



## FARM WOMEN IN CLIMATE CHANGE AND ITS EFFECT ON SOCIO-ECONOMIC CONDITIONS

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### Introduction

Climate change has emerged as a significant global challenge, exerting profound impacts on natural ecosystems, agricultural systems, and rural livelihoods. Changes in temperature, rainfall variability, and the increasing frequency of extreme weather events such as droughts and floods have intensified risks to agricultural productivity and food security, particularly in developing countries where agriculture remains climate-dependent (IPCC, 2022). These climatic disruptions directly influence socio-economic conditions by reducing farm incomes, increasing poverty, and threatening sustainable rural development.

Within the agricultural sector, farm women play a pivotal yet often overlooked role. Women contribute substantially to agricultural production, livestock management, food processing, and household nutrition. According to the Food and Agriculture Organization (FAO), women account for nearly 43 percent of the agricultural labor force in developing countries, yet they face persistent gender-based inequalities in access to land, credit, extension services, and climate-adaptive technologies (FAO, 2011). Such disparities heighten their vulnerability to climate-induced stresses.

Climate change disproportionately affects farm women by increasing their workload, reducing agricultural productivity, and exacerbating socio-economic insecurities. As

natural resources become scarce, women spend more time collecting water and fuel, compromising their health, education, and economic opportunities (UN Women, 2018). Furthermore, climate-related crop failures and livelihood losses often lead to reduced household income, food insecurity, and increased poverty, with women and children being the most affected. These impacts reinforce existing gender inequalities and undermine the socio-economic resilience of rural households.

### Farm Women's Place in Agriculture

#### Contribution to the Production of Crops:

From preparing the ground to sowing, weeding, harvesting, and post-harvest processing, farm women are essential to agricultural production. A large amount of the food consumed locally is produced by women in many developing nations. They frequently grow subsistence crops including fruits, vegetables, and grains, which directly support local markets and family nutrition.

#### Engagement in the Management of Livestock:

Cattle, poultry, goats, and other livestock are among the many animals that women actively care for. They frequently handle rudimentary veterinary treatment, cleaning, milking, and feeding animals. In addition to producing food items like milk, eggs, and meat, livestock gives rural households a source of income and financial stability.

### **Involvement in Water Management and Irrigation:**

Water resources are often managed by women for agricultural uses. This entails collecting water, keeping irrigation channels in good condition, and using water-saving techniques on crops. Their participation is essential in areas where water scarcity is a problem since it has a direct impact on household water security and crop output.

### **Juggling Household Duties and Farm Work:**

Typically, farm women balance a variety of responsibilities, including managing agricultural operations and taking care of household tasks like cooking, parenting, and collecting firewood and water. In addition to highlighting the gendered aspect of agricultural labor, this dual obligation shows their tenacity.

### **Importance for Rural Economies:**

Rural economies depend on the labor of agricultural women. Women support local markets, household incomes, and the general well-being of the community by raising animals, providing food, and protecting natural resources. Through their efforts, rural communities' social and economic stability is strengthened, poverty is decreased, and food security is promoted.

## **Climate Change's Effect on Farm Women**

### **1. Climate Change Difficulties**

Climate change is posing more difficulties for farm women, such as:

- a) **Droughts:** Extended dry spells deplete soil moisture, resulting in reduced crop production and a lack of pasture for cattle. When fetching water for home usage and irrigation, women frequently have to walk farther.
- b) **Floods:** Excessive rains and flooding can damage homes, destroy crops, wash away seeds, and endanger livestock. Repairing

family and farm losses is often an additional responsibility for women.

- c) **Heatwaves:** High temperatures can put crops and animals under stress, lower productivity, and put women working in the fields at greater risk for illness.
- d) **Erratic Rainfall:** Unpredictable rainfall patterns make it challenging to schedule planting and harvesting, which leads to agricultural failure and food poverty.
- e) **Soil Degradation and Land Erosion:** Women's capacity to cultivate food sustainably is impacted by soil erosion and the loss of fertile land due to increased flooding and erratic rainfall patterns.
- f) **Pests and Diseases:** As the climate changes, crop pests and livestock diseases may become more common, requiring women to devote more time to their management.
- g) **Resource Scarcity:** As shortages of fuelwood, water, and feed grow more frequent, the daily workload of women who gather these supplies increases.

The livelihoods of women who rely on agriculture for both food and revenue are directly threatened by these occurrences.

## **2. Impacts on Farm Women Directly**

Women are affected by climate change in a number of interrelated ways:

- a) **Crop Loss:** Unpredictable weather conditions like heat waves, floods, and droughts can harm crops, decreasing the amount of food that households and communities have access to.
- b) **Water Scarcity:** Women must travel farther and spend more time gathering water for irrigation and household usage due to irregular rainfall and droughts, which increases their burden.

- c) **Increased Labor:** Women frequently work longer hours on farming, caring for animals, and domestic tasks when resources become short, which may have an impact on their health and wellbeing.
- d) **Decreased Income:** When crops and cattle are lost, household income is reduced, which makes it more difficult for women to purchase necessities, make investments in tools or seeds, and provide for their families.
- e) **Food insecurity:** Women frequently put the needs of others before their own, and lower agricultural productivity has a direct impact on family nutrition.
- f) **Health Risks:** Women are more vulnerable to health issues such as exhaustion, dehydration, and heat stress due to higher temperatures, water scarcity, and greater work.
- g) **Limited Coping Capacity:** Women frequently lack access to financial resources, technology, and support networks as a result of gendered disparities, which makes it more difficult for them to adjust to climate shocks.

### 3. Factors of Vulnerability

Systemic disparities make farm women more vulnerable to climate change:

- a) **Limited Resources:** Women frequently have limited access to loans, land, and agricultural supplies like fertilizer and seeds.
- b) **Restricted Land Rights:** Women are unable to choose crops or adaptations due to a lack of ownership.
- c) **Limited Technology:** Women find it difficult to deal with climatic extremes without resources like irrigation, drought-resistant seeds, and weather forecasts.
- d) **Decision-Making Power:** When it comes to resource management and climate adaptation, women are often left out of household or communal decisions.

### 4. Wider Consequences

Farm women are the foundation of smallholder agriculture in many developing countries, and their livelihoods, food security, and rural economies are all at risk due to climate change. Building climate resilience requires giving women access to resources, information, and decision-making power.

### 5. Impacts on Socioeconomic Situations

- a) **Food Security and Nutrition in the Home:** Ensuring home nutrition is a major responsibility of women. Women frequently eat less or make dietary compromises to protect their children when food supply is reduced due to climate change, which has an impact on their own health and productivity.
- b) **Poverty and Income:** Rural poverty is exacerbated by climate shocks. Women who have unstable land tenure and little ability to save money are more vulnerable to debt and asset depletion.
- c) **Children & Education:** Children, particularly girls, frequently drop out of school to support family work due to lower incomes, which prolongs cycles of vulnerability.
- d) **Well-Being of the Community:** Communities that are severely impacted by climate change have less social services, less infrastructure investment, and weaker self-help and collective savings organizations.

Women's exclusion from decision-making exacerbates these impacts.

### Adaptation Techniques for Women

Farm women use a variety of adaptive techniques in spite of obstacles: Crop diversification to include drought-tolerant types; water conservation techniques (such as mulching and rainfall collection); and modifications to livestock management. Participation in local SHGs and cooperatives for

group action; utilization of indigenous knowledge for weather patterns. However, access to resources, knowledge, and assistance is necessary for both scalability and effectiveness.

### **Institutional, Technological, and Policy Assistance**

Important steps to empower farm women in climate adaptation include:

#### **Availability of Resources**

- Women's secure land rights and tenure;
- Reasonably priced credit and insurance products
- Financial aid for climate-smart equipment, such as solar pumps and drip irrigation.

#### **Information & Education**

- Training in sustainable farming methods;
- Gender-sensitive extension services;
- Local language climate information services

#### **Infrastructure and Social Safeguards**

- Better water supply systems;
- Childcare and medical services to assist female farmers;
- Rural highways and market connections

#### **Leadership & Involvement**

Women's participation in local government (such as panchayats), climate change planning, and farmer groups and cooperatives

#### **Conclusion**

With their significant contributions to crop production, livestock management, water conservation, and the maintenance of rural economies, farm women are essential pillars of agriculture. Their many obligations, which include juggling hard farm labor with domestic duties, highlight their tenacity and importance to community well-being and food security.

However, their livelihoods and the larger socioeconomic fabric of rural areas are directly threatened by climate change, which poses significant challenges that enhance their vulnerabilities through unpredictable weather patterns, resource scarcity, and higher labor costs.

Systemic injustices like restricted access to technology, limited land rights, and exclusion from decision-making processes exacerbate these problems and make it more difficult for women to successfully adapt to the effects of climate change. Despite these challenges, farm women show incredible creativity and tenacity by utilizing adaptive tactics based on indigenous knowledge and communal cooperation.

It is crucial for the resilience of farm women as well as the sustainability of agriculture and rural development in general to empower them through safe land tenure, reasonably priced financial services, gender-sensitive education, better infrastructure, and inclusive governance. Stronger, more egalitarian communities that can handle future environmental uncertainties will result from acknowledging and incorporating their perspectives and knowledge into climate adaptation planning. In the end, assisting farm women is not only a social justice issue but also a strategic necessity for climate resilience and global food security.

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