Parametric Heat and Rainfall Insurance for Informal Women Workers

Documenting VimoSEWA's climate insurance prototype in Ahmedabad and surrounding districts

A report by the SEWA Cooperative Federation and National Insurance VimoSEWA Cooperative Ltd.

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SEWA COOPERATIVE FEDERATION
Capacity-building • Business Development • Policy Action

Acknowledgement

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Harshala Bagrao planned and coordinated data collection. The report was written by Semanti Chakladar, and the document was reviewed and edited by Neha Abraham, Aparamita Pramanik, Harshala Bagrao and Ruchi Agarwal.

Executive Summary

This report documents the development and early implementation of VimoSEWA's parametric heat and rainfall insurance prototype for informal women workers in Ahmedabad and surrounding districts. Anchored in the SEWA ecosystem, the initiative responds to rising climate risks - particularly extreme heat and erratic rainfall - that increasingly disrupt informal livelihoods, exacerbate income precarity, and place disproportionate burdens on women engaged in unpaid care work and low-paid informal occupations.

Climate projections for Gujarat indicate sharp increases in heatwaves, severe heat events, and high-intensity rainfall. These conditions intensify health risks, reduce working hours, depress wages, and worsen care responsibilities that women are required to shoulder. Workers in street vending, construction, agriculture, waste (collection, segregation, recycling) work, factory labour, home-based production and service work (nursing, para-health, domestic work) reported escalating fatigue, illnesses, losses in productivity, and reduced mobility during extreme weather. In this context, climate-linked microinsurance becomes an essential tool for strengthening resilience, particularly when embedded in broader risk education and social protection mechanisms.

VimoSEWA's prototype parametric products - designed in collaboration with Insurtech partners - offer income protection based on objective thresholds that include: temperatures exceeding 43.2°C over specified days using ERA-5 reanalysis data, and rainfall exceeding 45.28 inches over the policy period using IMD datasets. Premiums were kept affordable, claim processes were made automatic (trigger-based, without documentation), and coverage targeted occupational groups most exposed to climatic fluctuations. The pilot covered 2,913 women across Ahmedabad city and rural blocks.

The design process followed SEWA's cooperative principles, combining grassroots consultations, feedback from VimoSEWA's Board of Directors, and technical expertise. Sales

teams underwent structured training to translate complex concepts - such as index-based triggers and reanalysis datasets - into relatable communication. Social behaviour change and communication strategies centred on *Sambandh* (trust-building), repeated field engagements, use of simple IEC materials, linking climate impacts to daily losses, and emphasising guaranteed payouts when thresholds are breached.

Findings show that informal women workers understand climate change predominantly through lived disruptions such as irregular seasons, greater heat stress, unseasonal rainfall, and associated health problems. While rainfall insurance was easier to conceptualise, workers perceived heat as the more urgent risk. Awareness of parametric insurance, however, was initially low, and the lack of payouts during the pilot year - because thresholds were not crossed - contributed to confusion among members who often relied on local weather apps rather than third-party collected and verified sources used by the providers. Familial and social resistance, documentation barriers, and the novelty of the product further constrained uptake.

Despite these challenges, the pilot generated immediate behavioural shifts: members began monitoring temperature more closely, they recognised the value of insurance in offsetting climate-induced wage loss. Several enablers supported uptake of the product including: high trust in the SEWA ecosystem, longstanding relationships between *agewans* and communities, affordability of premiums, flexible payment timelines, and a supportive sales structure that integrates financial literacy, documentation assistance, and product handholding. These factors underline why cooperatives remain uniquely positioned to drive inclusive insurance penetration among informal women workers.

The pilot underscores the importance of community-led design and long-term engagement for behaviour change. It also highlights the need for enabling regulatory frameworks for parametric insurance, clearer product categorisation, and convergence between government agencies, insurers, reinsurers, and community institutions. As India explores

national parametric insurance mechanisms within its disaster risk reduction agenda, initiatives such as VimoSEWA's provide proof of concept for gender-responsive, low-premium, trigger-based insurance tailored to informal livelihoods.

Going forward, VimoSEWA has already revised the product in response to member feedback—raising age limits, lowering minimum threshold days, and increasing maximum coverage. Building a strong proof of concept, backed by actual payouts over multiple seasons and scaled pilots across diverse geographies, will be central to strengthening demand, ensuring policy credibility, and securing broader institutional support. Ultimately, parametric climate insurance for informal women workers must be embedded within larger climate adaptation, livelihood resilience, and social protection strategies to address the deepening vulnerabilities posed by extreme weather events.

1. Introduction

1.1 About VimoSEWA

National Insurance VimoSEWA Cooperative Ltd. is a standalone, multi product and full-service delivery insurance cooperative offering microinsurance services for 33 years.

Registered in 2009 under the Multi-State Co-operative Societies Act, 2002, it aims to provide financial protection through microinsurance to self-employed women workers and their families.

It offers both life and non-life insurance products such as life insurance, health insurance, accident and wage loss insurance. *VimoSEWA is the first cooperative of its kind in India where both insurance-policy-holders and shareholders are informal women workers.*

VimoSEWA operates with the core values of "Solidarity, Self-Help and Financial Sustainability", focusing on insurance services as well as member education and awareness on social security and financial risk management. VimoSEWA is integrated into the wider Self-Employed Women's Association (SEWA) movement wherein its members have access to a wide range of services through SEWA's sister cooperatives.

At present 4615 women from 5 states (Bihar, Delhi, Gujarat, Madhya Pradesh and Rajasthan) are individual shareholders and 10 membership-based organizations of the SEWA movement are institutional shareholders. The VimoSEWA sales and marketing teams are all women team, reaching out to members in Ahmedabad, Gandhinagar and Mehsana districts (covering rural blocks)

VimoSEWA has pioneered the microinsurance model in India offering unique affordable insurance policies to communities at the grassroots. One such innovative pilot is its parametric insurance for excessive heat and rainfall.

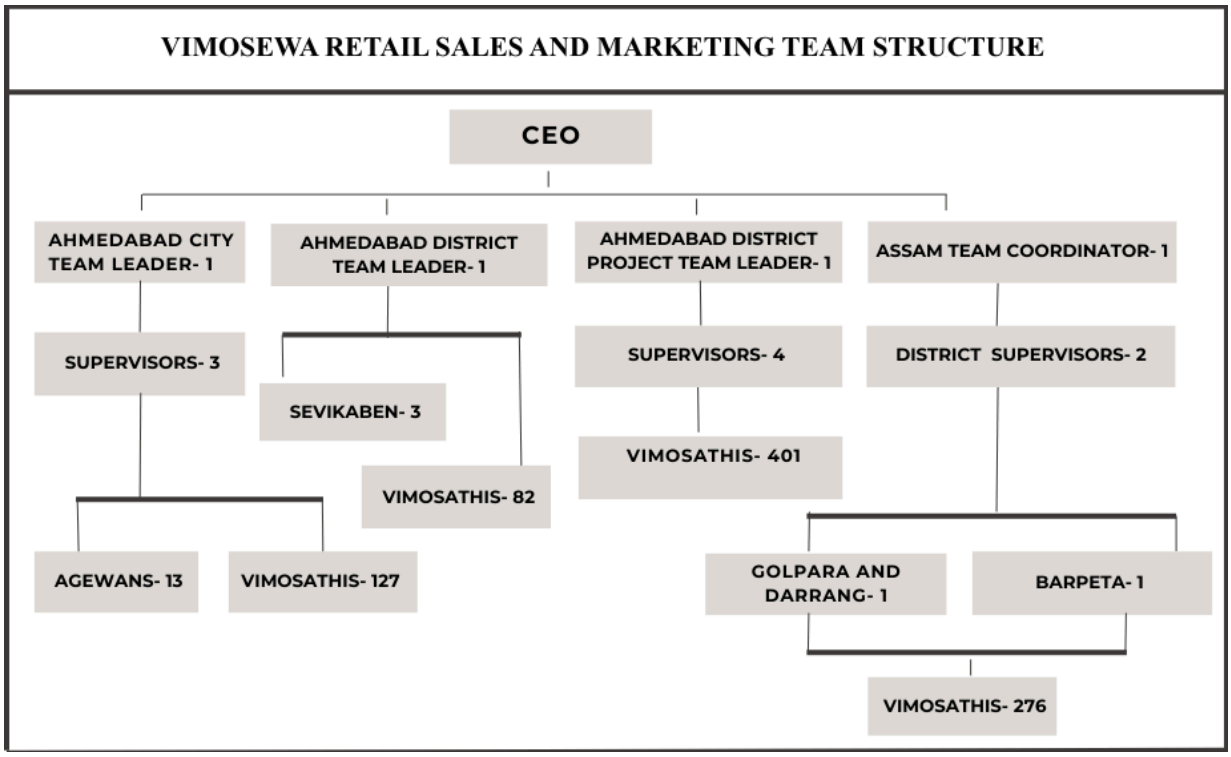


Figure: Organogram of VimoSEWA retail sales and marketing team

1.2 About SEWA Cooperative Federation

Established in 1992, the SEWA Cooperative Federation supports over 100 women-owned cooperatives, aiming for full employment and self-reliance for informal women workers. It helps these cooperatives become viable, innovate, and scale by providing organizational and capacity-building support. Acting as Women's Enterprise Support System, the Federation promotes Women's Collective Enterprises (WCEs), which are inherently low-carbon and contribute to sustainable practices.

2. Background

2.1 Excess heat and rainfall impacts on informal women workers' lives and livelihoods

The "District Level Changes in Climate: Historical Climate and Climate Change Projections for the Western States of India" report by CSTEP shows that, for Ahmedabad district, heatwaves[1] are projected to double in the 2030s, with severe heatwaves projected to increase by five to seven times.

In Gujarat, annual rainfall is projected to increase anywhere between 3% to 57% as compared to a historical baseline period of 1990-2019, depending on the season (Rabi or Kharif), the district being considered and the model of calculations. High intensity rainfall events which can cause waterlogging and floods are expected to increase annually by one to three events, with very high-intensity events projected to increase by one to two events per year (under two different calculation models).

More than 90% of Indian women workers are a part of the informal sector, characterized by low education, meagre and erratic incomes, lack of access to food security, housing and social security and a lack of formal or organised work structures. These women workers are especially at risk to extreme heat and rainfall events.

Reports by Arsht-Rock and the M.S. Swaminathan Research Foundation (MSSRF) shows that women are especially vulnerable to the rise in temperature. In India, women work an average of 6.1 hours in unpaid labor daily compared to men's 1.2 hours. These findings also estimate that one whole hour can be ascribed to the effects of extreme heat[2]. The poorest women lose 40% more paid work hours to heat

[1] Heatwaves as categorised by the India Meteorological Department (IMD) show a departure from the normal temperature between 4.5°C to 6.4°C. Severe heatwaves show a departure of >6.4°C.

[2] "Women spend an average of six hours a day on unpaid work—five times more than men. One of those hours is a direct result of extreme heat in the current climate." Adrienne Arsht-Rockefeller Foundation Resilience Center. (2023, July 26). The scorching divide: How extreme heat inflames

than wealthier women- especially those in low-income, outdoor and physically demanding roles. Extreme heat drives wages below the poverty line in agriculture, construction, and services—sectors employing 70% of women.

Rising temperatures may lead to higher likelihood of disease burden for diseases such as diabetes, hypertension, cardiovascular and respiratory issues and cause a decline in mental health (MSSRF, 2024). Women would also be expected to take the care burden of family members who would be similarly affected. Increase in unpaid care work could further lead to a drop in women's labour force participation.

In the case of flooding and excess rainfall, impacts are noticeable across women's life stages. Existing gender inequalities leading to poor mobility and access to relief often exacerbates the impact of floods and water-logging on women (MSSRF, 2024). Urban flooding poses increased health risks for women, as it exposes them to unhygienic conditions, contaminated food and water and water borne illnesses (MSSRF, 2024).

These impacts are often difficult to map due to being normalised by workers, a lack of appropriate communication of climate change, especially in regional languages or a mismatch between how climate change is conceptualised by mainstream policy formulations and informal workers. For example, heatwave definitions by the National Disaster Management Authority (NDMA) rely on measuring temperature deviations from the normal – without considering correlations between temperature and humidity which often aggravates the impacts of heatwaves.

gender inequalities in health and income. https://onebillionresilient.org/extreme-heat-inflames-gender-inequalities/

2.2 Role of insurance in building informal women workers' climate resilience

Climate or disaster specific inclusive insurance, has the capacity to build climate resilience among informal women workers- it makes beneficiaries aware of the effects of climate change, gives them some measure of financial protection against climate induced wage loss and helps prevent health issues which can occur due to being forced to work in extreme climatic conditions. Paired with risk education, insurance can encourage policyholders to invest in climate adaptation and increase their climate resilience (Generali GC&C & UNDP).

Parametric insurance is a form of coverage based on predetermined indices of climate linked risks where payouts are triggered when defined thresholds are breached. - . It can cover a wide variety of adverse climate or environmental events such as extreme weather and natural hazards. In traditional indemnity insurance, losses must first be assessed before payouts are made, however, in parametric insurance, payment is triggered by specific factors like temperature, wind speed, wave height or rainfall, which are tied to a predefined index or parameter and verified through independent third-party data from a weather station. Once an event meets the agreed parameter, payouts are released. This is advantageous for increasing the climate resilience of informal women workers as it gives them immediate payment to compensate for wage losses, and bypasses extensive claims filing processes.

Informal women workers need small loans and micro-insurance for their life-cycle needs, tailored to their risk appetites, paying capacities and financial management abilities. VimoSEWA has pioneered pilots in Parametric insurance for excessive heat and excessive rainfall index in earmarked geographical areas of Gujarat.

2.3 India's Parametric Climate Insurance Landscape

The major climate-related insurance product currently offered in India's insurance market is agricultural crop insurance. The Department of Agriculture and Farmers Welfare under the Ministry of Agriculture and Farmers' Welfare administers the Pradhan Mantri Fasal Bima Yojana (PMFBY) and the Restructured Weather Based Crop Insurance Scheme (RWBCIS). The National Livestock Mission (NLM), through its sub-mission on livestock development, also implements the Livestock Insurance Scheme (LIS).

Major insurance companies, some affiliated with large banks, are the primary providers of parametric insurance.

Nagaland has become the first state in India to adopt a comprehensive parametric insurance scheme, the Disaster Risk Transfer Parametric Insurance Solution (DRTPS), that insures the entire state against extreme rainfall events. Following a revised design using gridded rainfall data from the Indian Meteorological Department and local weather stations, the scheme was triggered recently, resulting in payouts totalling ₹1.06 crore (INR 10.6 million) to residents affected by heavy rainfall and landslides. The parametric model automatically triggers payouts based on predefined rainfall thresholds—starting at 1,500 mm (10% of the insured sum) and increasing incrementally to full payouts at 2,200 mm. In Kerala, the state's Co-operative Milk Marketing Federation, has also introduced parametric insurance against heat stress.

Grassroots insurance, credit cooperatives and trade unions play a major role in meeting the finance needs of vulnerable sections of the population who are not covered or unable to afford traditional and mainstream insurance or loan products. One such pilot product in climate insurance was launched in 2023 - the Extreme Heat Income Insurance by the Self-Employed Women's Association in collaboration with Arsht-Rock and the private microinsurance firm Blue Marble Micro. The

programme covered 50,000 women across 22 districts in Gujarat, Rajasthan, and Maharashtra by 2024. It serves a wide spectrum of informal workers. Each participant paid an annual premium of INR 250. When temperatures rise above 40°C, all insured women receive INR 400 in direct cash support mainly from the project grant. This model of payout from a multilateral grant and insurance is not a pure insurance mechanism, where claims are paid for rare occurrences of catastrophic events.

3. About the Study

The following report by the SEWA Cooperative Federation and VimoSEWA examines the process of developing a gender and worker-centric climate insurance product prototype by VimoSEWA cooperative, while situating it within the wider landscape of parametric insurance for the informal sector. The study explores the impacts of climate change on informal women workers, their awareness and perceptions of climate risks, and their feedback on a tailored insurance product, alongside the social behavior change and marketing strategies used by the Marketing teams.

3.1 Areas of Inquiry

4. What are the knowledge, attitude, practices and challenges faced by informal women workers in India regarding climate change and parametric insurance?
5. What factors influence the uptake of climate insurance among informal women workers?
6. What strategies may effectively improve climate insurance penetration in the informal sector?
7. How can parametric climate insurance be positioned as a marketable and scalable product for insurers and reinsurers?

4. Methods

4.1 Data Collection

Primary data was collected from the VimoSEWA management and sales teams on the above areas of inquiry. In-depth interviews and focus group discussions were used for primary data collection. Secondary data on the parametric insurance landscape of India was collected using desk research. This covered various aspects such as the role of stakeholders at different levels of regulation and implementation, market outlooks and trends and key gaps in the sector. A mix of government sources, news reports and reports by independent bodies were used for literature review.

4.2 Sample

Purposive sampling was done to select sales team members from city and district teams.

Participant Designation	No of Participants	Method of Data Collection
City Team Leader	1	Interview
Supervisors (Ahmedabad City and District Project Team)	5	Focused Group Discussion
Agewans (City Team)	4	Focused Group Discussion
District Team Leader	1	Interview
Sevikabens (District Team)	2	Interview

CEO of VimoSEWA	1	Interview

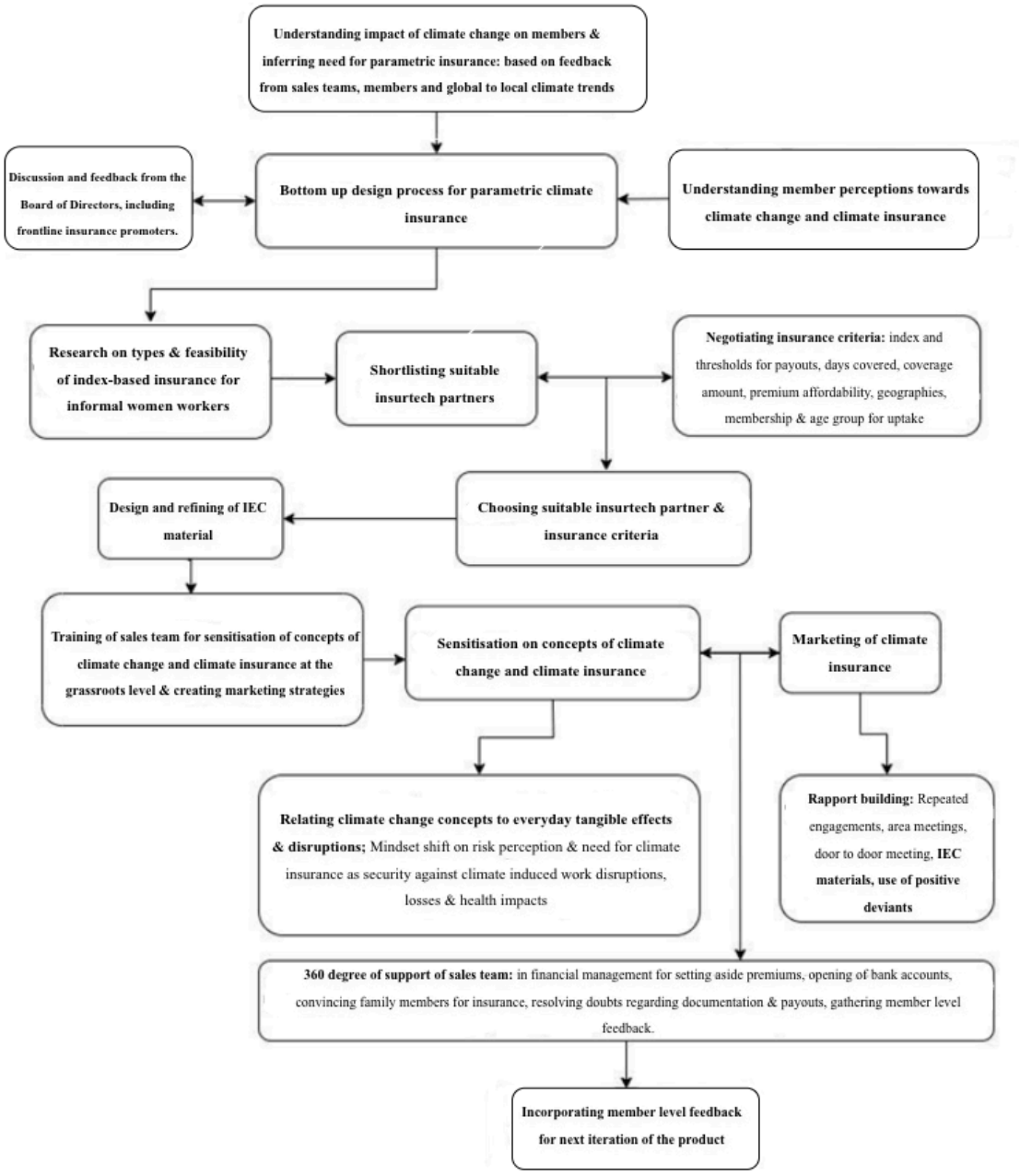
4.3 Data Analysis

The research uses intersecting lenses of gender, informal economy and cooperative based mutual insurance models to look at climate adaptation and resilience, specifically against excess heat and rainfall. The Knowledge, Attitudes and Practices (KAP) framework is used for understanding the experiences of the informal sector policy holders. The KAP framework provides a foundational base for tailoring of further Social and Behaviour Change Communication[3] (SBCC) practices, and understanding what strategies to implement to improve penetration.

[3]SBCC is "the systematic application of interactive, theory-based, and research driven communication processes and strategies to address change at the individual, community, and social levels", as defined here in a campaign for Pradhan Mantri Jan Arogya Yojana (PM-JAY), the world's largest public insurance scheme. It has been used to drive uptake and remove social, cultural and mental barriers to access health and social protection, by advocating for changes in individual and social behaviour through awareness communication.

5. Findings

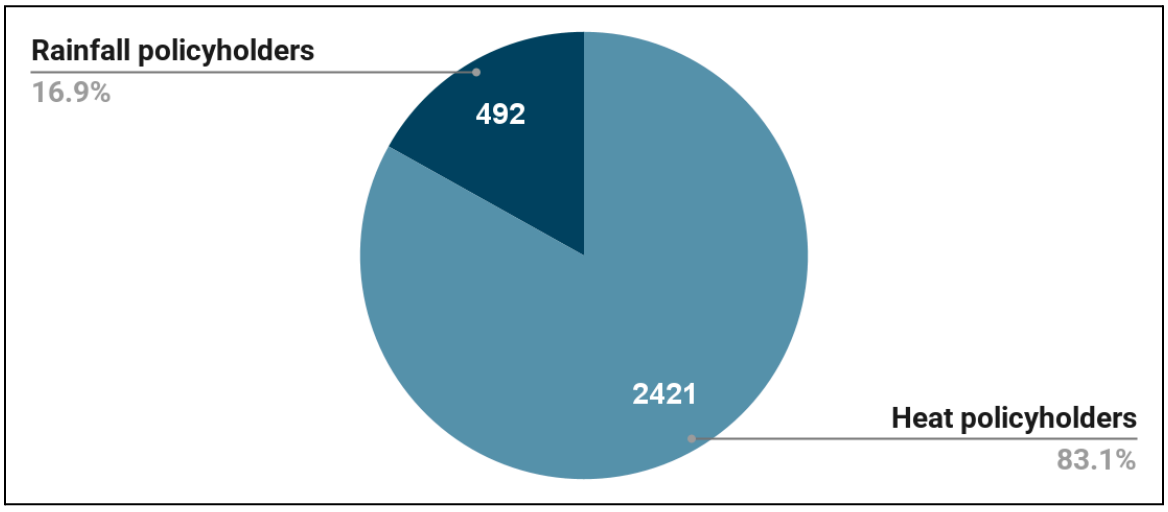
5.1 Process of designing parametric insurance by VimoSEWA

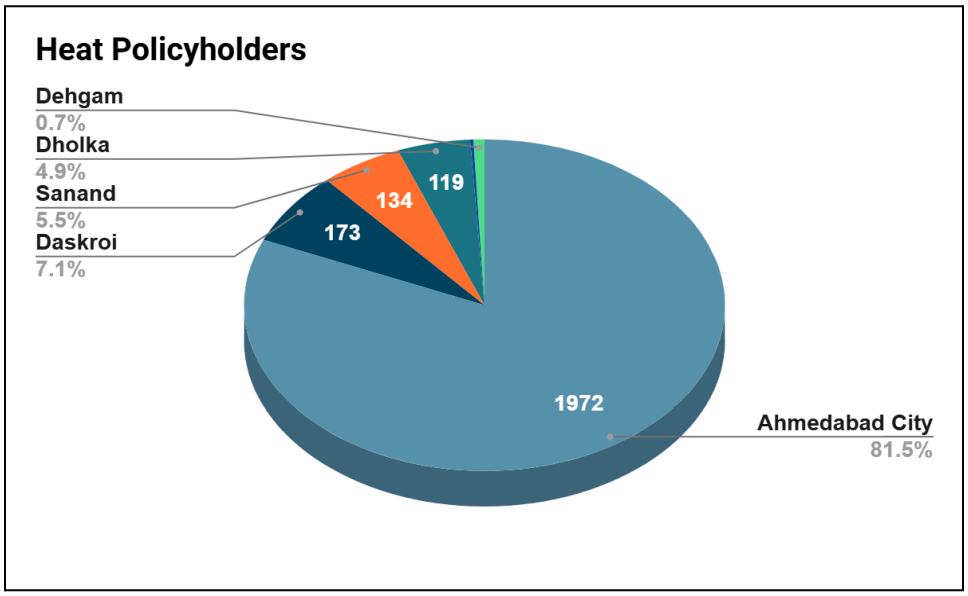


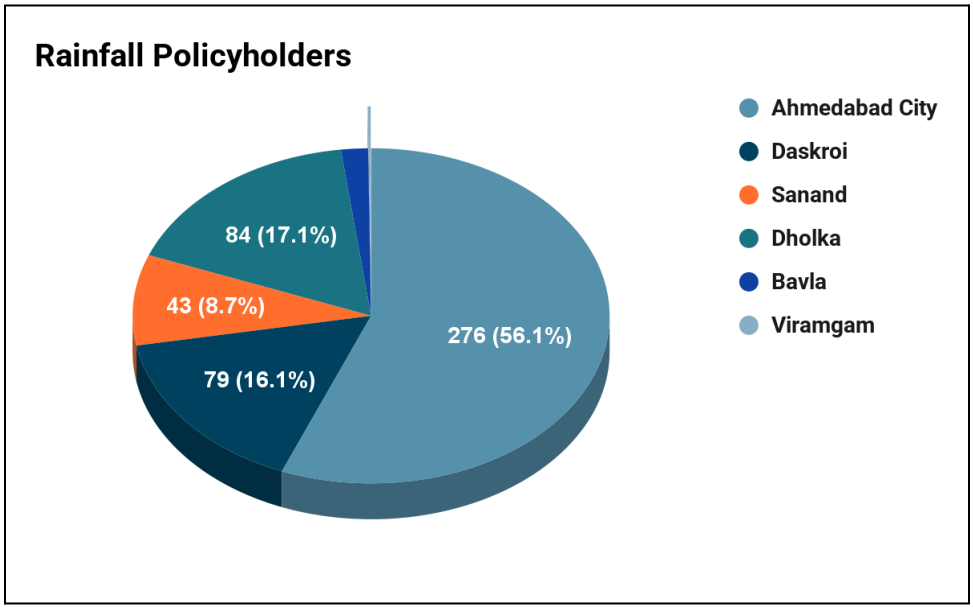
5.2 Coverage by Geography, Trades, and Membership

VimoSEWA provided coverage to a total of 2,913 members from the informal sector: 2,421 members under the extreme heat insurance and 492 under the heavy rain insurance.

- In total 4000 women were reached out to, for the awareness and marketing process.
- 75% of women were existing VimoSEWA members from the following blocks - Ahmedabad City, Daskroi, Sanand, Dholka, Bavla, Dehgam and Viramgam.
- 77% of total policyholders (heat and rainfall included) were from Ahmedabad City.







The following trades were broadly covered by insurance: Anganwadi and ASHA workers, Garment workers, Blacksmiths, Street vendors, Farm and factory workers, Construction workers, Waste pickers, Incense stick workers, Domestic cooks, Sweepers, Home-based and service workers.

5.2.1 Insurance Products

a. Excessive heat insurance

At first heat insurance was considered, as the main coverage area of Ahmedabad and neighboring talukas fall in climatic zones which are historically prone to extreme summer heat (excess of 40 degrees). The cooperative also wanted to pilot the product in Ahmedabad, as it had the highest concentration of members.

As an intermediary insurance player VimoSEWA can co- create and customize very specific products for members with other insurers. The distribution of the product is then done by VimoSEWA through their own sales and marketing team. Thus, after the initial research process of looking at index-based products, the next phase dealt with exploring key insurtech players and their willingness and capabilities regarding parametric insurance.

Jayaben, a Field Supervisor, explaining the heat insurance product to members of Mitha na Muvada and Udan villages in Dehgam Taluka, Gandhinagar.

Madhuben, a Field Supervisor, conducted awareness sessions on the heat insurance policy and enrolled members from the Meghaninagar area of Ahmedabad city.

Aagewan Minaxiben is spreading awareness about excessive rainfall insurance and heat insurance policies and enrolling members from Behrampura area in Ahmedabad city.

Aagewan, Rukaiyaben and Kokilaben, are educating members of Ahmedabad city about the heat insurance policy using pamphlets.

VimoSEWA's chosen insurtech partner for heat insurance leveraged ERA-5 as the database for the heat insurance, which would have a daily and spatial aspect of measuring temperature. ERA5 is the fifth generation of the European Centre for Medium Range Weather Forecasts (ECMWF) atmospheric reanalysis of the global climate. It provides hourly estimates of atmospheric, ocean-wave, and land-surface variables from January 1940 to the present day. The data source also regulates temperature all day and provides the mean value. Temperature measurement was monitored at every 25 KM distance in Ahmedabad city and the 5 blocks chosen for heat insurance coverage. The threshold for payout was discussed as being more than 43.2 degrees. If this parameter was crossed for a minimum of 7 days, then payout would be triggered.

"ERA 5 goes into a very microscopic level of data capturing, not just daily temperature averages but also how every 25 kilometers there is expected to be a different type of weather condition. So, the temperature captured in an area can be very different from another area even within the same city. These

nuances were very important and hence it was vital to pick the right insurtech partner"- Ms. Ruchi Agarwal, VimoSEWA CEO.

Risk period of heat insurance	1st April 2024 to 31st July 2024
Temperature threshold	More than 43.2 degrees
Annual Premium	INR 350 per policy
Maximum coverage	INR 3000
Who can take the insurance?	Women from the informal sector
Age limit	18 years to 70 years
Days during full coverage period where temperature > 43.2 degrees	Coverage Amount (INR)
7 (not continuous)	1200
11 (not continuous)	1800
20 (not continuous)	2400
30 (not continuous)	3000
Geographies (blocks) covered	Ahmedabad City, Bavla, Daskroi, Dholka, Sanand, Dahgam

b. Excessive rainfall insurance

The VimoSEWA team chose a different insurtech partner for the rainfall insurance. The rainfall index was calculated using data from the Indian Meteorological Department(IMD). The threshold was decided as a rainfall

level of more than 45.28 inches during the entire policy period, which would trigger a one-day payout as per the decided rates**.**

Risk period	25th June 2024 to 30th September 2024	
Rainfall threshold	More than 45.28 inches	
Annual Premium	INR 425 per policy	
Maximum coverage	INR 7000	
Who can take the insurance?	Women from the informal sector	
Age limit	18 years to 70 years	
Rainfall Level	Days	Coverage Amount (INR)
45.28 inches	1	500
47.24 inches	3	1500
49.21 inches	5	2500
51.18 inches	10	5000
55.12 inches	14	7000
Geographies covered	Ahmedabad City, Bavla, Viramgam, Daskroi, Dholka, Sanand	

Vanitaben, a Field Supervisor, conducted sessions on Heat insurance policies and Excessive Rainfall insurance policies in Bhurkhi and Ambaliyara villages in Dholka taluka, Ahmedabad district.

5.3 Perceptions, attitudes and practices to deal with climate change

The sales team reported that informal women workers understand climate change not as a concept caused by global warming but through the a) the tangible shifts and effects they observe in their daily lives and b) disruptive deviations from patterns they once relied on.

Members describe how, within a single season, the weather can change drastically- extreme heat at one moment, followed by unexpected cold. Sometimes, it feels like a season arrives without warning or at the wrong time altogether. This irregularity, this *"bin season ki rutu,"* becomes their way of making sense of climate change- changes that are tangible but feel unusual compared to previous years and have direct effects on their routines, work, and health. For example, members would say "*Rainfall is happening in Diwali or winter but not during the monsoon season".* - Vanitaben, City Team Leader.

In terms of language, members referred to these changes as *jalvayu parivartan* or *taapman mein badlav* or untimely heat and rainfall (*asamay garmi aur baarish*). In some households, members had a limited understanding of the concept and scientific causes of climate change through exposure to weather reports and forecasts on newspapers, smartphones or television.

Many members have noticed an increase in bodily stress and seasonal illnesses, attributing this to more intense heat, unexpected cold spells, or erratic weather changes.

There is a clear recognition of unusual and unseasonal weather patterns which disrupt daily life and work routines leading to economic losses. Women workers reported being worried about climate change effects on work, particularly those engaged in seasonal trades. Some complained how the monsoon season would cross into Navratri, and this would hamper work timings in the handicrafts and garments trades - as these are trades most dependent on the festival season for obtaining work.

Sales team members report that members are not averse to skipping work in the worst of the heat waves or waterlogging. However, this is considered a last resort due to potential income loss, particularly for daily wage workers.

As per Ms. Ruchi, CEO of VimoSEWA, members do not see climate change as a particularly catastrophic issue that warrants insurance. *"By and large members have some degree of understanding of the dos and don'ts [in heat waves] - to work in early morning and evenings and avoid noon, hydrating themselves and covering exposed skin etc. It makes sense to members that they should take insurance with the erratic climate changes and extreme heat because the place they live in is very hot and leads to various health and livelihood risks. But it has not been easy to reach out and convince a large number of grassroot communities owing to the technicalities of the products and new concepts. [to take the insurance]."*- Ms. Ruchi, CEO, VimoSEWA.

Details of how excess heat and rainfall impact informal women workers across various trades located both indoors and outdoors are given in Annexure A.

5.4 Sensitization and Attitudes towards taking Climate Insurance

Many women had never heard of climate-related or parametric insurance before. Most were not even aware that such a product could help them cope with climate-induced risks. Members struggled to grasp the concept of pre-determined thresholds for triggering payouts. The use of ERA-5 data to measure temperature was difficult to understand. To members, temperatures of 40°C or even slightly below or intense rainfall even for a single day, were already extreme and justified a claim. This gap in understanding led to confusion and frustration.

For some women, rainfall insurance was easier to understand because its effects- such as visible flooding or disruption, were clearly identifiable. They were less ambiguous than heat, where the effects were more subjectively felt. They recognized that rainfall amounts vary between areas and accepted this variability. However, the same level of understanding did not extend to heat insurance and many women expressed dissatisfaction when they didn't receive payouts.

While members understood the workings of the rainfall insurance better, they did not consider excess rainfall to be as stressful as excessive heat, at least, not enough to warrant taking insurance. Members were also more confident in handling the effects of excess rain: "*We have pakka houses, we can manage without the insurance*"- a member to Samaben, City team Supervisor.

There is very little insurance penetration and insurance awareness in the informal sector*"...so, in terms of [climate] insurance products there may be a latent demand but it's not a very visible demand because people are not aware in terms of supply"*- Ms. Ruchi, CEO, VimoSEWA.

Social behaviour change communication is used by VimoSEWA to spread awareness on how to tackle emergency situations and convince members to get insured against such risks: *"SBCC makes them aware, that, if a situation arises that the worst can happen, what can they do - mortality, hospitalisation, loss of earnings, loss of schooling when kids fall sick - what can they do to mitigate these…The way they perceive living in hot conditions has to be changed and that's where SBCC helps."* - Ms. Ruchi, CEO, VimoSEWA.

Overall members found the products novel and saw value in the idea of insurance that could protect them from climate risks.

"The members liked the products because they saw that at least a part of their income would be compensated" - Vanitaben City Team Leader

5.5 Bottom-up design process for need based insurance products

VimoSEWA develops products through iterative consultation between its grassroots members and professional staff. Sales teams gather insights and feedback from repeated interactions with members, while staff contribute their professional expertise and foresight on global, national, and community level realities.

Based on the merging of these two types of inputs at the grassroots and senior management levels, ideas for products are then tested through market and policy research to assess their feasibility. This process gives VimoSEWA a unique edge in designing products that are truly attuned to reflect the needs, capacities and feedback of informal women workers.

"We cater to the informal sector, and all our products must be relevant, affordable and sustainable and be able to mitigate risks that a given individual is encountering" - Ms. Ruchi, CEO, VimoSEWA.

5.5.1 Discussions with the BOD - A community informed design feedback process

In VimoSEWA's insurance model, the members who take the products are not just beneficiaries but have an active role in product selection, design and feedback. Frontline Insurance Promoters are members from the target communities who are elected to the board of directors (BOD)- with immense value placed on lived experiences and grassroots leadership. After determining technicalities, all products are brought to the BOD and their feedback is incorporated.

5.5.2 Exploring parametric climate insurance for informal women workers in Gujarat

In the case of parametric heat and rainfall insurance the cooperative was keeping abreast of the global conversations happening on climate change risks, rising temperatures[4] cited in various fora such as the United Nations Climate Change Conferences, India's position in terms of the global risk index[5] and the need for climate adaptation measures for vulnerable communities.

[4] The Paris Agreement is a global treaty on climate change adopted in 2016. It addresses climate change mitigation, adaptation, and financing, with 195 UNFCCC members having joined as of February 2023. Its long-term goal is to limit the rise in global surface temperatures to well below 2°C above pre-industrial levels, aiming ideally for no more than 1.5°C. Keeping temperature increases lower is expected to reduce the severity of climate change impacts.

[5] Global Climate Risk Index: The Global Climate Risk Index 2025 by Germanwatch ranks India as the sixth most affected country between 1993 and 2022. First published in 2006, the CRI is among the longest-running annual indices tracking climate impacts.

"It felt very pertinent to start thinking that this risk is affecting various segments across the geographies where we work- we needed to address them by mitigating risks through a relevant innovative product, customised and catering to the informal sector", says Ms. Ruchi, CEO of VimoSEWA.

Other than fixing thresholds for triggering payout, the VimoSEWA team also negotiated premium affordability, geographies where most members are located and which are also affected by extreme weather, relevance of the product to members, and finally which members to target. Primarily, existing intervention geographies were targeted where a member base with more trust and familiarity of VimoSEWA's people and processes, would be more likely to take a new product. There is due diligence in selecting insurtech partners to ensure reliability and alignment with members' needs, BOD are involved in product development and foreseeable challenges are addressed at each level of operations through a democratic feedback process.

5.6 Training and training outcomes for selling parametric insurance

Standardized training modules are used for capacity building of the insurance promoters at all three levels of the sales team - for aagewans, supervisors and team leads, ensuring heavy technical concepts were simplified, with *each team member being on the same page* on conceptual aspects of climate change and climate insurance. The supervisors and agewans later provided on-the-ground training for the vimosaathis, who are a larger and a more fluid part of the team at the grassroots

As within any other cooperative, there is a great drawing of collective knowledge as a resource to take on new challenges and endeavours. *The training provided ample opportunities for dialogue and experience sharing,* with the more experienced

members sharing marketing strategies for selling the new product, while VimoSEWA's management cleared any technical doubts.

The training used PPTs and IEC material. *The needs of women workers were explored along with the features of the product*, such that the sales team would be able to tie them together using common examples from the lives of members.

The training was considered *helpful in developing an understanding of the exact eligibility criteria* for giving the claims. It was important to explain to members why it was not always possible to trigger payout if temperature and rainfall thresholds were not crossed. Conceptual clarity for these technical details were of utmost importance, especially since the product was quite different from regular indemnity based insurance and was to be tested in a target population with very little awareness and risk taking capacity.

"*We did not know how they would disburse the insurance, before we received the training"* - Madhuben and Charumatiben, City Team Supervisors.

"Through the training we learnt about climate change and measuring temperature through a systematic database such as ERA5". - Vanitaben, City Team Leader, Sale.

5.6.1 Using established SBCC strategies

1. **Targeting existing customer base and relying on positive deviants:** most of the members targeted belonged to VimoSEWA's established customer base. Older members were eager to try novel products and explore more ways of financial and social security, having experienced net positive returns over many years of being part of the cooperative. Some members would themselves fix up times for

facilitating area meetings. These people were the "positive deviants" for newer products. Community members listened to them because they had reaped the benefits of insurance and were living case studies for others to learn from - leading to a domino effect of more people taking the insurance.

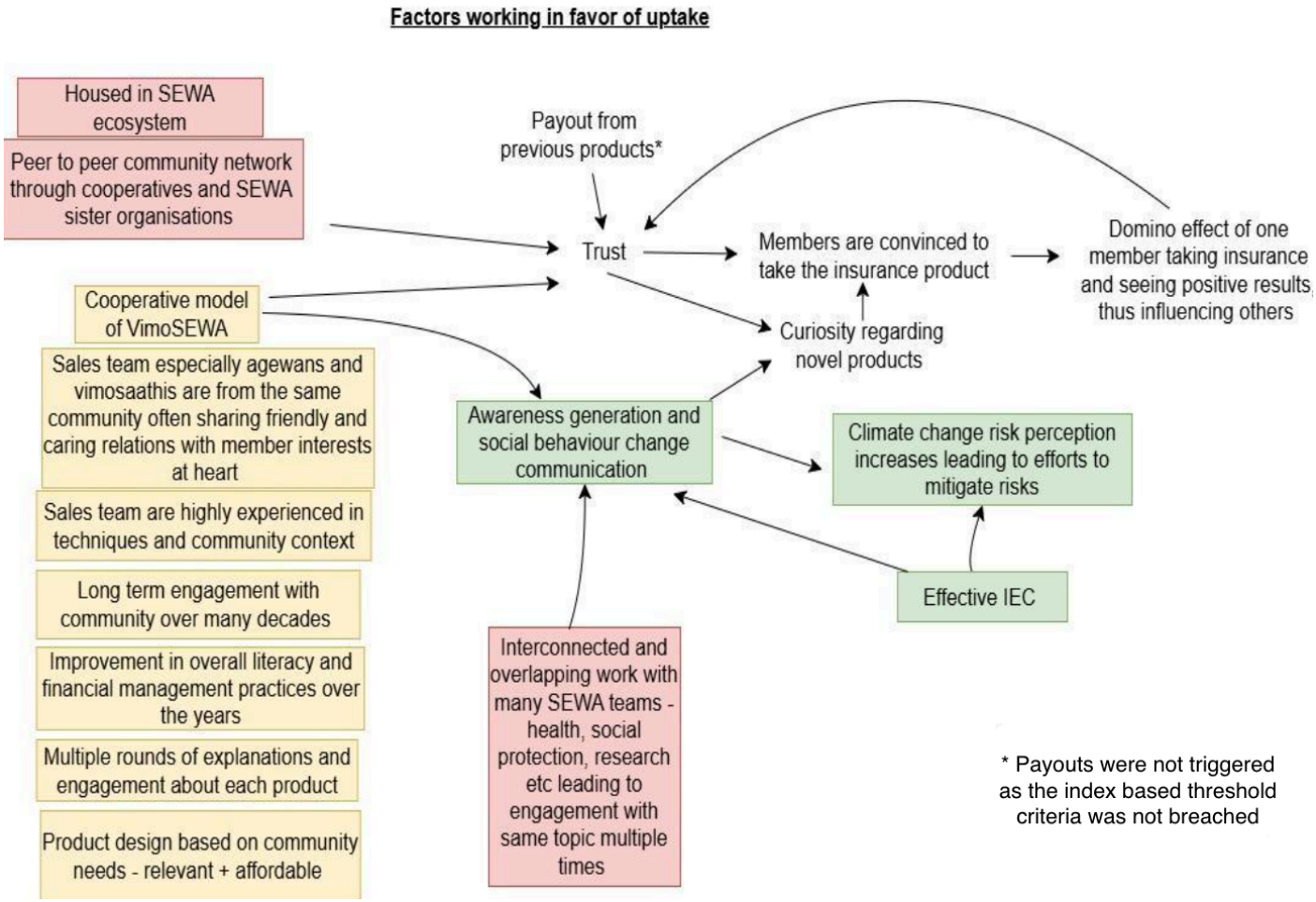
2. **Area meetings and door-to-door meetings:** Area meetings, where women were called to a meeting at a common public place, or at the home of any well-regarded community member, would be effective in taking into consideration care work and occupational work timings. Where area meetings were impractical, agewans conducted personalized door-to-door visits, ensuring convenience, space, and stronger chances of member engagement.

3. **Using printed IEC material - quantifying the effects of climate change:** The sales team used the IEC material (*patrika)* to explain the technical parts of the insurance. Madhuben and Charumatiben, city team supervisors, would explain insurance to members in terms of degrees (*garmi ka para)* or inches of rainfall. They would use the IEC material as means of lending credibility to the figures and data they were quoting.

4. **Support from educated, second generation SEWA Members:** The sales teams used their help in making families understand how insurance can be useful, including climate insurance.

5. **Overcoming gendered mindsets:** The Aagewans also supported women in understanding their role as productive earners, with their

double burden of responsibilities making them more exhausted and



affected by extreme heat and rainfall. They convinced them on how their own need for insurance was as important as insuring family members- beyond their "*duty to family, they had their own self-identity and duty towards the self*". "*Sometimes, we tell them, 'You spend so much for your family, why don't you spend some for your own self? You are the person who is affected by heat and rainfall while going to work and providing for your family'*" - City Team Agewans.

5.7. Enablers to Uptake of Parametric Insurance

- Housed in the SEWA ecosystem: A federated or trade union linked system of cooperatives plays a role in successful participation and uptake of individual cooperatives' services among members. The VimoSEWA's team works in geographies which are frequently serviced by other teams of the SEWA Union and SEWA Federation or their member cooperatives. The common services being offered include healthcare awareness, insurance, pension, loans and other aspects of social protection.
- Trust Built Over Time: Trust has been cultivated through decades of consistent presence: *"What sets VimoSEWA apart is that we understand the grassroots- because of the SEWA model built over the last 50 years. The way we build relationships, the way women trust us, and the way they recognise the VimoSEWA brand is our key strength."* - Ms. Ruchi, CEO

  The members have been seeing the Vimo sales team over 20-25 years and faces have become familiar and trustworthy. Insurance agents from other companies also frequently visit the members. However, these agents are constantly changing, while the agewans are fixed to the place and may even be living nearby. *"If they cannot get hold of one agewan, they can get hold of someone else from a neighboring area. Everyone is from SEWA", - Samaben, City Team Supervisor.*

  The members have had good experiences with previous Vimo products such as life insurance cover, mediclaim and wage loss insurance (Saral suraksha yojana, swasth parivar floater). This has led to an increased trust in newer products. Vaanitaben, District Team supervisor highlights this impact: "*When a claim is successfully received—like in the case of the life insurance product, where a member's family received ₹35,000 after her passing—it leaves a deep impression on the community*".

People begin to see the tangible benefits of being associated with SEWA and its insurance programs.

"*Women feel that we would never intentionally hurt them, we must have come for some purpose that would be beneficial for them".* - Madhuben and Charumatiben, City Team Supervisors

- Products, processes and services that keep informal women workers at the centre: Teams work together to curate education and awareness efforts that resonate with the members' realities while also striving to improve the design and implementation of products based on feedback from the ground. This adaptability ensures that products are both practically relevant and technically sound.

  Products are based on affordability, since members save up premiums from monthly savings which can be erratic based on job type and seasons. The premiums can be as small as INR 50 and the collection process is flexible, with most members paying at the end of the month after meeting household expenses: "*If a new product has come, we take 2 to 3 weeks to make people aware. Women do not take the product until 20 days have passed. Then towards the end of the month, premiums start coming in very rapidly"* - Ritaben, District team lead.

  The claims process is faster and easier for informal women workers who may not be aware of the steps and documentation needed for filing claims with traditional insurance providers.

  Experienced and Supportive Sales Team: The VimoSEWA sales team is highly experienced and has an intimate understanding of even individual members' lives and spending patterns.

"*We can tailor our answers as per members' questions. All of us are between 15 to 20 years old in the VimoSEWA sales team. Even if there is a new joinee, the supervisor will go to support her in the sales process.*" Samaben, City Supervisor.

They provided "*360 degree support*" to members- showing them how to cut back on unnecessary expenses, save for premiums of multiple products, helping them open bank accounts, along with explaining the product and clearing technical doubts- financial and insurance literacy along with continuous logistical support are built into the responsibilities of the sales team. "*Our sisters don't know much about documentation and registration processes, so we give them 1:1 services at their home itself and help them manage everything.*" Parulben and Rekhaben, District Team Agewans.

Long term perseverance for social behavior change: Changing behaviours around savings and insurance requires long-term awareness drives over many years. VimoSEWA invests years of persistent engagement, visiting members multiple times and explaining concepts repeatedly, building products and even compensating out of pocket while awaiting proof of concept.

"The claim might be received once in five years or ten years but once it happens people put their trust and we can then showcase it as an example. But until it happens from our end, till we have had such proof we keep [the product] working - one has to keep this time scale in mind" - Ms. Ruchi, CEO.

The sales process is centred on member welfare and understanding, apart from traditional targets being met: *"We have at least four meetings to sell one product. Our*

cooperative is unique because we explain the concepts as many times as required by the member. " - Samaben, City Team Supervisor.

These long term processes have contributed to individual product uptake, and increase in insurance awareness and penetration across geographies and informal member profiles.

"In larger insurance schemes, agents often don't bother visiting the homes of low-income families, assuming there's no point since they can't afford high premiums and are unlikely to purchase insurance. As a result, these families are routinely excluded. But how did we manage to succeed where others gave up? Initially, these women would pay very little. However, over time, as we continued to visit them consistently and patiently explained the benefits, they began to trust the process. Now, many of them are insuring amounts as high as ₹35,000–₹40,000 with us. Our continued presence and engagement have made a real impact on their lives." - Parulben and Rekhaben, Agewans, District Team

5.8 Social Behaviour Change and Communication for Sales Processes

5.8.1 "Sambandh": Rapport Building (Relationship with members that engenders trust)

Both communication about climate change and marketing of climate insurance relied on the concept of *Sambandh* or rapport building. Rapport building is based on solidarity, respect and integrity: *"It's not like if we explain once, the member will understand and take the insurance. It depends on your relationship to the member: Based on your own respect and behaviour towards them, they take the insurance".* - District Team Aagewans

The most important aspect of building *Sambandh* is the enormous length of time involved. Awareness generation and insurance penetration among informal workers may take years of persistent effort - starting with the basics of financial literacy, convincing women's families to see them as important earning members who should take insurance, and slowly building the risk-taking capacities of members towards investing in insurance - something that is often seen as having a lower priority than immediate needs towards basic amenities and work security.

"A key strategy of the sales team to build trust and rapport is to visit the same locality multiple times within the week" - Vanitaben, City Team Leader.

Members may not initially know the insurance team members by name, but they recognize them simply as the *"Vimo wali behen"*- the insurance sister who always comes around. The first time she is seen, there may be no interaction, just familiarity. The second time, as she passes by again, the woman might call out warmly, "*Kaise ho ben? (How are you sister?)*"- and a connection begins to form. By the third meeting, the insurance behen begins engaging more directly, gently encouraging the woman to consider joining the insurance scheme and explaining its benefits. Eventually, a relationship is built. Over time, this bond leads to trust, and the member often decides to enroll in the insurance scheme- because *"the relationship comes first, and the insurance follows".*- Interview, Sevikaben, District Team.

5.8.2 Sensitisation towards climate change

The sales team used regional languages and dialects to communicate climate change. They did not try to explain complicated concepts such as global warming and index-based temperature measurement directly but rather in terms of climate change effects that were already perceived by members to be risks. These included common experiences of seasonal sickness such as vomiting, dizziness and impact on income.

"As the summer here is now four months long, the member herself will tell us how their festive seasons have shortened and right after Uttarayan (a kite festival in January), summer starts almost immediately (whereas summer is supposed to come after March)...so in terms of what they feel and understand - be it in terms of seasonal festivities or changes in seasonal mean temperatures, we simply connect these [informal] understandings to the [formal] concept of climate change".

- Samaben, City Team Supervisor.

5.8.3 Sensitisation towards climate insurance

First, the sales team helped members see climate change impacts as something that could be realistically compensated for, and which members should not normalise as part of the struggle of daily life.

"If the rainfall amount is high, then the member will get the claim, and since members understand through effects that can be seen and felt…that they then know they would need protection from, those are what we aimed to connect [their existing understanding of insurance] with…" - Vanitaben, City Team Leader.

There was a strong focus on helping members understand the cascading nature of climate-related risks they faced. The agewans would explain that rising temperatures could lead to health issues such as high blood pressure and fatigue, which in turn could lead to a drain in income.

The basic understanding of temperature and temperature based indices was further connected to trade-specific examples, often showing how climate change posed hitherto un-acknowledged risks.

"For home based workers with access to electricity, we explained how even the fanned air inside the house is severely hot and if their houses are not constructed out of cooling material, and without ventilation, it can affect their health and productivity." - Ritaben, District Team Lead on convincing home based workers to take insurance.

This awareness of risk would then be connected to the vital need for financial protection, especially given members' unique socioeconomic vulnerabilities. *"We reminded the women that, unlike the upper-middle class or wealthy, they could not afford expensive health care to deal with heat-related illnesses."* - Parulben and Rekhaben, District Agewans.

For rainfall insurance which was harder to sell in areas which did not receive much rain, Samaben, City Team Supervisor, countered member perceptions of there being no risk, by reframing in terms of sudden, unseasonal or unusual impacts which have become increasingly common - "*what if it rains a lot for many more months, it's not as if it only rains for four months."*

5.8.4 Incentivizing climate insurance

1. **Guaranteed and easy compensation:** Guaranteed compensation was one of the main driving forces or anchor points towards selling the insurance products. It was explained to members that as soon as a certain threshold was reached, they would automatically receive compensation without having to furnish proof of any adverse events happening. Immediate monetary compensation was lucrative as it has always been a need for informal workers. This way members could choose whether or not to skip work.

2. **Climate insurance as part of a product bundle:** The Aagewans stressed that the climate insurance would be part of an integrated and well-rounded cover, because the product could be clubbed with others, particularly for illness or wage loss. For example, if appropriate, a member could claim insurance for hospitalisation as well as against extreme heat. *"For any medical effects you can get mediclaim, but the small losses that you face everyday due to not being able to work- these add up, where will you get compensation for these?"* - Samaben explaining to women the need for parametric insurance.

5.9 Challenges to insurance uptake

1. **Regulatory workaround:** Parametric insurance as a distinct category had not yet been formally filed with the insurance regulator as of 2024. As a result, insurers were offering such products under the broader umbrella of weather insurance, often linked to crop insurance, since the technical components—such as climate indices—are already established in that domain. This was a temporary workaround due to the absence of a dedicated regulatory pathway for parametric insurance.

2. **New product with complex concepts and low perception of climate risk:** There were some challenges in member sensitisation. The lack of member awareness, not just about insurance but also a lack of general higher education, made the concepts of climate change and systematic databases hard to convey.

   "*Even after explaining the concept and effects of climate change, convincing members to part with their hard-earned money—especially when they are already balancing*

other urgent needs—is a significant hurdle. They must be clearly told that risk insurance only provides a payout if a catastrophic event occurs and the trigger, as defined in the policy, is met. This involves explaining complex components like the index, the number of days required to reach the threshold, the payout amounts tied to specific durations, and the total coverage offered.

Members need to understand that the premium is valid for only a specific season or a defined period—typically one year or less. If they want to be covered again in the next season, they will have to pay the premium again. Since this was a pilot product, there's also the possibility that the product may evolve or change in the future, adding another layer of complexity to the communication. Explaining all these nuances in a clear and relatable way, especially to those unfamiliar with formal insurance, remains one of the biggest implementation challenges on the ground." - Ms. Ruchi, CEO

Initially the sales team also found it difficult to transfer concepts from the supervisor and team lead level to the Vimosaathi level. They had to sit with agewans and Vimosaathis and explain the technical parts in different ways to make it easier to absorb.

3. **Gap in technical understanding leading to dissatisfaction when claims were not paid:** Since members typically relied on local weather apps, newspapers, or personal experience to assess heat levels, they found it difficult to reconcile their lived experience of extreme heat with the formal payout conditions of the policy. This led to a disconnect between perception and policy criteria. Finally payout did not happen during the pilot phase as the threshold was not breached for either heat or rainfall insurance.

4. **Hindrances from family members:** In some households husbands and older male heads of households were suspicious of the product as it only covered the woman and she was paying the premium. They had to be convinced that the product was for the benefit of the family. "*Our members have a certain trust with the sales team but other financial, family or social pressures make them want to postpone [paying the premium] as there is no proof of concept - like accident insurance, medical etc - established products about which members are aware"* - Ms. Ruchi, CEO, VimoSEWA.

   Educated younger members were suspicious of bank details being involved. Ritaben, District Team Lead, mentions that getting the required verifiable documents for insurance and claims is difficult to acquire from members.

5.10 Immediate Outcomes of Insurance Pilot Process

As per the sales team, there has been a noticeable increase in climate change awareness and risk perception among members following the introduction of the parametric insurance product. Many women now check the temperature regularly, a practice that was not common earlier. There was also a growing recognition that insurance could serve as a tool to safeguard against climate-induced wage losses, marking an important shift in how members think about resilience and financial security. Importantly members reported finding it a little easier mentally to skip work during extreme weather. As understanding of climate insurance improved, women often asked about claims and payouts.

5.11 Community level feedback:

1. Members expressed satisfaction with the premium amount, finding it affordable.

2. Members wanted to expand eligibility criteria for age groups beyond 70, as many older women are still actively part of the informal workforce and for including male members to expand protection for the whole household.
3. Members wanted to reduce the minimum requirement of seven days for heat insurance payout thresholds to three days.
4. Members expressed need for related products addressing environmental and seasonal disruptions on livelihood: City team agewans conveyed that members talked about factory work being affected by sewage and pollution. Another demand raised by members was the need for insurance coverage that accounts for seasonal disruptions to their work in trades such as kite-making and handicrafts.
5. Suggestion to use more video-based IEC materials to make technical concepts easier to understand.

5.12 Major learnings

1. **Climate risk is a long term issue and insurance work has to happen alongside other community-sustainability measures and securities.** All the different forms of securities VimoSEWA provides- against wage loss, health, accidents, death and so on, cumulatively create a safety net for informal women workers which also act as further adaptations against climate risks.

2. **Informal women workers are aware of climate change impacts** but relate to climate insurance in terms of immediate needs rather than long-term financial security.

3. **Cooperatives have played a key role in promoting financial management and literacy among members.** They demonstrate that a holistic approach is essential for building trust, awareness, and uptake of such financial products including climate insurance.

4. **Solutions must come from within the community** - in design and implementation and to understand needs of the sales team, ensuring marketing strategies are tweaked according to the on-ground difficulties faced- "*We go with the agewans and try to answer their doubts. We can usually find the solution by sitting with our members and holding discussions among ourselves. Since we visit the members so often during each week, our understanding also develops and helps to grow sales".* - Samaben City Supervisor. Climate insurance products must keep in mind meaning-making, lived realities, life cycle needs and negotiations of informal women workers with climate change impacts to truly create change.

5. **Value of appropriately designed IEC Materials:** Sales team members observed that uneducated members valued having something written down; they kept the IEC materials as proof of the product's authenticity. Sales team agewans praised the simplicity of the material: "*If kids read the material they can understand as well, our IEC material is written in simple regional language- in just four lines you can understand everything*".

6. **Success must look beyond uptake figures** to a larger picture of awareness generation, re-evaluation of risk and trade wise climate change impact mapping and coverage, with long term monitoring and evaluation on the impact of climate insurance on workers' risk taking capacities, climate resilience and financial security.

6. Next Steps

1. **Work on member level feedback** - the VimoSEWA team rolled out the next iteration of the product, which incorporates member suggestions. The new policy has increased the age limit to 75 years, with a maximum coverage of INR 3500. The minimum number of days covered was also reduced to 3 days for which INR 875 would be paid.

   This is the true essence of a cooperative in the insurance landscape, where community feedback is intricately linked to what is felt to be a "successful" product. The cooperative will keep working to make the product stronger, while advocating for an enabling environment for more awareness and coverage of climate risks for informal women workers. "*We are constantly endeavoring to make our products relevant to members, and for them to understand climate risks and the need to pay premiums"* - Ms. Ruchi, CEO.

2. **Producing a proof of concept:** As parametric insurance is a new area, a clear proof of concept is essential. This means being able to demonstrate that a significant number of members not only purchased the policy but also received payouts during the coverage period. Without a strong narrative showing this end-to-end success, it becomes difficult to justify or support scaling efforts. By addressing geographic expansion, actual claims paid, and consistent uptake, VimoSEWA hopes to build a proof of concept, laying the foundation for broader adoption and policy convergence in the future. This process will take significant time.

7. Way forward: Building a unified framework for climate insurance

India's insurance penetration rate is only 4% (gross written premium as a percentage of GDP), as per a report on inclusive insurance and risk financing. The need is to integrate inclusive, cooperative-based insurance as part of climate action plans, which themselves should be embedded in wider livelihood resilience strategies, linking payouts and coverage to low-carbon, health-enhancing initiatives such as clean energy adoption, waste recycling value chain upgrading, and just transitions for informal workers.

Insurance schemes should be informed by robust, mixed-methods research quantifying climate-related losses and mapping risk hotspots (for example, via GIS and heat monitoring). Key indicators of measuring whether climate insurance is truly effective will depend on the accurate and reliable mapping of climate impacts on vulnerable populations, and since vulnerability varies as per intersectional markers of gender, nature of work, disability, age or access to resources, a wide range of disaggregated data needs to be considered for developing coverage.

For low-income women workers and their households, gender-mainstreamed micro-level insurance through cooperatives, where members tailor products themselves, can be useful to secure diverse life-cycle based climate risks affordably. Existing products can be remodelled to include climate induced losses to assets, livestock, health and against diseases and deaths through climate-induced natural disasters. Cooperatives like VimoSEWA can provide a proof of concept but they do not have the scale or funding to implement these solutions nationally. More pilots across different geographies are required to generate evidence. For this, funding support is required for scaling the model and providing data for decision-making. Convergence with government programs and policies on parametric insurance is a way forward.

Here, governments must play a key role by establishing enabling regulatory and policy frameworks, integrating parametric products into disaster risk reduction strategies, and

investing in public awareness and market development. Development partners can help fill gaps by funding pilots, strengthening data systems, sharing global best practices, building partnerships that connect insurers with vulnerable communities and exploring accessible and value-driven distribution models. Insurers need to design tailored products based on local risk profiles, invest in accurate modelling and robust data, and prioritise client education to build trust. This holistic, multi-actor approach will ensure parametric insurance is part of a broader climate resilience strategy rather than a stand-alone product.

In March, the Ministry of Home Affairs informed the Rajya Sabha that it was examining ways to extend parametric insurance coverage to all citizens. This aligns with the Prime Minister's 2016 ten-point agenda on Disaster Risk Reduction, which includes providing risk coverage for all, from poor households to SMEs, multinational corporations, and nation states. The National Disaster Management Authority (NDMA) reported that it has been engaging with national institutions such as the Insurance Regulatory and Development Authority of India (IRDAI), General Insurance Corporation of India (GIC Re), and Insurance Institute of India (III), along with multilateral institutions, to study four disaster risk insurance mechanisms. These mechanisms include a national insurance scheme for disaster-related deaths, aligning relief assistance with crop insurance, creating a risk pool for infrastructure protection and recovery, and securing access to international reinsurance for rare, extreme hazard events. However, schemes must include areas of coverage beyond agriculture and allied trades. Further index-based insurance for heat, rainfall, and other climate-induced risks calls for distinct policies, coverage, and reinsurance. It should not be clubbed with crop and agriculture insurance policies

Parametric insurance, especially as tailored for informal workers, is a relatively new and unique offering. Bridging the gap between latent demand and niche supply requires trusted intermediaries like VimoSEWA, who not only educate communities about risks but also help them navigate the landscape of financial protection in meaningful and accessible ways.

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Annexure A

A. Impacts of climate change on informal women workers

1. Reduced work hours: During summers the average work day for informal workers reduces to half - instead of 8 hours, many members can only work between four to five hours during the day. For example, Samaben, City Team Supervisor covers the areas of Chandkheda, Shahpur, Dariyapur, Khanpur, Vadaj and Ranip, where she comes across *chulha kam wale* (street food makers). These women often work in direct sunlight and work stops completely during late morning to peak noon.

2. Income loss: Members experience income loss due to reduced work hours, missed work days, and health issues. The effects of such losses are higher for daily wage workers. Agricultural seasonal work demands almost daily attendance for payouts to make a difference for a worker, as their base daily pay is quite low - INR 200/day as reported by Ritaben, District Team Lead.

3. Increased exhaustion: Factory workers may feel more exhausted in summer, affecting their productivity. Waste pickers, sweepers and small shopkeepers are affected by exhaustion as well. Some of the affected regions in Ahmedabad city included Dariyapur, Shahibaug, Madhavpura, Dhokla, Bavla and Shahpur. Here trades such as vegetable vending, stitch work, garment selling, kite making, domestic work, and miscellaneous smaller trades such

as workers screwing on caps onto pens - monotonous work, full of drudgery and long hours- are affected by heat, leading to greater mental and physical exhaustion.

4. Medical issues: The health of children, the elderly, and animals is adversely impacted by the extreme weather conditions, leading to general illnesses. Increased cases of high blood pressure, diarrhea, and vomiting are common, especially in rural areas where health facilities are poorly connected and maintained. Thus, non-workers are also impacted, which puts stress on working members, affecting productivity. Due to illness at home women miss work or go home early. Not only does this result in loss of income, but going home in peak noon hours affects the health of the woman worker.

5. Cascading implications of women's health on family wellbeing: If a woman falls ill, the entire household is affected due to her central role in family care. "*If the woman is sick the whole household is in disarray as there is no one to do the chores. Children end up not going to school. The loss of income affects things women are in charge of, such as nutrition".* - Ritaben, District Team Lead.

6. Exacerbation of the double burden of work on informal women workers: Informal women workers face difficult working conditions, which are exacerbated by extreme climatic conditions. Their leisure and health are severely impacted by long working hours both at home and outside during extreme heat or heavy rains.

7. Infrastructural deficits compound extreme heat impact: Heavy rains can cause damage to homes and equipment. Poorer members may not have *pakka* houses or proper places to store their equipment which can get affected by the excess moisture or be damaged in floods.

In rural areas, the absence of air conditioning or even electricity, along with other challenges like bathrooms and animal sheds being outside the house, forces women to go in and out frequently, adding to their physical strain. *"Things like washing utensils, filling up water, giving water to livestock, grazing, cooking, washing clothes etc- these activities are all done by women from noon to afternoon. They have to keep stepping out which can affect their health"*- Parulben and Rekhaben, District Agewans.

Outdoor workers	Indoor workers
Ritaben, District Team Leader, describes that many roadside small sellers and vendors use tin shacks as makeshift shops. Extreme heat and lack of cooling options in these shacks and the long hours of work can lead to terrible health complications. "*These shops (galle) selling tea and snacks are just small shacks made of tin. The women sit there in a cramped position all day and it is so suffocating. The metal gets heated up so quickly that even the air inside is hot. The structure has such a low ceiling, think how hot it must be- even in such situations our women are working".*	Home- based informal workers are affected by lack of ventilation within their homes or lack of cooling facilities. Increased utility bills and subsequent mal-adaptive coping methods to extreme heat: increased electricity bills lead to a drain on income for maintaining the same level of productivity for home based paid work and for day to day energy expenses. Parulben and Rekhaben, District Agewans highlight how for home based workers, it is not always possible to alleviate the discomfort caused by heat by switching on fans or ACs (even if they have such facilities), as it leads to a drain on income.

8. Impact on mobility In the monsoon, there can be waterlogging at places of work - leading to the members who work on the street, such as vendors having to move around to new

locations. Extreme heat or waterlogging prevents movement of workers across their usual areas of operations, and they are often unable to target their regular customers. Women members are unable to go and collect raw materials for livelihood activities related to production such as food production, handicrafts or agro-allied activities.

9. Trade specific impacts

Outdoor workers	Indoor workers
a. Agriculture and allied activities: Farmers are experiencing a decline in both the quantity and quality of their produce, while livestock health is deteriorating, with cattle producing less milk and falling sick more frequently. In case of excess rainfall animal sheds get washed out and they can catch water borne diseases as well. "*Milk production is affected. Calves die. They need to give more drinking water and baths to the animals, often throughout the day, and create sheds for them which can be expensive.* *Our members do not have their own land, in case it rains and the crops are lost they also lose some of their wages. If the entire crop fails, the land owner clears out the whole field - they lose their main source of seasonal income"* - Ritaben, District Team Lead.	a. Artisanal & crafts work: Unseasonal rainfall is disrupting the production of bandhani and other crafts, and artisans are also facing a significant drop in customers, affecting their overall incomes. People also place less orders during the extreme summer months. *Kagar kam dar behen* - those who work in paper making, recycling and reselling, get most affected during the monsoon season as they cannot go out to collect raw materials or transport finished paper products, and the production process of paper is also affected by humidity, water logging and low

b. Outdoor vending and labour work:

Chulha kam wale, working in roadside food stalls find it easier to sell their products, which are made on small stoves, during the winter. The rainy season is difficult for them to endure as customers dwindle and their energy source is affected, along with waterlogging at the work sites.

Beedi makers, stone and brick layers on roads and pavements, *Potli wale* who carry goods and raw materials from one shop to another or between warehouse to shops are similarly affected by both heat exhaustion and waterlogging.

"There is an Aagewan under me who is a fish seller - her fish are spoiled in the harsh sun and she has to get more and more ice to preserve them - this costs her more money because in that kind of heat the ice melts too soon. Customers don't come to buy her fish in the noon or late morning, they only come in the evenings - this reduces the number of working hours and she earns INR 200-300 less per day" - Madhuben, City Team Supervisor.

lighting. In some cases incomes are disrupted across two to four months- during the worst of the monsoon, as reported by city team agewans.

b. Service sector:

Samaben, City Team Supervisor, covers Anganwadi workers as part of the target member base- during noon time they try to put some time aside from childcare duties to collectivise women and sell insurance, or conduct any of their other government assigned duties, such as surveys and awareness training. However, the intense heat prevents their regular customers from coming to meetings, affecting their secondary sources of income.