

The Influence of Gender Relations on Women's Involvement and Experience in Climate Change Adaptation Programs in Bangladesh

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Abstract

The nexus between poverty and climate change is a major concern, especially in a country like Bangladesh where lack of resources is a significant problem in both rural and urban areas. Climate change affects a wide demographic of the population in Bangladesh, and among those affected, women are more vulnerable to climate change impacts, as is evident from the history of climate-induced disasters in the country. Climate change increases women's socio-economic vulnerabilities by directly impacting their family's food security, water consumption, and livelihood. Hence, their roles and contributions are critical in responding through adaptation. Nonetheless, in Bangladesh, challenges remain to incorporate women as distinct actors and active agents in climate adaptation programs considering the gender power dynamics that exist. In this context, this study focuses on women's contributions as individuals or as a group and reveals their significant influence in climate change adaptation practices.

Keywords

climate change, women, adaptation practices, gender relations

Introduction

Climate change has clearly manifested itself through a range of weather events and climatic hazards in Bangladesh. The country is facing diverse impacts such as sea-level rises, increased tropical cyclones, salinity inundation in arable lands, intensified droughts, precipitation variability, and frequent flooding due to its expansive coastline, low-lying delta, and large river systems that support its agricultural-dependent economy (*Bangladesh Climate Change Strategy and Action Plan* [BCCSAP], 2009). In Bangladesh, climate is not merely an environmental phenomenon but is also interconnected with many socio-cultural and economic factors. These create increased vulnerabilities for many people. Evidence from a global perspective has revealed that natural resources-based and agricultural-dependent populations are the primary victims of climate change (Intergovernmental Panel on Climate Change [IPCC], 2014). According to Bangladesh Bureau of Statistics (BBS, 2011), more than one third of the population of Bangladesh lives in rural areas and they are the main drivers of the rural-agricultural based economy of the country. Therefore, climate events directly and indirectly affect these people's lives in multifaceted ways making their lives even more arduous. Affected populations are increasingly

vulnerable to poverty, food insecurity, water crises, loss of traditional livelihood, and lack of social well-being. BCCSAP (2009) confirmed that a large proportion of the population of the country has already been displaced from rural areas to urban centers in a quest for a better life. This displacement has meant an increased risk of safety and security for the people involved (Shamsuddoha, Khan, Raihan, & Hossain, 2012). Among the climate victims, women are the most vulnerable as they make up a large proportion of the poor population in both urban and rural contexts. In addition, attributed gender roles, the gender division of labor, and dependency on nature make women vulnerable in a different way to men. Thus, poverty and gender inequality appear to be important factors in shaping vulnerability and resilience within affected communities in a country like Bangladesh.

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In response to the climate change threat, Bangladesh first began its adaptation program by preparing the National Adaptation Programme of Action (2005) in-line with the United Nations Framework Convention on Climate Change (UNFCCC). In 2009, the BCCSAP was also developed and is currently the main generator of policy documents in relation to adaptation programs and activities. In Bangladesh, climate change adaptation (CCA) programs mostly converge with disaster risk reduction and disaster resilience strategies underpinned by a social protection perspective (Islam & Sumon, 2013). To implement the adaptation programs, many development partners at the field level are carrying out diverse types of livelihood activities to ensure social safety and enhance resilience to cope with the changing situation.

Community-based disaster preparedness and disaster management programs are more common at the field level to build disaster resilient communities where women play active roles (Ayers & Forsyth, 2009). Like many other countries, Bangladeshi women are the victims of climate change and at the same time an important agent for household and community led response to climate change. Yet, the positive roles they play, the challenges they face, and the benefits they gain in responding to the enormous challenges that climate change presents, particularly in vulnerable countries/communities, have not been well studied.

This article describes some diverse examples of CCA programs/projects in Bangladesh: the Cyclone Preparedness Program (CPP) in Bagerhat district, the Assistance to Local Communities on Climate Change Adaptation (ALCCCA) project in Naogaon district, and the Community Based Early Warning System (CBEWS) on Landslide in Cox's Bazar municipality. These cases provide the opportunity to identify the role of women in the programs, examine the roles that women have had in influencing processes and outcomes, identify the challenges they face in these roles, and explore how their contributions might have a positive impact on community resilience in the Bangladesh context. By exploring these dimensions, we can identify how women can contribute and benefit from active participation in CCA projects and how this might translate to other vulnerable communities in similar types of countries. This information is important for development of gender sensitive policy, providing policy makers with improved understanding of opportunities and benefits for women's increased involvement in CCA in the future.

Gender and Climate Change

Climate is not a gender-neutral phenomenon. Impacts of climate change are closely related to the gender division of labor for women across the world. Balgis (2009) points out that the main responsibility for water and energy supply related to household food security falls firmly on women's shoulders in rural areas of developing countries, which are the home of the most affected sectors. Eunice and Gry (2011)

state that in African and Asian countries, drought and shortage of water significantly increase women's workload in terms of collecting water and firewood. Even in urban areas, women spend several hours queuing for water, which reduces social participation or opportunities for economic activity (Brody, Demetriades, & Esplen, 2008). Food and Agricultural Organization (2010) affirms these findings and projects that women will suffer from food insecurity, social dislocation, and increased poverty due to climate change. A study on rural women in Nepal by Regmi (2011) reveals that an uncertain climate threatens women's livelihood, which in turn impacts on their income and household food security.

Most of the existing literature identifies the marginalized position of women, prevailing gender relations, economic dependency, and lack of social and political power as factors that reinforce their vulnerabilities to environmental problems (Nelson et al., 2010). According to Milne (2005), power relations that exclude women from power structures shape the gender dimension of climate change, particularly in rural contexts. Furthermore, gender-insensitive programs limit women's access to community services and infrastructure, hence creating significant difference between men and women in terms of the power of resilience (Silva & Jayathilaka, 2014). These scholarly works suggest that the effect of climate change is a highly gendered phenomenon determined by prevailing gender power relations.

Gender Relations and Power Dynamics in Bangladesh

Bangladesh is a traditional patriarchal society, where males play a dominant role within the family, the community, and society as a whole. This situation is pervasive within states, political institutions, and legal systems as the consequence of deeply rooted unequal gender relations. According to Kabeer and Mahmud (2004), in Bangladesh, there is a strict patriarchal structure that includes "the practice of female seclusion, patrilineal principles of descent and inheritance [and] patrilineal principles of marriage" (p. 94). Another study by the United Nations Children's Fund (UNICEF; 2010) states that the mobility of Bangladeshi women is controlled and male family members often make the decisions. In particular, husbands usually make economic decisions around women's health and employment-related issues. Due to prevalent cultural and socio-economic conditions, women experience structural discrimination such as access to and control over resources, property rights, less opportunity for employment, and under-representation in the political sphere (Ahmed & Maitra, 2010).

Currently, in Bangladesh, the male-female ratio is 50.1:49.9, which indicates an increasing female population, since an earlier census (2001) where the ratio was 51.9:48.1 (BBS, 2011). The most recent statistical data indicate that in urban areas, 67% of men are employed whereas only 18% of women have formal employment. In rural areas, only 8% of

women are formally employed compared with 63% of men (BBS, 2011). The statistics imply a large gender disparity in relation to women's economic status both in urban and rural areas. However, the official unemployment status of women hides the informal labor contributions women make to the economy. According to Kabeer and Mahmud (2004), women's restricted mobility in the public domain reinforces them either to work as unpaid family laborers or to engage in informal work within the home. Women also receive lower wages than men when in paid employment in both rural and urban areas and the status of employment, occupation, and hours of work are determined by males (Ahmed & Maitra, 2010). A study conducted by OXFAM and Somasthe (Moni, 2015)¹ claims that despite not being recognized as farmers, 61.1% of the female labor force in Bangladesh is involved in agriculture, even though women's labor force participation in agriculture is an under-presented phenomenon in the country.

In Bangladesh, households are mainly headed and controlled by men (88%) and only 12% of households are led by women, though the proportion of female-headed households has increased more in urban than rural areas since the 2001 census (BBS, 2011). Interestingly, female-headed households experience less poverty (26.6%) than male-headed households (32%), although the female-headed household's monthly average income is lower than that of the male-headed households (BBS, 2012). This is because women adopt many strategies to maintain household food security. An extreme example of this is that 1.9% of women in rural areas and 1% in urban areas report skipping meals each month (National Institute of Population Research and Training, 2013).

Despite the persisting inequalities, Bangladeshi women have historically shown great resilience and courage in confronting social, economic, political, and environmental problems (Azim, 2010). After independence in 1972, the women's equality movement in Bangladesh gained momentum through the influence of various organizations including nongovernmental organizations (NGOs), women's groups, and other civil society organizations (Mohsin, 2010). In recent years, a large number of NGOs have played a vital role in improving women's visibility in rural Bangladesh: the microcredit sector is one such initiative. Rural women of Bangladesh are the main drivers of the microfinance sector. In addition, women's involvement in some formal sectors (public and private) such as ready-made garments, shrimp processing, cosmetics, shoes, and pharmaceutical industries is significant and women's economic participation rate has increased from 29.2% to 36% in the period from 2005-2006 to 2010 (BBS, 2012). In the Ready Made Garments (RMG) sector, about 80% to 85% of workers are women, and this sector has played a significant role in the country's economic success over the last two decades (Khatiwada, 2014). Currently, Bangladesh's position in the global gender gap index is 64 out of 145 countries, and it has made significant

progress within the last 8 years. In 2007, its rank was 100; however, within South Asian countries, its position is now at the top (World Economic Forum, 2015).

Understanding these gender dimensions of Bangladesh's society is critical for better engaging women in local-level CCA, as it is at the community and household level, where many adaptation actions are being taken and can be implemented.

Theoretical Framework Underpinning This Research

The theoretical framework of this study combines theories of Feminist Political Ecology, Feminist Environmentalism, and Ecofeminism to facilitate a comprehensive lens to better understand the roles of women in CCA. All of these approaches theorize gender and gender relations in a specific way depending on their particular stances. One distinction is that while the Ecofeminists emphasize the spiritual connection between women and nature (Shiva, 1989), the proponents of Feminist Environmentalism argue instead that women's connection with nature is more concrete or materialist, and takes place throughout their life due to their closer proximity to the natural environment (Agarwal, 1992). Feminist Political Ecology, on the contrary, is a subfield of Political Ecology which examines the gendered dimension of environmental crises from a broader institutional perspective involving government, politics, and other institutions that shape the overall social system (Hovorka, 2006; Rocheleau, Thomas-Slayter, & Wangari, 1996).

The three theories provide the necessary tools for examining the relationship between women and environmental degradation in Bangladesh. Therefore, these theoretical approaches provide a feminist analysis as a means to understanding women's experiences of the environment in Bangladesh, particularly in relation to climate change. Elements of the above-mentioned theories, such as women's connection with nature; gendered knowledge, roles, and responsibilities; gender power relations; and women's agency, were used to analyze the eco-political link between women and climate change, with special reference to women's contributions to CCA.

Method

The study was designed as qualitative research and collected data by following qualitative data collection techniques such as observation, focus group discussions, and in-depth interviews. Several steps were followed in designing this study. Related literature was reviewed from a range of books, journals articles, reports, and electronic sources and then cases were selected based on specific criteria such as severity of effects, type of activities, and adaptation initiatives by state and non-state actors.

Table 1. Methods Used to Collect Data.

Method	Participants	Number
Primary data collection		
Focus group discussion (FGD) ^a	Community members (a group of 10-12 participants) One mixed group; two female groups	9 (approximately 90 participants) (3 FGDs in three of the selected programs, total 9 FGDs)
Interviews with local program stakeholders ^b	Local-level government officials, workers of non-government organizations, community leaders, local government representatives	15 (5 interviews from each field)
Field observation	Respective areas and programs	3 selected programs
Key informant interviews ^c	Policy makers, government officials, non-government officials, gender and environment activists, practitioners, academicians	15 KI from national and international experts
In depth interviews ^d	Women directly involving in adaption programs	6 (2 women from each area)
Secondary data collection		
Documentary research, institutional policy mapping, and program documents analysis		

Note. More women were in the FGDs compared with male participants; of a total of 90 participants, 60 were women and 30 were men.

^aWomen's groups henceforth stated as FGD.WG and mixed group as FGD.MG.

^bInterviews with program stakeholders henceforth stated as LI (Local Interviewee).

^cNational-level key informant interview stated as KI.

^dIn-depth interview with individual women stated as IDI.

Selection of Locations and Programs

Three adaptation programs were selected for the study considering three climate-induced hazards—drought, cyclones, and landslides in the northern, southern, and south-eastern parts of Bangladesh, respectively. In Bangladesh, government and its development partners have formally carried out a range of adaptation programs. Therefore, these three major climate-induced hazards and corresponding adaptation programs were selected to garner a broader view of the overall topic. The selected programs were *CPP* in Bagerhat district, *ALCCCA Project* in Naogaon district, and *CBEWS on Landslide* in Cox's Bazar municipality.

Data Collection, Ethical Approval, and Data Analysis

Both primary and secondary data were collected for the research. The main sources of primary data were from field observation, focus group discussions, semi-structured interviews with local people, in-depth interviews with women, and interviews with key informants at the national level. Respondents were selected through purposive sampling method. First author (principal researcher) visited each field area 2 or 3 times to understand and gather experiences about the impacts of climate change on people's daily life activities. These observations helped to understand real life problems, practical needs, and coping practices of locals. Table 1 presents a summary of the methods and number of participants in the study.

Ethical approval for this study was approved by the Griffith University Human Research Ethics Committee (GIR/03/13/ HREC), as this study is a part of first author's

PhD thesis. Informed consent was asked prior to data collection from all study participants, and they provided their written consent to participate in this study. To maintain the privacy, anonymity, and confidentiality of data, it was explained to each of the respondents that his or her identity and the information he or she would provide would be confidential.

A qualitative thematic method was used to analyze the data. After each interview had been completed, a transcript was written in Bengali. First, familiarization with the data was achieved by reading and rereading the transcripts several times. After familiarization with the data, the principal researcher coded the transcripts to ensure intercoder reliability. Initially, from the narratives of the texts, a code list was developed for data analysis. Based on the codes, themes were identified for framework analysis, and the framework adapted and finalized based on the findings and emergent themes as part of the iterative process of qualitative data analysis.

In addition to primary data analysis, a content analysis of secondary documents on climate-induced hazards and affected communities to determine climate change impacts and vulnerability trends was done. Government documents and other studies focused on Bangladesh were analyzed to investigate gender consideration in policy processes.

Findings

Description of the Selected Adaptation Programs and Level of Women's Involvement

The *CPP* is a national community-based climate-induced disaster risk reduction program run by the Government of

Bangladesh and the Red Crescent Society across many coastal districts of Bangladesh. It aims to develop and strengthen the disaster preparedness and response capacity of coastal communities (Amin, 2012). For the program, five-member volunteer teams were formed consisting of both females and males selected from the communities. The program assigned different responsibilities and roles to male and female volunteers. In each community, five volunteer groups (early warning dissemination, rescue, evacuation, first aid service, and relief distribution) carry out different activities and each CPP volunteer group consists of two female and three male volunteers.

For the CPP, it was observed that women were not involved in resource distribution such as relief work, which involves monetary issues, with men mostly in control of this realm. Both gender power relations and gender stereotyped work divisions play a vital role in defining the level and engagement of women in any program or project. As Cornwall (2003) discussed in the context of community forest management, “the means by which women are excluded [through] hegemonic gender norms, may echo and reinforce, as well as replicate patterns of gendered exclusion that have [a] wider resonance” (p. 1329) in society. This strong division of labor suggests that women’s involvement is limited to the caring role that women are usually known for in their community. Unsurprisingly, women are actively excluded from roles that would grant them power status or decision-making authority within the community. Due to this practice, during FGDs, women expressed their powerlessness and opportunities for less management capacity in public work.

The *ALCCCA Project* (drought prone area Shaphar, Naugaon) was implemented through involving and engaging the local community. In total, 60 male and female groups were formed, and each group consisted of 30 members. Each group was known as Gono Gobeshona Dal (GGD), which means community research group. The group members identified their own problems and needs in the drought context of their locality through participatory research. Accordingly, the groups were designated with different roles and responsibilities, which were defined by group members. The community was supported by local needs-based livelihood activities as a means of adaptation.

The number of female members was quite high as more female groups were required to be formed within the community by the project. Therefore, a larger number of female facilitators and group mobilizers developed and provided a supportive environment to strengthen female leadership skills. Consequently, female engagement at every stage, even in the planning process, developed, as reflected in the interview with a female leader of a women’s group (Tilna village) in Sapahar Upazila. She presents a more analytical outlook about social and female-centric issues closely related to climate change and activities in her community’s day-to-day life:

Women contribute more to their family and household work even in agriculture. For example, women of our locality do seed preservation, sow seeds, help in planting the paddy and have all the responsibilities after harvesting. They perform these along with their daily household chores, yet they have to listen to men complaining that women do not do much work but society does not appreciate or acknowledge it much. (IDI.5, 2014).

This program has created opportunities for women in general by supporting livelihood-based adaptation activities. Such activities have led to an increase in their resilience and capacity to cope. Women’s involvement in this adaptation intervention includes providing livelihood assets such as vegetable seeds, chickens, lambs, and opportunities for women to control the community mango forestry. Such measures are important in strengthening women’s roles as active partners of community-based adaptation. As an adaptation measure, most of the women emphasized the importance of livelihood activities that, in turn, reinforce the processes of empowerment at a household and community level.

In the *CBEWS on Landslide program* implemented in Cox’s Bazar city, the target community’s socio-economic structure was different from the other two program cases in terms of living conditions, occupations, attachments to the environment, and daily life experiences as it is an urban setting. The program target settlement has grown over the decades due to a large number of the population migrating from their previous homelands mostly due to sea-level rise. However, the settlements face a severe risk of landslides, and as it is not possible to shift the community from this location, the project’s target was to develop disaster resilience through awareness raising and capacity building (KI.12, 2014).

For this program, three young volunteers (one female and two male) were trained from each community. In this urban area, more women are visible in public spaces such as the market places, construction work, and informal labor sectors, and the overall community attitude in this setting is not as conservative as in rural areas of Bangladesh. Here, female volunteers did not receive a negative response from the community when working alone with male volunteers. In addition, some NGO workers, mostly women, helped to shape the community’s mind-set about women’s visibility in community activities. This finding confirms that there is a significant difference in gendered norms and values between the rural and urban societies of Bangladesh. A female volunteer from the South Baharchhara Ward tells of her experience. Her story, while positive and affirming the value of increased gender representation, also identifies that there was still gender imbalance in the teams formed:

We (girls and boys) usually work together during any type of disaster. We observe and record rainfall trends and accordingly disseminate warnings and evacuate. We have needed to rescue elderly people, children, pregnant women and people with disabilities many times. I did not get any resistance from the community as they saw we were doing work for its safety and

local people understand that any community work cannot be done properly if women are excluded. However, I feel that the project could include another female volunteer in each group for better results. (IDI.8, 2014)

Role of Women in Adaptation Programs

The increasing visibility of women as community volunteers in the CPP program had a positive impact for women, adolescent girls, and children who take shelter in the evacuation or cyclone centers. Positive changes have been noticed among other local women regarding disaster awareness because of the CPP. Female members of the CPP team played a significant role in raising awareness of local women and encouraging them to move to safe places after receiving a disaster warning. As a result, women's involvement in the program has created a positive space to address women's issues effectively, as one volunteer observes,

Earlier most of the women did not want to move to cyclone shelters leaving their household assets such as food, poultry, and cattle. Moreover, they did not feel comfortable to move without husband or any male members of the family. That's why earlier more women and children died during cyclone. (FGD.WG2, 2013)

In addition, women in this program were mainly involved in early warning dissemination, first aid service delivery, and evacuation of the elderly, pregnant women, and children during the pre-disaster stage and in the post-disaster stage return to their homes. In many cases, female volunteers were left with the sole responsibility for early warning dissemination. This was particularly a large burden during emergency periods, when every household within their community needed to be visited. Women were generally not active in the other two committees of work that focused on relief and rescue, particularly the relief committee as this is socially considered men's work. Female volunteers are often required to take care of injured or sick people during any disaster, and to do this, they are provided with first aid training and toolkits.

Correspondingly, in the ALCCCA project, it was revealed that women groups have become aware of the climatic changes in their area and are more conscious of the problems. This highlights that women's engagement in village research groups enhances their knowledge, in contrast to the traditional belief of society that women are more concerned about household matters and lack interest about outside issues. Interestingly, women of this area were found to be highly aware of the present changing climate situation and other environmental problems:

Climate change is happening because of the weather pattern change. We have been noticing that rain does not come when expected. When it is time for the paddy plantation in the monsoon period, it is not raining. When rain comes, it has no use. This year a new problem has emerged. The pests attacked in

the root of rice plants due to the dampness caused by trapped water during heavy rainfall. The pests ate and destroyed crops, which reduced rice production significantly. (FGD.WG3, 2013)

Their responsiveness demonstrates that women are aware of agriculture-related problems, even though traditional patriarchal views do not consider women as farmers, so do not value their knowledge.

Finally, in the CBEWS project, trained young females have played a major role in raising awareness within the community as volunteers. The findings of this project concur with those of Coleman and Mwangi (2013), who argue that women's visibility can bring positive impacts and generate positive attitudes and interest among women to engage in those activities that are not familiar to them. As found in the study, the involvement of female volunteers can create a sense that the inclusion of women is vital to the success of any project.

A female volunteer aged 20 years from the Jadi Pahar ward speaks about her involvement in the project:

I joined the ADPC volunteer team after observing the suffering in our community, especially women, the elderly and children during every rainy season. Earlier landslides destroyed many families and took several lives in our area. Now we are more aware of how to respond before the hazards and what preparations are needed. My involvement in this project has made me valuable in my community. (IDI.10, 2014)

Other young female volunteers have expressed their interests in becoming future leaders of their community and maintaining their involvement in social activities. This positive interest by women is consistent with the research by Sutton and Tobin (2011) who found that younger people and females were more likely to engage in CCA and mitigation than the elderly and men, respectively.

Discussion

Findings of this study reveal that none of the case programs/projects examined for this research involved all group members equally. Consequently, the capacity of the majority of members was under-utilized and all did not obtain equal benefit from the programs. As a result, only a small portion (leaders or volunteers) were actively involved in a project's activities, whereas the involvement of other group members could be considered as passive because they neither had options to give opinions nor influence decisions. These unequal power dynamics were mostly found within the CPP and CBEWS. In addition, inequality in the composition or representation of men and women at a leadership level resulted in uneven power relations among women and men, as women were allocated specific activities which are socially considered as less important activities. This reflects perceived roles and identities of men and women in Bangladesh society at large as discussed in "Gender relations and power dynamics in Bangladesh" section (2.0).

Overall findings of the study strongly suggest that women's participation in these climate change-related programs in Bangladesh remains largely controlled and shaped by gender division of labor, social norms, and customary tradition. This situation supports the findings of Cornwall and Gaventa (2001) who connect women's socio-demographic status with women's engagement and involvement in community activities. An example of this from our study is the inability of women from ethnic minority groups in drought prone areas to fully engage in project activities due to their specific gender roles and socio-economic status. During the field visits, it was noticed that women from the local ethnic community (Santal) could not join in the scheduled FGD because they were working in the agricultural fields. Later, it was found through FGD that all women from this ethnic community had to work either on their own agricultural land or as an agricultural laborer. This is very different from the local Muslim women in the community who only perform duties related to agricultural work at home. This is another dimension of a culturally diverse society and reinforces an additional, important point that even when belonging to the same class or same society, women do not constitute a homogeneous group.

Although gendered distribution of power, assets, and resources within the family reproduce gender inequality, women need to respond first during any natural or environmental disaster as a part of their household responsibility (Women's UN Reporting Network, 2017). Therefore, intra-household's gender dynamics is an important factor in responding or adopting coping strategies by women (Neelormi & Ahmed, 2012). Traditionally, in the household, Bangladeshi women (as daughters, daughters-in-law, and mothers-in-law) share unequal power relations due to customary socio-cultural norms. An example of this observed through FGDs and interviews was daughter-in-laws not being able to challenge the decisions of their mother-in-laws due to the family hierarchy. In most patriarchal societies, including in traditional Bangladeshi households, there is commonly a dialectic relationship between a mother-in-law and a daughter-in-law. Within household gender dynamics, daughters-in-law are always more underprivileged than daughters, and divorced or widowed daughters are more neglected. Every married woman of this study informed the researcher that they needed to finish their household responsibilities before joining the FGDs and it was the same situation when they attended project or group meetings.

Household responsibilities appear a vital factor determining women's level of involvement in community activities, and if women engage themselves in additional activities, such as those required for participation in the case programs described here, they have to accept a double or triple work burden. A FGD participant from Mongla Union in Bagerhat districts says, "If I come to regular meetings without finishing my household duties my husband will divorce me. My mother-in-law also expects the same responsibilities and duties from me though I have sisters-in-law at house." Like many other

women, she has to take care of children and family matters along with the project/program's related responsibilities.

Based on gender responsibilities, a clear dichotomy persists between public and private domains in patriarchal societies, and women are customarily discouraged from engaging in activities related to the public sphere. Most women do not want to make any trouble in their family life by taking additional duties. If they do, they need to maintain a work balance between home and outside activities. The conflict between domestic responsibilities and involvement in community activities places many women in an unenviable situation. Consequently, it is difficult for women to combine both types of work because gendered responsibilities prevail within the household domain. The burden of major domestic activities and non-cooperation from other family members are therefore a major barrier for women, limiting effective participation in activities outside their households.

Despite these remaining issues, the three described programs brought opportunities for more women to be seen and heard in public spaces and in leadership positions, challenging the traditional notions of women's roles and improving program outcomes. For example, in the second case in the drought prone area, women were part of the local government's budget preparation; a situation unheard of for a rural woman even a few years ago. The analysis of the cyclone and land slide cases also revealed other positive changes, indicating the empowerment of women. In the past, during a disaster, women refrained from moving to a safe place without a male family member. But these cases identified that this situation has changed noticeably and women are now more aware of their own and their children's safety. Traditional gender norms have changed due to women's involvement in these programs. Besides the improvement in self-protection, more women participating in the public arena creates more opportunity to speak about their own issues and to be the voice for other women, increasing possibilities to bring change. As one woman described,

Earlier most of the women did not want to move to cyclone shelters even when being forced. But now women feel comfortable and confident to go to cyclone shelters because they know that we will be beside them and we will take care of them. We could motivate women to take shelter in a safe place during a cyclone. We are also concerned about women's problems, requirements and safety in temporary shelter places. (FGD, WG2, 2013)

Furthermore, women are better capable to fully comprehend the trouble that they face due to gender identity in public spaces, especially in evacuation centers and relief queues during disasters and post-disaster periods. As a result, women's involvement in the CCA program has created a positive environment to address women's issues during disaster more effectively. The increasing visibility of women as community volunteers thus has a positive impact

for women, adolescent girls, and children who take shelter in the evacuation or cyclone centers. Positive changes have been noticed among other local women regarding disaster awareness. Thus, a disaster resilient community can be a strong part of CCA when a program considers women as proactive agents in bringing change.

Notwithstanding many positive and inspiring achievements, Bangladeshi women need to confront several existing structural and socio-cultural constraints. Persistent unequal gender power relations within the household, community, or society undermine women's capability and restrict their engagement in certain types of activities that can prove them equal to men. This situation is reinforced by many unequal gender norms and practices, which are the main challenges for women in becoming more active partners in CCA. Gendered power structures create a male-biased environment within all social and political institutions and discourage women's involvement. Due to this cultural mind-set, women's contributions are mostly undermined and undervalued. As a result, they are deprived of institutional and governmental support, which places them in an even more vulnerable position. Indeed, women are still considered to be recipients of, not active partners in, formal climate change adaptation processes. These factors thus undermine women's struggles, ignore their voices, and do not fully acknowledge their contributions to family or society.

Conclusion

This study was underpinned by feminist theories of the environment, which consider gender, particularly women, as a critical factor in explaining and solving any environmental problems. Overall, the study findings also imply that gender relations is a significant concern that actively shapes women's mobility and their access to resources and power within the community. In addition, "intra and inter household" power dynamics is also a crucial factor for women in the context of climate change adaptation in Bangladesh. Furthermore, women's experience is an underrepresented aspect of the climate change discourse in Bangladesh, because women's contributions continue to be dismissed and are not fully captured due to traditional gender perceptions. Therefore, changing gender relations is a crucial step toward a gender equal community that acknowledges women's needs, roles, and contributions in the era of climate change. In turn, this will empower women to contribute fully to any program or activity, whether it is climate change adaptation or disaster management.

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