

Reviewing the Impacts of Climate Change on Women

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Abstract

Climate change is threatening the lives of millions around the world. Apart from their location, the extent to which people are affected by climate change also depends upon their social and economic status, access to resources, and gender. Despite of progress on women empowerment indicators, still in the majority of countries, women are in a disadvantageous position. Their lack of control over various forms of assets and social norms makes them more vulnerable to climate change. Traditionally women have a better understanding of natural resources as they are procurers and consumers. That means the participation of women in climate change mitigation efforts will make these policies more effective. Unfortunately, this fact is not being given serious consideration. In the present scenario, this paper based on secondary data from various related sources analyzes how climate change impacts women differently and what steps can be taken for gender mainstreaming of climate change policies. It can be seen that climate change has certain specific impacts on women, which are further exacerbated by the economic and social setup of society. To address this some interventions have been mentioned to promote the inclusion of women in climate change mitigation, adaptation, and negotiations.

Key words: *gender, climate change, women, vulnerable, adaptation, mitigation*

1. Introduction:

Climate change is one of the most complex problems that our world is facing today especially

the developing countries that have a paucity of resources to tackle this pressing crisis. Climate change has manifested itself in the form of frequent occurrences of high temperatures, variable rainfall patterns, and extreme weather events like cyclones, droughts, etc. The economic system and environment share a close interrelationship. There are mutual inflows and outflows between these two systems. So it is inevitable that climate affects our economic activities as well. Adverse impacts on economic activities put the lives, food security, and employment of millions of poor people at stake. India being a developing country and home to the largest population in the world is highly exposed to the effects of climate change. Further, its geographical location makes it more vulnerable. It has one of the highest densities of economic activity in the world and large numbers of poor people who rely on the natural resource base for their livelihoods. So, climate change puts stress on the economic and social lives of these people and accentuates the already existing inequalities.

These inequalities can assume many forms but the most appalling inequality that the world is still facing even after centuries of struggle is gender inequality, which runs across borders, disciplines, and sectors and can be found in all aspects of modern life. Since the discussion is on the influence of climate change on human lives it is important to look at it through gender lens also. Why there is a need for this when it is just a climatic event? On the face of it, climate change seems to be a gender neutral phenomenon that can affect anyone who happens to come in contact with

it. The reason is that the majority of the views and discourse on climate change fails to address its gender wise impacts and its role in widening inequalities. However, when we analyze deeply the components of society and economy, the intricate inter-relations between climate change and gender emerge. It affects men and women differently. Gender inequality already exists so climate change is not responsible for creating it, but what it does is that it further intensifies these differences. Women mostly are in a disadvantageous position in society as they lack access to basic income earning assets and in the decision making process due to various economic, social, cultural, and political factors. This makes them more vulnerable to climate change in comparison to men.

If we look at some of the estimates highlighting the vulnerable position of women around the world, it reveals that globally 380 million women live in extreme poverty, and 1 in 3 women have experienced food insecurity and hunger in 2021 (UN, 2022). Women account for two-thirds of the illiterate population (UN, 2015) subsequently; the share of women in global labour income comes to around 34 percent (WIR, 2022). According to an estimate, man-made and climatic disasters resulted in the loss of around 115 lives and 200 million dollars between 1970 and 2019. An important thing to notice is that in these disasters women especially those belonging to socio-economic weaker sections are affected excessively (UN, 2022). Work wise; women comprise 43 percent of the agriculture sector, especially in developing economies where we see the phenomenon of feminization of agriculture. This automatically translates into the fact that any strain on agriculture production is going to have an adverse impact on the condition of women. In 2016 UNICEF said that globally women and girls spend 200 million hours in collecting water. Further, it was estimated that women residing in developing countries generally walk 6 km daily to collect water. They spend around 15 hours of their week collecting water. All these figures shows that women already lose their precious time in collecting water and thus, get less time to take care of their health, engage in some paid job, relax, etc., Changes in climate has

affected access to natural resources and it is going to worsen in future. That means women are already living in difficult circumstances and continuing climate change would make their lives more difficult as most of them didn't have enough resources to adapt and mitigate this change.

Climate adversities further accentuate the rates of female morbidity, gender based violence, sexual harassment, sexual exploitation of children, human trafficking, and other forms of women specific criminal activities. Migration and displacement in post climate disaster period often witness overcrowding and unsafe living conditions in temporary housing, displacement camps, refugee centers, and other forms of shelters. Literature on climate change also points out that natural event like climate change has different impacts on males and females due to discrepancies in gender relations and roles in the society at large. UNEP in one of its studies notes that:

"Women in the South are particularly vulnerable to the impacts of disasters due to skewed power relations and inequitable cultural and social norms. Several dynamics make adaptation more difficult for some women due to a lack of access to formal education, economic poverty, discrimination in food distribution, food insecurity, limited access to resources, exclusion from policy and decision-making institutions and processes and other forms of social marginalization. These dynamics put women at a distinct disadvantage, and few programmes include or focus on them for adaptation" (UNEP, 2011).

National Action Plan on Climate Change (NAPCC) in India also points out that climate change and the increasing scarcity of natural resources have made women more vulnerable as compared to their male counterparts. That calls for special concern to be shown for gender aspects of climate change (Government of India, 2008)

However, most of these concerns have remained only in words without much being translated into action. This is an issue of concern as the impacts of climate change are becoming more visible day by day and the aftermath of these events threatens to enlarge the already existing gender gaps in the world, especially in developing countries like

India. Majority of the work done in the field of climate change takes it as a general problem without much concern about its specific effects on women. Further, even when effects on women are highlighted they fail to link it with inequities faced by women at large. They did not realize that this could have an adverse effect not only on the development of women but also on the country at large as women make up nearly half of the population.

This makes it imperative to analyze various inter-linkages between climate and gender and how they influence women in a different way than men. It is crucial to make women the center of climate change adaptation and mitigation policies and programs.

The focus of this paper is to explore how climate change impacts women differently and what steps can be taken to make climate change policies more gender inclusive both at execution and at decision making level. Brief objectives are mentioned in the second part while database and research methodology are given in the third section. The subsequent part addresses the condition of women at large and impact of climate change on women. It also highlights how the economic and social setup of the society interacts with climate change and exacerbates its burden on women. Lastly, some interventions have been mentioned to promote the inclusion of women in climate change mitigation, adaptation, and negotiations

2. Objectives:

- a) To understand the impacts of climate change on women
- b) To highlight gender specific inequities that make women more vulnerable to climate change
- c) To find out ways for gender mainstreaming of climate change efforts and policies

3. Materials and methods:

Data and information for this paper has mostly been collected from reports of United Nations Environment Programme, IPCC, UN Women, and different country-level studies about the impact of climate change on women. This study is descriptive in nature where information about climate change

and its effects on women is collected from different studies and analyzed to find out about gender dimensions of the climate change problem and address the resulting issues.

4. Results and discussions:

Climate change is something which cannot be stopped altogether but we can adapt our lives according to it. However, this adaptation requires a high level of resilience among the societies. Resilience necessitates collective efforts from all the stakeholders and major shifts at the economic, social, and cultural levels. Efforts taken must be inclusive enough to take into account the diverse effects of climate change on men and women.

What comes in the way of this are the widespread vulnerabilities. Vulnerability when used in the context of climate change can be defined as the degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes", (IPCC, 2001).

4.1 Global Socio-economic profile of women

- i) It is estimated that in 2022, 388 million women and girls are living in poverty as compared to 372 million men and boys. Region-wise, 83.7 percent of these poor females would live in just two regions: Sub-Saharan Africa (62.8%) and Central and Southern Asia (20.9%); (UN, 2022).
- ii) Women often lack access to resources and information required for food security which makes them more vulnerable to food insecurity. It is estimated that in 2021, 31.9 percent of females are food insecure as compared to 27.6 percent of their male counterparts. Globally 1 in 3 women experience some food insecurity leading to a hike in cases of malnourishment (FAO, 2020). As per the latest estimates of forest resources, the annual rate of deforestation was estimated at 10 million hectares between 2015 and 2020. Other critical natural resources like water are also under strain as more than 733 million people live in a context of high water stress, where demand for potable water exceeds supply. This is important because poor women

especially in rural areas are responsible for the collection of these resources and they will be highly affected by their depletion (FAO, 2020).

- iii) In 18 countries, husbands can legally prevent their wives from working; in 39 countries, daughters and sons do not have equal inheritance rights; and 49 countries lack laws protecting women from domestic violence. (UN Women, facts and figures, 2019)
- iv) Worldwide, women are just 13 percent of agricultural landholders.
- v) Climate change has a disproportionate impact on women and children, who are 14 times as likely as men to die during a disaster.
- vi) Globally, the labour force participation rate among females is 63 percent while that of males is 94 percent. Further, a more detailed measure to estimate employment condition is job gap rate. As per ILO estimates the job gap rate of women is 15 percent which is fairly higher than the 10.5 percent rate of men. Consequently, the global gender pay gap comes to 23 percent. Further, even those women who got jobs majority of them are in the informal sector and have been subjected to substandard working conditions with almost zero job security. ILO puts that figure as about 4 out of 5 for women whereas this figure for men is 2 out of 3.
- vii) If we look at gender equality in education, out of 250 million children and youth out of school globally, 122 million are females. Out of 99 million illiterate youth, 56 percent are women (UN, 2019).

Given these conditions, women have low resistance against climate change events. A study done by the London School of Economics found a correlation between the socio-economic status of women and gender-wise patterns of mortality from natural disasters. In areas where women's socio economic status is low, they are more likely to have a high death rate in the event of climate disaster as compared to men. Contrastingly, places where women are better-off experienced a more even distribution of deaths (Neumayer and Plumper 1997).

4.2 Impacts of climate change:

Climate change affects in numerous ways, sometimes directly and other times indirectly.

4.2.1 Direct impacts:

i. *Extreme weather events*

In recent times we have seen an unprecedented increase in extreme weather events like floods, cyclones, heat waves, droughts etc; Studies reveals that these climate change events kills more females as compared to males. Women, boys and girls are 14 times more likely than men to die during a disaster (Peterson, 2007). Of the lives claimed by the Cyclones in Bangladesh in 1991, 90 percent are females (Ikeda, 1995). It was reported that during Hurricane Katrina in U.S.; the majority of the victims trapped in New Orleans were Afro-American females who form the poorest demographic group in that region (Gault *et al.*, 2005; Williams *et al.*, 2006). During the situation of floods, it is easier for men to save themselves as they know how to swim and climb trees as compared to women who lack these basic life skills (Oxfam, 2005). These and many other similar cases reflect a situation where women lose their lives owing to their gender. Since they belong to a particular gender that's why they are subject to various socio-economic traditions and orthodox thinking which snatch away their chance of learning life saving skills and made them more vulnerable to climate change.

ii. *Increase in droughts and water shortage:*

Worldwide women and girls are the main collectors and managers of water. It is estimated that women spend 200 million hours in collecting water daily (UN Water). In countries like Ethiopia, Somalia, and Kenya a long drought that started in 2020 puts 11.6 million people in water crisis for their day to day needs. Since women and girls are primarily responsible for gathering water this has made their life more difficult. Severe droughts and water crisis forces women to go farther away from home for to collect water, this not only takes toll on their physical health but also puts them under mental stress as their security is at risk. This is just the preview of what is yet to come when large parts of the world will be under water stress.

iii. Rise in ocean and sea temperature:

Global warming causes melting of glaciers, which leads to rise in sea level and the addition of seawater in rivers increasing their salinity level. Higher salinity levels not only affect the health but also the employment of women who form a large part of the fishing community in these areas. Increasing temperature is also responsible for coral bleaching. Loss of coral reefs around the world damages the tourism sector in which women comprises nearly about half of the workforce.

4.2.2 Indirect effects:**i. Health risk due to rise in epidemics:**

Variability in the temperatures and precipitation level all around the world has exposed more and more people to vector borne diseases like Dengue, Malaria, Chikungunya etc; This poses two types of risks for women particularly. Firstly, these types of epidemics affect pregnant women severely as they are more vulnerable due to restricted movement and different hormonal and physiological changes (Sorensen et.al, 2018). Women often lack access to medical services sometimes due to paucity of financial resources and other times due to ignorance and carelessness towards their health. Secondly, rise in these diseases puts more burden on women as they are the primary care givers at home and need to spend more time to care for sick people. So, reducing the burden of vector borne diseases is crucial for maintaining maternal and neonatal health.

ii. Decline in crop production:

Temperature alterations due to climate change have put agriculture in distress. In regions like South Asia and Sub-Saharan Africa more than 40 percent of the population is dependent upon agriculture for their livelihood. There are clear evidences that extreme weather events have affected crop production in many countries which in turn reduced the income share of people dependent on it. In recent times to make ends meet we have seen a large percentage of males have left agriculture and moved to non farm sector leaving females to tend

to the fields. This has led to the emergence of the phenomenon of 'feminization of agriculture'. In South Asia, nearly 60 percent of females are working in agriculture sector. In India this number comes to 58 while for Nepal it is 75 and Bangladesh it is 56, percent (World Bank, 2023). However, this high percentage of women now being involved in agriculture has not translated into an increase in the women's ownership of agriculture land or any major improvement in their economic condition. Now, when crop production is being affected by climate change, this places an already vulnerable population of rural women in a high risk situation where their livelihood is threatened. Unlike their male counterparts, they don't enjoy the privilege of moving freely to different areas or occupations.

iii. Food insecurity and malnutrition:

It is a common sight, especially in traditional societies and less developed countries that women eat last and eat least. Neither they themselves nor others cared whether they are eating enough and nutritious food or not. That's why women are the greatest victims of hunger and malnutrition. World Food Program estimates that out of 690 million people food insecure in the world now, 60 percent are women and girls. In 2021 there are 126 million more food insecure women globally as compared to 49 million just two years before in 2019. UNICEF reported that 30 percent of females aged 15-49 years are anaemic which amounts to 571 million females worldwide (UNICEF, 2023). Rising agriculture stress due to climate change resulting in declined food production will further accentuate this problem. Poor women in flood-prone villages in eastern Uttar Pradesh described the difficulty in accessing food after floods as living with 'half-full stomachs' (Focus-group discussion, Gorakhpur, November 2006). Women in semi-arid villages in Kutch, Gujarat describe the same situation as 'drought lives in our stomachs' (Focus-group discussion, Bhuj, October 2007).

Women are more sensitive to food insecurity and malnutrition because of their heightened need during the phases of menstruation, pregnancy, and nursing (Sorenson et.al, 2018). This combined with

the increasing load on them due to the crisis of natural resources can contribute to the rise in health related issues and even mortality among females.

iv. Loss of biodiversity:

Climate change is one of the main drivers of biodiversity loss and its solution also lies in biodiversity (UNCBD, 2022). It is predicted that by 2050, climate change could result in a species extinction rate of 18 to 35 percent. Biodiversity is an essential part of the survival and livelihood solutions of millions of people especially those who are living in developing countries and continuous decline in biodiversity threatens their survival. However, the impacts of loss of biodiversity are gendered and affect men and women in different ways. Women control around 60-70 percent of the world's food production (*Convention on Biological Diversity, 2010*) and play a crucial role in the management of water and other natural resources. Not only this, women also have knowledge about the role and usage of various varieties of plants, seeds, trees, etc; which has both economic and non-economic value. Continuous biodiversity loss puts an extra burden on women regarding the management of these natural resources and also threatens their livelihood and income earning avenues.

v. Displacement and associated horrors:

Women are more likely to be displaced by climate change as compared to men. UN finds in one of its studies that 80 percent of those who are displaced due to climate change are women (BBC, 2022). Displacement is not just about losing home but within this lies a whole set of socio-economic and psychological impacts that affect the women population gravely. Women and girls living in makeshift shelters and camps often face a greater risk of sexual violence, domestic violence, and human trafficking. In a camp for displaced people in Somaliland, two sisters, Hibaq (age 15) and Nimco (age 19), lie awake at night listening to any sounds that may alert them to men walking into their makeshift shelter which has no proper doors. Some nights they don't sleep at all for fear of being attacked. To protect them from this ordeal and due

to lack of economic resources girls are married off at very early ages giving rise to child marriages among the refugee women. When the floods hit Bangladesh in 2017, Sarmin suddenly had to face the prospect of getting married at the tender age of 14. Her parents were struggling after they lost everything in the floods and they felt that marriage into another family would keep Sarmin well-fed and safe (ReliefWeb, 2019). Not only this when girls are displaced they are less likely to continue their education and lose the chance to enhance their earning opportunities.

Climate change though is a planetary phenomenon but it can intensify poverty, underdevelopment, and gender inequalities. Half of the world's population consists of women but still one can observe that in major forums of climate change, there is always underrepresentation of women. As we have witnessed that women are one of the worst affected victims of the climate change given their already existing vulnerable position in the society and economy. So, any negligence regarding the participation of women in discussions and solutions to climate change would have serious repercussions. The United Nations Framework Convention on Climate Change (UNFCCC) which provides for review and implementation of global climate change policy and targets does not concern itself much with gender dimensions of climate change in its early years. This scenario changed when the Global Gender and Climate Alliance (GGCA) was created at the 2007 UN Climate Change Conference in Bali. At COP21 (21st Conference of Parties) of UNFCCC in Paris in 2015, the members recognized the need for empowering women in climate change decision making. At the 23rd COP in Bonn (Germany) in 2017, a step forward was taken in this regard with the adoption of the Gender Action Plan. It is concerned with the incorporation of gender into all the works related to climate policy at both national and international levels.

We cannot combat climate change without mainstreaming gender in climate change related policies. Gender mainstreaming is defined as the "*process of assessing the implications for women*

and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality" (UN, 1997).

4.3 Need for gender inclusive approach to climate:

- i)** Climate change affects the entire world and requires efforts from all of us. Women constitute half of the world's population and yet for the greater part of the time they are left out of the climate related discussions. To bring down the global temperature by limiting GHGs emissions and making the net zero pledge successful it is imperative to include women from all walks of life in our agendas and programs.
- ii)** Women have unique knowledge about the management of land and other natural resources because they are the main collectors and managers of these resources at their homes especially in rural areas. With the majority of agriculture labour force being women in many parts of the world studies have indicated if women are provided with better agricultural resources and credit, food production would increase many times thereby reducing the problem of world hunger and malnourishment. Improvement in agriculture productivity also reduces the need for clearance of forests and green pastures reducing the GHGs emissions.
- iii)** Women are often first responders in case of any disaster and providing care for victims. In order to adapt our societies according to the climate change impacts it is crucial to involve women in disaster relief programs and building more climate resilient societies.

- iv)** Women are more vulnerable to climate change and it is further deepening the gender divide. This gender divide translates into an increase in poverty, unemployment, illiteracy, food insecurity, violence, and many other socio-economic evils. If we involve women in climate change combating efforts and make them the centre of climate change policies it will automatically help in solving these various socio-economic issues of the countries

4.4 Gender inclusive intervention for climate change:

Actions taken for mitigation, adaptation and reducing the effect of climate change call for gender focused approaches like:

i) Gender specific data:

Solution to any problem requires its proper information. Thereby, it is imperative that for gender mainstreaming of climate policies we need to know how climate change affects women differently and for that purpose we need gender specific data. This will help in analyzing different aspects of relationship between gender and climate change.

ii) Gender centric approach in climate change solutions

Sectors like agriculture, fishing, etc; which are dependent on natural resources bear the major burden of climate change. Many regions of the world are dependent on them for livelihood and world is dependent on them for food supply. Discussions earlier showed that in these regions it is women who are actively involved in these occupations. That means when we talk about sustainable agriculture, fishing, irrigation facilities, water management etc; this cannot be done without participation of women in it. They know the ecosystem of a specific area in and out and they themselves are using local methods to address the issues created by climate change. *Páramo* ecosystem of the Andes mountain range of Southern America which is one of its kinds on Earth is facing desertification over a long period of time. Here native women are using sustainable agricultural

production and landscape management to refurbish the fragile ecosystem to its original state. Similarly, in 2013, to tackle the recurring typhoons in Vietnam, the high risk communities of Da Nang City engaged a local Women's Union in advance to help them build typhoon resistant homes. This and many other examples from all over the world show that for better preparedness regarding climate change incidents, it is crucial to use the knowledge and efforts of women be they native, young, or old. We need to give more support to women led bodies, cooperatives, and organizations engaged in providing sustainable development solutions.

iii) Inclusion of the voices of women:

Women are underrepresented in not just climate change related forums but also in political and economic bodies in majority of the countries. In most of the decision making positions, there is a wide gender gap. As of 2022, women held only 26.4 percent of Parliamentary seats globally and in 23 countries it is even below 10 percent. Similarly, only 14 percent of countries (27 countries) have female head of state or government and women held only 21.9 percent of ministerial positions in COP26 of UNFCCC.

As per the analysis by BBC, women accounted for just 34 percent of the committee members in negotiations with some country teams having more than 90 percent men. There were 110 leaders at COP but only seven were women (BBC, 2022). When representation of women is low in these bodies its negotiations and outcomes are more likely to be affected by ignorance towards specific affects of climate change on women

iv) Creating jobs for women in green economy:

As the world now focuses on a sustainable development model, one of its key elements is green economy which includes the use of sustainable technologies and expansion of green sectors to make them the engine of economic growth. Green economy includes sectors like agriculture, green manufacturing sectors, renewable energy, tourism, waste management, etc. LinkedIn Green Skills Report highlights the presence of gender gap in green sectors as well. For every 100 men, only 62 women are considered "green talent"

globally. Since 2015, 66 percent of transitions into green jobs have been made by men (ADB, 2022). Boston Consultancy Group (BCG) study indicates that by 2030, 67 million jobs will be created in the green economy. However, looking at the present gender distribution of the workforce in green sectors, only 25 percent of these jobs will be held by women (Sqalli *et al.*; 2022). All this shows that there will be a gender divide in the future employment opportunities also which will keep the women in their current grim economic and social conditions. So there is a need to bring more women into these green sectors and for that changes are required in the educational and organizational structure.

v) Gender focused approach in climate financing and investment:

This is a proven fact that women in general lack access to financial resources. Coming to climate change, they don't have enough knowledge and capital to mitigate its effects in comparison to their male counterparts who have better information and reach to sources of climate financing. Gender focused approach on climate financing is crucial not only just for achieving gender equality but also for enhancing climate change mitigation efforts as more hands will participate. After COP26 we can see some focus and discussions on gender dimension of climate finance but a lot more needs to be done in this area. We need to channelize more finance towards women working for sustainable development solutions. Increasing participation of women in green economy is also linked with financing. Women entrepreneurs in these green sectors require money to buy latest technologies and expand their businesses. Investment and expansion calls for proper networking and women entrepreneur lacks majorly in this area. Financing solutions should also include networking platforms for these women entrepreneurs to help them in coming at level playing field with their counterparts.

vi) Land rights for women

Land is crucial for economic and social security. However, one-third of population lacks secure land rights. If we translate this in gender specific terms, women constitute more than 50 percent of the

agriculture workforce in South Asian and Sub-Saharan African regions. Still, we can see that in terms of land ownership, they own just 20 percent of the land globally. This restricts them from accessing capital which can be useful in implementing sustainable land use methods. It further accentuates inequalities. So, reducing land inequalities and securing land rights is an important step towards building climate change resilient economies.

vii) Reducing health burden of climate change for women:

Climate change influences health of the population by deteriorating the quality of air and water, increasing the prevalence of vector borne diseases, food insecurity, and malnourishment. However, due to biological, physiological, economic and social dissimilarities it affects women more than men. In recent years climate related discussions have recognized the need for gender mainstreaming of policies but specifics about the impact of climate change on women's health still needs to be recognized.

5. Conclusion:

There is no doubt that climate change is one of the most severe threats faced by the world right now. Majority of the policies and programs dealing with climate change take it as a gender neutral issue and do not take into account inter-linkages between climate change, gender equality and economic development. This gap in the core of most of the climate action plans today is highlighted in the discussion above that how and why climate change affects women differently. It is apparent that due to their traditional roles in society and prevailing gender inequalities around the world women often bear the greatest brunt of climate change. This study also examines different interventions that can be made to enhance the inclusion of women in climate change mitigation, adaptation, and negotiations. Although now there have been efforts at the international and national levels for gender mainstreaming of actions taken to tackle climate change but majority of them are just on paper. There is a need to start close monitoring of the impact of these policies in reducing gender

inequalities and the burden of climate change on women.

References:

- [1] ADB. (2022). Women in the Green Economy Integrating gender equality in building a sustainable future for all. Virtual ADB seminar. Accessed from <https://www.adb.org/annual-meeting/2022/events/women-green-economy> in December 2023.
- [2] Alston, Margaret. (2015). Women and Climate change in Bangladesh. *Routledge* Accessed from https://www.google.co.in/books/edition/_/WMsGgAAQBAJ?hl=en&gbpv=1 in June 2023
- [3] Brody, A., J. Demetriades and E. Esplen. 2008. Gender and Climate Change: Mapping the Linkages, *BRIDGE Institute of Development Studies*, United Kingdom.
- [4] Burns, Bridget. (2017). Pocket Guide to Gender Equality under the UNFCCC. *Women's Environment and Development Organization*. Accessed from <https://wedo.org/wp-content/uploads/2016/11/GGCA-RP-FINAL.pdf> in December 2019.
- [5] Castañeda, I., and S. Gammage. (2011). Gender, Global Crises, and Climate Change' in Jain, D., and D. Elson (eds.), *Harvesting Feminist Knowledge for Public Policy*, International Development Research Centre, SAGE Publications India, New Delhi, India.
- [6] Convention on Biological Diversity. (2010). Gender and Biodiversity. Accessed from <https://www.cbd.int/gender/doc/cbd-factsheet-gender-en.pdf> in December 2019.
- [7] FAO. (2020). Global Forest Assessment Report. Accessed from <https://www.fao.org/3/ca8753en/ca8753en.pdf> in December 2022
- [8] FAO. (2020). Gender, food security and nutrition. Accessed from [https://www.fao.org/gender/learning-center/thematic-areas/gender-and-food-security-and-nutrition/4/#:~:text=Worldwide%2C%20the%20gender%20gap%20in,\(FAO%20SOFI%2C%202021\)](https://www.fao.org/gender/learning-center/thematic-areas/gender-and-food-security-and-nutrition/4/#:~:text=Worldwide%2C%20the%20gender%20gap%20in,(FAO%20SOFI%2C%202021)) in December 2023
- [9] FAO. Integrating Agriculture in national adaptation plans. Accessed from <http://www.fao.org/in-action/naps/overview/programme-activities/gender-mainstreaming> in December 2019.
- [10] FAO. (2015). Gender in Climate Smart Agriculture. Agriculture Global Practice. *World Bank Group and the Food and Agriculture Organization of the United Nations and the International Fund for Agricultural Development*. Accessed from

- <http://www.fao.org/3/a-az917e.pdf> in December 2019.
- [11] Fordham M; Ariyabandu, M. M, Gopalan P and Peterson K. (2009). "Please don't raise gender now – we're in an emergency!" 2006. *World Disasters Report*. International Federation of Red Cross and Red Crescent Societies. International Federation of Red Cross and Red Crescent Societies-IFRCRCS.
- [12] Global Gender and Climate Alliance. (2016). Gender and Climate Change: A Closer Look at Existing Evidence. Accessed from <https://wedo.org/wp-content/uploads/2016/11/GGCA-RP-FINAL.pdf> in December 2019.
- [13] Government of India. (2008). National Action Plan on Climate Change. Accessed from http://www.moef.nic.in/sites/default/files/%20Pg01-52_2.pdf in December 2019
- [14] Ikeda, Keiko. (1995). Gender Differences in Human Loss and Vulnerability in Natural Disasters: A Case Study from Bangladesh." *Indian Journal of Gender Studies* 2 (2):171- 93.
- [15] IPCC. (2001). Climate change 2001: Impacts, Adaptation and Vulnerability, Summary for Policymakers, WMO.
- [16] Marin, N. (2014). Unconventional food plants in three departments of the Colombian Amazon as support for food sobrania, contributions from the genre approach. *Amazonian Scientific Research Institute Bogota: SINCHI*
- [17] Mutoko, Morgon C., Janie Rioux, and Josephine Kirui. (2015). Barriers, incentives and benefits in the adoption of climate-smart agriculture: *Lessons from the MICCA pilot project in Kenya. Background report 9*. Rome. Accessed from <http://www.fao.org/3/a-i4396e.pdf> in December 2019.
- [18] Neumayer, E., and T. Plumper. (1997). The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981-2002', *Annals of the Association of American Geographers*, Issue 97. Accessed from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7007102/pdf/GH2-2-283.pdf> in December 2019.
- [19] Price, R.A. (2018). Women-initiated measures to cope with environmental stresses and climate change in South Asia. *K4D Helpdesk Report*. Brighton, UK: Institute of Development Studies. 28th February. Accessed from https://assets.publishing.service.gov.uk/media/5aafc6b40f0b64ab1a1e876/Women-initiated_measures_to_cope_with_environmental_stresses_in_South_Asia.pdf in December 2019
- [20] Reliefweb. (2019). 5 ways climate change affects women and girls. Accessed from <https://reliefweb.int/report/world/5-ways-climate-change-affects-women-and-girls> in December 2023.
- [21] Slavchevska, Vanya; Kaaria, Susan; Taivalmaa, Sanna-Liisa. (2016). *Feminization of Agriculture in the Context of Rural Transformations: What is the Evidence?* World Bank, Washington
- [22] Sorensen, C., Saunik, S., Sehgal, M., Tewary, A., Govindan, M., Lemery, J., & Balbus, J. (2018). Climate change and women's health: Impacts and opportunities in India. *Geo Health*, 2,283–297. Accessed from <https://doi.org/10.1029/2018GH000163> in December 2023
- [23] Stallard, Esmá. (2022). COP27: Lack of women at negotiations raises concern. BBC News Science. 16th Nov. Accessed from <https://www.bbc.com/news/science-environment-63636435> in December 2023.
- [24] UN Climate Change. (2014). *Vietnam: Building Storm-Resistant Houses*. Accessed from <https://unfccc.int/climate-action/momentum-for-change/lighthouse-activities/building%20storm-resistant-houses> in December 2019
- [25] UN Women. (2022). Accessed from <https://data.unwomen.org/features/poverty-deepens-women-and-girls-according-latest-projections> in December 2023
- [26] UN Women. (1997). Gender Mainstreaming. Accessed from <https://www.unwomen.org/en/how-we-work/un-system-coordination/gender-mainstreaming> in December 2019
- [27] UN Women. Facts and Figures: Economic Empowerment Benefits of economic empowerment. Accessed from <https://www.unwomen.org/en/what-we-do/economic-empowerment/facts-and-figures> in December 2019
- [28] UN. (2015). World's Women 2015. Accessed from https://www.undp.org/content/dam/%20aplaws/publication/en/publications/environment-energy/www-ee-library/climate-change/africa-adaptation-programme-experiences-gender-and-climate-change/AAP_Discussion_Paper1_English.pdf in December 2019.
- [29] UN. (1997). *Report of the Economic and Social Council for 1997 (ECOSOC) on Gender mainstreaming*. Accessed from <https://www.un.org/womenwatch/daw/csw/GMS.PDF> in December 2019

- [30] UNCBD. (2022). Biodiversity - our strongest natural defense against climate change. Accessed from <https://www.un.org/en/climatechange/science/climate-issues/biodiversity> in December 2023
- [31] UNDP. (2010). Gender, Climate Change and Community-Based Adaptation. New York.
- [32] UNDP.(2011). Laddey, Ryan, et al. Africa Adaptation Programme Experiences Gender and Climate Change: Advancing Development through an Integrated Gender Perspective.
- [33] UNDP. (2013). Overview of linkages between gender and climate change, Gender and climate change-Capacity development series, *Asia-Pacific, Training module-1*. Accessed from <https://www.undp.org/un/content/dam/undp/library/gender/Gender%20and%20Environment/TM1 Asia Pacific Capacity.pdf> in December 2019
- [34] UNEP. (2011). Women at the frontline of climate change. Accessed from https://www.ipcc.ch/apps/nj-lite/ar5wg2/nj-lite_download2.php?id=9719 in December 2019
- [35] UNESCO. (2019). Gender Equality and Education: Access to Empowerment, Accessed from <https://www.unesco.org/en/gender-equality/education> in December 2019
- [36] UNICEF.(2023). Malnutrition in mothers soars by 25 per cent in crisis-hit countries, putting women and newborn babies at risk. March 6. Accessed from <https://www.unicef.org/press-releases/malnutrition-mothers-soars-25-cent-crisis-hit-countries-putting-women-and-newborn-in-December-2023>
- [37] Women's Environmental Network. (2010). Gender and the climate change agenda. The impacts of climate change on women and public policy. London (U.K.).
- [38] World Bank.(2023) <https://data.worldbank.org/indicator/SL.AGR.EMP.L.ZS>
- [39] World Bank (2023). Accessed in January 2024 <https://data.worldbank.org/indicator/SL.AGR.EMP.L.ZS>
- [40] World Inequality Report. (2022). Accessed from <https://wir2022.wid.world/chapter-5/> in December 2023.
- [41] Zineb Sqalli, Shalini Unnikrishnan, Nour Mejri, Patrick Dupoux, Robin George, and Younès Zrikem. (2021). Why Climate Action Needs a Gender Focus. Accessed from <https://www.bcg.com/publications/2021/climate-action-impact-on-gender-equality> in December 2023