

Impact of Climate Change on Women in Rural India

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Abstract. This article analyses the disproportionate impact of climate change on women residing in rural parts of India. Using secondary data sources and other literature, it argues how women are at higher risk socially, economically and on account of health. However, despite this vulnerability, women are important change makers and are leading the fight against climate change at the grassroot level. It highlights the work done by two such women groups based in Tamil Nadu and Rajasthan. It also briefly comments on the future plan of action to create a gender-sensitive approach to mitigating climate change.

Key Words: climate change; women and health; fuel wood; fetching water; rural India; grassroot level

1 Introduction

The United Nations Framework Convention on Climate Change defines the phenomena as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". The annual report published by the International Panel on Climate Change (IPCC) pointed out that the primary cause of global warming was burning fossil fuels for human activities. Deforestation is also a leading cause.

The reasons for such environmental degradation are manifold. Some examples are population growth, technological advancements and economic progress. A growing population has endless needs. The most basic of those is food and settlement – both of which require large forests areas to be cleared both for housing and for food production. Other needs of a growing population can be met through technological progress. However, technological progress itself affects the environment adversely, say for instance, through generation of e-waste, air pollution, water pollution etc. Technological progress is essential for economic growth, which leads to higher incomes. However, higher incomes encourage a culture of consumerism. As people earn more money, they buy more food, more cars etc., reinforcing the vicious cycle of environment

degradation. The results of these human activities are that the global temperatures have risen. The polar ice caps are melting at a faster rate, leading to a rise in sea levels, threatening the existence of low-lying coastal areas and islands. The degradation has been rather accelerated. For instance, in 2012, the average surface temperature of the earth was 0.85 degrees Celsius higher than the 1880 levels.

The impact of climate change is not equally spread across the world. The developing countries are at a higher risk of facing adverse effects of global warming. This is because in such countries, a large proportion of the population is dependent on agriculture, which in turn is significantly affected by changing temperatures. Consider the case of India. 71% percent of the Indian population, which translates into 69% households, resides in rural areas where agriculture is the prime occupation. Roughly half the population earns its livelihoods from this sector. However, agriculture is largely rain-fed. Climate change has resulted in an increased frequency of occurrence of droughts and floods, leading to fall in crop production. This will potentially raise food insecurity among the masses. Crop damage also renders farmers incapable of repaying the debt they had taken for agricultural production. This puts the farmers under immense economics strain. The severity of the effect can be highlighted by the fact that droughts and other extreme weather events are a leading cause in farmer suicides in the country. The changing temperatures also have adverse health effects. As weather patterns change, some areas become more humid, providing a perfect breeding ground for vector borne diseases like malaria and dengue. Other areas receive scanty rainfall which severely affects access to water, thereby compromising health and hygiene. Food insecurity affects nutritional intake, making masses vulnerable to malnutrition.

Even within the rural areas, these adverse effects are disproportionately borne by certain groups like low income class, lower caste etc. Across all these groups, women are the worst affected. Given that a large proportion of women in rural India are engaged in agricultural activities, without being entitled to land ownership, they are at the highest risk of negative effects of the climate change which affects the sector. However, the rising temperatures also have profound social effects. Women in rural India are responsible for carrying out almost all household activities, which includes fetching water and fuelwood from faraway places. Climate change has led to a depletion in these natural resources, increasing the burden of women.

This article analyses the disproportionate impact of climate change on women residing in rural parts of India. It argues how women are at higher risk socially, economically and on account of health. However, despite this vulnerability, women are important changemakers and are leading the fight against climate change at the grassroots level. This paper highlights the work done by two such women groups based in Tamil Nadu and Rajasthan. It also briefly comments on the future plan of action to create a gender-sensitive approach to mitigating climate change.

The paper is structured in the following way. Section 2 outlines the methodology adopted for analysis. Sections 3 analyses the socio-economic effects of climate change on rural women in India. Section 4 looks at the adverse health effects. Section 5 exemplifies how women are leading the fight against climate change through 2 examples. Section 6 makes comments on the potential policy interventions.

2. METHODOLOGY

This article uses secondary data and reviews literature to analyse the effect of climate change on women in rural India. The data sources include reports published by the Government of India between a period spanning 2005 – 2015. These reports include surveys conducted by the National Sample Survey Office, NFHS. Reports published by international bodies like The United Nations, IIPC, World Bank etc. have also been used. The case studies and specific examples mentioned in the article are taken from literature and official websites of various organizations.

3 WOMEN AS SOCIO-ECONOMICALLY DISADVANTAGED GROUP: HIGHER VULNERABILITY TO CLIMATE CHANGE

Historically, women have fared poorly on indicators of progress like health, education, employment, per capita income, access to public goods etc. compared to men. The figures published in the 68th NSS report of employment status reveal that 56% rural females were literate, compared to 72% rural males. The statistics for secondary level education are worse. Only 12% rural women attained a secondary level education, much lower than their male counterparts. The unemployment figures are as grim. 25% of rural women were in the labour force, a decline from the 66th round survey in 2009-10. With respect to health indicators, women again fare poorly. NFHS - 3 fact sheet highlights that about 40% women in rural areas have a BMI below normal i.e. they are underweight, and 9% rural women are overweight. In contrast to

this, fewer men fall in either category. In fact, over 50% women in rural areas are anemic compared to about 25% men. These statistics paint a picture that is not surprising. Women in India, and over the world, are treated as second-class citizens. This inequality leaves them more vulnerable to the dire effects of climate change.

Firstly, women in rural areas carry out most, if not all, of the household chores. These include not only cleaning and cooking, but also collecting water and fuelwood for carrying out the cleaning and cooking. In 84% of rural households, women did the work of fetching water. For this, women wake up early in the morning and walk long distances. For 21 out of every 1000 households, the women had to walk for a distance of more than 1 km to fetch water. However, due to climate change, the traditional sources of water are drying up or becoming ill-fit for use. Rising temperatures, coupled with excessive exploitation of water sources for human activities like construction have led to this outcome. In addition, owing to increase in the sea level, the salinity of the groundwater has increased, making it unsuitable for consumption. This means that women have to travel longer, to farther destinations, in order to collect water. This is not the only trip women make to collect resources for household use. They also travel to collect fuelwood to use as fuel for cooking food etc. The traditional sources of energy were used by 67% of rural households, most of them being the poorest in the rural areas. Women spent about 40 minutes on an average to collect fuelwood, in a single day. Due to deforestation and alternative land use, women have to travel to more remote areas to get the job done. There are several consequences of traveling to faraway places for collecting basic amenities such as higher susceptibility to sexual violence and harassment. Therefore, the burden of household work on women increases due to climate change.

Secondly, as women are burdened with household chores, the girls of the household are expected to start helping out. This directly affects the education of the girlchild by increasing absenteeism from school, sometimes leading to even dropping out. A study carried out in Gujarat and Rajasthan found that over 60% students in both the states missed about 2 days per month to help with household work, with female students being absent 2-10 times more often compared to male students. This directly implies that the future employment prospects of these girls are affected. Education could have been used as a tool to enforce gender equality; however, climate change threatens to further cement these peculiarities.

Thirdly, 75% women are engaged in agriculture, compared to 59% men. Climate change has adverse effects on agriculture through various mechanisms. Agriculture in India is still predominantly rainfed. However, the weather patterns have changed due to global warming, and other aspects such as soil fertility have been adversely impacted, affecting the livelihoods of those dependent on agriculture. As agricultural prospects fall, men leave to work in cities, looking for jobs that pay them better, leaving the women behind to work on farms. This is also evident from the NSS reports, which highlights that the labour force participation rate for females is much higher in rural areas compared to urban areas, whereas the statistics are comparable for men in these two areas. However, as temperatures increase, agricultural productivity declines. As per a World Bank report, since the 1980s, rice and wheat yields have been declining by about 8% for every one-degree Celsius increase in temperature. Many models have been used to simulate the expected effect of climate change on agricultural productivity and prices. One such study predicts that production of rice, wheat and cereals is likely to fall significantly in India. This will have a significant negative economic impact on the women engaged in farming, and push them to take loans from moneylenders etc. at exorbitant interest rates, potentially rendering them into a vicious debt cycle.

Being a woman imposes a higher penalty in terms of the adverse effects of changing climate. This however, is just the tip of the ice-berg. Intersectionality of gender with class, caste etc. implies that women belonging to lower social strata of incomes and castes, face challenges of a higher degree. For instance, women belonging to marginalized communities do not enjoy land ownership on account of being a woman and being poor. They are also subject to discrimination on account of their caste, resulting in them having limited access to other resources essential for disaster mitigation etc. This makes them more susceptible to climate-related challenges than women of higher income strata or upper caste women. Therefore, climate change imposes a double burden on women by restraining them from moving up the ladder of social hierarchy.

4. WOMEN AND HEALTH

Climate change has been linked to several health conditions. Extreme temperatures give rise to a heat wave or cold wave, which can result in casualties. For instance, one of the worst heat waves in Odisha happened in 1998 and claimed 2000 lives. As temperatures rise, the frequency and intensity of these waves will rise. Extreme weather events have also become a common

phenomenon in India. Droughts, floods, cyclones are becoming a regular occurrence in many states in India. Floods in Bihar, for instance, have become an annual event, damaging lives, livelihoods and crops. These extremities bring with them a host of diseases like diarrhea, and vector borne diseases like malaria. A report suggests that climate change will increase the risk of diarrhea by 10% in 2030. Not only that, decreasing production and productivity of staple crops like rice, wheat and cereals will lead to a sharp rise in prices for agricultural produce. This will severely affect food security in the population, exacerbating the situation of malnutrition.

Again, it is the women who are worst affected on various accounts. There are studies that indicate that household's dependent on agriculture consume less protein, are more susceptible to variation in nutritional intake, and suffer from a high degree of gender bias. When produce is low, agricultural households increase the share of output to be sent to the market, leaving little food at home to be consumed. Given the traditional male priority, women end up eating less. This affects their nutritional status. As climate change worsens farm output, this nutritional divide between the two genders is likely to increase. With poor health indicators to begin with, women are at a higher risk of adult malnutrition and deficiency diseases. Women are also prone to spine injuries, as they carry weight of water and fuelwood on their heads and hips for long distances. Increased incidence of viral, bacterial and vector borne diseases also puts women at a higher risk due to their poor nutritional status, i.e. being anemic, underweight etc.

Climate change also reduces access to clean water not only for drinking purposes, but also for sanitation. This will compromise hygiene and health and can give rise to skin infections, urinary tract infections, and infections related to menstrual hygiene.

5. WOMEN AS ASSETS TO LEAD FIGHT AGAINST CLIMATE CHANGE

Women face higher risks due to climate change. Due to this, several women across India have taken up the fight against climate change head on and are working towards mitigating the impacts of the same. There are several examples of women leading the way in India. Some of them have been highlighted in this section.

The Deccan Development Society, founded in 1985, is a community of women from the poorest and the marginalized sections of society. This organization has smaller groups called sanghams across villages that are entrusted with the responsibility of primary local governance. These groups not only act as a strong lobby for the poor and the marginalized women in the

villages, but also carry out activities that have brought a positive significant change in the environment. Over the years, these women have reclaimed thousands of acres of degraded agricultural land and made it cultivable. Now they use environment-friendly agricultural techniques for cultivation, and also educate and encourage other farmers to do the same. Their total produce has increased considerably over the years, a result of the consistent community effort. The group has also undertaken initiatives to ensure food security by running its own PDS (Public Distribution System). They have also devised ways of cultivating multiple crops on fallow or marginal land holdings, enough to sustain all members of a particular household. The results of this is that the villages no longer need to depend on the government systems. These initiatives have ensured that in critical times, the poorest and the marginalized do not go hungry.

Rajasthan is one of the most arid states in India, victim to frequent droughts. Climate change has exacerbated the water availability in the state. However, women leaders from a village have undertaken several initiatives to solve the crisis situation. These women are leading their community to adopt improved crop varieties that are suited to the region. They are also encouraging planting of fruit trees to ensure better nutritional intake and well as enhanced income. They also substitute their income by growing fodder for cattle. Given the scarcity of rainfall, these women have also incorporated ways to store water and prevent runoff, by building embankments. Through self-help groups, they are managing common resources in order to check overutilization. Such initiatives have been made possible due to grassroot-level NGOs and organizations like ICRISAT and CGAIR, which work closely with the local women and empower them to become stakeholders in climate change mitigation.

6. WAY FORWARD

The government has taken some initiatives to address and mitigate the challenges posed by climate change, such as the National Action Plan on Climate Change (NAPCC) launched in 2008 by the Prime Minister's Council on Climate Change. While these initiatives cover a broad range of objectives to mitigate climate change, they are not targeted towards the vulnerable groups such as women, and marginalized communities. Therefore, going forward, there needs to be focused policy intervention with a gender dimension. One way to do so is to have more women in policy making positions - i.e. in the parliament and other national decision making bodies, in international bodies focused on climate change, etc. Some other ways in which the effect of

climate change on women can be ameliorated are by ensuring expansion of women's rights. For instance, making women entitled to their own land, so that they can make decisions about agricultural technologies etc. and can gain financial independence. For such technological transfers, the government will have to collaborate with other technologically advanced countries for procurement of equipment that supports sustainable and ecological agriculture, and make it accessible to the rural women at affordable cost. Access to institutional credit will ensure that even during bad harvests, there is consumption smoothing, so that nutritional intake of women does not fall. There have been various government schemes to ensure direct water and electricity connection to rural households; these need to be expanded to areas where women still have to walk long distances for basic amenities. Ensuring access to these conveniences will also reduce the burden on school girls and will reduce rates of school absenteeism. Given the illustrious work of local bodies, more non-governmental organizations should be encouraged to work with women at the grassroot level to educate them about ecological agriculture and other ways to manage common resources. Given women are at high risk, and they are already engaged in an economic activity that is also most susceptible to climate change, it is important to make these women stakeholders in the mitigation plans. A local approach to fight this battle is the need of the hour.

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