

WOMEN IN COTTON:
**LISTENING TO WOMEN'S
VOICES ON THE EFFECTS
OF CLIMATE CHANGE**



**COTTON
CONNECT**

Fashion and textile manufacturers are being urged to incorporate climate change mitigation into their re-build strategies. According to a recent McKinsey report¹, the global fashion industry produced around 2.1 billion tonnes of greenhouse gas emissions in 2018 (4% of the global total), with 38% of those emissions coming from energy-intensive raw material production.

The effects of climate change are known for their impact on the environment. However, it is now becoming clear that these environmental changes are seriously impacting the lives of cotton farmers, especially women.

The impact of climate change on cotton farming



TEMPERATURE:

An increase in temperatures has been recorded in recent decades. The annual mean, maximum and minimum temperatures averaged over India during 1986-2015 show a significant warming trend of 0.15 °C, 0.15 °C and 0.13 °C per decade, respectively².



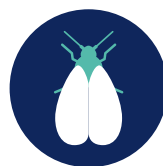
HARVEST:

The number of harvests has reduced³. In previous years, some cotton could be harvested after March, but with the rise in temperature, cotton can rarely be harvested after January now.



MONSOON:

The summer monsoon precipitation (June to September) over India has declined by around 6% from 1951 to 2015. More frequent dry spells (27% higher during 1981-2011 relative to 1951-1980) and more intense wet spells were recorded during the summer monsoon season⁴.



PESTS:

The persistent warm and dry conditions allow pests to increase their populations and geographical range. Due to increased metabolic rates, insects eat more in hot conditions,⁵ causing more damage to crops.⁶



BIODIVERSITY:

Climate change is one of the biggest drivers of biodiversity, and with global warming, is expected to cause losses of 29%.^{7,8} The biodiversity loss affects agroecosystem, livestock farming and rural economy.⁹

Three key impacts of climate change on women cotton farmers



REDUCED INCOME

The loss of productivity in livestock impacts women's income the most, as this income is primarily theirs.

Women and local partners shared that any reduction in contribution to household expenditure reduces women's decision-making powers in the family.



REDUCED TIME

The increased time spent looking after the farm, livestock and family means the women now have very little time for themselves or to socialise.

Many women who previously earned money by doing craftwork like embroidery, or running a small business, no longer have time to do this.



REDUCED HEALTH AND WELLBEING

With the rise in temperature and humidity, and weather extremes, women are more vulnerable to infectious diseases, allergy, and heat exhaustion.

The group discussions raised issues such as how women's health and nutrition needs are placed last by both herself and her family. Women are at greater risk of food insecurity. As men are the first to migrate to find additional or alternate income, women are left behind with increased responsibilities and less power.



Climate change is affecting all areas of women cotton farmers' lives

1. ON THE FARM

The women in group discussions reported they are working longer hours in the farm, sometimes for eight to nine hours. The key themes raised were:

◆ Increased sowing

Women now sometimes need to sow cotton seeds more than once. Sudden, excessive rainfall can erode the top soil, and long, dry spells dry out the seeds, requiring another round of sowing.

◆ Warmer winters

In most areas, the winter has become warmer and women now need to get to the farms earlier to pick certain crops during winter. As a result, they get less time to sleep. Warmer winters and untimely rainfall increases weed growth, requiring more weeding. The rise in temperature and humidity also increases crop pests, requiring more time working in the field for pest control.

◆ Increased heat

People who work in open fields suffer because of the increase in heat. Several places in India reached 50°C in 2020, with the country experiencing its warmest decade on record.¹⁰ The extreme heat causes fatigue, weakness, dehydration and other heat exhaustion related issues.



2. CARING FOR LIVESTOCK

Taking care of livestock is usually managed by women, which is why women are more affected by the impact of climate change on livestock. The key themes mentioned by women were:

" Our livestock is an additional source of income and helps us meet expenses during any emergency. Climate change has shrunk our earnings. We face a hard time arranging for water and fodder for them especially when the weather is extreme. It has affected the quality of milk they give and brought down our income."
A female farmer in Pakistan

♦ More time fetching fodder

Temperature increases, elevated CO² emissions and changes in rainfall contribute to a loss of biodiversity and abundance, reducing the availability of green fodder for animals. Some families manage to leave some land spare as a grazing farm, while some women have to do additional work to fetch green fodder.

♦ Reduced productivity

Increased heat affects the animals' access to water and fodder, impacting their health and the quality of milk. These factors, combined with increased disease and mortality of the animals, mean productivity of livestock, especially dairy cattle, has decreased.



3. IN THE HOME

Women reported they are spending more time working in the home, as well as on the farm. The key themes mentioned were:

♦ Fetching water can take more time

As the summers are drier now and water sources are drying, fetching water can take a lot of time and effort. Women described health issues like headache, backache and hair loss from carrying water over long distances.

♦ Food spoils in heat

Women explained that whereas they could previously prepare food in advance, it now spoils in the heat, requiring them to cook multiple times. Some were too tired to cook after returning from the farm and so ate less nutritious food.

Recommendations

FOR ORGANISATIONS WORKING DIRECTLY WITH COTTON FARMING COMMUNITIES:

1. **Create gender-specific training on sustainable and socially responsible agricultural practices.**

CottonConnect has found that when women receive specialist training, it helps them develop their role as farmers, especially with regard to income generation and decision-making.

“By including women in agronomic training CottonConnect has normalized women as farmers. It has led to men accepting women as farmers, just as they themselves are.”

Janardhan Rakhama Pawar, Executive Director, Sanjeevani Institute of Empowerment and Development (SIED).

2. **Educate farmers to adapt their crop planning according to the changed climate cycle, providing contextualised training for each stage of the cropping according to the local geography and climate.**

CottonConnect’s sustainable cotton training includes advice for farmers to use short duration varieties of cotton so they can grow the same quantity during a shorter time period. They can then remove the cotton in November or December, and plant winter crops which provide additional income, help in pest control and increase biodiversity.

3. **Improve farm profitability and increase financial and market access, e.g. credit services, bank linkages, seed linkages and crop insurance for women as key stakeholders.**

The Farmer Business School helps women to treat farming as a business. As a result of the programme, more women open bank accounts, take out crop insurance, and are aware of how to find the right market for their produce.

FOR FASHION AND TEXTILE BRANDS:

1. **Consider the human cost, not only the environmental cost, of climate change**
2. **Develop supply chain climate change strategies with women in mind**
3. **Choose sustainable agricultural programmes with a focus on training women**

“Farmers can be trained to cope with the changing climate cycles. Agronomic trainings should include modules on changing crop cycles. These should be region and season specific. If the farmer is aware of the changed crop and weather cycles, they are better equipped to face the challenges.”

**Arpit Khandewal, Director,
The Shree Ram Fibres**

“Need-based credit facility provided to women farmers empower women. We see that women work more on the field but the income from the field goes to men. But when the loan money goes to the woman’s account, it gives her the decision-making power of how to use that money.”

**Heena Dave, Coordinator,
Self-Employed Women’s Association
(SEWA)**

In Summary

Climate change affects all areas of women's lives - on the farm, caring for livestock, and in the home. In turn, this has a profound impact on their income, time and health.

While there may be variations in the effect of climate change in different regions, overall, the effects combined have a significant, negative impact for smallholder cotton farmers, resulting in:

- Crop failure or reduced yield
- Poorer cotton quality
- Increased cost of farming or effort required

Women in cotton farming communities are affected by climate change in far-reaching ways, beyond the direct impacts on the cotton they grow, because of the traditional gender roles and specific tasks that they undertake.

There is clearly a human cost attributable to climate change, as well as an environmental cost. Organisations developing responses to climate change in agriculture should keep in mind how the impacts of climate change affect women beyond the environmental changes to farming. Addressing the effects of climate change is a fundamental part of building resilient supply chains.

KEY FINDINGS

- ♦ **Women are working longer hours in the farm due to increased sowing, weeding and other farm activities needed.**
- ♦ **The productivity of livestock has decreased, yet the cost and time of taking care of animals has increased.**
- ♦ **Women face a dual blow of increased work but reduced income, affecting the social and economic gains from cotton farming.**
- ♦ **The increased burden of work in the field and at home affects physical and mental health, and increases time poverty.**

"Climate change is an important issue affecting our lives and livelihoods. For our children and their children's future, it is vital that we act before it's too late."

A female farmer in Pakistan



Methodology

To understand the practical impact of climate change on rural communities, CottonConnect conducted a scoping exercise, including interviews and focus groups discussions, to identify areas for future research and action. The findings from this study illustrate the specific ways in which women cotton farmers are affected by climate change. It is hoped the themes identified will direct future research and help build the resilience and adaptability of women in cotton farming communities.

“ We know our challenges well. The biggest challenge in rural areas is livelihood. Soil, water and pest challenges have reduced yield and income. My husband had to migrate to the city for better paying employment, leaving me behind to take care of family and our farms.”

A female farmer in India

“ We are stuck in a 5am to 9pm work hour cycle, with a lot of home, farm and livestock responsibilities. It leaves us hardly any time to rest. Our work at home and field has increased, so we have the same or more expenses but the income is not much.”

A female farmer in Pakistan



ACKNOWLEDGEMENTS

CottonConnect interviewed experts from five local partner organisations and conducted five focus group discussions, with around ten women farmers in each group, in India and Pakistan.

CottonConnect would like to thank the following organisations for their valuable contributions to this study: Sanjeevani Institute of Empowerment and Development (SIED), Self-Employed Women's Association (SEWA), Sri Ram Fibers, and Yoganjali

Kelavani Mandal in India, and Rural Education and Economic Development Society (REEDS) in Pakistan.

With thanks to Janardhan Rakhama Pawar, Heena Dave, Arpit Khandelwal, Jigna Dave and Shahid Saleem for their time and expertise shared in interviews.

CottonConnect would also like to thank the women farmers who took part in the farmer group discussions and shared their experiences of the impacts of climate change.

1. Fashion on Climate - How the Fashion Industry can urgently act to reduce its greenhouse gas emissions. McKinsey & Company, in partnership with the Global Fashion Agenda, 2020
2. Assessment of Climate Change over the Indian Region, Union Ministry of Earth Sciences (MoES), India
3. International Trade Centre (ITC) Cotton and Climate Change: Impacts and Options to Mitigate and Adapt.
4. Assessment of Climate Change over the Indian Region, Union Ministry of Earth Sciences (MoES), India
5. <https://www.downtoearth.org.in/news/natural-disasters/crops-failing-against-rising-temperatures-pest-attacks-study-69317>
6. International Trade Centre (ITC) Cotton and Climate Change: Impacts and Options to Mitigate and Adapt.
7. Newbold, T. (2018) Future effects of climate and land-use change on terrestrial vertebrate community diversity under different scenarios, Proceedings of the Royal Society of London B, doi:10.1098/rspb.2018.0792
8. John P. Rafferty, Biodiversity loss report 2019, <https://www.britannica.com/science/biodiversity-loss>
9. FAO, University of York, The Economics of Biodiversity Loss and Agricultural Development in Low Income Countries http://www.fao.org/fileadmin/templates/soilbiodiversity/Downloadable_files/agriculture_2.pdf
10. India Meteorological Department



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COTTONCONNECT IS AN ENTERPRISE WITH A SOCIAL MISSION PIONEERING A
TRANSPARENT AND SUSTAINABLE COTTON SUPPLY CHAIN FROM RETAILERS TO
FARMERS TO BUILD A SUSTAINABLE FUTURE FOR THE COTTON INDUSTRY.

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