FEMALE VULNERABILITY TO CLIMATE CHANGE DURING PANDEMIC IN INDIA

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Abstract

Vulnerability, as stated in the IPCC report (2014), refers to the sensitivity of the system to the adverse impacts of climate change and variability. It encompasses the sensitivity, resilience, fidelity and general characteristics of the system (Alhassan et al., 2019). This paper explores how gender and relationships affect vulnerability and change in the context of climate change (Olmos, S., 2001). Marginalized communities face poverty and constraints, including climate impacts, and are increasingly stressed in their daily lives. This study investigates India's climate and its impact on households, especially female-headed households, which often lack sufficient resources to address population growth, land problems and environmental degradation. Women are more vulnerable to climate-related events such as floods, floods and earthquakes because social, economic and political constraints limit their ability to protect themselves. Studies show that women and girls are less healthy than men when they are malnourished. There is an urgent need to develop gender-sensitive strategies to address human security issues and the environmental and human health problems resulting from climate change. Studies show differences in the roles, access to resources, rights, knowledge and opportunities of men and women in combating climate change. Despite the negative impact of global pandemics and social problems, women's participation in decision-making processes related to climate change is still limited. A study by the World Health Organization has indicated that climate change is expected to lead to a decline in agriculture in India by 2050, with wheat production expected to fall by 18.6% and rice yields by 10.8%. In India, women make up over 60% of the agricultural workforce and are responsible for 90% of post-harvest work. When it comes to water, a UNICEF report shows that women and girls in India spend over 150 million hours a day collecting water, equivalent to the labor force of 1

million people. The disaster has displaced a large number of people and affected over 5 million people. Women and girls, in particular, are particularly vulnerable to the negative consequences of displacement, including trafficking and exploitation. This study explores the gender impact of climate change in India and proposes a framework for assessing vulnerability and adaptation to climate change to illustrate the relationship between vulnerability and change. Kannan, M. (2013) Research on monitoring and management of water resources. She noted that today the world is facing a water inequality crisis, with average daily water consumption per person being 50 litres in rural areas and 150 litres in cities. Gender dependency means that they are often more vulnerable to the adverse effects of earthquakes, droughts, floods, hurricanes and heavy rainfall. These adverse effects have many social, economic and economic consequences. Evidence suggests that many social factors make women and marginalised groups more vulnerable to the long-term effects of climate change. Women are more vulnerable than men to the effects of climate change, such as floods, inundations and earthquakes, because social, economic and political impacts affect their ability to solve them. Food grievances have worsened over time. Therefore, it is important to develop gender-appropriate strategies to address the needs of human security and environmental and humanitarian crises resulting from climate change. This region lies north of the equator, between 8°4' and 37°6' N and 68°7' and 97°25' E. India is the seventh largest country in the world, with an area of 3,287,263 sq km. It stretches 3,214 km from north to south and 2,933 km from east to west. The border between the two countries stretches for more than 15,200 km and the coastline is 7,516.6 km. As of 2023, India's population is estimated at 1,428,627,663, which is 17.76% of the world's population. In the same year, India’s female population reached 691 million. The female mortality rate in India was 26.25 deaths per 100 women aged 15-59 in 2020, down 3.16% from 27.1 deaths per 100 women in 2015. It is particularly vulnerable to the impacts of climate change. More than 80% of India’s population lives in climate-protected areas. These include rising altitudes, changing rainfall patterns, falling water levels, retreating glaciers, severe storms and rising sea levels, all of which pose serious threats to livelihoods, food security and the economy, and impact women in society. Approximately 7.5% of Indian women experience serious mental health problems, with nearly half experiencing serious mental health problems at least once in their lives. Nine states in India are among the 50 regions in the world most at risk from the effects of climate change. These states include Punjab, Bihar, Uttar Pradesh, Assam, Rajasthan, Tamil Nadu,

Maharashtra, Kerala and Gujarat. Kannan, M. (2013) said that biodiversity is a term used for the diversity of people, species and ecosystems found in various parts of the world. This rich biological wealth of the world, which includes all living farms, microorganisms in plant and animal life and the water, soil and air in which they live and interact, in short, provides a wealth of essential goods and services. Kannan, M. (2014) said that protecting the environment from natural resources has obvious benefits for humans. But there is no strong desire to sustain natural ecosystems and their inhabitants based on their benefits, especially to protect humans, global sprawl and the current progress of artifacts and humans.

The National Security Report 2023, published by the Cross-Dependency Initiative (XDI), states that Bihar, Tamil Nadu and Assam have the highest disaster risk rating (ADR) by 2050, indicating the impact of construction in these regions on the region. damage. Low humidity causes the cold force of sweat and heat, especially for workers and farmers. Women in cities like Hyderabad, Delhi and Allahabad were severely affected by temperatures exceeding 46 °C. The following year, daytime temperatures in Falodi were recorded at 51 °C, breaking monthly records in July 2019. The accompanying map identifies the country's hot, dry tropical regions. Health risks from other sources, such as the COVID-19 pandemic. The pandemic has exacerbated the situation, with travel restrictions preventing migrants from returning home and shelters becoming overcrowded. But in some cities, the changes have managed to reduce the number of deaths from violence by 27%, a significant achievement. About 7 in 10 people reported experiencing serious mental illness due to heat and cold during the COVID-19 pandemic.

Data and methods

There is no general definition of heat waves and cold waves. These events occur when temperatures are at or below normal, and an abnormal situation occurs. The criteria used to determine the "over/under" can vary. The India Meteorological Department (IMD) uses a special technique to identify heat and cold waves based on temperature data from weather stations. However, the average area or points based on temperature data may be slightly different but still similar. The station lasted for several days. In data science, additional maps are used to analyze heat, especially using area averages or gridded data. One indicator is based on two overheating parameters: overheating measured in $°C^2$ (EHIsig) and thermal stress (EHIaccl). Heat stroke means

not being well-temperatured; this is caused by the insufficient distribution of daytime heat at night, especially due to nighttime heat. The index defines the average daily temperature (DMT) over a three-day period compared to the air temperature index. EHIsig is measured in °C. The average daily temperature is the average of the maximum and minimum temperatures and is defined as -

The thermal stress caused by the temperature between the highest temperatures of recent times. The average maximum and minimum temperatures over the last three days and 30 days were compared in terms of the characteristics of thermal stress. This is represented as short-term (adaptation) temperature abnormalities. The unit of EHIaccl is oC. Heat stress is defined as -

where Ti is DMT day i. The definition of maximum temperature (EHF) is as follows:

When the EHF value is positive and the daily temperature Tmax is above 35°C for three consecutive days, heat can be detected. The sample was carefully selected to maximize the number of participants. - for ... Meteorological droughts characterized by low rainfall can be exacerbated by simultaneous heat waves. The study found significant changes in the occurrence of extreme weather events and heat waves, with an increase in their frequency across India. > Temperature increase in India

Between 1901 and 2018, the average temperature in India has increased by 0.7 °C. Impacts of Gas (GHG).

By the end of the 21st century, the average temperature across India is expected to be 4.4 °C above the recent average temperature (1976 to 2005). Over the nearly 30 years up to 2015, the temperature on the hottest day and the coldest night of the year increased by 0.63 °C and 0.4 °C, respectively. Looking at the end of the 21st century, these temperatures are projected to be 4.7°C and 5.5°C, respectively, compared with current temperatures (averaged since 1976) as of 2005. related. The occurrence of summer heat waves (April–June) in India is projected to be more

frequent by the end of the 21st century than between 1976 and 2005 under the RCP8.5 scenario; the base duration is 3 to 4 times longer. In addition, the average duration of hot weather events will approximately double, although there will be differences in weather conditions.
particularly in the Indo-Gangetic and Indus river basins.

Indian Ocean Warming

Between 1951 and 2015, the Indian Ocean Sea Surface Temperature (SST) temperature increased by an average of 1 °C, which was higher than the global average SST warming of 0.7 °C during the same period. . In addition, the sea level content in the upper 700 m (OHC700) of the tropical Indian Ocean has increased over the last 60 years (1955 to 2015), especially in the last 20 years (1998 to 2015). Projections show that SST and sea level content in the Indian Ocean are expected to continue to increase throughout the twentieth century.) The decline over India is approximately 6%. This decline is particularly pronounced in regions such as the Indo-Gangetic Plains and the Western Ghats. Annual rainfall across India in 2022 is expected to reach 125.7 centimeters, a slight increase from the 123.6 centimeters projected in 2021. However, due to the uneven distribution of rainfall across the region, heavy rainfall is causing widespread flooding across the country. The worst affected states are Assam, Meghalaya, Arunachal Pradesh and Tripura, which have been hit by severe weather since April 6, 2022, due to the rains that fell early yesterday and the storms that followed the floods and earthquakes. Frequency and spatial extent of droughts from 1951 to 2016. dry water. In particular, during this period, regions such as central India, the southwest coast, the southern peninsula and the northeast of India experienced an average of more than two floods per decade. The area affected by drought also expanded by 1.3% per decade during the same period. "A few months." These events include heat waves, cyclones, lightning, heavy rainfall, floods and earthquakes, as highlighted in the report titled 'India 2022: Climate Assessment Weather'. It is noteworthy that March was the hottest month on record, while April was the third coldest month in more than a century. Madhya Pradesh has the highest number of days with extreme weather conditions, occurring once every day in the state. Assam and Madhya Pradesh reported 301 deaths, while Himachal Pradesh recorded the highest death toll at 359. Rizal and Goa had the most affected days. A total of 783 deaths were reported in the Eastern and Northeastern regions. The storm affected 1.8 million hectares of farmland in total, destroyed over 400,000 homes and caused the loss of nearly 70,000 livestock. Number of people displaced due to climate change. Rural and urban women in India are experiencing the impacts of climate change in significant but unique

ways. Research shows that rural women, especially those who lack the knowledge, skills and resources, experience psychological stress due to the inadequate use of groundwater. They often deal with the financial pressures of accessing water and water rationing, as well as domestic and agricultural needs. In addition, recent heavy rainfall and poor crop yields have increased debts and increased stress. During the monsoon season, crowded cities, especially slums, are frequently subject to severe flooding due to lack of housing. In this context, the lack of toilet facilities is particularly problematic for women. Floods also increase the risk of diseases such as dengue, malaria and chikungunya, and place an additional mental and physical burden on women, who are often responsible for caring for family illnesses. The cleaning and repair of flood damage has also become the responsibility of women, leaving them unemployed and affecting their income. Problem solving.

Conclusion

Since the mid-twentieth century, India has experienced a number of climate changes, including an increase in average temperature, a decrease in monsoon rainfall, an increase in hot weather and rainfall, droughts, tsunamis, and other changes in the monsoon system. Scientific evidence suggests that human activities play a significant role in driving climate change in the region. Projections suggest that anthropogenic climate change will continue throughout the twentieth century.

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