

Informal economy women workers on the frontline of the climate crisis

A summary of the impacts of climate change on informal economy women workers in India are how they are responding

Onyeka Nneli



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The **Self-Employed Women's Association (SEWA)** is a national trade union in India started in 1972, which has a membership of over 3.2 million women across 18 states in India who are all poor, self-employed women workers from the informal economy. SEWA assists informal economy women workers in achieving full employment and becoming self-reliant through organising and constructive collective action. SEWA has grown into a family of member-owned economic organisations that provide livelihood security, reduce vulnerability and lead to economic empowerment of members. There are now over 4,000 Self-Help Groups, 110 cooperatives, 15 economic federations and 3 producer companies affiliated with the SEWA movement.

SEWA Bharat is the national federation of the larger SEWA movement, and is committed to strengthening the movement by highlighting the issues of informal economy women workers at the national level and building the capacity of the various SEWA branches. In this study, 'SEWA members' (or just 'members') refers to the informal economy women workers who participated in this study and are members of SEWA.

SEWA Bharat has collaborated with **Social Development Direct (SDDirect)** to build the evidence on how climate change is impacting informal economy women in India and how they are responding. This summary report gives an overview of the key findings of the study, which includes insights from over 1,100 of SEWA's members across four Indian states.



For further details, see the full report [here](#).



Key messages

1. Informal economy women workers are acutely aware of climate change and environmental degradation, and are frequently seeing negative impacts on their lives and livelihoods.
2. Informal economy women workers are on the frontline of the climate crisis, facing heavy losses to productivity and incomes.
3. Informal economy women workers in India are at risk of being left behind in the transition to a green economy, as the green sectors they work in become formalised.
4. Informal economy women workers are adapting to climate change, for example by changing work patterns and diversifying their incomes.
5. Collective action and related programming is vital for enhancing climate resilience, advocating for gender-just policies, and promoting sustainable practices, and needs to be rapidly scaled up as the climate crisis accelerates.
6. Climate change is reversing progress in unpaid care work. Improvements in climate-smart infrastructure are essential for building climate resilience.
7. Informal economy women workers are championing innovative sustainable practices, and their traditional knowledge and solutions need to be further documented.

Introduction

The informal economy encompasses a wide range of economic activities that are unregistered, unprotected and unregulated. Informal workers typically experience economic precarity due to a lack of reliable income and barriers to social protection and insurance, and as a result often live in insecure, informal housing. In India, 82% of women who work are working in the informal sector, or at least 151 million women, for example as street vendors, domestic workers and agricultural workers.¹

The study by SEWA Bharat and SDDirect focused on the impacts of climate change amongst eight occupation groups, which form a core part of SEWA's membership base:

 Agricultural Workers	<p>80% of the rural Indian workforce work in agriculture.² Women in rural areas often choose agricultural work due to its convenience, flexibility, contribution to household food security and lack of other options. The exact tasks they carry out are often influenced by gender, religion, and caste.³</p>
 Animal Husbandry Workers	<p>70% of livestock in India are owned by marginal and landless farmers, most of whom are women.⁴ Animal husbandry boosts women's income and food security, with women managing tasks like feeding, health care, and processing of livestock products.</p>
 Construction Workers	<p>In the construction sector, women typically earn lower wages and are primarily hired for tasks such as head-loading bricks and cement, breaking stones, mixing mortar, sifting sand, or cleaning. 98% of female construction workers are informally employed, often working seasonally or temporarily and earning less than men.⁵</p>
 Domestic Workers	<p>This is the largest sector for women in urban areas in India, often comprising women from marginalized groups who have migrated from rural areas.⁶ They face high risks of discrimination, poor working conditions, job precarity, and lack of social protection.</p>
 Forest-based workers	<p>Women are overwhelmingly responsible for fuelwood collection and collection of Non-Timber Forest Products (NTFP).⁷ NTFPs are the products from the forest other than timber, such as gum, medicinal plants and vegetables such as mushrooms.</p>
 Home-based Workers	<p>In 2017-18, there were 41.85 million home-based workers in India, or 9% of the total workforce. They perform tasks such as garment stitching, bidi rolling, snack preparation, recycling, and various crafts.⁸</p>



Street Vendors

An estimated 10% of the 10 million Indian street vendors are women.⁹ Women food vendors often dominate low-income, low-skill roles like selling perishable items.¹⁰



Waste Segregation Workers

In 2017, there were 17 million informal waste workers in India who play a crucial role in recycling and reducing landfill waste by handling, segregating, and disposing of waste, as recognized by the International Labour Organization as a green job.¹¹ They often face marginalisation related to their lower caste status and economic insecurity.

It is well documented that climate change disproportionately affects women - gender and its intersection with age, caste, disability, ethnicity, migrant status and other identities exacerbates the impact of climate change on women's lives and livelihood.¹² Working in the informal sector also increases vulnerability to climate change due to the precarity of income, as well as many informal sector jobs being outdoors and therefore highly exposed to extreme weather. At the same time, informal workers are often carrying out low-carbon work, playing a critical role in climate change mitigation and using local solutions to adapt to climate change. This study aims to document the experiences and insights of informal economy women in the context of an accelerating climate crisis in India.

Context and methodology

In 2019, India was the seventh most vulnerable country in the world to climate change.¹³ Rising temperatures have led to cities experiencing temperatures of over 52°C in 2024¹⁴ with deadly heatwaves and increased forest fires in rural areas. India's monsoon is becoming more erratic, causing deadly rainstorms and flooding.¹⁵ Precipitation is highly variable, leaving one billion people facing severe water shortages for at least one month per year. These impacts are expected to continue, with devastating effects on the most vulnerable communities.

Data Collection and Approach

The study employed a mixed-methods approach, combining desk-based research and in-person data collection from November 2023 to May 2024. Purposive sampling was used to ensure diverse representation of rural, urban, and tribal areas, various occupation groups, and marginalized communities affected by climate change and environmental degradation.

307

informal economy women
participants across 18 Focus
Group Discussion (FGDs)

40

Key Informant
Interviews (KIIs)

807

Survey
respondents

The findings of this study are based on insights from over 1,100 informal economy women workers, as well as SEWA staff and other stakeholders.



Uttarakhand is a rural and mountainous state in northern India. Due to melting glaciers from the Himalayas, it is susceptible to landslides and flash flooding.¹⁶ Forest fires have been increasing in recent years, linked to climate change.¹⁷ Human-wildlife conflict has also become a serious issue in the state, leading to the destruction of agriculture, which lowers yields and incomes for agricultural workers.¹⁸



Delhi has a dense urban population. The urban heat island effect, whereby human-made materials absorb and retain heat more than nature, intensifies heatwaves in the city. This has been found to cause productivity losses of 20% for shaded workers and 25% for those exposed to the sun.¹⁹ The city also faces increased flooding from the swollen Yamuna River, leading to more water- and vector-borne diseases²⁰, as well as rising drought frequency.²¹



Madhya Pradesh is a largely rural state with extensive forested regions and tribal communities. It has seen significant declines in monsoon precipitation, increased post-monsoon temperatures, and more frequent extreme droughts.²² These changes have reduced crop yields and adversely affected farmers' livelihoods.²³ In urban Indore, informal workers have reported an increase in the number of hot days, along with increased downpours and flooding, negatively impacting their productivity and income.²⁴



Jharkhand is a primarily rural state in eastern India. Forests make up 29% of Jharkhand's landscape, making the state vulnerable to forest fires.²⁵ Many of Jharkhand's Adivasi tribal communities are involved in collecting NTFPs as a source of livelihoods. These are being negatively affected by increased temperatures, lower rainfall, and forest fires, leading to lower earnings.²⁶



Findings

The impacts of climate change and extreme weather events on informal work

☼ Changes to Temperature

Unseasonable changes in temperature and increasing unpredictability was reported by a majority of informal women workers.

88% of survey respondents believe it is now hotter in the summer while 55% have noticed that temperatures are more unpredictable.

Impacts on Livelihoods

- **Agricultural Workers:** Inconsistent weather conditions, particularly extreme heat, reduce crop quality and spoil produce, especially in rural parts of Uttarakhand and Madhya Pradesh. This impacts their yield and therefore their incomes.
- **Construction Workers:** Extreme heat makes work very difficult as the work is outdoors and therefore highly exposed, especially for those working far from home and through the hottest part of the day.
- **Domestic Workers:** Extreme cold in winter and extreme heat in summer impacts domestic workers who commute early in the morning. During hot weather, workers are often tasked with more cleaning work without extra pay.
- **Home-based Workers:** These workers work indoors, often in cramped homes with poor ventilation where temperatures can reach over 50 degrees Celsius. This can cause severe health issues and impacts negatively on productivity and therefore incomes.
- **Street Vendors:** They are highly exposed to extreme temperatures. Street vendors often face health risks such as heat strokes, hindering their health and also productivity. Seasonal temperature changes also affects their sales, since demand is reduced for certain products.
- **Waste Segregation Workers:** They are highly exposed to extreme temperatures. Extreme heat during summer reduces their productivity on landfills, significantly cutting their income. Winter pollution and smog further complicate their tasks, affecting their health and the health of their families living near landfills.

“Earlier, the temperature was not so unpredictable. If it was summer, it was summer, if it was winter, it was winter. Now in the winters we still get rainfall, in summers now there is still cold and if its rainy season there are still days when it’s so hot and sunny”

Construction worker,
Ranchi, Jharkhand

Changes to Rainfall Patterns

Study participants across all four states have noticed unseasonable and unpredictable changes in rainfall patterns over the past 10–12 years. The rainfall has been inconsistent and sometimes extremely heavy.

95% of all survey respondents have noticed an unseasonal change in the rainfall pattern over the past 10 years.

Impact on Livelihoods

- **Agricultural Workers:** The unpredictability of rainfall affects agricultural workers and their incomes. It can lead to insect infestations and crop diseases, reducing yield and increasing food insecurity. Rain sometimes comes late or not at all, ruining crops and affecting planning, especially for seasonal foods and produce. Crop quality and yield reduces, lowering incomes and increasing food prices, leading to inflation.
- **Animal Husbandry:** Extreme and unpredictable rainfall increases incidents of livestock sickness and death, wiping out key household assets.
- **Construction Workers:** Irregular and unpredictable rainfall forces construction workers to pause their work, affecting their income as they only get paid for the hours they work.
- **Domestic Workers:** Heavy rainfall makes commuting to their employers' homes more difficult. It can lead to health issues, causing them to miss work and therefore lose out on earnings.
- **Home-based Workers:** These workers are significantly affected by rainfall impacts on their housing such as poor drainage and leaky roofs, which can cause flooding. Their products may become spoiled by the rains or fungus, leading to loss of income, investments, and time.
- **Street Vendors:** Street vendors often suffer when their produce is spoiled by rain due to a lack of shelter. Reduced customer turnout during rainy periods leads to decreased demand and income.

“10 years ago, there used to be a lot more rain in January. During the 26th of January Republic Day celebrations, we used to always carry umbrellas, but now we don't need to.”

Home-based worker,
Nand Nagri, Delhi

Changes to Flooding and Drought

The patterns of flooding and drought have significantly altered due to the increasingly unpredictable nature of rainfall. In rural areas, flash floods have caused extensive damage to homes and crops, resulting in substantial property loss. Similarly, droughts have had severe consequences for agriculture, affecting crops and farmland. In urban areas, the impact is particularly pronounced in informal settlements, where overcrowding—often in areas near floodplains—leads to blocked drains. This blockage exacerbates flooding, which poses health risks to the affected populations.

Impacts on Livelihoods

- Agricultural Workers:** Flooding and droughts ruin crops, affecting both yield and income for women who do agricultural work.
- Domestic Workers:** Heavy rain and poor drainage systems result in flooding, making it difficult for domestic workers to commute to work.
- Home-Based Workers:** Flooding in homes can spoil stock, leading to loss of income and investments.
- Street Vendors:** Flooding affects the stock stored in their homes and the stalls where they sell their goods, impacting their sales and income.

Changes to Storms and Fogs

Over the past decade, storms have become more frequent and unseasonal, with fog patterns also shifting and becoming irregular.

73% of survey respondents have noticed a change in storms/cyclones in the past 10 years.

Impacts on Livelihoods

- Agricultural Workers:** Hailstorms in rural areas reduce crop productivity and yield. Unseasonal fog impacts crops that require sunlight, leading to rot.
- Animal Husbandry:** Hailstorms result in the loss of livestock, affecting income and investment for women involved in animal husbandry.
- Domestic Workers:** Fog, like cold temperatures, affects commutes.

For 74% of respondents in Madhya Pradesh, 53% in Delhi, 47% in Jharkhand and 31% in Uttarakhand, changes to storms/cyclones are having a negative effect on their livelihoods.

The Impact of Environmental Degradation on Informal Work

Deforestation and Changes to the Forest

- Many women in rural Jharkhand and Madhya Pradesh, particularly Adivasi tribal women, rely heavily on nearby forests for wood used in fuel, furniture-making, and collecting NTFPs as part of their livelihoods. They have increasingly noticed changes to the forest and deforestation.

→ There are several factors driving deforestation, including women needing to cut down wood for fuel as alternatives such as gas are unaffordable for them.

→ **Forest-based workers** have noticed changes to the forest such as a decrease in tree species, reduced availability of animal fodder, and shorter trees. Climate change has exacerbated these environmental shifts.



→ The degradation of forests affects the **forest-based workers'** economic activities. Many NFTP, which were once sources of income, are no longer available. NFTP are also used for barter trade, which is also being affected, meaning other products are less available to forest-based workers.

→ The forest holds cultural importance, particularly for Adivasi tribal communities. For instance, flowers collected from the forest were traditionally used in festivals like Holi, but climate change has now disrupted when they bloom, affecting the festivities.

Forest Fires

→ Participants associated increasing forest fires with hotter temperatures, electrical faults, human behaviour, agricultural practices, the government forest department and forest collection practices.

→ Forest fires can get out of control and burn down surrounding fields and crops, which has negative impacts on the lives and livelihoods of the women and their communities, especially **agricultural workers**. They also pose risks to people's lives and ecosystems.

93% of respondents in Uttarakhand, **81%** of respondents in Madhya Pradesh and **46%** of respondents in Jharkhand have seen changes to forest fires over the past 10 years.

Human-wildlife Conflict

→ There has been an increase in human-wildlife conflict in rural areas, with more frequent encounters with boars, foxes, monkeys, elephants and other wildlife.

→ This is leading to negative impacts for **agricultural workers**, particularly in Uttarakhand. Wild animals such as boars destroy the crops of women agricultural workers, leaving them with nothing to sell. Other animals, like monkeys, dig deep holes that adversely affect crop growth. This is heavily reducing crop yields, leading to a loss of investment and incomes.

- This loss of livelihood is further increasing male out-migration, leaving women behind to bear more responsibilities, both in terms of agriculture and in the household.
- SEWA's members are finding it difficult to address these human-wildlife interactions due to limited funding and misalignment with government conservation policies.



Inorganic Farming and Changes to Farming Practices

- Women **agricultural workers** in rural areas are increasingly concerned about soil health due to the significant rise in the use of chemicals. There has been a shift towards chemical fertilizers, pesticides, and insecticides, moving away from organic alternatives. This shift is largely driven by attempts to mitigate falling crop yields. Women have observed that these chemicals contribute to water pollution, soil degradation, and adverse health effects for them and their families.
- Some women do continue to use organic fertilizers and traditional practices, which are regenerative and 'climate smart.' Those who have adopted chemical fertilizers have expressed interest in reverting to organic methods, but face economic constraints.



Air Pollution

- Air pollution is a major concern for informal economy women workers living in urban areas in India. Air pollution is causing even hotter temperatures and is having negative consequences on health, particularly respiratory problems.
- **Agricultural Workers:** Air pollution results in black dust that affects crop quality and yield.
- **Construction Workers:** Working outside exposes them to higher levels of air pollution, negatively impacting their health.
- **Domestic Workers:** As pollution increases, their workload also increases, requiring more sweeping and cleaning without additional pay.
- **Street Vendors:** They work outdoors and are highly exposed to air pollution, which adversely affects their health.

Wider Impacts on Households



Unpaid Care and Domestic Work

- Women's unpaid care and domestic work has significantly increased due to climate change and environmental degradation. For almost half of the women in the study, the burden of unpaid care work has risen by at least 2 hours per day.

- Climate change and environmental degradation has increased the time required for tasks such as fetching water and collecting firewood.
- Male out-migration due to climate change has further intensified the burden of unpaid care work on women in rural areas.
- Access to basic services such as improved water infrastructure and gas cylinders can mitigate the impact of climate change on the increase in unpaid care work.

86% of all survey respondents have noticed a change in their unpaid care work tasks, related to climate change. For 16%, the time needed for unpaid care work tasks has increased by up to 2 hours per day, for 42% of respondents, the time needed for unpaid care work tasks has increased by over 2 hours per day.

Water Security

- Water insecurity was identified as a major climate change related issue by the informal economy women in the study. Significant climate-related changes in water availability have been observed, with local ponds and other water sources drying up in extreme heat, leading to women having to travel further distances and spend more time collecting water for their households.
- Rural areas in India often lack water infrastructure compared to urban areas, forcing many women to walk over a kilometre to reach a functioning water pump to collect water for household usage and agricultural irrigation.
- Water availability was found to vary widely in rural areas - whilst some villages have seen recent improvements such as in-house taps, others face difficulty finding enough clean drinking water due to reducing groundwater levels. In mountainous Uttarakhand, high altitudes also affect pump pressure.
- Water scarcity in rural areas has led women to shift their livelihoods from **agricultural work** to **construction work**, as they struggle to find enough water to make an income from agricultural work.
- Urban water insecurity has also increased, related to rising extreme heat. In some cases, landlords turn off the electricity to save costs, impacting water availability within homes. This results in women relying on centralized water tanks available only at specific times, leading to long queues. Some women in urban areas from very low-income households have to pay for private water tankers during hot summers as all of their nearby water sources dry up.

In Ranchi, the government has tackled water security by installing borewells and providing rainwater harvesting tanks. These tanks can store rainwater for **15-20 days** and offer cleaner water than river sources. Residents use this harvested rainwater for bathing and washing clothes.

- The time spent queuing for water when water sources dry up affects women's increases unpaid care work and can affect their productivity and incomes.
- **Domestic workers** face the risk of job loss when being late to work from spending hours in the morning queuing for water.
- **Construction workers** face significant wage losses from missing out on working hours.

Fuel

- The time required for informal women workers to collect fuel for cooking has increased, related to deforestation.
- Women with gas cylinders are less affected by this issue. However, due to the high cost of gas, most women in rural areas continue to collect firewood from the forest for fuel.

63% of all survey respondents have noticed that the time taken to collect fuel has increased.

Food Security and Nutrition

- Climate change and increased human-wildlife conflict has significantly reduced agricultural yields and affected food prices and food patterns, particularly in rural areas.
- Women have noticed that the taste and nutritional value of vegetables have significantly diminished due to increased use of fertilisers, insecticides, and pesticides.
- Extreme heat is leading to food spoiling more quickly during the summer, increasing the need for cooling solutions such as fridges, which are too expensive for many informal economy women workers.

85% report that climate change affects their food security, with 84% eating less locally grown food.

Health

- Extreme heat and extreme cold are noted to be causing stomach aches, fatigue, and dehydration, with some cases leading to death.
- Increased air pollution is negatively affecting the respiratory health of informal economy women workers, particularly those such as **street vendors** and **construction workers** who work outside.
- Unseasonal rains and persistent water from lack of sunlight have increased mosquito populations, leading to higher incidences of dengue fever and malaria.
- **Forest-based workers** have noticed that medicinal plants used for Ayurvedic medicine are now less available in the forest.

- Health issues cause a fall in productivity and therefore in income, since informal workers do not receive any type of sick pay.
- Women often have responsibility for caring for sick family members, also leading to lost income from work and an increase in the burden of unpaid care work. Barriers to accessing healthcare, such as long travel times, exacerbate these issues.

Housing

- Informal economy women workers have observed significant impacts of climate change on housing, with differences between rural and urban areas. In rural areas, traditional *kutcha*²⁷ houses made from mud, wood, and other materials stay cool in summer and warm in winter. However, climate change has affected the quality of the wood, requiring replacement every three to five years, contributing to deforestation.
- In urban areas, women live in informal settlements with closely packed houses and little ventilation, leading to heat and mold issues. Heavy rainfall can damage roofs, which are sometimes replaced with asbestos tiles, which is a danger to health. Leaky roofs during heavy rain and poor drainage systems exacerbate problems, causing flooding, attracting mosquitoes, and leading to various health issues.
- Extreme heat is forcing women to seek additional cooling methods. Fans are now insufficient to manage extreme heat, leading to increased use of coolers. This rise in electricity costs adds to the expense of climate adaptation, whilst incomes fall.
- As a result of lack of regulation in informal settings, air conditioning units are built in close proximity to the neighbor's houses which causes hot air to blow into the houses of the neighbors. This increases the temperature to a point of being unbearable.
- **Home-based workers** face additional challenges, including the spoilage of stored goods, leading to investment losses and decreased income. Many women cannot afford cooling systems such as electric fans or air conditioning due to high costs.

Coping mechanisms and adaptations

Lifestyle and Work-related Adaptations

- Informal economy women workers adapt to climate conditions using various methods. In extreme heat, those who cannot afford cooling systems or fridges construct local solutions to cope with extreme temperatures or cold, such as placing foods in bowls of water to keep it cool, covering green vegetables with cloth to keep them from spoiling or cooking rice instead of rotis to reduce the heat.
- Informal economy women workers are adjusting their work schedules to avoid working outside during the hottest part of the day. However, many informal economy women workers are unable to adjust their work schedules, such as **construction workers** who usually have to work on-site during specific hours.

Informal economy women spoke of making the following adaptations to their work:

- **Street vendors:** They take specific breaks during extreme temperatures to continue working effectively without compromising their health.
- **Agricultural Workers:** They adapt by altering their working hours, often taking afternoons off during the hottest part of the day to cool off.
- **Home-based Workers:** They take more breaks, drink water more frequently, and use homemade bamboo fans to stay cool.
- **Domestic Workers:** A few employers may provide cold or hot beverages depending on the weather and offer changes of clothes and shoes if caught in heavy rain.

Income Diversification

Many informal economy women are finding ways to diversify their income or switch their trade completely.

42% of survey respondents have sought additional income sources due to climate change. This was notably common among construction workers (80%), SEWA staff members (75%), and those doing home-based work (65%).

Agricultural Workers: Some have switched from growing crops to cultivating flowers like roses due to increased human-wildlife interactions. They are increasingly taking on construction work due to reduced agricultural yields.

Construction Workers: Some construction workers take up agricultural work when it's too hot outside for construction or engage in home-based work like selling cement bags outside their homes.

Forest-based Workers: Women are transitioning from forest work to agricultural labour and exploring other income sources such as selling goats or wood.

Home-based Workers: They are now switching between different types of home-based work. For example, some are moving away from working with denim, which is in less demand due to higher temperatures, to working with paper-based bags.

Street Vendors: Some are taking on home-based work during the hottest part of the day.

Migration

- A significant number of rural women in the study have male family members, particularly husbands, who have migrated from rural to urban areas due to reduced livelihood opportunities in rural areas, linked to climate change and environmental degradation.

31% of respondents from Madhya Pradesh, 27% from Jharkhand, and 21% from Uttarakhand have a household member who has migrated, typically their husband.

- Many informal economy women workers in urban areas have migrated from rural areas, leading to increased job competition within urban areas.
- **Domestic workers** in Ranchi, Jharkhand, stated that rural migrants often accept lower wages, intensifying competition in the job market.

Changes to Financial Behaviour

- Although some informal economy women workers have taken out loans to manage the financial impact of climate change, many prefer to handle losses by taking on additional work for supplemental income. For instance, women who face agricultural losses often take up construction work as a quicker source of income rather than relying on loans.
- Those who opt for loans typically turn to informal lenders as they are often unable to access formal banking. Despite higher interest rates, informal lenders offer greater flexibility in repayment terms, which is preferred as informal workers often see their incomes fluctuate, particularly with the seasons.
- During extreme financial difficulties, some households sell assets such as animals or jewellery instead of taking out loans.
- Other financial behaviors are also shifting in response to reduced incomes related to climate change. Some informal economy women are delaying loan payments, altering their spending habits, and cutting back on expenditures for their children.

46% of survey respondents have taken out a loan in the last five years related to climate change. Loans are most commonly taken out for house repairs, investing in their work/business, a wedding or children's education.

Informal work as green work

- Informal work tends to have a lower carbon footprint compared to formal work due to minimal machine use and a focus on resource efficiency. Informal livelihoods often play a vital role in the 'circular economy'.²⁸
- **Agricultural workers** use limited machinery, and some engage in organic farming practices, which are regenerative and 'climate smart'.
- **Forest-based workers** sometimes participate in reforestation by planting seeds and exploring the use of alternative sustainable materials rather than timber.
- **Home-based workers** contribute to the circular economy by upcycling clothes and electronics, thus reducing waste and extending the life of products.

- **Street vendors** who engage in '*pheri*' work²⁹ support sustainable practices by selling second-hand clothing, a form of waste management.
- **Waste segregators** engage in recycling waste materials, promoting environmental sustainability.

Exclusion of informal women workers in the transition to a green economy

- Women informal workers in India face significant risks in transitioning to a green economy, often experiencing adverse effects on their income and livelihoods. Support is crucial for their successful transition to a green economy to form part of a 'Just Transition'.³⁰
- **Waste segregators** have already been negatively affected as formal recycling systems expand. The formal sector is increasingly processing high-value recyclables such as mobile phones and other electronics, which has led to a decrease in the incomes of informal economy waste segregators.
- Other informal economy women workers in the circular economy are also at risk of losing out as formal recycling and other green sectors continue to grow. For example, street vendors and home-based workers involved in upcycling and recycling could be pushed out by formal sector companies, due to their lack of legal and social protections.

In Bhaswala, Delhi, waste segregators shared that their daily earnings have sharply decreased. Initially making 700-800 rupees per day, their income has fallen to 200-300 rupees per day due to the increased formal recycling of higher-value items.

Factors affecting members' vulnerability to climate change and ability to respond

The survey found that the following factors affect vulnerability:

Women with disabilities are notably overrepresented in the informal economy due to barriers in accessing education and employment opportunities stemming from gender and disability discrimination. While these women report similar climate change impacts on their livelihoods as those without disabilities, the negative effects on their earnings are more severe.

Adivasi tribal women report experiencing fewer impacts from climate change compared to non-tribal women. This may be due to their barter system of trade, which emphasizes changes in productivity over direct financial impacts.

Women from Scheduled Castes and Tribes experience greater negative effects on their earnings from climate change. This is attributed to their socio-economic marginalisation and discrimination.

Older women, particularly those over 60, report greater negative impacts on their earnings due to climate change.

Women who have migrated from rural to urban areas report more severe negative impacts on their earnings due to climate change compared to other respondents.

Gender: While this study did not specifically measure gendered impacts, research indicates that women's livelihoods in India are more adversely affected by climate degradation than men's. Women face disruptions in unpaid care work, which exacerbates their vulnerability and increases their unpaid labor.

Digital Access: FGDs revealed that digital access aids in climate resilience, especially in extreme weathers where women use their phones to contact customers, make sales via apps like WhatsApp, and access information through radio and SMS.



Vulnerability related to Informal Economy Work

Informal economy women workers are disproportionately affected by climate change due to the precarious nature of their work and limited livelihood alternatives.

Their jobs lack the security and benefits associated with formal employment, and they are usually paid based on output, which in many cases is declining due to climate change.

Informal economy workers face job insecurity in the face of the shift towards a green economy, lacking legal protections and alternative training or employment options.

Limited livelihood options and societal barriers prevent many women from being able to switch livelihood sources.

Weather impacts are particularly severe for **agricultural** and **forest workers** whose incomes are tied to climate conditions, whilst outdoor workers such as construction workers and street vendors face exposure to extreme weather, affecting their productivity.

Collective action for climate justice

- SEWA's members are eager to contribute to solutions for the rapidly changing climate and would like to work with SEWA to enhance awareness about sustainable practices within their communities.
- Informal economy women workers frequently develop sustainable and innovative methods to manage limited resources and adapt to climate changes. Although these practices are often labour- and time-intensive, the women persistently implement them. For example, they flatten empty oil containers to use as doors, dry cow dung to make fuel for cooking, and craft *sal* leaves from the forest into plates and even rain jackets.
- SEWA works with their members to strengthen collective action, advocacy and cooperation to address climate and environmental challenges.
- SEWA currently runs several campaigns and programs aimed at combating environmental degradation and bolstering informal economy women worker's climate change resilience, particularly for women and youth in rural areas. Initiatives also focus on improving infrastructure and enhancing access to government support for women, which leads to improved climate resilience.

“Humans are the responsible ones, so we (street vendors) need to make sure we are not causing climate change”

Street vendor,
Raghubir Nagar, Delhi



Recommendations

Key Message 1

Informal economy women workers are highly aware of the impacts of climate change and environmental degradation, as it is affecting their lives and livelihoods on a daily basis. However, they have less knowledge and understanding of the scientific basis and climate change adaptation and mitigation. This type of understanding would help them to engage more meaningfully in local action and to advocate for their own specific needs within climate adaptation and mitigation activity.



Recommendation 1.1

Raise further awareness of climate change amongst informal economy women workers, particularly on adaptation solutions.

Grassroots organisations: Conduct awareness raising amongst informal economy women of climate change, particularly on adaptation solutions.

International organisations: Build the capacities of grassroots organisations so that they can disseminate knowledge to informal economy women workers, and provide funding for this work.

Recommendation 1.2

Support collective action and advocacy for informal economy women workers so that they can ensure that their specific needs are taken into account within climate adaptation and mitigation policies.

Grassroots organisations: Support informal economy women workers to conduct climate change-related advocacy at the local, national and international level, including finding innovative ways to highlight their contributions to the green economy.

International organisations and government: Ensure that informal economy women workers and their representatives are part of climate change adaptation planning and decision-making processes.

Key Message 2

Informal economy women workers are at risk of being left behind in the transition to a green economy. Many informal economy women workers are already carrying out work related to the green economy, such as waste segregation and *pheri* street vending. As India shifts towards a green economy, these types of jobs are being formalised, and informal economy women workers are at risk of being left behind in the transition. They need to be upskilled and integrated into the formal green economy as part of a ‘just transition’, with both labour supply side and labour demand side support.

Recommendation 2.1

Protect and formalise green jobs which informal economy women are already carrying out (e.g. street vendors upcycling clothes), to ensure that informal economy women workers are not left behind in the transition to a green economy.

Grassroots organisations: Support informal economy women workers to collectivise and formalise within the green economy.

Government: Enact policies which protect and formalise existing green informal jobs within the ‘just transition’.

Private sector: Upskill informal economy women workers who are carrying out green work, and provide them with formal green jobs.

Recommendation 2.2

Support informal economy women workers to diversify their incomes and access new green jobs, through both labour supply side support (e.g. green skills training) and labour demand side support (e.g. linking women who have been trained with jobs or lending capital to women entrepreneurs).

Grassroots organisations: Support both rural- and urban-based informal economy women workers to diversify their incomes, providing both training and wider support for women to set up and run successful enterprises, such as linking them with customers.

International organisations: Design and fund programmes which support informal economy women workers to diversify their incomes and upskill in green skills.

Government: Provide and scale up schemes which both support a green economy and offer livelihood alternatives for informal economy women.

Private sector: Work with grassroots organisations and government on upskilling and adapt procurement practices to support those who have been upskilled to subsequently find formal sector work.



Key Message 3

Informal economy women workers are on the frontline of climate change. Their lives and livelihoods are already being highly negatively affected by the impacts of climate change and environmental degradation, which is worsening with the increasing climate crisis. They are facing major productivity losses due to climate change, leading to a drop in income. Informal economy women workers are disproportionately negatively affected by climate change due to the precarity of their work, which is also compounded by other factors such as gender.

Recommendation 3.1

Support and advocate for informal economy women workers living in urban areas to adapt their work in the face of climate change and extreme weather events, to ensure that they can continue to earn an income throughout climate shocks.

Grassroots organisations: Advocate for and with informal economy women workers for policies and technical solutions which support them to adapt their work in the face of climate change and extreme weather events.

Government: Establish, implement and enforce policies and regulations that protect outdoor informal economy workers from climate change and extreme weather events.

Recommendation 3.2

Scale-up support to informal economy agricultural women workers on climate-smart agriculture, including organic agriculture.

Grassroots organisations: Support agricultural workers to switch towards climate-smart and regenerative agriculture, including traditional agricultural practices, by providing inputs and training.

International organisations: Design and fund climate-smart agriculture programmes which are specifically targeted to female agricultural workers in the informal economy.

Government: Ensure that government-led initiatives on climate-smart agriculture can reach informal economy women agricultural workers.

Private sector: Boost women's engagement in climate-smart agriculture by providing gender-responsive essential inputs, services and products across the agricultural value chain.

Both private sector and government: Set procurement targets around informal sector products and services within agricultural supply chains, and enact procurement reforms, to support informal economy women's enterprises.

Key Message 4

Informal economy women are using a variety of different coping mechanisms in the face of climate change, from shifting their work patterns to diversifying their incomes. They need more support to strengthen their financial inclusion and digital access in order to build their climate resilience.

Recommendation 4.1

Support women's financial resilience in the face of climate change and climate-related disasters, through financial products which are designed for informal economy women workers.

International organisations, private sector and grassroots organisations: Fund and deliver innovative financial products which are tailored to the needs of informal economy women workers.

Government: Expand social protection and financial schemes and ensure that they can effectively reach informal economy workers.

Private sector: Design innovative financial products which are tailored to the needs of informal economy women workers.

Key Message 5

The work which SEWA is already carrying out with the collective strength of informal economy women workers is crucial for strengthening women's climate resilience, advocating for gender-just climate policies and advancing sustainable practices. In the face of a growing climate emergency in India, it needs to be rapidly scaled up and expanded to reach as many informal economy women workers as possible.

Recommendation 5.1

Climate and environment related work with informal economy women workers needs to be rapidly scaled up via increased gender-responsive climate finance.

Grassroots organisations: Explore accessing alternative climate financing arrangements, such as gender-responsive carbon credits.

The role of international organisations and funders: Channel climate finance to women's rights organisations on the ground, including by supporting women's funds which finance climate justice work.

The role of investors and the private sector: Integrate a gender lens into climate investments, and ensure that investments can reach the informal economy.

Recommendation 5.2

Ensure that climate and environmental campaigns, programmes and policies take an intersectional focus, for example to include older women, women with disabilities and women of all castes.

Grassroots organisations: Deliver programming to those who are most at-risk of climate change and environmental degradation, using a twin-track approach of both mainstreaming and targeting different groups.

Government: Update national and sub-national climate policies and action plans to include a focus on the most marginalised groups, and ensure that these are implemented effectively.

Key Message 6

Climate change is leading to a reversal of progress in unpaid care work, and improved infrastructure is crucial for building climate-resilience. Women need improved access to climate-resilient infrastructure, from heat resilient homes, to better drainage systems, to better cooling mechanisms, to help them to cope with increasingly extreme temperatures. Much of this is unaffordable for most informal economy women workers, so support is needed.

Recommendation 6.1

Support people living in informal housing with access to climate-resilient infrastructure.

Grassroots organisations: In the absence of formal government interventions, promote innovative solutions for climate-resilient infrastructure.

International organisations: Work with local organisations, community members and governments to improve climate resilience of urban informal settlements.

Government: Upgrade housing structures and provide infrastructure and public services, to improve climate resilience of vulnerable communities.



Key Message 7

Informal economy women workers are championing innovative sustainable practices. They play a key role in climate mitigation, environmental stewardship and the protection of nature. Traditional and indigenous knowledge is often the most sustainable and needs to be preserved through increased documentation and participatory action research, working alongside Indigenous communities. More research is also needed on further suitable climate-resilient solutions which are tailored to the needs of informal economy women workers and can be scaled.

Recommendation 7.1

Support informal economy women workers' innovative and sustainable practices within resources constrained contexts.

Grassroots organisations: Support the knowledge transfer and expansion of innovative sustainable and adaptation practices, which are being used by informal economy women workers.

Recommendation 7.2

Increase the evidence base on traditional Indigenous practices which respond to climate change, ensuring that traditional knowledge and practices are not lost.

Grassroots organisations: Work closely with Indigenous women to document their traditional knowledge and practices which respond to climate change.

Research organisations and grassroots organisations: Conduct participatory action research with informal economy women workers, including Indigenous women, to build the evidence base on how they are impacted by climate change.

International organisations: Research, pilot and test climate-resilient solutions which are tailored to the needs of informal economy women workers and which can be scaled.



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- 27 A *pucca* house is a permanent structure built with durable materials such as cement concrete, burnt bricks, jack board, timber, or stone. In contrast, *kutch* houses are constructed from readily available materials like mud, straw, bamboo, stones, or wood.
- 28 The circular economy is based on the reuse, repair, and recycling of resources, with deep roots in the urban informal economy.
- 29 *Pheri* means "to roam for barter/ trade". Street vendors engaged in *pheri* work go door-to-door in middleclass neighbourhoods trading utensils such as pots and pans for household's second-hand clothes and electronics. The second-hand clothes and electronics are then repaired and upcycled and sold on to customers. This is a traditional trade which is carried out by a specific community in Delhi and handed down through the generations.
- 30 A 'just transition' means greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind, including informal economy women.
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The **Self-Employed Women's Association (SEWA)** is a national trade union in India started in 1972, which has a membership of over 3.2 million women across 18 states in India who are all poor, self-employed women workers from the informal economy. SEWA assists informal economy women workers in achieving full employment and becoming self-reliant through organising and constructive collective action. SEWA has grown into a family of member-owned economic organisations that provide livelihood security, reduce vulnerability and lead to economic empowerment of members. There are now over 4,000 Self-Help Groups, 110 cooperatives, 15 economic federations and 3 producer companies affiliated with the SEWA movement.

SEWA Bharat is the national federation of the larger SEWA movement, and is committed to strengthening the movement by highlighting the issues of informal economy women workers at the national level and building the capacity of the various SEWA branches. In this study, 'SEWA members' (or just 'members') refers to the informal economy women workers who participated in this study and are members of SEWA.



Social Development Direct (SDDirect) is a gender equality, disability and social inclusion consultancy based in London. SDDirect provides high-quality, innovative social development expertise to civil society, the private sector, multilateral institutions and governments. We work with partners to achieve sustainable impact in gender equality and social inclusion and to advance policies, laws, social norms and institutions that work for everyone.

SEWA Bharat and SDDirect are committed to an equitable partnership³¹ based on shared values. SEWA Bharat and SDDirect have collaborated on this study to bring to light the impacts of, and responses to, climate change for women in the informal economy in India.

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If you would like to discuss the research, please contact sonal@sewabharat.org and olivia.jenkins@sddirect.org.uk.

