

Climate Change & Gender: A Pirouette of Disaster

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Abstract: The effects of climate change and global warming are apparent in every continent. Green House Gas Emission (GHGE) has direct link with the negative impacts of climate change. Industrialized and developed countries are primarily responsible for the GHGE and the worst sufferers are the poor people, especially women, of the under developed countries like Bangladesh. The international response to the problem has failed to grasp the appalling consequences of climate change. There is much talk about it but little is done. Between the year 1991 and 2000, total 93 major disasters were recorded in Bangladesh. The female segment of population is the worst affected one during and after the events of natural disasters like flood, cyclone and sidr. Subsequent down turns in economy after such calamities further deteriorates gender power relations, empowerment of women, their health, food security, employment, education and also aggravate women trafficking. Our government has taken different programs to abate natural disasters. However, if richer western countries do not take any initiative to change their lifestyle, input from our organizations will not be able to protect poor women from the pirouette of disaster.

1.0 Introduction

The term climate change generally refers to the changes in our climate, which has been identified since the early part of the 1900's. The changes we have seen over recent years and those, which are predicted over the next 80 years, are thought to be mainly as a result of human behavior rather than due to natural changes in the atmosphere. The impacts of global warming due to climate change are worldwide. Every year an estimated 150,000 people die as a result of global warming- mainly through natural disasters, disease and malnutrition- and the toll is rising exponentially. An estimated 5.5 million Disability-Adjusted Life Years were caused in the year 2000 due to climate change. Still there is much talk, but little is done.

The Greenhouse effect is very important when we talk about climate change as it relates to the gases (i.e. Carbon dioxide, Methane, Nitrous

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oxide, Ozone, Water vapour, Halocarbons) which keep the Earth warm. It is the extra greenhouse gases which humans have released which are thought to pose the strongest threat. Green House Gas Emission (GHGE) has direct link with global warming, in turn, with the negative effect of climate change. The world is warming up due to GHGE, glaciers are melting, the sea level is rising, and the world climate is changing- all at a faster rate than ever.

Industrialized and developed countries like the USA, Europe, Canada, Japan, Australia, now joined by India and China, are primarily responsible for the GHGE while the worst sufferers are the under developed countries. GHGE is caused primarily due to burning fossil fuel in the mills, factories and vehicles. According to a research by the environmentalists, annual carbon dioxide emission is only 172kg per capita in Bangladesh compared to 21 tones in the US.

The international response to the problem has failed to grasp those serious consequences, such as reduced crop yields and water shortages are now inevitable. For example, wheat production in India is already in decline, for no other reason than climate change. There are signs that a similar shift is underway in China.

In fact, the consequences of rising temperatures are already being felt on every continent. The 1990s were the hottest decade on record and the upward trend in the world's temperature continues. The climate change is responsible for 2.4% of all cases of diarrhea worldwide and for 2% of all cases of malaria, according to the study 'Climate Change and Human Health- Risk and Responses' of World Health Organization (WHO).

Intergovernmental Panel on Climate Change (IPCC) published a report on climate change in April 2007. The report warns that Africa and the Arctic will bear the brunt of climate impacts, along with small islands such as Fiji, and Asian river mega deltas including the Mekong. It says extreme weather events are likely to become more intense and more frequent, and the effect on ecosystems could be severe, with up to 30% of plant and animal species at risk of extinction if the average rise in global temperatures exceeds 1.5C-2.5C. That would place more than 2 billion people at risk of water shortages, and hundreds of millions more will face hunger.

Unfortunately, the effect of climate change has occurred several decades earlier than previously scientists realized. Vulnerable people such as the

old and poor, especially women are the worst affected, and that world leaders had not accepted the fact that none of the countries are immune from this imminent disaster and their policies seems to lack a foresight about what is to be adopted to counter the dire consequences. We cannot bail ourselves out of this problem. In a lose-lose situation human race now has a choice between a future with a damaged world or a severely damaged world.

2.0 Climate Change and Bangladesh

Nature has never made it easy to live in Bangladesh. Located in the low-lying Ganges Delta, formed by the confluence of the Ganges, Brahmaputra and Meghna rivers, most of the country is swamped by annual floods, with a coast battered by cyclones and tornado, and at times subject to drought. Besides, the country is extremely populated in a small area and one of the most densely populated in the world. At present population density is 1100 plus per square kilometer. It is also one of the poorest countries in the world: 50% of our population lives in poverty, 51% of our children are malnourished.

According to the UNDP Human Development Report 2006, population living on income of less than one US dollar a day is 36% while 82.8% of the population is living on income below two US dollar a day in Bangladesh. Between the year 1991 and 2000, total 93 major disasters were recorded in Bangladesh, resulting in nearly 200,000 deaths and causing US dollar 5.9 billion in damages with high losses in agriculture and infrastructure. A low economic capacity, inadequate infrastructure and a higher dependence on a natural resource base exacerbate our vulnerability.

The industrialized world has pumped such huge amounts of greenhouse gases into the atmosphere that set us on a course, where a global temperature rise of more than two degree Celsius is inevitable. That may not sound much, but for people here in Bangladesh, even those two degrees amount to a catastrophe. Bangladesh's agriculture relies on fresh water supplied by rivers flowing from the Himalayan Glaciers to the delta. If temperature continues to rise, these vital reserves may disappear. Prevailing ignorance to water bodies will add further to the calamity.

Bangladesh scientists believe that because of sea level rise coastal Bangladesh has already experienced the worst impacts especially in terms of coastal inundation and erosion, saline intrusion, deforestation, loss of

bio-diversity and agriculture, and large-scale migration. About 830,000 million hectares of arable land is affected by varying degrees of soil salinity. During the period 1973-87, about 2.18 million tons of rice was damaged due to drought and 2.38 million tons due to flood. Drought affects annually about 2.32 million hectares and 1.2 million hectares of cropped land during the Kharif (summer, i.e. November to June) and Rabi (winter, i.e. July to October) seasons respectively, soil salinity, water logging and acidification affect 3.05 million hectares, 0.7 million hectares and 0.6 million hectares of crop land, respectively in the country. Cyclone sidr that hit Bangladesh on 15 November 2007 caused havoc to its southwestern coastal belt (Source: The Daily Jugantor, December 2007).

A sea level rise of 0.5 meter over the last 100 years because of climate change has already eroded 65% landmass of 250 square kilometer Kutubdia, 227 square kilometer of Bhola and 180 square kilometer of Sandwip islands. In case of any further sea level rise, islands like these and the entire coastal area would be hit hard resulting in further degradations causing billions of dollars of losses in GDP, economic downturn, ecological damage and livelihood assets and options.

Besides, a large fraction of Bangladesh's poor live on small shifting silt river islands (known as 'chars') created when water levels drop in summer. However, with diminishing silt levels already apparent, such temporary shelters are likely to vanish earlier than the present time period and inhabitants of choar and small islands would become 'Climate Refugees'. In the dialogue on 'Climate change, migration and environment in Bangladesh' Dr. Atiq Rahman in his keynote paper claimed that around 35 million people in Bangladesh have already become 'Climate Refugee' (Source: The Daily Star, Dt. 13 January 2009).

Already, Bangladesh has experienced sharp changes in rainfall patterns, droughts in rainy seasons, late monsoons, recurring floods and warm winters. As an indication of what the future may look like, in 2007 alone two floods, a drought and a massive cyclone devastated Bangladesh. The world heritage listed Sundarbans Nature Reserve in the country's south (home to the largest population of tigers left in the wild), now having trees dying en masse, due to increased salinity brought on by rising sea levels. Besides the reason for Bangladesh to be more concerned about global warming is that, according to the available reports and forecast of the experts on climate change, Bangladesh and Maldives are two countries that will be worst affected because of global warming.

If the pace at which the global temperature is rising at the moment continues unchecked and the population growth rate of the country remains as it is, by 2050 nearly one-fifth of Bangladesh will go under sea. We will have 300 million people to live in just about a 120,000 square kilometer area, increasing the country's population density to 2500 or more per square kilometers area.

3.0 Gender and Vulnerability

Climate change is not a neutral process. First of all, women are in general more vulnerable to the effects climate change, not the least because they represent the majority (70% of 1.3 billion people living in absolute poverty) of the world's poor and because they are more than proportionally dependent on natural resources that are already under threat. In fact it is observed that the technological changes and instruments that are being proposed to mitigate carbon emissions, which are implicitly presented as gender neutral, are in fact quite gender biased.

It is widely acknowledged that the negative effects of climate change are likely to hit the poorest people in the poorest countries hardest, in other words: that the poor are the most vulnerable to climate change. Today, on average, one person out of 19 in a developing country will be hit by a climate disaster. Since women form a disproportionate share of the poor in developing countries and communities that are highly dependent on local natural resources, women are likely to be disproportionately vulnerable to the effects of climate change. Moreover, because of gender differences in property rights, access to information and in cultural, social and economic roles, the effects of climate change are likely to affect men and women differently.

Women and children are 14 times more likely to die than men are during a disaster. Following the cyclone and flood of 1991 in Bangladesh the death rate was almost five times higher for women than for men. The death toll was 140,000 and 90% of the victims were women. Warning information was transmitted by men to men in public spaces, but rarely communicated to the rest of the family and as many women are not allowed to leave the house without a male relative and they therefore perished awaiting their relatives to return home and take them to a safe place. Women are primarily care-givers in times of disaster and environmental stress, the occurrence of magnified burdens of care giving is likely to make them less mobile and more vulnerable.

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3.1 Impacts of Climate Change on Gender Power Relations

The effects of climate change on gender inequality are not limited to immediate impacts and changing behaviors but also lead to subsequent changes in gender relations. Spending more time on traditional (growing foods, cooking, raising children, caring for the elderly, maintaining a house, hauling water) and reproductive tasks consequently re-enforces traditional work roles and works against a change in which women might begin to play other roles -ell including availing empowerment. For instance, as women are primarily caregivers in times of disaster and environmental stress, occurrence of magnified burdens of care giving is likely to make them less mobile. Also, since climate change is expected to exacerbate existing shortfalls in water resources and fuel wood the time taken to fetch water or wood (which in most countries is the responsibility of women) will certainly increase women's workload, thus, limiting their opportunities to branch out into other, non-traditional activities (like business, education, handicrafts, self-empowering provisions, taking part in national policy making and administration etc).

3.2 Empowerment of Women

Female empowerment is, first and foremost, about power, changing power relations in favor of women who previously exercised little or even no power over their own lives. It also includes learning skills, having access to information and resources. Women's informal rights to resources could decrease or disappear as access to land and other resources dwindle due to climate change. Women, even in the 21st century, are treated as second-class citizens with less rights and a reduced status. Climate change and nation's financial crisis will deteriorate their position. They will have little or no access to education and other economic activities that would thwart them from upgrading themselves at socio-economic ladder from the bottom, ultimately close women's way to power, decision making and especially raising their voices for their rights.

3.3 Food Security

Climate change is predicted to reduce crop yields and food production in some regions, particularly the tropics. Food security of the country would worsen as a result of climate change, coastal inundation and erosion, saline intrusion, untimely rainfall, changes in the rate of precipitation, loss of biodiversity and agriculture. According to Bangladeshi custom and tradition women eat the remaining of the food after the male members and children have taken their meal. Food crisis would increase

the starvation of the female quarter of population. However, 65% of the total women population in Asia is responsible for household food production. Women in Bangladesh like any other Asian countries play the same role despite unequal access to land, information, and inputs such as seeds and fertilizer. Traditional food sources may become more unpredictable and scarce as the climate changes. Women's specific knowledge of maintaining biodiversity, through the conservation and domestication of wild edible plant seeds and food crop breeding, is the key to adapting to climate change more effectively.

3.4 Health

As primary caregivers in many families, women's responsibilities increase as family members suffer increased illness, like malaria, diarrhea etc. They become susceptible to diseases. Further, in the developing world like Bangladesh, women often have less access to food, nutrition and medical care than men. Poverty elevation due to climate change would worsen women's access to medical treatment.

3.5 Education

The literacy rate is 61% in Bangladesh, but it remains at roughly 41% among adults (women and people living in rural areas and choars have the lowest level of literacy). Climate change and frequent natural catastrophe would worsen the financial condition of our people and strike a heavy blow to our economy. As a result the poor would either concentrate to the education of their male offspring for future security and financial development or engage them in jobs. Besides, in shifting silt river islands (where 95% of the parents of school going children are extremely poor) would disappear. As an impact of climate change; frequent massive floods, river erosion, cyclones, disappearance of choars- will lower the overall literacy rate of the country.

3.6 Unemployment and Migration

Frequent flooding, erosion and lower fertility of arable land would make the agriculture based Bangladesh economy dilapidated where majority of the population are farmers. Rural people, especially farmers, would be dispossessed of their holdings, become unemployed and poorer. Both men and women migration inside and the country would multiply. The nexus of recruiting agencies, their dalal/agents and errant government employees and human traffickers would take the advantage of their misfortune. Consequently, illegal migration of semi skilled workers and women trafficking would increase.

4.0 How Women are Responding to Climate Change?

Participation of women as a stakeholder in the whole process to combat climate change, at international, national and local levels, is very low; probably skills and resources need to be developed to overcome the situation. This process tends to be driven by a masculine view of the problem and its solution.

Gender, like poverty, is a cross cutting issue in climate change and needs to be recognized as such. In fact, gender and poverty are interrelated and create mutually reinforcing barriers to social change. For example, women comprised the majority of those killed and who were least likely to recover in the 2005 Asian Tsunami. In Aceh, more than 75% of those who died were women, resulting in a male-female ratio of 3:1 among the survivors (Source: The Daily Star, 2005). As so many mothers died, there had been major consequences with respect to infant mortality, early marriage of girls, neglect of girls' education, sexual assault, trafficking of women and prostitution.

If action on climate change is partly about vulnerability and building resilience, then it is important that vulnerable groups do not suffer disproportionately from its adverse effects. Women figure high among such vulnerable groups.

A document from the United Nations Conference on Environment and Development states: "An overall assessment of climate change debate to date shows women are patently absent in the decision making process. Their contributions in environmental policies are largely ignored". Decision-making and policy formulation at environmental levels such as conservation, protection and rehabilitation, and environmental management are predominantly male agenda.

Nevertheless, in the United Nations Conference on Environment and Development reflected in **Agenda 21**, the key role ascribed to women as principle actors in the management of natural resources and development of sustainable and ecologically sound policies. Perhaps the fact that existence of few trained women environmental specialists tends to accentuate this gender deficit in environmental policy. Institutional weakness in women's organizations and under representation, informal decision-making is factors that lend to swing the pendulum away from their oft-valuable input.

Women must understand their potentiality and engage themselves in mainstream issues. Gender must therefore be taken up as part and parcel

of these issues. Women must understand therefore how these affect them as well as how they can become part of the solution. The current imperative is for women to understand the phenomenon of climate change and its impact and implications at individual, household, community and national levels.

5.0 Conclusion

It is not just Bangladesh. Across the globe, there are fierce droughts, threats to water resources, more intense hurricanes, rising sea levels- the list goes on. How many millions or billions of lives must be put at risk before we are prepared to act?

Developed nations and governments must put aside self-interest and ensure that developing countries are a priority. It is the poor, especially women, who are most profoundly affected by climate change, so it is their development that must take precedence.

The recently published Bangladesh National Adaptation Program of Action (NAPA) recommended strategies focusing on coastal forestation, provision of drinking water to coastal communities, education, the protection of urban infrastructure, and scientific research and development to protect crops.

We are doing our bit. However, if richer countries do not change their way of life, and do it now, input from our organization and others will not be able to protect the people and the world from devastating, deadly effects of climate change.

References

- Aguilar, L. (2004) Climate Change and Disaster Mitigation (IUCN) available on-line: <http://www.iucn.org/congress/women/Climate.pdf>
- Anderson, C. (2002) 'Gender Matters: implications for climate variability and Climate Change and for disaster management in the pacific islands' available on-line from www.gencc.interconnection.org
- Bangladesh Bureau of Statistics (2001). The Population Census Primary Report 2001. Dhaka: Ministry of Planning.
- Climate Fact Sheet 2008: Gender and Water Alliance, p5, 8-10
- Nelson, V. (2002). "Uncertain predictions, invisible impacts, and the need to mainstream gender in Climate Change adaptation". Gender and Development Vol. 10
- Women's Environment and Development Organization (2007). Changing the Climate: Why Women's Perspectives Matter? Information Sheet. p2.
- The Daily Jugantar, December 2007;
- The Daily Star, 13 January 2009;
- www.bangladesh-web.com
- www.cavehill.wwi.edu
- www.news.bbc.co.uk
- www.undp.org/climatechange/ccross.html