



PHASE A · IMPACT ASSESSMENT

Resilient farms need resilient workers

What Kenya's flower farms reveal about the link between gender equity, economic resilience and climate adaptation

Findings from the Women's Economic Resilience in Times of Climate Crisis research across four farms in Kitengela, Njoro and Eldoret



bloomon



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ABOUT THIS PUBLICATION

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EXECUTIVE SUMMARY

Farm and worker resilience: one business case

The effects of a changing climate and the economic vulnerability of women workers on Kenya's flower farms are rarely discussed together. This research treats them as one issue seen from two angles: a worker who cannot absorb an unplanned climate cost is not economically resilient, and a farm that cannot protect her through a shock is not fully climate-resilient either.

Few links in Europe's supply chains feel climate change as directly. The 2024 floods and an August 2025 hailstorm that destroyed up to 80% of the crop on two farms in this study show how fast a shock travels — and it does not stop at the greenhouse door: three-quarters of workers surveyed had faced unplanned climate costs, and nearly half were left short of essentials. That burden falls hardest on women, who make up most of the workforce and its lowest-paid roles, and who absorb a shock twice over — once in lost income, and again in the unpaid care work that climbs steeply just as the money runs short.

Drawing on 489 workers, managers and sector experts, the research found farms adapting quickly and substantially on the technical side — water storage, forecasting, resistant varieties — while worker-facing resilience has lagged, not for lack of will but because its business case was never made legible. Yet that resilience shows up where the sector already counts: in retention, recovery and reliable delivery. Economic security is the foundation climate resilience rests on, and the two are halves of one capability — neither can wait for the other.

Phase B (2026–2028) pilots interventions with women workers at its centre — building their economic resilience and better-preparing farms for climate emergencies — designed to be measured, learned from and shared across the sector.

CONTEXT

Climate risk does not stop at the greenhouse door

The effects of a changing climate and the economic vulnerability of women workers on flower farms are rarely discussed in the same breath. This research set out to challenge that separation, testing a single premise: that climate resilience and women's economic resilience are not two separate issues, but the same issue seen from two angles. A woman worker who cannot absorb an unplanned climate-related cost is not economically resilient. A farm that cannot protect her during a climate shock is not truly climate-resilient, as it risks losing the workers it does not protect. The two must be addressed together, and doing so requires understanding exactly how climate shocks translate into working conditions on the ground.

450,000+

floriculture sector

60–75%

of the workforce estimated to be women

75%

of workers surveyed faced unplanned climate-related costs

Kenya's floriculture sector is a critical economic driver and a major contributor to national exports and rural employment, supporting, according to sector estimates, more than 450,000 workers. Women are estimated to make up 60–75% of the workforce, yet remain concentrated in the lowest-paid, most physically demanding roles, while men more often hold supervisory positions. Few links in Europe's supply chains feel climate change as directly as Kenya's flower farms do. The floods of March to May 2024 displaced more than 278,000 people (UN OCHA) and disrupted production nationwide; a single hailstorm in August 2025 destroyed up to 80% of the crop on two of the farms in this study. But climate risk in this sector does not stop at the greenhouse door. Three-quarters of the workers we surveyed had faced unplanned climate-related costs, and nearly half said these costs left them short of essentials. A farm whose workers cannot absorb a shock is exposed and so is the supply chain that depends on it.

Between June 2025 and January 2026 Sian Flowers, Bloomon, CIFCAD and Women Win supported by the Netherlands Enterprise Agency (RVO), examined the intersection of climate and gender in Kenya's floriculture sector, guided by an overarching question: **how does the climate crisis affect the working conditions of women workers, and what adaptive strategies can companies implement to strengthen their long-term economic resilience in a world with a changing climate?** Engaging 489 stakeholders, that is, workers, managers and sector experts, the research generated insights that have since been used to develop interventions to improve climate resilience across the sector. This report shares those key findings and outlines the next steps for the work ahead.

BRIEF METHODOLOGY

About this research

Phase A worked at three levels - worker, company and sector - to build the evidence base that Phase B rests on.

1

Workers

302 workers across 4 farms

We began with the workforce, using pre-tested tools to explore how workers experience climate change in their working conditions, household finances and daily lives, with particular attention to the pressures on women.

2

Managers

30 managers surveyed

A manager survey then examined the same climate impacts from the company side, alongside working conditions and policies.

3

Sector

22 sector stakeholders surveyed,
plus desk research

At sector level, we combined desk research on climate adaptation, certification and wages with a value-chain analysis tracing costs and risks from farm to European consumer, a survey of sector preparedness, and dedicated gender and living-wage analyses.

Findings were tested and refined throughout - in briefings, in conversations at sector events, and at a consortium meeting - grounding the conclusions in the sector's own reading of its situation, not ours alone.

The result is a single, connected evidence base: every intervention in this report traces back to something workers, managers or sector stakeholders told us.

KEY LEARNINGS

Three learnings from the farms

LEARNING ONE

1 Climate change is a threat multiplier for existing inequality

Within this research, 71% of workers confirmed that men and women are affected differently by climate events. Women in the workforce face a triple burden during times of climate crisis: (1) physically demanding farm labour, (2) domestic and caregiving responsibilities that intensify during extreme weather, and (3) the increase in household costs that follow a climate shock. As primary caregivers and household managers, and as the workers least likely to have savings, transport or bargaining power to fall back on, women bear most of the climate events' cost. 90% of workers surveyed confirmed that women take on additional burdens at home during extreme weather, and 79% of women workers said caregiving becomes harder to manage during a climate event.

71%

of workers say men and women are affected differently by climate events

90%

say women take on additional burdens at home during extreme weather

66%

of women feel less safe working in extreme weather

“Due to floods, most of us end up reporting late to work or even use alternative routes which aren’t accessible, posing a risk to our safety.”

— WOMAN WORKER, DRAWING THE LINE SESSION

Extreme weather also brings heightened safety risks for women. 66% of women said they feel less safe working in extreme weather conditions, with our research finding that climate-induced stress and economic hardship are linked to increased risk of gender-based violence, both within the home and during unsafe commutes caused by flooded or damaged roads.

“There are increased cases of domestic violence at home due to lateness in the evening. The lateness is due to heavy rains or using a longer route to access homes.”

— FARM MANAGER, MANAGER SURVEY

Health impacts are strongly gendered, and climate stress compounds them in ways farm-level policy is not designed to detect. 44% of women said their health needs, particularly around pregnancy and menstruation, are not adequately addressed at work. This is felt even more during extreme climate events, as workers described protective equipment that traps heat, long distances to toilets and heavier periods during high temperatures.

“High temperatures in the greenhouse lead to dehydration, headaches and discomfort, especially because workers have to put on PPEs, and [that all results in] low productivity.”

— FARM MANAGER, MANAGER SURVEY

Economic pressure is widespread: 75% of workers reported incurring unplanned climate-related costs such as medication for climate-related illnesses, and higher food and utility bills during floods. This had led to periodic shortfalls in covering basic essentials, felt by 46% of workers. To cope, workers rely heavily on informal savings groups, salary advances and loans — mechanisms that offer short-term relief but often trap workers, and especially women, in cycles of debt. Another highly vulnerable group are migrant workers who, on top of having to undergo additional steps to gain access to the usual coping mechanisms — like saving groups or loans, migrant workers are also unable to rely on subsistence farming, defined as growing crops and raising animals strictly for family use, as they often don't own land, leaving them even more vulnerable.

What this makes clear is that the vulnerability is structural, not personal: it stems from incomes with no room to absorb a shock and protections not built for one, and it falls hardest on the women who can least offset it.

2

LEARNING TWO

Adaptation often protects operations before it protects people

Farm managers confirmed that climate change is already a serious operational challenge. All of the respondents reported infrastructure damage from rainfall, hailstorms and strong winds; while 97% reported increased disease pressure (including downy mildew and botrytis) and pest pressure (including aphids, false codling moth and spider mites); and production losses of between 28% and 48% were already recorded following extreme weather events. As a result, farm expenditure rose significantly. The majority of managers (91%) reported disruption to transport and logistics, and said extreme weather had disrupted labour planning, contributing to unplanned leave and stress among workers. Managers traced absenteeism to the same cause workers did — children falling ill in the cold seasons — a reminder that what happens at home shapes the labour plan as much as what happens in the greenhouse.

All

managers reported infrastructure damage from extreme weather

28–48%

extreme weather events

91%

reported disruption to transport and logistics

“Crop damage is above 80%. Production is low, affecting customer orders. Currently 130 workers are on leave this month... Workers' mental health is affected; they are living with uncertainty because they fear losing jobs.”

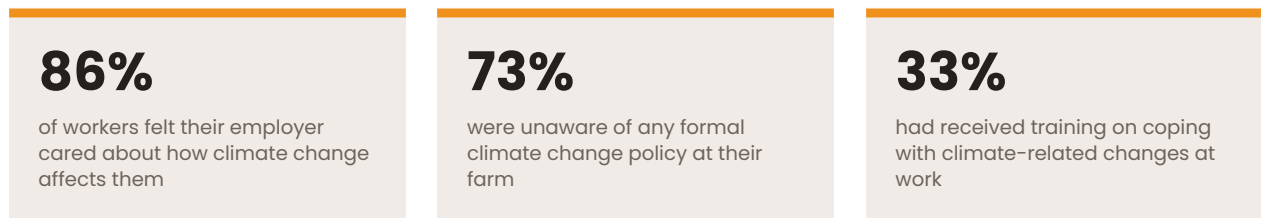
— FARM MANAGER, MANAGER SURVEY

“The production went low by approximately 48% – we had budgeted for 2.2 million stems in August 2025 but only harvested 1.2 million. The income projections were affected by about 43%.”

— FARM MANAGER, MANAGER SURVEY

In response, farms have invested substantially in technical adaptation: water harvesting and storage, weather-forecasting technology, greenhouse sensors, insurance for infrastructure and crops, and integrated pest management. Alongside these, worker-facing efforts are visible too – investment in drainage and erosion control, on-site health support, rest areas and improved washrooms, targeted support for vulnerable groups such as expectant mothers, including dry food support during drought, cold-weather clothing and, on some farms, interest-free loans for clean-energy cookers and solar panels – cutting household fuel costs and respiratory illness that comes with charcoal smoke. Workers recognise the effort: 86% felt their employer cared about how climate change affects them, and 85% said changes had been made in response to adverse weather. Those changes, though, have largely been operational, protecting production and infrastructure, rather than directly addressing the needs of the workforce described above.

The research identified a clear and consistent gap: adaptation that protects farm operations has moved faster than adaptation that protects workers directly. 73% of workers were unaware of any formal climate change policy at their farm, and only 33% had received training on coping with climate-related changes at work. Protective equipment was specified for chemical safety rather than thermal load, and for a workforce assumed to be male. Transport allowances were set against the cost of an ordinary commute, not a flooded one. Neither decision was unreasonable when it was made, but both were made before extreme weather became routine.



This asymmetry is not a matter of intent. A water reservoir, a resistant variety or a crop insurance policy has a calculable return: it can be modelled against yield, and the investment can be defended to a board or a lender. Support that protects a worker through a shock has no comparable line on any balance sheet. It does not appear in production forecasts, it is not measured by most certification standards, and it is rarely something a buyer asks about. Farms have invested where the case was legible and the case for the workforce has not yet been made in the same terms.

Yet no line on the balance sheet is not the same as no return. Worker resilience surfaces in the measures the sector already tracks. It shows up in retention; grading, pruning and packhouse work take time to master, and when experienced workers leave, as is beginning to happen and as migrant workers do when a shock makes staying untenable, a farm pays to recruit and retrain while quality slips. It shows up in recovery; the weeks after an event, when a damaged crop must be salvaged, re-graded and orders defended, are exactly when a farm needs a steady, present workforce. And it shows up in delivery, in the just-in-time schedules and quality standards European buyers rely on, which depend on skilled, attentive hands at the moments climate stress pulls workers away. These are the same outcomes a reservoir or a resistant variety is bought to secure.

None of which diminishes the case for technical adaptation: a farm that loses its crop protects no one, and the farms in this study were right to build those defences first. But the two cannot be sequenced. A shock tests both at once, the August hailstorm destroyed the crop and destabilised the workforce in the same forty minutes — and the technical defences themselves depend on people to work: an early-warning system protects no one if the warning never reaches those who must act on it, and a battered crop is salvaged by skilled hands. Climate resilience and worker resilience are two halves of the same capability; letting one wait leaves the other exposed.

Notably, within this research, the call for worker-centred climate adaptations came from within farm management itself. When asked what support would help most, managers requested training on climate adaptation, accurate localised weather forecasting, standard procedures for climate emergencies, financial literacy support for their workers and, strikingly, training in the soft skills and emotional intelligence needed to support workers through stressful climate events. Worker-centred adaptation is not an external agenda; it is what the people running these farms say is needed most.

CASE STUDY

The August 2025 hailstorms

An abnormal hailstorm in August 2025 struck two of researched farms, destroying up to 80% of crops in places and severely damaging greenhouse infrastructure. Production fell by close to 50% and the producer was given the opportunity to defer payments to some of their suppliers. In the weeks that followed, 130 workers were placed on unplanned — but paid — leave, however these workers were unable to earn bonuses or overtime payments. Due to the abrupt changes, 75% of the respondents reported worrying about job security. The event illustrates, at scale, what happens when a climate shock meets a system where technical protection is strong but worker-facing safety nets are still developing: production and infrastructure were prioritised in the immediate response, while the financial and psychological impact on workers was significant and, by workers' own account, not always clearly communicated.

Taken together, these findings point to a single conclusion: resilience that stops at the greenhouse is incomplete. The converse is the opportunity — a workforce cushioned against the cost of a shock, clearly informed and sure of its footing, is also the one best placed to help a farm salvage its crop and protect its orders once the storm passes. Extending it to the workforce is not principally a matter of will — the farms in this study have shown considerable willingness — but of building an investment case that does not yet exist. That case cannot be built by producers alone. It depends on what buyers ask for, what financial buffers they put in place, what certification standards measure and what the sector agrees is worth counting. The sections that follow turn to those conditions.

3

LEARNING THREE

Economic resilience is the foundation of climate resilience

Climate vulnerability among women workers is closely tied to economic precarity: many lack the disposable income to absorb unplanned costs from climate shocks, from repairing flood-damaged homes to covering medical costs after a climate-related illness. Without that financial buffer, farm-level adaptation alone cannot make the sector climate-resilient.

Economic resilience is built from several components working together: savings mechanisms that workers can actually access, financial literacy that makes those mechanisms work better, emergency support that does not create new debt and, underpinning all of it, an income with room to absorb a shock. This is where the concept of a living wage becomes directly relevant to climate resilience, not just to fairness.

A living wage is different from a statutory minimum wage. Minimum wage is a legal threshold; a living wage is an evidence-based benchmark, defined by the Global Living Wage Coalition and The Anker Methodology as:

“Remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing and other essential needs including provision for unexpected events.”

— GLOBAL LIVING WAGE COALITION / ANKER METHODOLOGY

The internationally agreed definition of a living wage contains a phrase that is rarely discussed and turns out to be decisive for climate resilience. Alongside food, housing, healthcare and transport, the Anker Methodology requires that a living wage covers “provision for unexpected events”, typically a 5% margin within the benchmark. That margin is the financial cushion that determines whether a flooded home, a damaged roof or a medical bill after an extreme weather event is a setback or a debt. This is the mechanism connecting living wages to climate resilience. A wage gap is a measure of how much shock a workforce can absorb before it resorts to financial debts. Many of the farms in Kenya are Fairtrade certified, thus pay the fairtrade floor wage which is slightly higher than the Collective Bargaining Agreement (CBA) and yet these wages are still well below a living wage.

Momentum toward living wages is building internationally, including through the IDH Roadmap on Living Wages and the Dutch International RBC (IMVO) Agreement for the Floriculture Sector, both of which have moved the topic from a voluntary Corporate Social Responsibility (CSR) ambition to a due diligence expectation. Adoption across the sector, however, remains slow and reasons are structural rather than a lack of will. No producer in a highly competitive global market can raise wages unilaterally and stay in business; it requires coordinated action between farms, buyers and other stakeholders on prices and long-term commitments. Trade agreements in the sector are typically short-term and informal, discouraging wage investments that cannot be easily reversed. Desk research points to another design consideration for workers themselves: wage gains need to be structured so

they are not eroded by local price increases and avoid creating friction with surrounding communities – which is another reason as to why **this living wage conversation tends to be a supply-chain and broader community conversation rather than a farm-level one.**

Similar to the climate impact, wage also knows a clear gender distinction. Women make up the majority of the lowest-paid workforce and bear the greatest burden when incomes fall short. As primary caregivers and household managers, they manage food and water shortages during climate shocks, yet they remain largely excluded from wage negotiations and sector decision-making processes.

NEXT STEPS

Climate resilience requires a collective effort

The 22 sector stakeholders surveyed for this research described an industry that recognizes the problem but is slow in responding. More than 80% said climate change had highly or severely impacted the sector over the past five years, and yet almost none rated the sector well prepared. Nonetheless, around half reported that their own organisation had allocated resources to climate adaptation.

22

sector stakeholders surveyed

80%+

say climate change has highly or severely impacted the sector in five years

~half

report their organisation has allocated resources to climate adaptation

Where adoption is happening, it spans five broad areas: integrating climate risk into strategic and operational planning; water conservation, including rainwater harvesting and efficient irrigation; renewable energy and energy efficiency; climate-smart agriculture, from resilient crop varieties to precision farming; and capacity building through training, awareness and community-led adaptation projects.

Adoption is held back by a consistent set of barriers:

- 1** Limited access to affordable climate finance, especially for smaller producers.
- 2** Inadequate localised climate data to guide farm-level decision-making.
- 3** Market pressures that prioritise short-term supply over long-term investment.
- 4** Difficulty justifying preventive spending against uncertain future risks.
- 5** Women's limited participation in climate and wage decision-making.
- 6** Some of the adoption requires coordination between different sector players, e.g. community greening.

When asked what the sector needs, stakeholders pointed to five priorities:

- 1** A national floriculture climate platform to harmonise regulations and share best practice across the sector.
- 2** Buyer-producer partnerships that co-finance climate adaptation.
- 3** Gender inclusion built into sustainability frameworks and standards.
- 4** Investment in evidence-based, localised climate and gender-disaggregated data systems.
- 5** Innovative financing models, including green finance, parametric insurance and tax incentives.

The Kenyan floriculture sector is at a pivotal moment, where progress toward economic resilience and climate resilience must be addressed together, not as separate priorities. Farms are investing in water security, renewable energy and climate-smart agriculture, but these measures alone cannot protect workers who lack the financial buffer to withstand extreme weather. Closing these gaps will require strengthened collective bargaining, long-term buyer commitments, expanded climate finance, and stronger gender inclusion across sector policies. Organisations such as the Kenya Flower Council, Floriculture Sustainability Initiative, government agencies, development partners, financial institutions and civil society all have a role to play in building a coordinated, resilient sector.

PLAN FOR PHASE B

What's next?

From this research, a plan has been developed to pilot interventions to improve climate resilience — several of them, including non-repayable emergency support and practical financial training, proposed by workers themselves — with the protection of women workers placed firmly at the centre. Four interventions will be piloted at the farm level, with a fifth dedicated to sharing insights with the broader sector:

PILOT INTERVENTIONS (JULY 2026 – DECEMBER 2028)

1

Economic Resilience

Phase A found that 75% of workers face unplanned climate-related costs and that current remuneration leaves no buffer to absorb them. This pilot addresses the gap from the income side first — exploring buyer-producer trade terms so that closing the remuneration gap becomes financially viable rather than merely desirable, and widening access to savings mechanisms (such as VSLAs and table banking) and to financial services on terms that do not deepen debt. Financial training runs alongside these, not as a substitute for adequate pay but as a way to help a more secure income stretch further.

2

Climate Emergency Preparedness

The August 2025 hailstorm exposed the gap most clearly: infrastructure protocols prioritized the farm's climate resilience and crop preservation, whereas worker protocols regarding climate-induced labor vulnerability remained absent. This pilot seeks to build farm-level early warning systems, gender-responsive climate preparedness policies, crisis communication procedures, climate smart agriculture (agronomy and other innovations), ecosystem resilience (community involvement and regreening) and worker and supervisor training on how best to respond to climate crises.

3

Gender-Responsive Workplace Practices

Phase A found that many workplace systems, such as protective equipment, transport support, facilities and grievance channels, were not designed with women in mind. This pilot seeks to redesign them with women at the table, establish women's leadership pathways, strengthen gender committees and deliver male allyship sessions on shared care. The aim: workplaces where equipment, facilities and grievance systems work as well for women as for men – with more women moving into technical and supervisory roles, and helping design the systems meant to protect them.

4

Gender and Climate Responsive Due Diligence

Existing due diligence in this sector detects labour rights violations. It does not detect a workforce with no financial buffer entering a hailstorm. This pilot builds climate and gender risk into how social risk is identified, monitored and responded to across the supply chain – a due diligence approach built by a buyer and a producer together, rather than imposed by one on the other, and, for buyers, a defensible answer to a question European regulation is increasingly asking.

5

Sector-wide Learning and Influence

Pilots are only valuable if learnings are shared. This pilot aims to disseminate lessons from Phase B to buyers, traders, and sector stakeholders, engaging the broader sector through dialogue and advocacy on sustainable trade and climate and gender-resilient practices, as well as co-developing exit plans to ensure the programme's impact is sustainable.

Businesses, buyers, certification bodies, researchers and financial actors who are interested in this work and want to engage further are warmly invited to connect with the consortium partners.

CONCLUSION

Resilience that reaches the workforce

Climate change is already reshaping life and work in Kenya's floriculture sector, and its effects are not felt equally. Women workers bear a disproportionate burden through unpaid care, economic precarity, and exposure to risk, while also being central to the sector's success.

This research shows that production-focused adaptation alone is not enough: genuine resilience requires a worker-centred framework that brings together economic stability, gender equity and climate preparedness. The economic resilience of women workers is inseparable from the sustainability of the sector itself, and no single farm can deliver this alone; it will take sector-wide coordination, long-term buyer commitments, stronger collective bargaining and inclusive governance.

Women's Economic Resilience in Times of Climate Crisis



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