capacity during climate change causes all the negative repercussions to devastate them so severely. Due to the negative effects of climate change, their means of subsistence are being destroyed. Furthermore women health has threatened seriously by climate change). Rural women with lack of literacy segregated themselves from proper health and hygiene education (Mukherjee et al., 2019). Climate change has significant implications that hinder their income-generating activities (Murray et al., 2016). Because they lack effective coping mechanisms, women's livelihoods are extremely vulnerable (Nyahunda, 2021). Many government and non-governmental organizations prioritize women in their climate resilience programming because investing in them leads to long-lasting improvements to important outcomes, guarantees the continuation of services and programs, and eventually creates communities that are more equitable, healthy, and sustainable (Ogra & Badola, 2015).The study's overall conclusions make it clear that women's livelihoods and climate change are negatively correlated.

Limitations

There were some restrictions in place during the data collection. Given that majority of the roads were muddy, there was a transportation problem. When collecting data during the wet season, the researchers ran into a number of obstacles. There was a significant financial problem because this research was self-funded by the researchers. The surveys were quite difficult for the respondents to understand because they were illiterate as well.

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Ethical consideration

The required ethics clearances were obtained and approved.

Declaration of Interest statement

The publication of this document does not conflict with the author's personal, financial, intellectual, or religious interests.

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