THE FABRIC OF IMPACT

Climate, Gender, and Energy in Cambodia's Garment Footwear Textile Industry

Empirical Evidence from Cambodia's GFT Sector –
Part of the Upstream Collective Study *"Towards a More Resilient Garment Industry"*

JANUARY 2025

geres ACTING FOR CLIMATE SOLIDARITY

F3E 1996-2024

care France

ACT Alliance for Conflict Transformation Organization

THE FABRIC OF IMPACT

BY JAWOON KIM

CLIMATE, GENDER AND ENERGY

ACKNOWLEDGEMENT

This report on the GFT sector in Cambodia is the result of a collaborative effort, shaped by the commitment and expertise of many dedicated individuals and organisations. We are sincerely grateful to all those who contributed at various stages of the study. We extend our sincere thanks to **Jawoon Kim**, lead researcher and external consultant, for her work in survey design, data analysis, and report writing.

At CARE Cambodia, several colleagues played key roles from the initial proposal phase to the completion of fieldwork. **Sokchan Phoeurn**, Country Program Representative, supported the development of the study from the beginning, contributed to the sampling design, and facilitated coordination with stakeholders—particularly in arranging government interviews. **Sinuon Hun,** Technical Advisor for Advancing Women & Girls, provided valuable guidance throughout the study. She was involved in shaping the questionnaire, conducting INGO interviews, contributing to data analysis, and reviewing and revising the final report. **Sokchandaly Meun** was actively engaged in collecting data in the field, conducting interviews with NGOs and factories, including translation tasks. Similarly, **Sothea Chuon** contributed to data transcription and translation from Khmer to English for various stakeholders. **Sopheak Kann** supported data collection in several factories and conducted interviews with both government and NGO representatives. **Sovannarith Chhoem** was also involved in collecting field data from selected factories. Also, thanks to **Jan Noorlander** for his early contributions during the proposal phase in 2024. Thank you **Capucine Lavollée** and **Nasa Dip** for the report dissemination and branding. Last but not least, thanks to **Rin Ponleu**, external consultant, for his contribution support on data collection at the factories.

The team at CARE France also provided valuable support throughout the study. **Thuy-Anne Stricher,** Head of Economic Innovation, was instrumental in the early proposal development, helped design the questionnaire for brand interviews, conducted interviews with EU-based brands and INGOs, and reviewed the final report with attention to detail. Alongside her, **Louison Asselin-Bizet** contributed to the data collection through designing the questionnaires, planning and co-running interviews with brands and INGOs and supported the transcription of this qualitative data and the analysis of data.

Our thanks also go to Geres, and especially to **Marina Dubois,** Inclusion & Energy Program Manager, whose involvement from the beginning helped shape the proposal and enrich the study. Thanks to **Patrick Renaud**, Geres Cambodia Country representative for his contributions especially during the early stage of the upstream study in 2024, a commitment enriched by his team throughout the Fabric of Impact study and till its final stage with the presentation of part of its findings by Project manager **Sophea Lun** during a dedicated workshop.

We are equally grateful to our local partners, the teams from **Alliance for Conflict Transformation (ACT)** and **Collective Union of Movement of Workers (CUMW),** who played a vital role in collecting primary data through interviews with workers in factories across several provinces. Their engagement ensured that workers' voices were captured and represented in this research. Exchanges with **RISE** with whom we cross-shared our findings and invited to our in-person restitution workshop.

Lastly, we express our deep appreciation to **F3E**, whose funding and trust enabled the realisation of this study and **CARE France** for its co-funding. Their support made it possible to explore and document the key dynamics of the GTF sector with nuance and depth.

Most importantly, we are grateful for the workers who are the part of this primary research. Without their generosity to participate, the study would not be completed.

Above all, we are thankful for the spirit of collaboration that brought this research to life

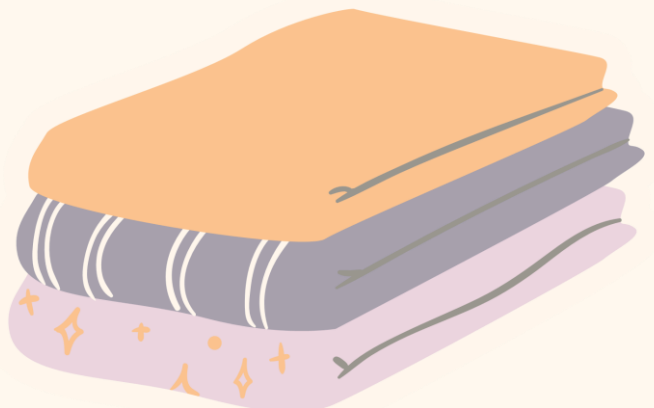


TABLE OF CONTENT

1. EXECUTIVE SUMMARY

Cambodia’s garment, footwear, and textile (GFT) sector is at a critical crossroads. As the country's largest formal employer and a key contributor to national GDP, the sector plays a central role in economic development, particularly for women and domestic migrants. However, this progress is challenged by intersecting pressures from climate change, gender inequality, and limited social and environmental protections. This study, part of the “Upstream Collective” initiative, explores the lived realities of GFT workers and identifies pathways toward a more resilient, equitable, and sustainable industry in Cambodia. **Below are the key findings from the study:**

Key Findings

1 Migrant Workers and Social Protection

- Awareness of the National Social Security Fund (NSSF) is high (98%), but detailed knowledge is limited, especially regarding eligibility, family coverage, and maternity benefits.
- Migrant workers face additional barriers due to a lack of documentation, temporary contracts, and limitation of the factory-level accountability for social protection registration.
- Gender-specific needs, such as reproductive health, remain under-addressed in both policy and practice.

2 Community Impacts

- The sector has improved financial independence for women and created economic opportunities in host communities.
- However, urbanisation linked to factory presence has increased housing costs and strained infrastructure.
- Women still bear the burden of unpaid care work and face stigma for working away from home.
- There is limited awareness of child protection policies, with early marriage and school dropout linked to economic pressures.

3 Circular Economy

- Circularity remains poorly understood at both worker and management levels. Only a small proportion of factories actively engage in recycling and reusing practices.
- There is a fragmentation between Corporate Social Responsibility (CSR) and Purchasing departments within brands, limiting coherent actions on circular procurement.
- Limited recycling infrastructure reduces the viability of circular models in Cambodia.

4 Climate Change

- Extreme weather conditions (EWC) have significantly disrupted livelihoods and productivity. 38% of workers reported income loss due to EWC, and productivity losses during heat events are estimated at 5.5% per day.
- Women are disproportionately affected by climate stress due to gendered care burdens and workplace norms (e.g., restrictive clothing).
- While 68% feel "generally prepared" for EWC, only 8% feel confident in their ability to adapt, indicating a knowledge gap and lack of systemic support.

Key Recommendations

Recommendations were derived from the key study findings, including inputs from key stakeholder consultations, as well as practitioners and researcher's perspectives. It sets out concrete actions for key stakeholder groups to implement the recommendations and move towards new initiatives of multi-stakeholder cooperation in the GFT sector in Cambodia. The main ones are listed below:

FOR FACTORIES

- Provide tailored support to migrant workers (e.g., housing, legal assistance).
- Simplify and regularly communicate environmental and social protection policies.
- Invest in worker training on circular economy and environmental sustainability.
- Integrate climate adaptation and gender-responsive policies into workplace planning.

FOR BUYERS

- Harmonise circular criteria across procurement and audits and align CSR and Purchasing strategies.
- Extend Human Rights and Environmental Due Diligence (HREDD) efforts to country suppliers and the surrounding communities.
- Support factory compliance on gender, climate, and social protection through technical and financial resources.

FOR CIVIL SOCIETY

- Design community campaigns and social dialogues addressing early marriage, unpaid care, and gender norms.
- Advocate nationally and globally (e.g., EU) for fair legislation and support knowledge-sharing tools like an “EU Help Desk” in Cambodia.
- Address gender- and climate-related issues for women and other diverse genders through collaborating with women-led unions.
- Collaborate with factories and government agencies on gender-transformative programs and climate adaptation training.

FOR GOVERNMENT

- Strengthen NSSF delivery and communication, especially for migrant workers.
- Finalise urban development strategies and invest in infrastructure in host communities.
- Incentivise investment in waste management and formalise the care economy through national childcare guidelines.
- Establish sector-specific benchmarks for climate adaptation and enforce climate-resilient building standards.

This study provides timely evidence for action. The sector has both the need and the opportunity to evolve toward a model that is not only economically robust but also socially just and environmentally sustainable. Advancing this vision will require stronger coordination between government, industry, civil society, and international partners.

2. LIST OF FIGURES

3. LIST OF ACRONYMS

ACRONYMS	FULL TERM	DESCRIPTION/CONTEXT
ACT	Alliance for Conflict Transformation	NGO partner in the Upstream Collective Study.
ADB	Asian Development Bank	International development finance institution; cited for climate data.
CDRI	Cambodia Development Resource Institute	Development policy research institute; cited for labour and socioeconomic research.
CE	Circular Economy	Economic model based on reuse, recycling, and reducing waste.
Civil Society		Used to describe NGOs and INGOs in the Recommendations section.
CSDDD	Corporate Sustainability Due Diligence Directive	EU regulation requiring companies to address human rights and environmental impacts.
CSRD	Corporate Sustainability Reporting Directive	EU regulation requiring sustainability reporting by companies.
EWC	Extreme Weather Conditions	Used to describe climate-related heatwaves, floods, etc. affecting workers.
EU	European Union	Referenced in relation to sustainability directives and trade implications.
FGD	Focus Group Discussion	Data collection method used in the study.
GFT	Garment, Footwear, and Textile	The sector under study in Cambodia.
GBVH	Gender-Based Violence and Harassment	A persistent issue in the GFT sector, particularly affecting women workers.

ACRONYMS	FULL TERM	DESCRIPTION/CONTEXT
GBV	Gender-Based Violence	Referenced in Safe App interventions.
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	German development agency; mentioned in prior studies.
HREDD	Human Rights and Environmental Due Diligence	Framework used by brands and buyers for ethical sourcing.
ILO	International Labour Organization	Referenced for regulatory frameworks.
INGO	International Non-Governmental Organisation	Various INGOs contributed to research and recommendations.
MoE	Ministry of Environment (Cambodia)	Government body overseeing climate and environmental policy.
MoLVT	Ministry of Labour and Vocational Training	Regulator of labour standards in Cambodia.
MoWA	Ministry of Women's Affairs	Lead government agency on gender mainstreaming.
NIS	National Institute of Statistics	Cambodia's statistical authority; referenced for demographic data.
NEA	National Employment Agency	Government agency providing labour market services.
NGO	Non-Governmental Organisation	The sector under study in Cambodia.
NMVOCs	Non-Methane Volatile Organic Compounds	A type of pollutant; cited in air quality analysis.
NOx	Nitrogen Oxides	Another pollutant from wood-burning factories.
NSSF	National Social Security Fund	Cambodia's primary social protection scheme.

ACRONYMS	FULL TERM	DESCRIPTION/CONTEXT
OH&S	Occupational Health and Safety	Worker safety and health in the workplace.
RISE	Reimagining Industry to Support Equality	Conducted related research used in the report.
TAFTAC	Textile, Apparel, Footwear and Travel Goods Association in Cambodia	Industry association.
UN Habitat	United Nations Human Settlements Programme	Referenced for urban development data.
UCDW	Unpaid Care and Domestic Work	A gendered labour issue explored in the study.
WHO	World Health Organization	Referenced in context of health-related risks from climate impacts.
World Bank	Formally known as the World bank Group	Cited for climate projections and sectoral economic data.

4. INTRODUCTION

4.1. Background and purpose of the study

Cambodia is one of the most climate-vulnerable countries in the world, ranking as the fourth most flood-exposed nation globally (World Bank, 2023). It is particularly susceptible to riverine and flash flooding, especially along the Mekong River and Tonle Sap Basins, home to approximately 80% of the country's population. In addition to severe flooding, Cambodia experiences some of the highest recorded temperatures globally and is projected to face increased incidences of extreme heat in the coming decades (World Bank & Asian Development Bank, 2021). The impacts of rising temperatures are particularly acute in urban areas, where the built environment exacerbates heat stress. Urban populations, especially the urban poor, are disproportionately affected, experiencing heightened health risks and reduced productivity (World Bank, 2023).

These environmental pressures are occurring alongside demographic shifts. In 2019, over one-third (34%) of Cambodians had migrated from rural to urban areas (International Organization for Migration (IOM), 2024, p. 24). While economic opportunities have been a primary driver, research suggests that climate change will increasingly influence internal migration flows in the coming years (Oudry et al., 2016).

Given this context, Cambodia's garment, footwear, and textile (GFT) sector has become a focal point for climate action, especially at the intersection of environmental sustainability and gender equality. The sector is largely concentrated in urban areas, exposing workers to the compounded effects of extreme weather events, including rising temperatures and flooding. Moreover, it is one of the country's major contributors to pollution and waste (Mikavaty, 2025), and its widespread reliance on forest wood for steam boilers, causing severe deforestation, presents further challenges to Cambodia's transition toward energy efficiency and decarbonisation (Alberts, 2021). The GFT sector also serves as a significant hub for *internal migrant* labour – "those who move within the borders of their country" (ONU Migración Americas, n.d.), as many workers leave rural areas and the agricultural sector in search of stable and better-paying employment in factories (Shaikh et al., 2023).

In 2024, the GFT industry, as Cambodia's largest formal employer, employed a predominantly female1 workforce, with women accounting for 75.5% of all employees (Baker et al., 2024, p. 5). However, despite the sector's highly feminised nature, entrenched gender norms and patriarchal structures continue to hinder women's advancement. Women workers face lower wages, limited opportunities for promotion, and heightened exposure to gender-based violence and harassment (GBVH) in the workplace (CARE International, 2017; GIZ et al., 2024).

1 This study acknowledges the difference between 'woman/women' and 'female'. It uses the term 'woman/women' wherever relevant and possible to emphasise the influence of gender (in)equality as it relates to both actual or perceived gender identity. However, due to practical limitations during data collection – including study participants' knowledge on gender and sex – these two terms may be used interchangeably in some instances. See Section 5. Research Design, specifically Section 5.4. Data Limitations, for the differentiation between the use of 'women' and 'female' in this research.

Despite this, few initiatives to date have taken an integrated approach that combines social and environmental objectives to maximise the dual impact of gender equality and climate resilience. Therefore, a consortium of like-minded organisations (Geres, CARE France, CARE Cambodia, and ACT) has formed a partnership in response to:

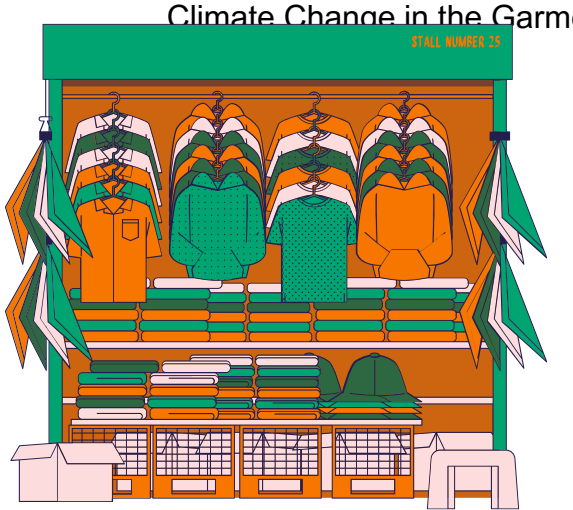
- **Deepen the understanding of the textile sector dynamics in South and Southeast Asia, particularly in how gender, environmental, and social issues are currently addressed; and**
- **Define a common programmatic approach built on their complementary expertise, field experience, and proven models of success.**

This collaborative initiative encompasses desk research examining the socio-environmental impacts of the GFT sector across South and Southeast Asia, which was conducted by a team of consultants, alongside a review of current programs by the partner organisations. As part of this multi-output project, the present research paper provides primary data and insights into the lived realities of Cambodia's GFT sector. Drawing from a mixed-methods approach, the study explores stakeholder knowledge, attitudes, and practices at the intersection of gender, climate change, and energy efficiency.

While the initial scoping document had pre-identified waste management, worker indebtedness, migrant workers, and community impacts as priority areas for further investigation, the consultant team also proposed technology and eco-innovation, circular economy, and climate change as additional topics of interest. However, in line with the Terms of Reference and Concept Note, and to ensure feasibility of primary data collection, the thematic scope had to be narrowed to four topics.

Following consultation, the partners selected the following four themes: (1) migrant workers, (2) community impacts, (3) circular economy, and (4) climate change. This decision was informed by the current state of knowledge on all seven proposed themes, as well as the organisational expertise of the four partners.

Within this refined scope, waste management was incorporated under community impacts. While worker indebtedness is not explicitly explored in this study, workers' livelihood, particularly their living wage, which is connected to indebtedness, is noted. The initial findings on this topic are also available in the report, 'Identification of Four Priority Issues for Further Study: Migrant Workers, Community Impacts, Circular Economy, and Climate Change in the Garment Industry' (Yen Yat et al., 2025).



4.2. Scope of the study

4.2.1. Migrant workers

Fast fashion is a widespread trend in the fashion industry that relies on the ultra-rapid renewal of disposable and cheap collections to serve a greater number of people (Oxfam France, 2023). The “lean management” business model, first introduced by Toyota during the industrialisation period of the late 1900s, focused on manufacturing on a just-in-time basis to reduce supply time and increase profitability. This was quickly adopted by the food industry, culminating in the introduction of “fast food,” and later was adopted by the fashion industry (ibid.).


© 2024 Monyroath Kun / CARE Cambodia

The rise of fast fashion has significantly influenced international migration trends across Asia. Brands and retailers increasingly demand fast, low-cost production, prompting a search for cheaper manufacturing locations. As a result, the GFT sector has transitioned from offering stable, permanent employment to relying on temporary and contract labour, exposing workers to precarious conditions and substandard wages. For many Cambodians, neighbouring countries such as Thailand, Malaysia, Japan, Singapore, and Hong Kong have become popular work destinations. Notably, of the 1.3 million Cambodian migrant workers, 1.2 million are employed in Thailand across various sectors, including the GFT industry (Sar, 2024).

The push and pull factors influencing cross-border migration in the GFT industry also apply to internal migration. A prominent pattern is the rural-to-urban movement, as factories are typically located in urbanised regions with better infrastructure and services. According to Shaikh et al. (2023), the proliferation of microfinance institutions and the expansion of the garment sector are key drivers of this type of migration in Cambodia. Declining agricultural income, exacerbated by changing agro-ecological landscapes and climate shocks, often forces rural households to borrow money, with formal microfinance lenders facilitating this process. In contrast, urban factory jobs offer more stable incomes, meeting or exceeding minimum wage levels, and offering additional monetary and non-monetary benefits, making them an attractive pull factor (Karamba et al., 2022).

In 2021, 64% of Cambodia's internal migration was rural-to-urban, predominantly among youth aged 20 to 34 (UN Habitat Cambodia, 2023). Projections suggest that by 2030, one-third of the Cambodian population will reside in cities (ibid.). This shift has led to a concentration of working-age adults, especially women of reproductive age and children, in urban areas, while the elderly are increasingly left behind in rural communities, resulting in changing household dynamics.

Against this backdrop, **this study focuses on the accessibility and uptake of social protection services, particularly the National Social Security Fund (NSSF), within GFT factories. Under Cambodian law, all formal employers, including those in the GFT sector, are obligated to register their employees with the NSSF, granting them access to key benefits such as health insurance, pensions, and disability coverage. For the predominantly female workforce of reproductive age, benefits such as maternity leave and pre-/post-natal cash allowances are especially critical. Investigating the extent to which these entitlements are understood and accessed by all workers, including migrant workers, is essential to evaluating the effectiveness and inclusiveness of the country's social protection system and the GFT factories' support system.**

4.2.2. Community Impacts

Building on the discussion of social protection and migrant workers, this section further explores how the presence of GFT factories shapes both host communities and the workers' home communities. The focus is on the broader socioeconomic and environmental impacts of the sector.

The GFT sector has made significant contributions to socioeconomic development at the individual level, particularly through the creation of employment opportunities. It provides accessible jobs for unskilled workers and is especially beneficial for women, who often earn comparatively better wages in this sector than in other industries in developing economies (Sharpe et al., 2022). These jobs help reduce poverty and support household income, with many workers, particularly internal migrants sending a substantial portion of their earnings back to their rural families (CDRI, 2007). The sector also provides opportunities to develop valuable technical, managerial, and soft skills, which are transferable beyond the factory setting.

At the community level, GFT factories stimulate local markets and small businesses, driving economic activity in surrounding urban areas. Their presence often attracts investment in infrastructure and services, such as roads, utilities, and public transport, which benefit the wider population.

However, the sector also imposes considerable social and environmental costs. The rapid influx of migrant workers into factory zones can also strain local infrastructure, housing, and public services, resulting in overcrowding, inadequate sanitation, and environmental degradation. Rural-to-urban migrants, like international migrants, are also at risk of facing exploitation in informal or unregulated segments of the GFT industry, accepting long hours, low pay, and poor working conditions due to limited alternatives. This confluence of challenges manifests in the increasing concentration of poverty in urban areas; while rural poverty has declined, the percentage of urban residents living in slums reached 39.7% in 2022 (UN Habitat Cambodia, 2023), highlighting a concerning trend in urban vulnerability.

Environmentally, the sector's negative impacts are well documented. Globally, textile production consumes around 93 billion cubic metres of water annually, enough to fill 37 million Olympic-sized swimming pools, posing a significant threat in countries with already limited water supplies, including Cambodia (Sharpe et al., 2022). The industry is also responsible for roughly 20% of global industrial water pollution due to untreated wastewater from dyeing and processing (ibid. p.6).

In Cambodia, the GFT sector generates approximately 140,000 tonnes of textile waste annually, contributing to 85% of the country's industrial waste, 70% of industrial toxic water pollution, and 27% of industrial air pollution (Khmer Times, 2023). While up to 95% of textile waste is technically recyclable including 100% cotton waste (nearly 25%) and poly-cotton blends (nearly half), much is downcycled2, incinerated, or sent to landfills, often without proper regulation (EuroCham Cambodia et al., 2021; GIZ Cambodia, 2025). Garment offcuts are also frequently burned in brick kilns as a cheap fuel source, exacerbating environmental degradation (Mikavaty, 2025).

Additionally, the industry consumes approximately 300,000 tonnes of wood annually for heating, contributing to deforestation and increased air pollution (Kunmakara, 2023). Air quality studies have shown that wood-burning garment factories emit particularly high levels of pollutants such as nitrogen oxides (NOx) and non-methane volatile organic compounds (NMVOCs) (Chandath et al., 2023). While the Cambodian government has made notable progress in promoting energy efficiency, especially in key sectors such as industry, gender dimensions have yet to be meaningfully integrated. The National Policy and Action Plan on Energy Efficiency (2018–2035) does not reference gender, women's roles, or gender-specific impacts.

In line with these findings, **this study categorises the impacts of GFT factories on host communities into two key dimensions: socioeconomic and environmental. To capture the multifaceted effects of factory presence at both the individual and community levels, the analysis considers the distinct experiences of workers shaped by intersecting factors such as gender, education level, and migration status. This approach highlights the complex interplay of benefits and challenges that exist across both urban and rural settings.**

2 Upcycling refers to transforming unwanted materials into something better. Recycling refers to converting a material or resource into a new item of equal value. Downcycling refers to transforming material into something of lesser value or quality (Sierra Skelly, 2022).

4.2.3. Circular Economy/ Circular Fashion

The circular economy (CE) is defined as a **"model of production and consumption which involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible"** to extend product life cycles (European Parliament, 2023). Building on this framework, circular fashion refers to a system that seeks to minimise waste through resource efficiency at every stage of the fashion product lifecycle, from production to distribution and consumption (Jimenez-Fernandez et al., 2023, p. 2). To aid public understanding, the concept of circular fashion is often explained using the more familiar 3-R principle: reduce, reuse, and recycle. This study adopts that approach by using the phrase "reusing and recycling clothes" in structured worker surveys to enhance comprehension (see Section 4: Research Design for more detail). Nonetheless, the study also recognises the more comprehensive 9-R framework, which incorporates additional strategies — repair, refurbish, recover, rethink, and restorative and regenerative by design and redesign — to underscore the importance of embedding circularity from the earliest stages of product design (Potting et al., 2017).

As in many contexts, the circular economy remains a relatively new concept in Cambodia. The Khmer term **«សេដ្ឋកិច្ចចក្រ»** is a direct translation and has yet to take root in public discourse or gain widespread understanding among stakeholders. Despite this, the Cambodian government has taken commendable steps toward establishing a national strategy for the circular economy, with an eye toward sustainability in the garment sector. This strategy identifies several priority issues to tackle, such as reliance on fuelwood for steam boilers and low energy efficiency, primarily addressed under *Community Impacts* in this study (See Section 3.1.2. and Section 5.2. for more information) (Kingdom of Cambodia, 2021). However, implementation challenges persist. Enforcement mechanisms are lacking and waste management options remain limited. Most textile waste ends up in landfills or is incinerated, both of which present serious environmental concerns (Mengheng, 2023). This signifies that issues such as the environmental impacts of GFT factories and the efforts to a circular economy are inherently intertwined, and interventions to address one would positively affect the other.

In support of efforts to advance circularity in fashion, this study maps the knowledge, attitudes, and practices of key stakeholders, particularly workers and factory management on the supplier side. The findings will serve as a foundation for future interventions and help identify leverage points for transforming global fashion supply chains toward more sustainable and circular models.

4.2.4. Climate Change

Cambodia's acute vulnerability to weather variability and climate change is well documented, and projections indicate that these risks will intensify by the end of the century (Monin et al., 2021; World Bank & Asian Development Bank, 2021; World Bank, 2023). In response to mounting evidence of climate-induced challenges, the Cambodian government has made notable progress in strengthening its climate-related policies and practices.

This is exemplified by a comprehensive suite of frameworks, most notably the Cambodia Climate Change Strategic Plan (CCCSP) 2014–2023, which institutionalises climate action within the country's broader development agenda. Encouragingly, gender considerations have also been gradually mainstreamed into national climate policies, elevating the interaction between gender and climate change in the policy discourse (Monin et al., 2021). While key policies such as the Climate Change Action Plan for the Energy Sector (2021–2023) intended to mainstream gender, policy makers and practitioners lack guidance and detailed steps or actions on how to move forward in climate-related energy strategies (ibid.).

Similarly, as momentum builds around industrial decarbonisation, the everyday experiences of workers in global supply chains, particularly their exposure to worsening economic and physical conditions, remain largely overlooked. Rising temperatures have led to increased reports of heat-related health incidents, such as fainting and dehydration, exacerbated by poor ventilation and inadequate cooling systems in many factories. Recent studies show that 64% of garment workers in Cambodia experienced climate-related impacts, including floods and extreme heat, within the past year (Parsons et al., 2022). These conditions have led to deteriorating working environments and frequent factory closures, with nearly 80% of affected workers reporting wage deductions during shutdowns. Prolonged exposure to extreme heat has also decreased worker productivity, contributing to an estimated annual loss of $290 million in export value (ibid.).

Women are particularly vulnerable to the impacts of climate change due to intersecting factors such as lower socioeconomic status, limited decision-making power, restricted access to resources, and entrenched gender norms (Monin et al., 2021, pp. 12–19). These disadvantages extend into the workplace, where many women workers already earn significantly less than their male counterparts and carry additional unpaid caregiving responsibilities at home. The intensification of factory work caused by climate-related disruptions can lead to heightened stress and, in some cases, verbal abuse from supervisors, further exacerbating mental and physical health challenges (RISE, 2025). These compounding vulnerabilities demonstrate how climate shocks uniquely and disproportionately burden women workers.

Despite the urgent need to respond to these challenges, the climate policy landscape of both Cambodia, as a country, and the global GFT supply chain remains heavily skewed toward mitigation, with adaptation measures receiving comparatively less attention (Judd et al., 2023). This imbalance places the burden of adaptation squarely on workers, particularly women, who are left to absorb the impacts of climate change with limited institutional support. Nevertheless, women also possess unique capacities for adaptation, drawing on their roles as household managers and caregivers to develop practical and resilient responses to environmental stressors.

While reducing the disproportionate impacts of climate change on women and girls is essential, it is equally important to recognise them as active agents of change with the knowledge, capacity, and agency to drive meaningful climate action.

In light of these insights, this study focuses on the lived experiences of GFT workers, paying close attention to intersecting identities such as gender, age, and migration status. By exploring these experiences, the research aims to understand workers' knowledge, attitudes, and practices related to climate change adaptation, and how these interact with factory structures, government policy, and the broader global supply chain.

5. METHODOLOGY

5.1. Research design

This study adopts a mixed-methods research approach to collect data on the knowledge (including lived experiences), attitudes, and practices of key stakeholders in Cambodia's GFT sector, focusing on the intersection of climate, gender, and energy efficiency. As outlined earlier, four key themes — migrant workers, community impacts, circular economy, and climate change — served as the guiding framework for both data collection and analysis. Accordingly, all data collection tools and questions were structured around these themes (see Section 4.3 Data Collection).

To capture both representative and in-depth insights from workers, a structured survey and focus group discussions (FGDs) were conducted. In parallel, a semi-structured survey was used to gather data from a range of other stakeholders, including factory management, brand representatives, government officials, a union, an industry association, donor and implementing partners, and INGOs/NGOs.

Following data collection, the study applied a descriptive analysis to the quantitative data from the structured worker survey. Then, a thematic analysis was conducted on a mix of qualitative and quantitative data gathered through semi-structured interviews with management. This deductive thematic analysis was based on the four pre-defined themes and associated sub-themes, which also informed the design of the data collection tools. To ensure consistency and reliability across multiple analysts from the partner organisations, the same qualitative data analysis framework and codebook were applied across all stakeholder groups.

Throughout the study, several measures were implemented to embed gender-sensitivity into both data collection and analysis. All data collection tools included participants' gender identity. Data collectors were explicitly instructed to read aloud the multiple-choice gender options, including woman, man, and non-binary.3

Gender-specific questions were integrated into the worker surveys, such as those addressing access to pre-/post-natal services and maternity leave policies. In the qualitative components (FGDs and semi-structured interviews), participants were also encouraged to reflect on how the intersecting identities such gender, dis(ability), and age, could influence people's experiences. FGDs were sex-segregated (female-only, male-only, and mixed-sex group) to create space for participants to share comfortably and to capture the different ways women and men may experience or express their views.

Finally, a gendered lens was applied during the analysis phase to explore the distinct experiences of women and men and the role of gendered hierarchies across the four thematic areas.

3All participating workers identified as either men or women. When participants did not want to answer, the responses were recorded as Don't Want To Answer.

5.2. Sampling

5.2.1. Factory Sampling Methodology

To ensure a representative sample, the study employed a **cluster sampling** method to categorise them based on five geographic locations:

1. City (Phnom Penh)
2. Plain Region
3. Coastal Region
4. Mountainous Region
5. Tonle Sap Basin Region

This method was chosen to capture the diverse and unique geographic and operational characteristics of factories across Cambodia.

59 factories were collated based on the list of factories currently working with Geres and/or CARE Cambodia. They were predominantly based in the City and Tonle Sap Basin region, except for one factory from the Mountainous region.

Given the limited sample in the Mountainous region cluster and the absence of samples from the Coastal region cluster that work with Geres and CARE Cambodia, the samples from these two clusters were sourced from the comprehensive list of factories from Textile Apparel Footwear Travel Goods Association in Cambodia (TAFTAC). These factories are external to the current programming of the two partners, which provides an external point of comparison for data analysis, particularly on the effectiveness of the current programming at CARE and Geres.

Based on the cluster sampling methodology, all factories were randomised and sampled within each cluster. The number of factories from each cluster was selected based on the cluster size. In total, 12 factories were sampled (four from the City cluster and two from all other clusters; nine factories work with CARE (4) or Geres (5), and three are external). These factories vary in size, ranging from 300 workers to 9,700 workers (one factory) with an average of 500 to 2,500 workers.

See below for the list of factories selected for the study.

Factory	Partner Org	Cluster	Location	No of Workers
F01	CARE	Capital City	Phnom Penh	2,500
F02	Geres	Capital City	Phnom Penh	350
F03	CARE	Capital City	Phnom Penh	314
F04	Geres	Capital City	Phnom Penh	1,200
F05	CARE	Tonle Sap	Kampong Cham	9,740
F06	Geres	Tonle Sap	Siem Reap	532
F07	Geres	Plain	Kandal	300
F08	CARE	Plain	Kandal	3,900
F09	Geres	Mountainous	Kampong Speu	2,574
F10	External	Mountainous	Kampong Speu	300
F11	External	Coastal areas	Koh Kong	291
F12	External	Coastal areas	Sihanoukville	2,221
Total number of workers				**24,222**

Figure 1. *List of sampled factories for the study.*

5.2.2. Factory Worker Sampling Methodology

Similar to the factory sampling process, the size of the worker sample from each factory was proportionate to its size; the bigger the factory size, the more workers were sampled. The study uses Slovin's formula to calculate the exact sample size of factory workers. See below for more information about the sample size calculation.

Slovin’s formula is calculated as: n = N / (1 + Ne2)

- n is the sample size,
- N is the population size (24,222 workers in this case),
- e is the acceptable margin of error (for a 95% confidence level, the margin of error is typically 0.05).

Sample Size Calculation:

- n = N / (1 + Ne2)
- n = 24222 / (1 + 24222(.05)2)=24222/(1+62.5)=24222/63.525000≈393.70
- n = 394

With a total sample size of 394 respondents, the sample for each factory was allocated proportionally to the size of the respective cluster. This allocation was further stratified by factory size and gender in line with the overall sectoral gender distribution (78% women and 22% men).

Step 1: Calculate the Distribution by Cluster

Cluster	Factories	Workers	Sample (approx.)
Capital City (Phnom Penh)	4	4,364	71
Coastal region	2	2,512	41
Plain region	2	4,200	68
Mountainous region	2	2,874	47
Tonle Sap Basin region	2	10,272	167
Total	**12**	**24,222**	**394**

Figure 2. *Distribution of sample by cluster.*

Step 2: Calculate the Proportional Representation by Factory

Factory	Location	Total Workers	Proportion of Total Workers	Sample (approx.)	Women (78%)	Men (22%)
F01	Phnom Penh	2,500	10%	41	32	9
F02	Phnom Penh	350	1%	6	5	1
F03	Phnom Penh	314	1%	5	4	1
F04	Phnom Penh	1,200	5%	20	15	4
F05	Tonle Sap	9,740	40%	158	124	35
F06	Tonle Sap	532	2%	9	7	2
F07	Plain (Kandal)	300	1%	5	4	1
F08	Plain (Kandal)	3,900	16%	63	49	14
F09	Mountainous	2,574	11%	42	33	9
F10	Mountainous	300	1%	5	4	1
F11	Coastal (Koh Kong)	291	1%	5	4	1
F12	Coastal (Sihanouk)	2,221	9%	36	28	8
Total		**24,222**	**100%**	**394**	**307**	**87**

Figure 3. *Proportional representation of the sample by factory.*

In summary, the total sample population of factory workers across 12 factories is 394, with 307 women and 87 men.

5.2.3. Other Stakeholders Sampling Strategy

Using a combination of purposive and convenience sampling methodologies, a range of relevant stakeholders within the global supply chain, as well as other key actors, were carefully selected to participate in this study. This included individuals and organisations with whom the partner organisations already had existing relationships, particularly NGOs, INGOs, and the trade union (identified through convenience sampling), as well as those explicitly engaged for their expertise, regardless of any prior collaboration. This includes representatives from seven government departments from five ministries (identified through purposive sampling).4

For brand stakeholders, the selection was based on their level of engagement with the textile sector in Cambodia and the wider region. The study employed the following criteria to guide inclusion:

- **Brands buying directly from the sampled factories**: These stakeholders provided insights into existing supply chain dynamics and the influence of ongoing programs, including interventions implemented by Geres, CARE, or ACT.
- **Brands with no direct relationship to the sampled factories:** Their inclusion introduced variability into the analysis, mitigated selection bias, and enabled broader comparisons of policies and practices across the sector.

5.3. Data Collection

5.3.1. Data Collection Tools

As briefly mentioned in Section 4.1 Research Design, three distinct data collection tools were used in this study:

1. **Structured survey with workers:** This tool provided quantitative data on workers' demographics and their knowledge (including lived experiences), attitudes, and practices related to the four key themes.
2. **Focus Group Discussions (FGDs) with workers:** These sessions generated in-depth qualitative data, offering nuanced insights into workers' experiences and attitudes. Responses were recorded verbatim wherever possible to preserve authenticity and detail.
3. **Semi-structured in-depth interviews with key stakeholders:** These interviews generated a combination of qualitative and quantitative data from a diverse range of stakeholders. While the core set of questions remained largely consistent across most stakeholder groups, tailored modifications were made for factory management and brand representatives to better capture differences in knowledge and attitudes. The factory management survey was designed to mirror the worker survey, enabling a complementary comparison of practices within factories. In contrast, the brand survey was designed independently to reflect the unique leverage and influence that buyers have within the supply chain's practices. This design allowed for more accurate and comprehensive documentation of brands' knowledge, attitudes, and practices.

4 The following ministries were interviewed: (1) the Ministry of Environment (MoE), (2) the Ministry of Industry, Science, Technology and Innovation (MISTI), (3) The Department of Occupational Safety and Health from the Ministry of Labour and Vocational Training (MoLVT), (4) the Ministry of Social Affairs, Veterans and Youth Rehabilitation (MoSVY), (5) National Employment Agency (NEA) from MoLVT, (6) National Committee for Sub-National Democratic Department (NCDD), and (7) Did not disclose. The order of the listed ministries does not correlate to the anonymised ministry labels (e.g. Ministry A, Ministry B) referenced throughout the report.

To explore internal variations within brand stakeholders, two individuals from each participating brand would be invited; one from Corporate Social Responsibility (CSR) and the other from Purchasing Practices. This approach aimed to capture differences in perspectives and practices between these two key departments. Once participation was confirmed, each individual completed a brief pre-interview questionnaire, followed by a semi-structured in-depth interview.

5.3.2. Summary of Collected Data

All data was collected between December 2024 and February 2025. The data collection activity was a combined effort across partner organisations, primarily led by CARE Cambodia.

Due to the practicalities of data collection, the actual number of participants varied from the intended sample sizes across some groups, particularly among workers, factory management staff, and brands.

See Section 5.4. Data Limitations for more information.

The total list of 486 study participants consists of:

- 419 workers in total:
  - 395 workers (304 women and 91 men) from selected 12 factories for the structured survey (See the Summary Table below).
  - 24 workers (10 women and 14 men) from selected 3 factories for focused group discussions.
- 13 management staff from selected 12 factories (6 women and 7 men)5
- 9 staff from 4 selected brands (6 women and 3 men)
- 7 government officials (1 woman and 6 men)
- 1 staff from the Industry Association (1 man)
- 1 union representative (1 woman)
- 3 staff from Donor/Partner (1 woman and 2 men)
- 7 staff from INGOs/NGOs
  - 2 NGOs (2 women)6
  - 5 INGOS (4 women and 1 man)

5 There were two men management staff surveyed from one factory. See Section 5.4. Data Limitations for more information.

6 Three additional NGOs were consulted in an FGD to provide their insights into legal support, youth engagement and workers' rights. Due to the time limitations, their views have been integrated as supplementary to the primary findings from in-depth interviews with other NGOs.

See below for the proportional representation of the participating workers by factory.

Factory	Partner Org	Location	Total Workers	Proportion of Total Workers	Collected Total	Collected Women	Collected Men
F01	CARE	Phnom Penh	2,500	10%	42	31	11
F02	Geres	Phnom Penh	350	1%	6	5	1
F03	CARE	Phnom Penh	314	1%	5	4	1
F04	Geres	Phnom Penh	1,200	5%	20	16	4
F05	CARE	Tonle Sap	9,740	40%	152	118	34
F06	Geres	Tonle Sap	532	2%	10	8	2
F07	Geres	Plain (Kandal)	300	1%	5	4	1
F08	CARE	Plain (Kandal)	3,900	16%	63	49	14
F09	Geres	Mountainous	2,574	11%	42	33	9
F10	External	Mountainous	300	1%	5	4	1
F11	External	Coastal (Koh Kong)	291	1%	7	4	3
F12	External	Coastal (Sihanouk)	2,221	9%	38	28	10
Total			**24,222**	**100%**	**395**	**304**	**91**

Figure 4. *Proportional representation of the participating workers by factory.*

See below for the descriptive statistics of participating workers by partner organisations.

Partner Org	Collected (Men)		Collected (Women)		Total	
	Count	%	Count	%	Count	%
CARE	60	66%	202	66%	262	66%
Geres	17	19%	66	22%	83	21%
External	14	15%	36	12%	50	13%

Figure 5. *Proportional representation of the participating workers by partner organisation.*

See below for the descriptive statistics of interviewed workers. See *Annex I* for disaggregated data on the participating workers.

Demographic information	Total Count (n)	Total Percentage (%)
Gender		
Men	91	23%
Women	304	77%
Age		
18 - 24 years old	63	16%
25 - 34 years old	162	41%
35 - 44 years old	137	35%
45 years and/or older	33	8%
Marital Status		
Divorced/ Separated	13	3%
Married/ Living together	288	73%
Single/ Never married/ Never lived with a partner	75	19%
Widowed	19	5%
Ethnicity		
Cham	4	1%
Khmer	391	99%
Migration Status		
Migrant	215	54%
Non-Migrant	180	46%

Level of Education		
1. Never attended school	15	4%
2. Some primary	101	26%
3. Completed primary (Grade 6)	39	10%
4. Some secondary	81	21%
5. Completed secondary (Grade 9)	63	16%
6. Some high school	54	14%
7. Completed high school	32	8%
8. More than high school	10	3%
Monthly Salary		
$101-$200	10	3%
$201-$300	275	70%
$301-$400	86	22%
≥ $401	24	6%
Grand Total	395	100.00%

Figure 6. *Descriptive statistics of the participating workers.*

5.4. Data limitations

This study encountered several limitations that should be taken into consideration when interpreting the findings. First, while the sample is representative of the actual gender distribution of the workforce, it included a relatively small number of men workers. This may have resulted in an overrepresentation of their responses. Because the weight of each individual response is higher in a smaller sample, men workers' perspectives may be disproportionately reflected compared to those of women workers.

Second, while the Washington Group Short Set of Questions was used to collect data on the workers' (dis)abilities, the questions were adapted in a binary format rather than on a scale, as originally intended, due to the length of the survey. This deviation may have led to an overreporting7 of respondents identifying as having specific impairments, potentially skewing the data on disability prevalence within the sample. As a result, an explicit decision has been made to share the descriptive statistics on (dis)abilities of participating workers in the Annex rather than along with other variables. However, where disability is noted as an intersecting identity by respondents, the relevant findings and statistics are mentioned.8

7 Because the three options (a little difficulty, a lot of difficulty, and can't do at all) have been collapsed into one binary option (yes), this leads to an overrepresentation of people who may need adjustments to their work environments. N.B. Washington Short Set is not a disability diagnostic tool. But, when the data is used for programme design, the responses for options 'a lot of difficulty' and 'can't do at all' form the basis of disability-specific intervention.

8 Based on the "Opportunity study for the implementation of a social incentives program for the VETHIC project," eyecare was identified as one of the potential social incentives. However, it only interested those who knew or felt they had vision problems but could not afford glasses (Archipel & Co., 2024).

Language limitations also posed challenges during data collection. Certain technical terms, such as "circular economy," do not have direct equivalents in Khmer. To address this, the term "recycling and reusing clothes" was used in the structured worker survey to ensure greater clarity and understanding (see Section 4.2.3: Circular Economy/Circular Fashion).

Finally, the distinction between sex and gender presented another layer of complexity. Although the demographic question explicitly asked about gender identity, varying levels of understanding among respondents meant that some individuals may have used the terms "gender" and "sex" interchangeably. For example, one respondent initially identified as non-binary, but upon follow-up with the data collector, this was determined to be a misunderstanding and was corrected to reflect the respondent’s actual gender identity.

In this light, this report primarily uses the terms "female" and "male" to denote sex-based classification and "women" and "men" to denote gender-based classification wherever appropriate. Nevertheless, the analysis recognises the influence of entrenched gender norms in Cambodian society and explores how these norms shape the lived experiences of both male and female participants in the context of the study’s four key themes, often leading to distinct and unequal challenges.

RESEARCH FINDING

“Towards a more resilient textile industry”

6. RESEARCH FINDINGS

The presentation of findings in this study is guided by the **Bridge Model**, a participatory research tool commonly used to facilitate reflective and forward-looking analysis. This model encourages participants to articulate their current realities, envision a desired future, and identify potential solutions to bridge the gap between the two.

Given that the ultimate goal of this collaboration among partner organisations is to develop a shared programmatic approach for future initiatives (see Section 3.1: Background and Purpose), this analytical framework enables the partners to take a step back and collectively envision what is possible within each thematic area. It also complements the proposed tools for meta-analysis, such as the Energy Delivery Model developed by Catholic Agency for Overseas Development (CAFOD) and International Institute for Environment and Development (IIED), which Geres has already implemented within their economic development program.

Accordingly, this research introduces a vision statement for each key theme to articulate the desired future state (*Where do we want to be?*). It then briefly outlines the current state (*Where are we now?) before* exploring the barriers that currently hinder progress (*What are stopping us?*) and enablers (at individual, relational, and structural levels) within the factories and beyond that could help bridge the gap between the current situation and the envisioned future (*What are enabling us?*).

6.1. Migrant Workers

6.1.1. Vision

Accessible, comprehensive, and high-quality social protection (NSSF) for all workers, including migrant workers.

6.1.2. State

Access to social protection is a critical factor in ensuring worker well-being in Cambodia's GFT sector, particularly for women and migrant workers. While awareness of the National Social Security Fund (NSSF) is high (reported by 98% of surveyed workers), significant information gaps remain around the specific services available and how to access them. These gaps hinder uptake and tend to vary depending on workers' intersecting identities, including gender, migration status, and education level.

At the factory level, 75% of interviewed managers reported having social protection policies in place. Among these, nine factories have developed specific policies for women workers, and another nine offer childcare support. However, the effectiveness of these policies is often undermined by the lack of clear accountability mechanisms to monitor and enforce their implementation. Without proper oversight, policy commitments may not translate into meaningful change for workers.

Although most workers indicated they do not feel actively discriminated against based on their migration status, a view echoed by management and unions, this perception can obscure the more subtle challenges migrant workers face outside the factory. These include difficulties in securing housing and managing higher living costs in urban areas. Currently, only two factories provide tailored support services that address the specific needs of migrant workers.

Beyond the factory level, broader structural issues with the NSSF also limit its effectiveness. The system for accessing information and services is often overly complex, even for people with a high level of education. Given that one in four workers (both men and women) has had some primary education, this complexity poses a significant barrier to access. Combined with low-quality service delivery, these challenges result in negative user experiences and deter many workers from fully engaging with the social protection system, even when they are technically eligible for support.

6.1.3. Barriers and enablers

1. Limited Availability of Accessible Information

One of the most significant barriers to accessing NSSF services is the **lack of clear, easy-to-understand information about what services are available and how to access them.** While general awareness of the NSSF is high, only 37% of women and 35% of men workers knew that their families could be covered under the scheme with their voluntary contribution to the fund.9 Additionally, 14% of women workers were unaware of pre- and post-natal services, and 12% did not know they were entitled to maternity leave benefits. Evolving changes to NSSF service availability are often poorly communicated. For example, workers were unable to use their NSSF cards more than twice a month in January 2025 due to the temporary changes in the NSSF's policy, this restriction was not formally communicated to factories or workers, leaving them to rely on hearsay (Interview with NGO worker, 2025).10

Approximately 21% of workers reported having experienced difficulties in accessing NSSF services, mainly due to these information gaps. *See Figure 7 below.*

9 Currently, workers' voluntary contribution allows for their family members to be eligible for NSSF services. The question in the survey did not elaborate on the need for voluntary contribution; the exact question asked was: "Are you aware that NSSF covers your family members as well?".

10 According to the officials from NSSF, the services were briefly limited to twice a month in January 2025 but are now back to normal. However, the lack of clear, prompt and official communication from NSSF adds to the confusion among workers (and all NSSF users) about the service availability and accessibility.

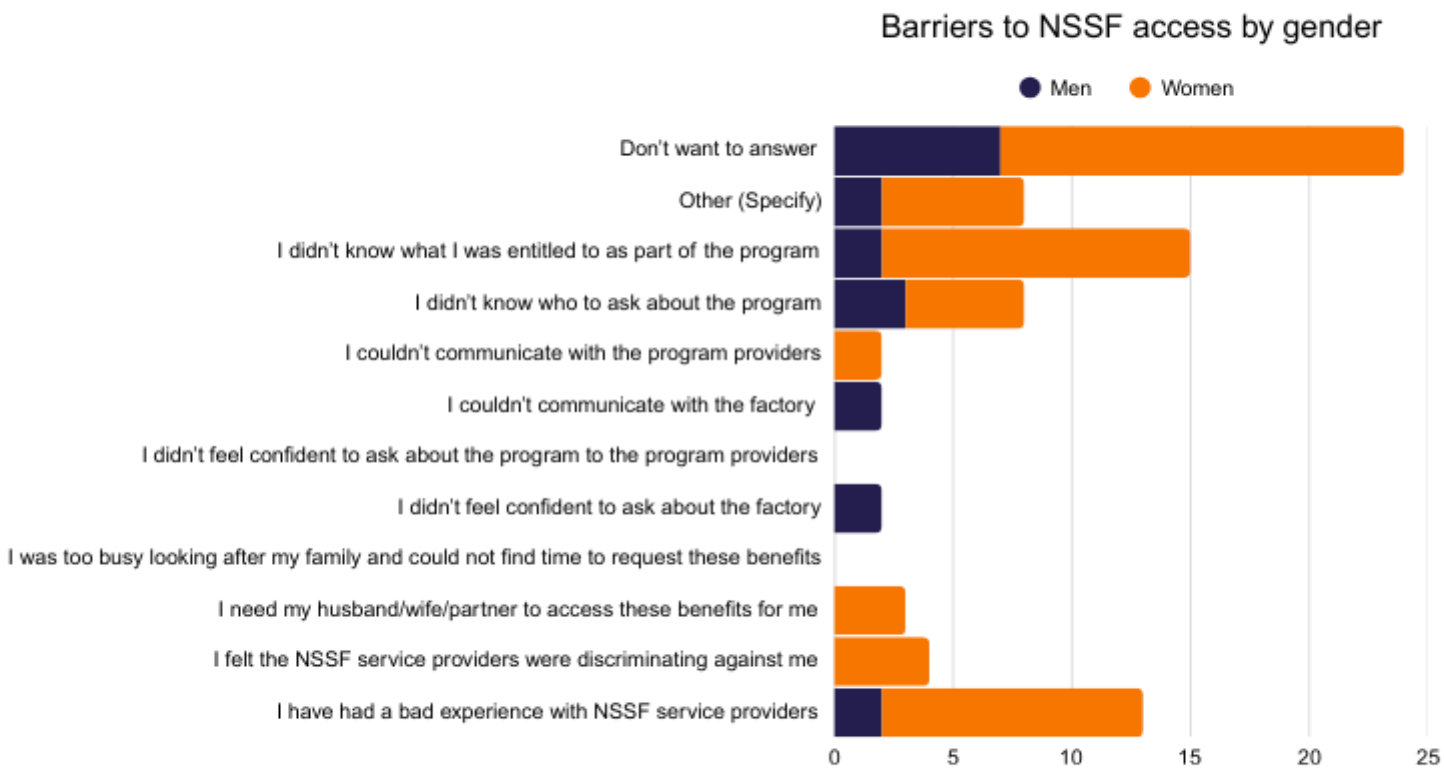


Figure 7. *Barriers to accessing NSSF segregated by gender.*

Among them, 41% did not know what they were entitled to, and 22% did not know who to ask for assistance. As noted by one government official, workers with disabilities are disproportionately affected, as they may also face digital literacy challenges that further impede access to online information about NSSF services.11 The government has acknowledged this challenge and is committed to awareness-raising campaigns. The National Employment Agency (NEA) continues to play a role in disseminating information through workshops and events, particularly during emergencies. Trade unions, as representatives of workers, are also aware of these barriers. However, simply increasing the volume of information is not enough. Information must also be provided in accessible formats to meet the needs of workers with diverse and intersecting identities, particularly their education levels. Notably, 4% of participating workers reported having no formal education, and 36% had some or completed primary education.

2. Ineffective Communication Within Factories

Beyond general information gaps, **how NSSF information is communicated within factories remains ineffective.** Most commonly, factories communicate information about NSSF during one-off onboarding/orientation sessions, HR workshops or training and noticeboards on the factory walls. While these efforts may be well-intentioned, they do not consistently lead to improved worker awareness or uptake. Some factories have public address systems or other communication infrastructure, but these are not regularly used to disseminate information about NSSF.

11 Of those who experienced difficulties accessing NSSF, 20% (12 respondents) reported having one or more forms of impairment. However, as people with impairments made up 23% of the overall participant group, we cannot conclude that individuals with impairments faced greater difficulty accessing NSSF compared to those without impairments.

Nonetheless, there is an appetite for improved communication, and workers are generally open to seeking assistance. Among workers who accessed NSSF services in the last 12 months, 95% reported having sought support from their factory. The high penetration of mobile phones — 88.9% of Cambodians own one (National Institute of Statistics (NIS) Cambodia et al., 2023) — and the widespread use of platforms like Telegram, particularly among younger workers, also present opportunities to reach workers with relevant information. The government's ongoing commitment to expanding mobile infrastructure across communes nationwide may also help bridge communication gaps.

3. Ineffective Factory-Level Policies and Accountability Mechanisms

Social protection policies are not consistently implemented across factories. One in four factories reported having no such policies in place, and among those that do, fewer than half include these policies in workers' contracts. This lack of formal integration undermines the reliability of protections, particularly for women. When contracts are suspended, pregnant workers may lose access to key NSSF benefits such as pre- and post-natal cash payments, even if they can still access basic health services.

Subcontracted factories are especially prone to non-compliance, with some failing to register workers with NSSF. Currently, there are limited mechanisms in place to monitor or enforce employer compliance (International Labour Organization (ILO), 2024, p. 86). However, some buyers have expressed concern about these deficiencies and are increasingly interested in monitoring and evaluating worker well-being and access to social protection. Existing partnerships with government agencies such as the MoLVT and NEA at both national and subnational levels also offer avenues to strengthen compliance and coordination.

4. Inadequate Support for Migrant Workers

Migrant workers face a number of unique vulnerabilities that are rarely addressed through factory policy. **While six factories reported having policies specific to migrant workers, only two offered meaningful, tailored support.** Many migrant workers are on short-term, casual, or informal contracts; four out of 12 factories reported the use of temporary contracts while five noted informal or no contracts. Additionally, four out of five factories stated that migrant workers are often required to work long hours.

> *A lot of migrant workers still do not necessarily have access to a written contract. Without a formal contract, they can't claim social or health insurance. They often have to travel back to their province to obtain official documents, which incurs extra costs and delays*.
>
> **– Woman staff, INGO A**

Despite these structural challenges, 63% of migrant workers said they feel comfortable seeking help from peers or factory representatives. Moreover, some factories are demonstrating best practice. For instance, Factory A supports new migrant workers by covering their first month's rent, recognising top-performing migrant workers through reward schemes12, and working with NEA to help with transport costs and employment guidance. Factory B pays rent for the first three months for new migrant workers. These practices offer replicable models for other factories.

5. Structural Limitations of the NSSF System

Several factories reported challenges in enabling workers to access NSSF benefits due to systemic flaws in the programme itself. Low-quality services from NSSF providers continue to discourage use. Among workers who used NSSF services in the past year, 22% had negative experiences. Workers have expressed the need for high-quality hospitals and medical standards to safeguard their physical and mental health (RISE, 2025). Similarly, a union representative called for an expansion of the program to all people regardless of their employment status and to more geographical locations.

> *Government should allow all people to register for NSSF regardless of employed or unemployed status. [It also should] expand [NSSF] to more locations and services.*
>
> **– Woman Union Representative, Union A**

In response, the government has pledged to improve the NSSF and expand access. MoLVT is currently considering extending coverage to individuals without a stable income. Additionally, there are hotlines and anonymous complaint mechanisms available to factories for reporting grievances, although the effectiveness of these tools remains to be assessed.

6. Lack of Awareness Among Key Stakeholders

There is a general lack of awareness among buyers, government agencies, and NGOs about how urbanisation, migration, and socioeconomic vulnerabilities intersect to affect workers' access to social protection. **Among brands, internal migrant workers in Cambodia remain largely invisible.** While three out of four surveyed brands said they were aware of internal migrants in Cambodia, only one, Brand C, reported active tracking of the employment of internal migrant workers in its supply chain. This highlights the broader industry gap in recognising and addressing the specific needs of internal migrants.

12 However, it is unclear what this reward system is based on e.g. productivity-based reward system or behaviour-based reward system.

Five out of six government agencies surveyed stated that migration status does not affect access to NSSF. However, this perception overlooks structural barriers that migrant workers routinely face, such as difficulties obtaining legal documentation, navigating administrative systems, and finding time to complete required procedures, all of which limit their access to social protection (RISE, 2025). One agency also acknowledged that eviction risks persist, particularly when land is reclaimed by local authorities for public development (ibid.).

Despite these gaps, buyers are aware of and work with international guidelines on monitoring and preventing the use of forced labour in the supply chain, particularly across borders. One brand noted that it has dedicated migrant worker protection programmes in some regions (though not in Cambodia), while another cited efforts to assess and monitor the situation of migrant workers in countries like Myanmar, offering promising models for potential replication in Cambodia. Given that buyers do already address issues related to international migrants and their legal protection, similar approaches could be encouraged to strengthen compliance and support for internal migrant workers in Cambodia.

7. Discriminatory Social Norms and Misconceptions

Finally, entrenched social norms continue to influence access to healthcare and public services for migrant workers. Discrimination from host communities remains a major issue. In rural and regional areas, where public hospitals are scarce and private clinics are more accessible, migrant workers are sometimes refused treatment. Medical staff may be unfamiliar with them and, in some cases, view them with suspicion, assuming they are thieves or troublemakers (ibid.). This problem is worsened by the fact that not all clinics and hospitals are registered with the NSSF scheme, further narrowing available healthcare options for migrant workers.

> *Some clinics do not provide service for migrant workers during late night (because they are afraid of acquaintance and robbery) and public hospitals mostly are far away from their living place.*
>
> **From a female-only FGD session (RISE, 2025)**

6.2. Community Impacts

Given the depth of this theme, the subheadings ‘state’ and ‘enablers-barriers’ are categorised into socioeconomic and environmental.

6.2.1. Vision

GFT factories have positive socioeconomic and environmental community impacts

6.2.2. State - Socioeconomic

The presence of GFT factories has brought notable socioeconomic benefits to workers, particularly women and migrant workers. A significant majority (80%) of surveyed workers, especially those aged between 25 and 44, reported experiencing salary increases since joining their current factory. See *Figure 8* below.

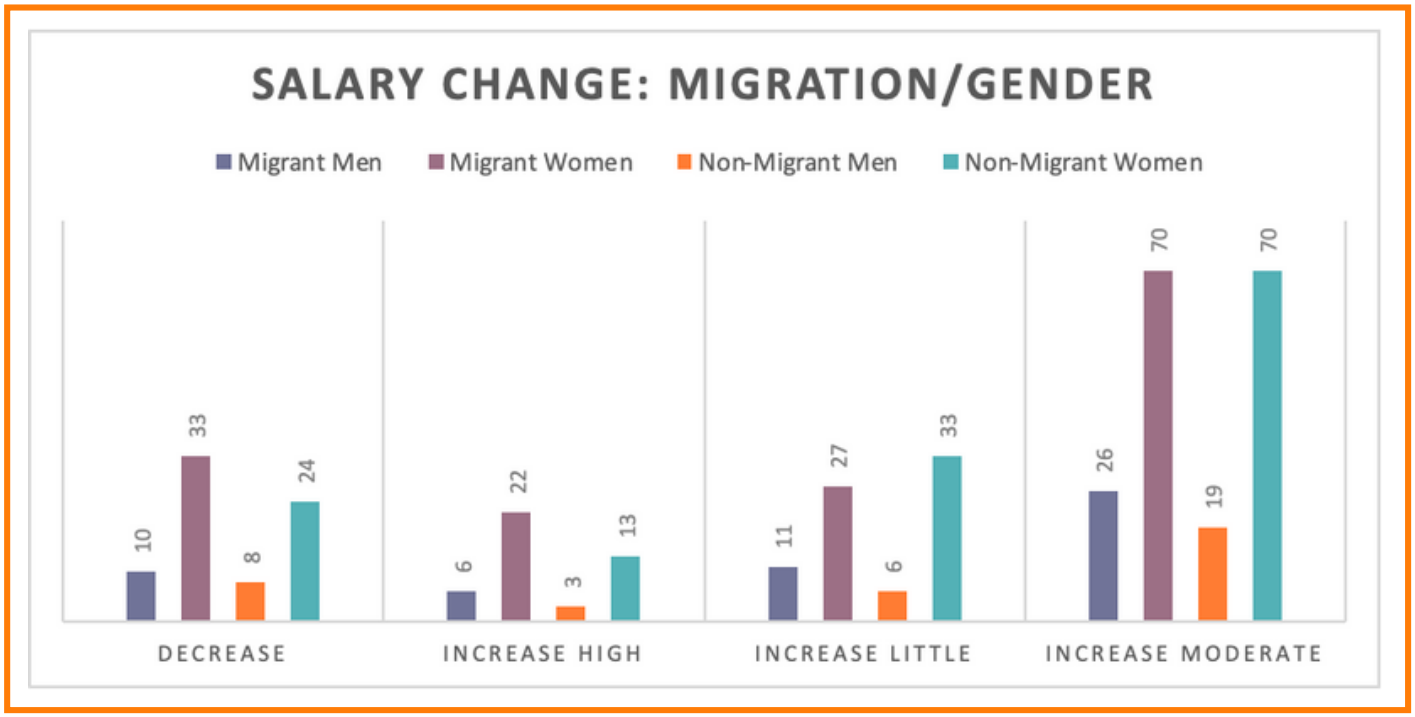


Figure 8. *Salary change before and after working at the current factory segregated by gender and migration status.*

These improvements have translated into **greater financial independence**, particularly among women. As one woman focus group participant, aged 50, explained:

> *I have the freedom to make decisions and receive a regular salary, allowing me to save more money than before.*
>
> **– Woman, 50, FGD Participant**

The economic empowerment of women through factory employment has also contributed to broader household stability and mobility. Workers across the board indicated an increased ability to save, contribute to family expenses, and manage their own finances, marking a departure from previous dependency on other household members or informal, unstable income streams.

Government representatives, INGOs, and donor partners widely recognise the positive economic role of the GFT sector. The industry is seen as a key contributor to Cambodia's GDP growth, youth employment, and workforce skill development. Workers themselves also noted the positive economic spillovers in host communities. More than 95% reported that factory presence had supported local economic growth and improved access to social services, while 88.9% believed it had led to enhanced living standards in their area.

In addition to its economic contributions, the sector maintains largely positive relationships with local communities. Many factories actively engage in community outreach and support activities, strengthening their social license to operate and reinforcing the perception that the factories are integral to community development.

Despite these encouraging outcomes, several socioeconomic challenges remain. Rising housing costs and population growth, driven in part by the influx of workers into industrial zones, have placed pressure on local infrastructure and services.

Urban planning challenges led to overcrowded living conditions and limited access to essential services, such as waste collection, healthcare, and safe public spaces.

Furthermore, persistent gender norms continue to shape how women workers are perceived within their communities. In many cases, women face social judgement or discrimination precisely because working away from their families contradicts cultural expectations that women should remain at home. These challenges point to the need for more holistic, gender-sensitive policies and gender-transformative interventions that address both economic and social well-being in communities affected by industrial growth.

6.2.3. Barriers and Enablers - Socioeconomic

1. Inadequate Living Wages and Structural Gender Pay Gaps

Many workers still struggle to meet basic living standards despite the rising minimum wage. As of 1 January 2025, workers are entitled to the minimum wage of USD 208, plus additional monthly allowances for housing, transport, and attendance bonus (Jahic, 2025). However, many still struggle, and a small but notable portion of workers (3%) are not paid even the minimum wage13, which is illegal. Here it must be noted that the study was not specifically designed to investigate minimum wage compliance, but rather to understand workers' basic income (how much they earn and are paid). To supplement low base salaries, over half (55%) of workers rely on working overtime. This creates long-term precarity, as described by one INGO staff member: "Low base salaries and the pressure to work overtime forces workers to move frequently from one place to the next."

For migrant workers, these financial pressures are magnified. Many face what has been described as a "**double expense**" challenge; covering the cost of living in urban areas while continuing to support families in their home communities. As one woman focus group participant shared:

13 This refers to a group of participating workers who reported having less than the legal minimum wage of $208 per month even though they work 8 or more hours per day.

> *If we compare to the workers who are the local people here, we face more challenges than them because they don't need to spend on room rental fees, electricity, food, and childcare.*
>
> **- Woman, FGD Participant**

*photo does not reflect participant's identity

> *My salary is not enough to support my family due to I have to cover many things, including debt, rental fees, and sending money to my hometown.*
>
> **– Woman, 40, FGD Participant**

These economic struggles may be compounded by gender-based pay disparities. Among those working eight hours per day, **only 12% of women earned more than USD $301 per month, compared to 23% of men.** Even among those working longer hours (9–10 hours daily), the gap persisted: 44% of men earned above USD 301, compared to 37% of women. Among those who work in sewing, 28% of men workers earned more than USD 301 while only 20% of women workers earned USD 301. This is in line with the findings from the ILO report (2018) which reported that the gender pay gap in the Cambodian GFT sector, though lowest among the studied countries in South and Southeast Asia, was at 4.5%; in other words, female workers in the sector earned approximately 13% less than their male counterparts.14 Such disparities leave women in a more vulnerable position, with a subpar living wage and limited economic mobility.

The economic wellbeing of workers' families is also deeply reliant on remittances. 38% of all workers' families depend solely on income from GFT employment to meet basic needs such as food, housing, clothing, and healthcare. This dependency can push workers further into financial insecurity. As one migrant worker explained:

> *As workers, we get low income, which forces us to spend less and save more. Sometimes, we do not take sick leave even when we are sick. We work until we cannot do it anymore when the illness becomes serious.*
>
> **– Man, 27, FGD Participant**

14 *National Gender Pay Gap in Cambodia* (Oum, 2021) alludes to both observable and unobservable factors that contribute to this gender pay gap. Occupational segregation where overrepresentation of women in low skilled occupation accounts for 4% of the nationwide gender pay gap while education, experience and type of occupation also influence this gap. Other unobservable factors, most notably labour market gender discriminations, explain 105% of the wage gap (ibid.).

Nevertheless, there are some promising enablers. Buyers are becoming increasingly aware of gender-specific vulnerabilities in their supply chains, and a few surveyed brands shared good practices in integrating gender criteria into their supplier assessments. Government agencies have also recognised the need to enhance sustainable livelihoods, with one stating:

> *Interventions for sustainable livelihoods made by various actors should be carried out to support the workers.*
>
> **– Man staff, Government Agency D**

Others emphasised the importance of increasing base salaries, strengthening social protection systems, aligning labour laws with social protection frameworks, and attracting more investment into the sector.

2. Rising Cost of Living in Host Communities

The factory presence has led to a noticeable rise in housing and land prices in host communities, with 87% of workers reporting that local living costs have increased. This makes securing affordable accommodation more difficult, particularly for migrant workers. While some buyers are beginning to acknowledge how factory presence impacts local real estate and housing choices, including increased dormitory living, this awareness has not yet translated into comprehensive mitigation strategies.

3. Persistent Gendered Social Norms

Despite gains in economic empowerment, women workers continue to face pervasive social judgement for working away from home, regardless of their marital status. Unmarried women are often viewed as inappropriate for living independently, while married women are criticised for neglecting household duties. Some are even subjected to unfounded accusations of infidelity when living apart from their spouses.

In addition, despite this increased economic empowerment, women continue to bear the most of unpaid household and caring burden. This was noted by an INGO staff:

> *Economic impact means that the formal sector is increasing. For registered factories, workers can benefit from social protection like NSSF and social insurance – which is progress. But at the same time, a majority of household chores still fall on women. That's why we also organise parenting sessions… so that parents can meet regularly to discuss… issues like gender balance within the family.*
>
> **– Woman staff, INGO A**

Cambodia has one of the highest gender parities in unpaid care and domestic work (UCDW) in the world, with women spending 10 times more hours on unpaid care and domestic work than men (Hanna et al., 2024). A more recent Oxfam Cambodia report (2025) also flagged deeply rooted gender norms as the key driver of this inequality. These norms reinforce stigma and limit women's choices, underscoring the need for continued investment in gender-transformative approaches within and beyond the factory floors.

Encouragingly, both NGOs and buyers are working with factories to provide technical support that addresses these norms and promotes women's empowerment.15 More practical support, such as investment in on-site or host community-based childcare, can significantly reduce the care burden. As noted by the World Bank (2024) and Oxfam Cambodia (2025), childcare in Cambodia remains highly informal, often provided by grandmothers. This reflects an intergenerational and gendered burden that particularly disadvantages migrant women, who lack family support.

The absence of standardised, regulated childcare options also contributes to low uptake, largely due to limited awareness or trust in formal systems (ibid.) Investing in standard and good quality childcare, both by factory management and government, could unlock greater economic participation by women and help sustain the gains made in empowerment.

4. Limited Awareness of Child-Safe Policies

There is also a concerning lack of awareness regarding child-safe policies and their implementation in factories. NGO representatives reported rising school dropout rates, with many children entering the workforce early to help repay household debts. A recent report found that more than 50% of youth aged 10 to 17 who drop out of school to assist with family loans end up working in garment factories (LICADHO & Equitable Cambodia, 2023). Additionally, one in three factory managers acknowledged that child or early marriage is commonly observed in their workplaces, highlighting another critical area requiring targeted intervention.

5. Lack of Holistic Urban Planning

The rapid industrial expansion has not been matched by adequate urban planning. Infrastructure and public services in host communities have struggled to keep pace, leading to issues, such as road insecurity and overcrowding. One woman explained, "Transportation is often dangerous". Participants in several focus groups also reported a perceived increase in drug trafficking and usage in their areas, potentially linked to rising population density, a concerning socioeconomic impact requiring further investigation.

Despite these challenges, many factories are actively involved in community outreach, offering training on road safety, sexual and reproductive health, language skills, nutrition, and waste management. Some support local homeless populations or partner with NGOs on vocational training programs, such as donating old sewing machines. The presence of factories has also stimulated local economies, providing a boost to local small businesses like street food vendors and tuk tuk drivers.

15 Partner organisations of this study, Geres, CARE Cambodia, and ACT work directly with factories to empower women. Some women economic justice programmes by CARE Cambodia are gender-transformative, specifically challenging rigid gendered norms that lead to discrimination.

Most respondents (83%) reported no tension between factories and the local community, and factories often engage local suppliers and participate in local business meetings.

At the policy level, the government is making progress. A draft National Urban Development Strategy is underway, and a people-centred smart cities initiative is currently being piloted in Preah Sihanouk province in partnership with UN-Habitat (UN Habitat, 2025).

6. Limited Prioritisation of Socioeconomic Impacts by Buyers

While buyers are increasingly proactive on environmental performance, socioeconomic impacts on the community often receive less attention. In other words, participating brands were more familiar with socioeconomic concerns inside the factory walls, such as forced labour, child labour and Occupational Health and Safety (OH&S), than those at the community level. This may be due to the greater availability of evaluable targets and indicators for environmental metrics, which makes them easier to integrate into compliance systems. Although some buyers have shown concern about the socioeconomic effects of factory presence, knowledge gaps persist. Building better frameworks to assess and address the social dimensions of supply chain operations, particularly those affecting surrounding communities, will be critical to achieving long-term sustainability and equity in the sector.

6.2.4. State – Environmental

While the socioeconomic implications of factory presence are evident, the environmental impacts are equally significant and complex. Although there is growing attention to sustainability, the gap between high-level environmental commitments and their on-the-ground implementation remains substantial.

Many brands have developed comprehensive regulatory frameworks and support programs aimed at helping their suppliers reduce environmental harm in host communities. These initiatives typically include training, blended financing mechanisms, and third-party auditing services.

As one brand representative explained:

> *“We support our suppliers with training, technical assistance, and access to blended financing so they can reduce their environmental footprint. This support not only improves their operational performance but also enhances the socio-economic conditions in local communities.”*
>
> **– Woman staff, Brand A**

These efforts have led to widespread adoption of basic waste management practices at the factory level. Of the factories surveyed, 12 had systems in place to manage plastic waste, while 11 had broader general waste management systems.

However, these advancements have not translated into improved environmental awareness among workers themselves. A gap persists between policy and practice, especially on the factory floor. Environmental training and communications are often geared toward management-level staff, leaving workers with limited exposure to the goals, processes, or benefits of these environmental programs.

This disconnect is further exacerbated by the limited visibility buyers have into daily operations. Despite investing in sustainability measures, brands are not always fully aware of the practical challenges or inconsistencies in supplier practices. Government agencies have acknowledged their responsibility in this area, noting that existing regulations fall short in effectively monitoring and enforcing environmental compliance within the GFT sector. As a result, the environmental burden on host communities remains a pressing concern, calling for deeper collaboration between buyers, factories, and regulatory authorities to close the implementation gap and strengthen awareness across the board.

6.2.5. Barriers and Enablers – Environmental

1. Worker Knowledge of Environmental Issues

One of the most prominent challenges lies in the limited environmental awareness among factory workers. Misconceptions about basic waste and pollution practices are widespread. For example, 68% of workers believed that wastewater does not need to be treated before being disposed of via drains, while 70% incorrectly thought that even treated wastewater should not be discharged into rivers or onto land.

Misunderstandings also extend to plastic waste disposal. 48% of workers believed burning plastic was the best method, while 54% favoured burying it. This belief could derive from the common practice of the Cambodia communities, particularly the rural area, burning or burying plastic or general waste is very common for household environmental cleaning practice. Only 27% recognised that using reusable items over single-use plastics could meaningfully reduce waste. General waste management practices were also poorly understood. 48% of workers did not know whether yellow bins were for non-recyclables as the waste management practice is not commonly or wisely educated both formal or informal among communities for standard waste collection and separation including designed bins, and only 39% believed that factory waste contributes to pollution. More than half of respondents (52%) felt that daily human activities do not cause pollution, and 54% did not consider transportation or industrial processes to be significant sources of pollution.

These gaps in understanding likely reflect the limited recycling infrastructure in the country (See Point 6), which may hinder public knowledge of waste management practices like recycling.

Energy efficiency knowledge was similarly limited. Over half the workers (53.4%) believed that using forest wood as fuel does not negatively affect the environment. However, it's worth noting that this response may be shaped by the actual operations of their factory. Based on sector data, only 46.7% of TAFTAC member factories use boilers, which may influence workers' level of exposure and understanding.16

Additionally, workers' beliefs are shaped by common household cooking practices, which often rely on burning wood, including forest wood or various types of charcoal. This practice still continues in some communities where electricity or gas is limited or unavailable.

Encouragingly, factories are already collaborating with government, buyers, and NGOs to offer environmental training. Over the past 12 months, nine factories had delivered training on managing plastic waste, and eight offered sessions on reducing plastic use. Five provided training on water management, wastewater treatment, and sustainable energy, while four focused on broader waste management and pollution reduction. However, these trainings appear to reach only a portion of the workforce — just 44% of workers reported receiving any environmental training in the last year.

Where training was received, the impact extended beyond the workplace. A large majority (84%) of trained workers reported applying the lessons at home. Topics most frequently translated into personal practice included wastewater management, plastic waste reduction, general waste disposal, pollution mitigation, and sustainable energy use. This flow-on effect presents a promising opportunity to enhance environmental behaviour both inside and outside factory walls.

2. Inadequate Environmental Policies and Systems in Factories

A number of factories lack structured systems and policies for managing environmental impacts. While all surveyed factories had general waste management systems, only seven had wastewater management systems, and just six had formal wastewater policies. For general waste, even though systems exist, implementation gaps remain — 23.5% of workers said their factory did not have colour-coded bins, suggesting a disconnect between policy and practice.

Energy efficiency remains underdeveloped, with only six factories reporting a formal policy in this area. Despite these limitations, most factories claim to avoid overtly harmful practices: 68.6% of workers said their factory does not burn garbage, and 76.5% confirmed that waste is not disposed of in water bodies.
In this context, buyers play a significant role in supporting environmental efforts. Many provide technical assistance, data systems, and compliance tools. These initiatives are often paired with goal setting and auditing frameworks aimed at enhancing accountability.

16The figure on TAFTAC member factories using boilers is from Geres. Using Bayes' Theorem-style reasoning (mixture modelling) and assuming that workers from factories with a boiler are more aware of the usage of forest wood affecting the environment, the readjusted % of workers who don't know about the usage of forest wood affecting the environment would be between 45% - 50%.

3. Discrepancy Between Systems and Policies

A clear gap exists between the presence of environmental systems and the corresponding written policies. For each environmental issue studied, more factories had operational systems in place than formalised policies. For example, wastewater systems existed in seven factories, but only six had a policy; for plastic waste, 11 had systems, but just nine had policies; and for general waste, all had systems, but only nine had policies.

This gap matters. Without formalised policies, it is more difficult to standardise practices, measure compliance, or build long-term accountability structures. Buyers have recognised this need and are increasingly introducing stricter regulatory and monitoring standards. “Our larger suppliers, covering 80% of our production volume, are subject to higher scrutiny. We require them to meet strict targets for carbon reduction, renewable energy, and wastewater circularity,” noted one brand.

4. Limited Knowledge of Human Rights and Environmental Due Diligence (HREDD) and Corporate Sustainability Reporting Directive (CSRD) Regulations

Awareness of emerging HREDD legislation, such as the EU and US requirements, was generally low among factory management. This limits the sector’s preparedness to meet forthcoming international compliance standards, which could impact supplier eligibility in global markets.

5. Policy and Implementation Gaps Among Buyers

Although buyers often have detailed sustainability strategies and supplier codes of conduct, many still lack a full understanding of the everyday environmental practices and limitations faced by their suppliers. The gap between policy and implementation remains wide. One brand acknowledged this learning curve:

> *Overall, our sustainability approach has evolved rapidly over the past few years. We are now more ambitious, faster in our actions, and we continuously refine our targets and strategies. Feedback and external collaboration help us understand industry impacts and determine priority areas.*
>
> **– Woman staff, Brand A**

6. Government-Level Constraints and Acknowledged Roles

Government agencies also face considerable challenges in developing and enforcing relevant environmental policies. A lack of budget and technical capacity continues to hinder policy development, implementation, and factory-level enforcement. One agency stated: "*Limited national budget and resource persons who are capable of research, formulating the policies, and implementation of it*."

While Cambodia has legislation covering waste management and environmental regulation, enforcement remains inconsistent. Nonetheless, government officials expressed willingness to strengthen their roles in supporting factory compliance. One representative explained:

> *[The government should] develop policies related to waste and solid waste management; strengthen the role and responsibilities of sub-national administrations in monitoring and evaluating the factory environment.*
>
> **- Man staff, Government Agency A**

This acknowledgment reflects an emerging opportunity for multi-stakeholder collaboration in building more robust governance frameworks.

6.3. CIRCULAR ECONOMY

6.3.1. Vision

More buyers adopt the circular fashion or circular fashion as a key strategy, and there are appropriate incentives and compliance at every level of the supply chain to make this transition.

6.3.2. State

The concept of circularity remains relatively underdeveloped in Cambodia's GFT sector. Circular fashion, in particular, is not a widely understood term, and currently, there is no direct equivalent in the Khmer language. This linguistic gap has contributed to limited awareness and understanding of the concept among both workers and factory management.

To address this, the study used the terms "recycling and reusing" as a more accessible alternative to "circular fashion" during worker consultations. Framed this way, many workers expressed positive attitudes and acknowledged the potential role they could play in supporting these practices within the factory setting. However, these views were tempered by significant concerns around job security. Some workers feared that the shift towards circular production models, such as reduced production or the reuse of existing materials, could lead to job losses or fewer purchase orders. Such concerns are understandable in a context where earning a living wage is already a persistent challenge.

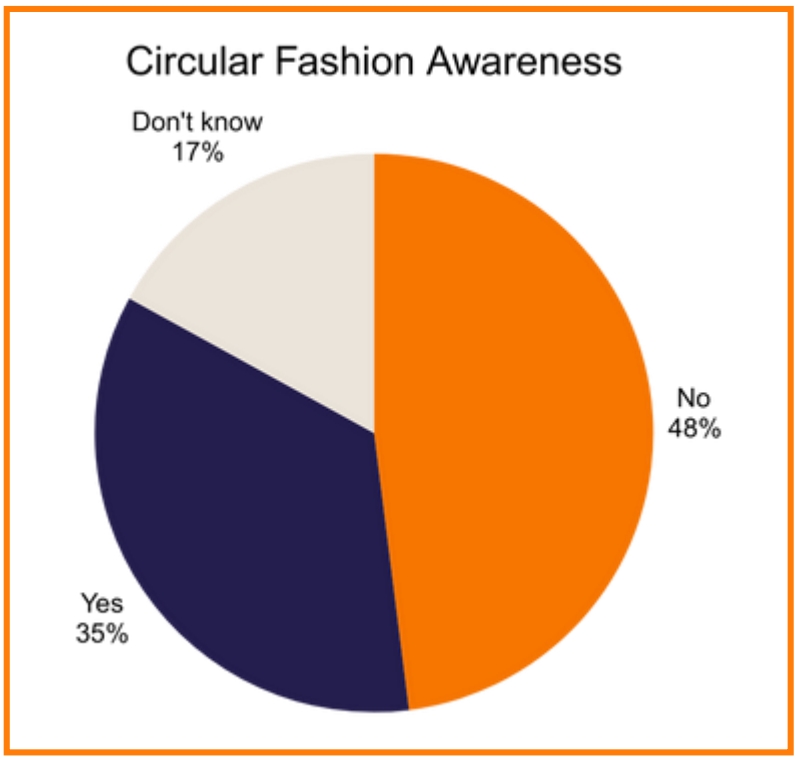
Buyers, for their part, expressed strong commitments to advancing circularity in the supply chain. However, the translation of these commitments into consistent action varies widely. Policies and implementation strategies differ significantly across brands, resulting in fragmented and, at times, contradictory efforts at the factory level.

A further challenge to the adoption of circular economy principles is the lack of national infrastructure to support circularity. Cambodia currently lacks adequate recycling facilities, waste sorting systems, and circular supply chain mechanisms that are essential to implementing a sustainable, closed-loop production model in the GFT sector. Without targeted investment in infrastructure, the full potential of circular fashion remains out of reach for much of the industry.

6.3.3. Barriers and Enablers

1. Limited Understanding of Circular Fashion and Circular Economy

A foundational challenge lies in the conceptual unfamiliarity of circularity in Cambodia. The terms "circular fashion" and "circular economy" do not yet hold strong social or cultural meaning, with the Khmer translations **(ផ្នែម៉ូដដោយប្រើប្រាស់ឡើងវិញ and សេដ្ឋកិច្ចចក្រា ឬសេដ្ឋកិច្ចវិលជុំ)** largely direct transliterations from English. While more people are beginning to recognise and use the term "circular economy," "circular fashion" remains far less understood. Within factories, awareness is low.



As seen in *Figure 9*, just 35% of workers had heard of the term, compared to 48% who had not; this awareness did not correlate with educational attainment. Among factory management, only four out of 12 had heard of “circular fashion,” and only three felt confident in explaining its meaning.

This lack of clarity extended to attitudes, with nearly one in three workers expressing uncertainty when asked about the socioeconomic and environmental benefits of circular fashion.

Figure 9. *Level Awareness of the term, “Circular Fashion” by workers.*

However, outside the factory walls, awareness was stronger. All other stakeholders, including government agencies, TAFTAC, and INGOs, were familiar with the term and could articulate its relevance. Furthermore, there is currently growing interest in the concept across factory settings. Among workers, especially women aged 25 to 34, attitudes were notably positive: 76.5% agreed that recycling and reusing clothes is important for the environment (54% strongly agreed), and 78% agreed it reduces waste. A majority also recognised broader benefits, such as improving working conditions (56%) and reducing factory waste (72%).

Factory management echoed these views. All management staff believed in the environmental benefits of circular fashion, and 83% felt it would improve working conditions. 11 out of 12 agreed it would help reduce production waste. This strong alignment of beliefs is matched by high levels of interest: 68% of workers and 100% of management expressed a desire to learn more about circular fashion. Additionally, 62.8% of workers saw their role as contributing to recycling and reuse efforts, while 55% acknowledged the sector’s potential to promote circularity. All management respondents shared this view.

2. Concerns About Job Security and Factory Stability

Despite this enthusiasm, concerns about job security remain a significant barrier. 41% of workers were worried that the circular fashion could threaten job stability, with women and those working fewer hours particularly affected. Over half (52%) feared that circular practices might reduce purchase orders. These anxieties reflect workers’ heavy reliance on overtime pay rather than a sustainable base salary, an issue repeatedly raised in focus group discussions. As one participant put it, the fear is not just about fewer jobs but about losing the hours that make survival possible.

3. Uncertainty Around Drivers and Responsibilities for Change

Stakeholders across the sector expressed uncertainty about who should lead the transition toward circularity. Business associations and local NGOs saw the main levers for change as external, driven by global market demands, regulations, or pressure from buyers. One NGO suggested that buyers have a separate project focusing on circular fashion, while another noted:

> *Buyers need to put more investment into Cambodia in a circular fashion.*
>
> **– Woman staff, NGO B**

Suppliers and factory management were divided in their understanding of buyer motivations. Some believed brands were driven by genuine environmental concerns, while others pointed to regulatory compliance or consumer pressure.

Uncertainty also surrounds consumer awareness. Stakeholders suggested that while customers are increasingly interested in sustainability, the high cost of circular products remains a barrier. Research confirms this complexity: consumers are generally more aware of the environmental benefits of circular economy practices (Jimenez-Fernandez et al., 2023) and increasingly pay attention to sustainability (Gazzola et al., 2020), yet feel that brands could communicate these issues more clearly (Vehmas et al., 2018). Awareness of the broader advantages of the circular economy beyond the environment remains low (Jimenez-Fernandez et al., 2023), and many still make price-driven choices. That said, environmental awareness and product placement are proven enablers that influence consumer behaviour and positive attitudes (Amoako et al., 2020; Jimenez-Fernandez et al., 2023).

4. Circular Economy Is Not Yet a Priority for Many Stakeholders

Despite the presence of several policy frameworks, circular economy is not yet a core focus for many relevant Cambodian institutions. Among the seven government agencies interviewed, only one was actively working on circularity. However, there are promising signs of policy momentum. The *Circular Economy Strategy and Action Plan (2021)* outlines Cambodia's vision for achieving a prosperous, inclusive, and sustainable economy. It is complemented by the *Circular Strategy on Environment 2023–2028 (*henceforth the *Circular Strategy 2023-2028)*, which supports green investment, strengthens legal frameworks, and builds institutional capacity, all within the broader *Pentagon Strategy (2023–2028)*.

5. Structural Challenges with Recycling and Reuse

In line with existing research (FABRIC Cambodia & Global Fashion Agenda, 2024), this research also found that Cambodia faces systemic barriers to implementing circular production practices. Most notably, the country's recycling infrastructure is critically underdeveloped. As one respondent from a donor/implementing partner explained:

> *In Cambodia, we generate roughly 140,000 waste units, yet we only have one or two recycling facilities available for around 1,000 units.*
>
> **- Staff, Donor/ Implementing Partner A**

Another expert noted that the demand for byproduct reuse in Cambodia is similarly fragmented, with minimal coordination among factories:

> *There's no connection between factories, and the scale is very marginal compared to Europe.*
>
> **– Man staff, Donor/Implementing Partner B**

Recycling efficiency is further hindered by inconsistent material quality. One respondent underscored the vital role that designers and material specifiers play in enabling circular practices:

> *The quality of the textile base is crucial; if the recycler receives low-quality materials, they cannot efficiently recycle them.*
>
> **– Staff, Donor/ Implementing Partner A**

To address the challenges, the Cambodian Government has ramped up efforts to improve waste management. A notable step is in the ongoing partnerships with INGOs to implement the aforementioned *Circular Strategy 2023–2028*. As part of this strategy, the MoE, in collaboration with UNESCO, recently launched a place-based awareness and behavioural change program targeting school children (UNESCO, 2024). This model could be replicated in other settings, such as factories, to promote sustainability at the organisational level.

Additionally, changes to the investment law in 2023, which offer financial incentives for green businesses, present a timely opportunity to boost investment in waste management and recycling infrastructure (FABRIC Cambodia & Global Fashion Agenda, 2024; Kreston Global, 2024).

6. Inconsistent Circularity Efforts Among Buyers

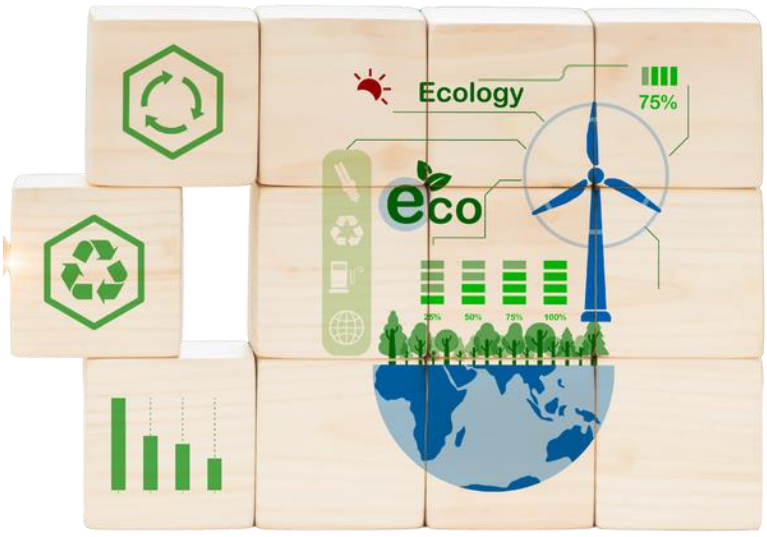
Although many brands express commitment to circular economy principles, implementation in Cambodia remains inconsistent. Circularity is not yet a standard criterion in "assembly" supplier selection, and current initiatives are often fragmented, ranging from isolated consumer campaigns to sporadic inclusion of circular criteria in procurement processes. As Brand D admitted, "Circular practices are not yet a major criterion when selecting suppliers," while Brand A noted, "We integrate circular economy criteria into our sourcing process," suggesting inconsistencies even among buyers.

Only six factories reported actively recycling or reusing materials, primarily through recycling offcuts, reusing packaging, and pollutant removal during production. This limited engagement reflects broader structural issues: buyers struggle with insufficient internal upskilling, inadequate infrastructure, and a lack of financial support to meaningfully advance circularity in their supply chains.

Further complicating implementation are internal disconnects between departments, particularly between CSR and Purchasing teams. While CSR representatives claimed a strong internal push for circularity, Purchasing staff reported that these efforts were not reflected in supplier evaluations. This gap underscores the need for stronger alignment between policy, procurement, and practice.

Despite these challenges, brands remain optimistic about circularity as a long-term goal. As one brand put it:

> *"[Circular fashion is] a transformative topic that can help us rethink our business model."*
>
> **– Woman Staff, Brand B**



Brands already apply strict policies for suppliers of materials and fibres in upstream operations (Dragomir & Dumitru, 2022). Extending similar monitoring, compliance measures, and technical support to downstream operations, where most Cambodian factories operate, could provide the additional push needed to improve supplier circular practices.

With growing stakeholder interest, emerging policy frameworks, and positive worker attitudes, Cambodia's GFT sector is well-placed to transition toward a more circular future, provided the barriers are addressed in a coordinated and inclusive way.

6.4. CLIMATE CHANGE

6.4.1. Vision

All stakeholders are engaged in the fight against climate change by implementing adaptation and mitigation measures considering the gender dimension.

6.4.2. State

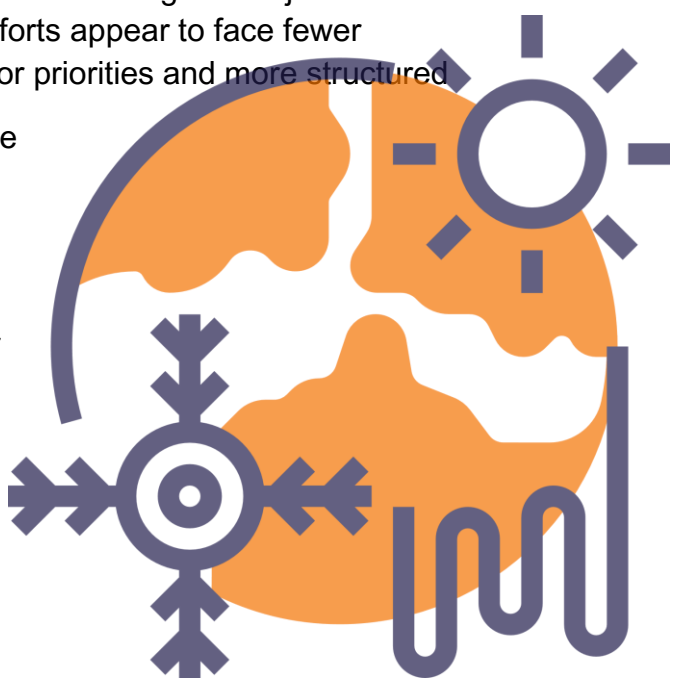
As a hot topic often featured in the news, awareness of climate change is relatively high among GFT sector workers in Cambodia. Approximately 75% of workers reported being familiar with the term “climate change” and were able to explain its meaning. Their understanding most often centres on rising temperatures, extreme weather events, and increasing unpredictability in weather patterns. This aligns with national-level awareness trends, where social media and news outlets remain the primary sources of climate-related information, followed by workplace messaging from factories, government campaigns, and peer networks.

Although climate change is not cited as the main driver of migration, it is increasingly recognised as a contributing factor, particularly in the form of extreme weather conditions (EWC). Men were found to be slightly more likely than women to migrate for climate-related reasons. This trend reflects findings from RISE (2025), which highlights a growing connection between climate-related agricultural disruption and increased factory employment.

Rural households experiencing harvest losses due to climate variability are more likely to send family members, especially women, to seek work in urban-based GFT factories. These findings reinforce broader rural-to-urban migration patterns documented in existing literature (Parsons et al., 2022; IOM, 2024).

While the negative impacts of climate change on the GFT workforce are well-recognised, particularly the intensification of extreme weather, the sector’s ability to adapt remains limited. Infrastructure constraints and a lack of accessible funding are major barriers to effective adaptation. In contrast, climate mitigation efforts appear to face fewer challenges, in part due to greater alignment with donor priorities and more structured regulatory mechanisms.

Encouragingly, the Cambodian government has made notable progress on climate action. In addition to policy-level commitments, there has been a strong push to mainstream gender into climate-related planning and decision-making. This progressive approach acknowledges the differentiated impacts of climate change on women and men and highlights Cambodia’s leadership in building inclusive climate resilience frameworks within the region.



6.4.3. Barriers and Enablers

1. Health Impacts Exacerbated by Intersectional Inequities

A striking 80% of workers reported falling ill due to climate change, with 82% citing headaches and 66% reporting fever linked to EWC. Others experienced more acute effects, such as diarrhoea, constipation, and, in some cases, fainting — findings consistent with existing research (Parsons et al., 2022).

The experience and severity of these health impacts are shaped by intersecting identities. Physiological sex plays a role, with female bodies often more sensitive to heat and EWC (Vongchanh & Chan, 2022; Birgi et al., 2023). Pregnant women, in particular, face heightened vulnerability (RISE 2025). Social norms and biases in medical systems further complicate this picture: gendered expectations and the prioritisation of male bodies (andronormativity) in healthcare can skew diagnosis and treatment (Samulowitz et al., 2018). Disability is another key factor, with respondents highlighting that persons with disabilities often face additional barriers in coping with EWC-related health challenges. These findings reinforce the concern: 97% of women with one or more impairments experienced at least one health impact related to EWC, compared to 90% of women without impairments.17

Despite these concerns, factories are implementing some protective measures, such as improved ventilation and space conditioning. Nature-based solutions, like planting trees, have been cited as effective (RISE 2025), alongside practical strategies such as roof-spraying. There is also a recommended ILO guideline to maintain indoor temperatures below 32°C, though enforcement remains weak.

At a policy level, Cambodia has made commendable strides. Sectoral climate action is mainstreamed through the Ministry of Women's Affairs (MoWA), with support from the MoE. Several policies, including the Master Plan on Gender and Climate Change (2018–2030), are explicitly gender-responsive and mandate periodic updates aligned with national strategies. As part of this Master Plan, planned activities, such as public/private/CSO sector dialogue platform, increasing gender mainstreaming capacity across public institutions, and more gender-segregated data through NIS, could positively contribute to increasing visibility and awareness of the gender-climate intersection.

2. Livelihood Disruptions Due to Productivity Losses

EWC have significantly disrupted livelihoods across the Cambodia's GFT sector.

As shown in Figure 10, approximately 38% of workers reported income losses due to EWC, with a gendered disparity. 50% of men experienced income reduction, compared to 35% of women. This difference may reflect men's greater reliance on overtime hours which are more likely to be reduced or cancelled during climate-related disruptions.

17 See Section 5.4. Data Limitations for more information on data limitations on disability-segregated findings.

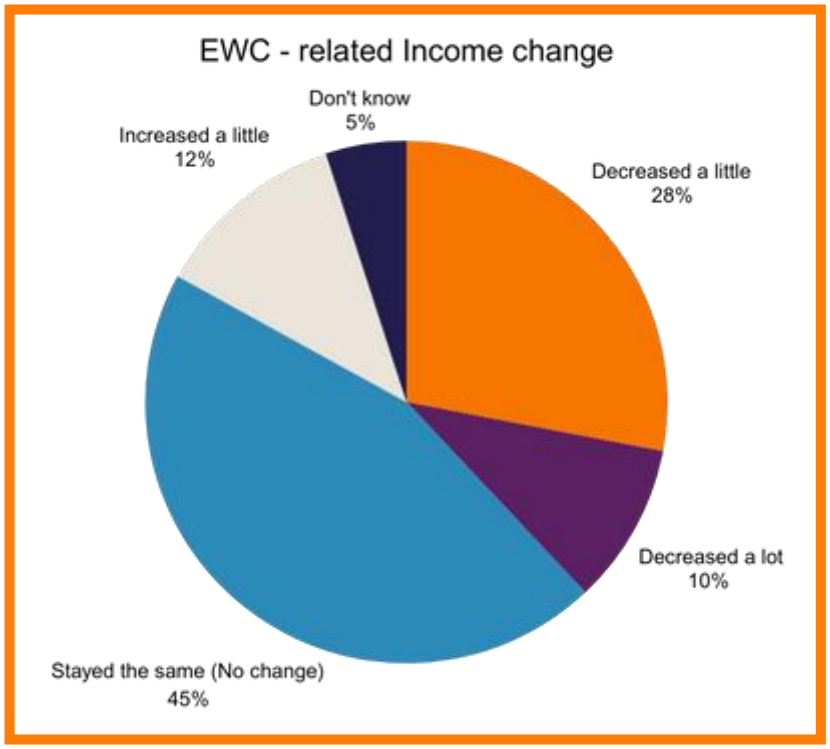


Figure 10. *Income change as a result of EWC.*

Over time, such disruptions can undermine factory output and sector-wide resilience. Across the sample, productivity loss during periods of EWC was estimated at 5.5% per day, amounting to approximately USD 173.80 per day.18 Extrapolated across the sector and considering Cambodia has, on average, 65 annual days over 35°C (World Bank & Asian Development Bank, 2021), potential losses due to EWC could reach up to USD 26 million annually. These figures exclude losses from flooding or other EWC events. Consistently, 37% of workers noted disruptions to factory operations during extreme weather, with 23% reporting job reductions as a direct result.

Climate change can also drive productivity loss through indirect but significant channels, such as the increased burden of unpaid care work, which disproportionately affects women. According to a recent study by RISE (2025), many women reported a clear link between rising UCDW and climate change. Participants shared that women have to “spare time to take care of family due to climate change” and are also responsible for managing the health needs of sick family members. Given Cambodia’s high UCDW gender parity (See Point 1 under Section 5.2.3. Barriers and Enablers – Socioeconomic), this reduces women’s ability to fully participate in paid work during climate-related events.

18 This calculation is based on the assumption that (1) there are 26 work days per month; (2) those who missed quota are at 75% productivity while those who missed work at 0% productivity; and (3) National GFT workforce is 925,000 (based on the latest Sector Brief by EuroCham in 2024).

3. Climate Training Remains Limited

Climate change remains a relatively new topic in the factory context. According to a union member, most factories do not provide formal training on climate change. This gap exists despite growing momentum around HREDD and CSRD regulations, which call for greater preparedness across supply chains.

4. Low Adaptation Knowledge and Varying Coping Practices

Adaptation knowledge among workers remains low, with only 8% reporting confidence in coping with EWC. While the level of formal education appears to influence uncertainty, it does not necessarily translate into greater preparedness: 49% of respondents reported taking no proactive measures to prepare for climate risks. Among the more proactive are workers aged 25 to 34, and divorced or separated women, suggesting these could be strategic target groups for future adaptation programs.

Common adaptation practices include drinking more water (91%), taking frequent breaks (56%), and energy-saving at work (24%), such as turning off lights when not in use. However, gender norms heavily influence coping strategies. Some women reported wearing long clothes even during hot days to avoid harassment, a practice that may increase the risk of fainting, as flagged by one government official.

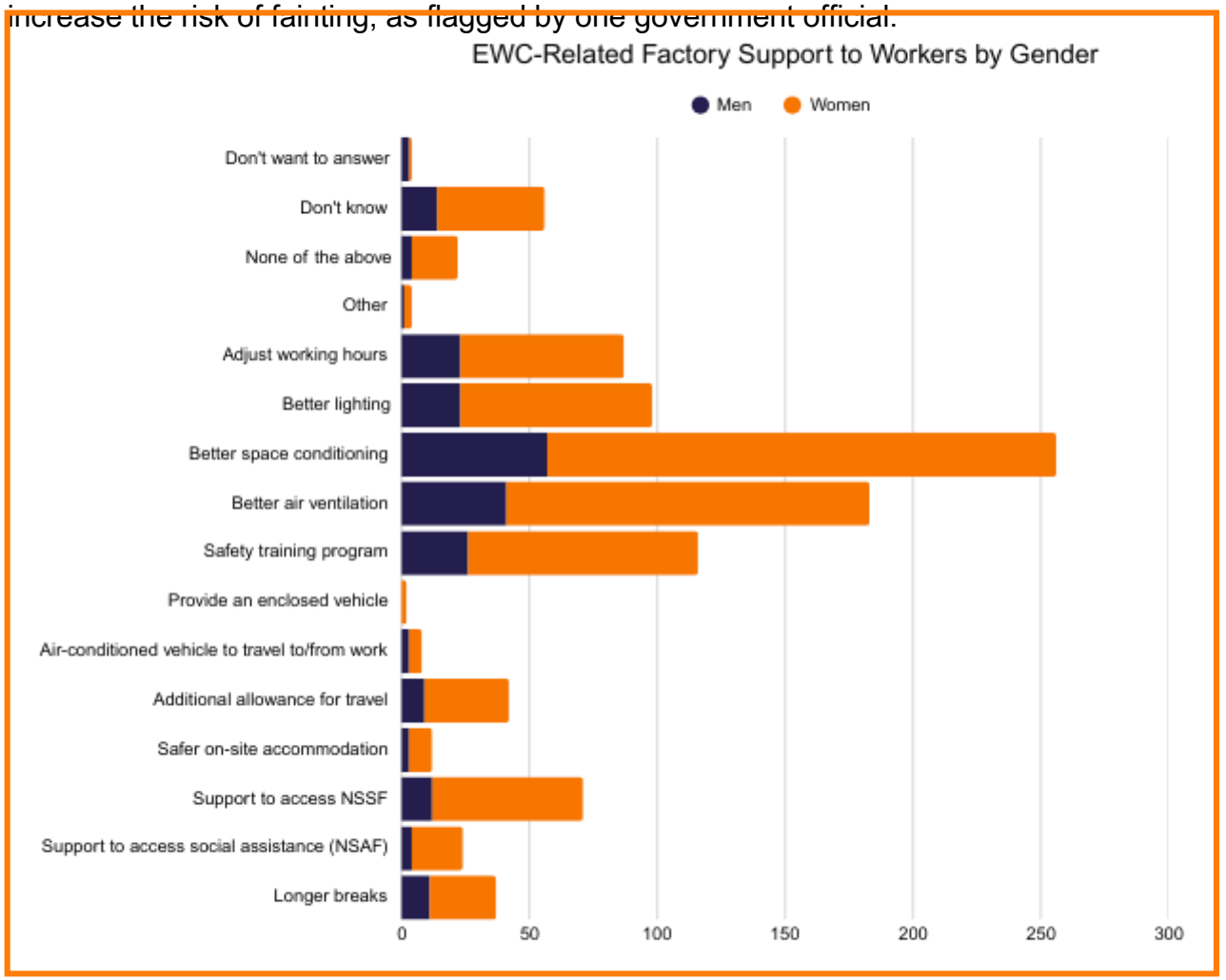


Figure 11. *EWC-related factory support to workers segregated by gender.*

Despite low formal adaptation knowledge, 68% of workers feel generally prepared to handle EWC. All factories surveyed provide some form of support, though the nature of assistance varies. Some factories provide additional care, including weather updates, hospital transport, and refreshments like cane juice and ice cream.

As evident in Figure 11, men are more likely to receive longer breaks, while women are more likely to receive safety training, possibly because men often occupy higher paying roles (e.g. mechanists) or log more overtime hours. Additionally, many existing factory programs focus on women's empowerment and health, often substituting 'gender' with 'women'. While these programs are important, they tend to attract more women participants and may inadvertently exclude men from broader climate preparedness initiatives. This highlights the need for truly gender-sensitive planning that includes all genders.

Trust in factories is relatively high. A large majority of workers believe that factories care about their wellbeing (87%), productivity (81%), and livelihood (66%). Moreover, 65% feel comfortable seeking help — although one in four remain unsure, suggesting room for improvement in communication and worker engagement.

5. Limited Sense of Personal Responsibility

More than half of respondents (58%) do not believe it is their personal responsibility to act on EWC, while just 14% do. A further 22% were unsure. Interestingly, education level did not correlate with this sense of responsibility. Nonetheless, concern levels are high; 78% of workers are worried about EWC, with women more likely than men to express concern, mirroring national findings (MoE & National Council for Sustainable Development, 2024).

6. Insufficient Support for Factory-Level Adaptation

Buyers tend to prioritise climate mitigation over adaptation, with support focused on emissions, water usage, and pollution. As one brand representative stated,

> *Incentives for adaptation are key because suppliers don't want to make investments unless they see clear benefits*
>
> **– Brand A**

This trend is well-documented in global literature (Judd et al., 2023). Some INGOs provide support through structural assessments and capacity-building, often using digital tools and partnerships. Despite a clear commitment, these efforts are limited by financial constraints and coordination challenges. Buyers and INGOs alike recognise that factory modernisation remains ad hoc and lacks the consistency needed for systemic resilience. While 73% of workers feel their factories are well-prepared to adapt, government and NGO stakeholders express lower confidence.

7. Infrastructure Constraints and Investment Challenges

Factory size and building ownership significantly influence the ability to invest in climate adaptation. Smaller factories, particularly those with fewer than 1,000 workers, struggle to afford large-scale improvements. Most factories (seven out of 11) operate in rented premises, often under short-term leases of three to five years. This discourages investment in long-term solutions. Building regulations in Cambodia remain poorly enforced, and infrastructure diversity, along with high energy costs, hinders broader investment from buyers and partners.

© 2024 Roun Ry / CARE Cambodia

7. REFERENCE

- Alberts, E. C. (2021, December 3). *Major clothing brands contribute to deforestation in Cambodia, report finds.* Mongabay Environmental News. https://news.mongabay.com/2021/12/major-clothing-brands-contribute-to-deforestation-in-cambodia-report-finds/

- Amoako, G. K., Dzogbenuku, R. K., & Abubakari, A. (2020). Do green knowledge and attitude influence the youth's green purchasing? Theory of planned behavior. *International Journal of Productivity and Performance Management, 69(8)*, 1609–1626. https://doi.org/10.1108/IJPPM-12-2019-0595

- Archipel & Co. (2024). *Opportunity study for the implementation of a social incentives program for the VETHIC project* (pp. 1–43) [Final report]. Geres.

- Baker, P., Hurry, N., & Le, L. (2024). *Cambodia Garment, Footwar and Travel Goods (GFT) Sector Brief: Issue 3 (No. 3; Sector Brief, pp. 1–44).* Responsible Business Hub Cambodia and TAFTAC.

- Birgi, O. G., Ferdebar, M., Fuhrmann, A., Habersbrunner, K., & Stock, A. (2023). *Gender and energy poverty; Facts and arguments* (pp. 1–18). EmpowerMed.

- CARE International. (2017). *"I know I cannot quit." The Prevalence and Productiviyt Cost of Sexual Harassment to the Cambodian Garment Industry* [Research Report].

- CDRI. (2007). *Youth Migration and Urbanisation in Cambodia* (Working Paper No. 36). CDRI - Cambodia's Leading Independent Policy Research Institute.

- Chandath, H., Chhay Por, I., Sokyimeng, S., Dana, S., & Raksmey, Y. (2023). *Undersatnding Air Pollution in the Garment Sector and Health Impacts on Workers: A Cambodian Case Study.* Ministry of Environment of Cambodia, Stockholm Environment Institute, and IDRC/CRDI. https://epa.moe.gov.kh/pdf/post/f7e6c85504ce6e82442c770f7c8606f0.pdf

- Dragomir, V. D., & Dumitru, M. (2022). Practical solutions for circular business models in the fashion industry. *Cleaner Logistics and Supply Chain*, *4*, 100040. https://doi.org/10.1016/j.clscn.2022.100040

- EuroCham Cambodia, German Business Cambodia, & GIZ. (2021). *Sourcing from Cambodia: Sustainable Textiles* (Product & Supplier Brochure) [Brochure]. https://www.eurocham-cambodia.org/uploads/c38ef-sourcing-from-cambodia_sustainable-textile-latest.pdf

- European Parliament. (2023, May 24). *Circular economy: Definition, importance and benefits*. Topics | European Parliament. https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits

- FABRIC Cambodia & Global Fashion Agenda. (2024). *Promoting Textile Waste Management and Recycling in the Garment, Footwear, and Travel Goods (GFT) Sector* (Sustainability Recommendations Paper). GIZ.

- Gazzola, P., Pavione, E., Pezzetti, R., & Grechi, D. (2020). Trends in the Fashion Industry. The Perception of Sustainability and Circular Economy: A Gender/Generation Quantitative Approach. Sustainability, 12(7), 2809. https://doi.org/10.3390/su12072809

- GIZ, CARE Cambodia, FABRIC Cambodia, RBH Cambodia, EUROCHAM Cambodia, & TAFTAC. (2024). Prevention of Gender-Based Violence and Harassment at the Workplace (Sustainability Recommendation Paper).

- Hanna, T., Meisel, C., Moyer, J., Azcona, G., Bhatt, A., & Valero, S. D. (2024). Forecasting Time Spent in Unpaid Care and Domestic Work [Technical Brief]. UN Women and Frederick S. Pardee Center for International Futures.

- International Labour Organization. (2024). *Assessment of the Cambodian National Social Security Fund's health insurance schemes*. International Labour Organization.

- International Organization for Migration. (2024). *Country Factsheet: Cambodia; Migration, Environment and Climate Change (MECC) Key Risks, Policies and Data Sources*. https://roasiapacific.iom.int/sites/g/files/tmzbdl671/files/documents/2024-06/cambodia-snapshot-final_updated.pdf

- Jahic, N. (2025, March 17). Cambodia's GFT Sector Sees Wage Increase. *The Borgen Project*. https://borgenproject.org/cambodias-gf/

- Jimenez-Fernandez, A., Aramendia-Muneta, M. E., & Alzate, M. (2023). Consumers' awareness and attitudes in circular fashion. *Cleaner and Responsible Consumption*, 11, 100144. https://doi.org/10.1016/j.clrc.2023.100144

- Judd, J., Bauer, A., Kuruvilla, S., & Williams, S. (2023). *Higher Ground? Report 1: Fashion's Climate Breakdown and its Effect for Workers* (No. 1; pp. 1–63). ILR Global Labor Institute; Schroders. https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf

- Karamba, W., Tong, K., & Salcher, I. (2022). *Cambodia Poverty Assessment: Toward a More Inclusive and Resilient Cambodia*. World Bank. https://doi.org/10.1596/38344

- Khmer Times. (2023, June 2). *Cambodia sets course for sustainable, circular textile industry — Khmer Times.* Khmer Times. https://www.khmertimeskh.com/501300984/cambodia-sets-course-for-sustainable-circular-textile-industry/

- Kingdom of Cambodia. (2021). *Circular Economy Strategy and Action Plan 2021.* https://www.undp.org/sites/g/files/zskgke326/files/2022-06/Circular%20Economy%20Strategy%20and%20Action%20Plan%202021%20%282%29.pdf

- Kreston Global. (2024, August 5). *Cambodia's new investment law offers tax incentives.* Kreston Global. https://www.kreston.com/article/cambodias-new-investment-law/

- Kunmakara, M. (2023, March 13). *Textile industry energy audits rising.* The Phnom Penh Post. https://www.phnompenhpost.com/business/textile-industry-energy-audits-rising

- LICADHO & Equitable Cambodia. (2023). *Debt Threats: A Quantitative Study of Microloan Borrowers in Cambodia's Kampong Speu Province*. LICADHO and Equitable Cambodia.

- Mengheng, S. (2023, March 17). *Textile Industry Seeks Solutions for Circular Economy.* Kiripost. https://kiripost.com/stories/cambodia-textile-industry-seeks-solutions-for-circular-economy

- International Organization for Migration. (2024). *Migration in the Kingdom of Cambodia: A country profile 2023.* International Organization for Migration.

- Mikavaty, S. (2025, March 1). *Opinion: Cambodia Must Deal with its Fabric Waste.* Cambodianess. https://www.cambodianess.com/article/opinion-cambodia-must-deal-with-its-fabric-waste

- Ministry of Environment & National Council for Sustainable Development. (2024). *A Fourth Study on Understanding Public Perceptions of Climate Change in Cambodia: Knowledge, Attitudes, and Practices (KAP).*

- *Monin, N., Lonn, P., San, S., Keang, S., & Duong, S. (2021). State of Gender Equality and Climate Change in Cambodia. UN Women and Cambodia Development Resource Institute (CDRI). https://www.uncclearn.org/wp-content/uploads/library/final-digital_cambodia_report.pdf*

- *National Institute of Statistics (NIS) [Cambodia], Ministry of Health (MoH) [Cambodia]], & ICF. (2023). Cambodia Demographic and Health Survey 2021-2022 Final report. NIS, MoH, and ICF.*

- *ONU Migración Americas. (n.d.). What do you call a person who moves within the same country? IOM UN Migration | Latin America and the Caribbean. Retrieved April 2, 2025, from https://lac.iom.int/en/blogs/what-do-you-call-person-who-moves-within-same-country*

- *Oudry, G., Pak, K., & Chea, C. (2016). Assessing Vulnerabilities and Responses to Environmental Changes in Cambodia [Country Report]. International Organization for Migration.*

- *Oum, S. (2021). The Genger Wage Gap in Cambodia (pp. 1–34). UNDP Cambodia. https://www.undp.org/sites/g/files/zskgke326/files/migration/kh/Gender-Wage-Gap-in-Cambodia.pdf*

- *Oxfam Cambodia. (2025). Addressing Unpaid Care and Domestic Work (UCDW) in Cambodia [Policy Brief]. Oxfam Cambodia.*

- *Oxfam France. (2023, November 7). Fast fashion: Définition, industrie de la mode et slow fashion [Oxfam France]. https://www.oxfamfrance.org/agir-oxfam/fast-fashion-et-slow-fashion-impacts-definitions/*

- Parsons, L., Lawreniuk, S., & Sok, S. (2022). Hot Trends: How the gobal garment industry shapes climate change vulnerability in Cambodia (pp. 1–29). Royal Holloway, University of London and University of Nottingham.

- Pillay, A. (2018). Gender pay gaps in the garment, textile and footwear sector in developing Asia (No. Issue 8; ILO Asia-Pacific Garment and Footwear Sector Research Note). International Labour Organization. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_protect/%40protrav/%40travail/documents/publication/wcms_655334.pdf

- Potting, J., Hekkert, M., Worrell, E., & Hanemaaijer, A. (2017). Circular Economy: Measuring innovation in the product chain [Policy Report]. PBL Netherlands Environmental Assessment Agency.

- RISE. (2025). Defining a gender just and equitable response to climate change within the garment & footwear industry.

- Samulowitz, A., Gremyr, I., Eriksson, E., & Hensing, G. (2018). “Brave Men” and “Emotional Women”: A Theory-Guided Literature Review on Gender Bias in Health Care and Gendered Norms towards Patients with Chronic Pain. Pain Research & Management, 2018, 6358624. https://doi.org/10.1155/2018/6358624

- Sen, D. (2024, July 10). Govt provides robust assistance to 1.3 million migrant workers. Khmer Times. https://www.khmertimeskh.com/501521096/govt-provides-robust-assistance-to-1-3-million-migrant-workers/

- Shaikh, S., Kolata, A. L., Johnson, J., & Binford, M. W. (2023). Home and Away: Drivers and Perceptions of Migration Among Urban Migrants and Their Rural Families in the Lower Mekong River Basin of Cambodia. Migration and Development, 12(1), 13–48. https://doi.org/10.1177/21632324231194763

- Sharpe, S., Retamal, M., & Martinez-Fernandez, C. (2022). *Assessing the impact: Environmental impact assessment in the textile and garment sector in Bangladesh, Cambodia, Indonesia and Viet Nam* (Working Paper No. 51). International Labour Organization. https://doi.org/10.54394/YCEP9777

- Sierra Skelly. (2022, July 25). *The Upcycling vs. Recycling vs. Downcycling Guide—Hive.* Hive Brands. https://hivebrands.com/blogs/news/upcycling-vs-recycling-vs-downcycling

- UN Habitat. (2025). *Kingdom of Cambodia.* Urban Policy Platform. https://urbanpolicyplatform.org/cambodia/

- UN Habitat Cambodia. (2023). *2023 Cambodia Country Report: Building Places that We All Call Home* (pp. 1–16). UN Habitat Cambodia.

- UNESCO. (2024, December 18). *UNESCO Contributes to “Clean Cambodia, Khmer Can Do” Campaign of the Ministry of Environment | UNESCO*. UNESCO. https://www.unesco.org/en/articles/unesco-contributes-clean-cambodia-khmer-can-do-campaign-ministry-environment

- Vehmas, K., Raudaskoski, A., Heikkilä, P., Harlin, A., & Mensonen, A. (2018). *Consumer attitudes and communication in circular fashion.* Journal of Fashion Marketing and Management: An International Journal, 22(3), 286–300. https://doi.org/10.1108/JFMM-08-2017-0079

- Vongchanh, K., & Chan, S. (2022). *Preliminary study on investigation of the heat stress affecting the labor productivity, a cases tudy: Garment Factory in Phnom Penh.* ASEAN Engineering Journal, 12(3), 103–109. https://doi.org/10.11113/aej.v12.17821

- World Bank. (2023). *Cambodia Country Climate and Development Report* (East Asia Pacific, pp. 1–23). The World Bank Group. https://documents1.worldbank.org/curated/en/099092823045528995/pdf/P178871154c24a0917720149301a3431d83a4f0ced08.pdf

- World Bank. (2024). *Supply of and Demand for Accessible and Affordable Childcare Services in Cambodia*. World Bank. https://doi.org/10.1596/42294

- World Bank & Asian Development Bank. (2021). *Climate Risk Country Profile: Cambodia*. World Bank. https://doi.org/10.1596/36380

- Yen Yat, Sam Chanty, Kem Sarom, & Rin Poleu. (2025). *Identification of Four-Priority Issues for Further Study: Migrant Workers, Community Impacts, Circular Economy and Climate Change in Garment industry.* Geres, CARE France, CARE Cambodia, and ACT.

7. ANNEX TABLES

ANNEX I

Descriptive statistics of participating workers based on types of impairments as set out by the Washington Short Set Survey.

Demographic information	Total Count (n)	Total Percentage (%)
Impairment		
Vision		
No	335	85%
Yes	60	15%
Hearing		
No	355	90%
Yes	40	10%
Cognitive		
No	363	92%
Yes	32	8%
Self-Care		
Don't want to answer	1	0,25%
No	372	94.18%
Yes	22	5.57%
Communication		
Don't want to answer	1	0.25%
No	359	90.89%
Yes	35	8.86%
Grand Total	395	**100.00%**

ANNEX II

Descriptive statistics of participating workers disaggregated by gender, age, and marital status.

Gender/Age	Divorced/Separated		Married/ Living together		Single/ Never married/ Never lived with a partner		Widowed		Total	
Men	**4**	**31%**	**62**	**22%**	**24**	**32%**	**1**	**5%**	**91**	**23%**
18 - 24 y/o	1	25%	4	6%	16	67%	0	0%	21	23%
25 - 34 y/o	3	75%	28	45%	6	25%	0	0%	37	41%
35 - 44 y/o	0	0%	27	44%	2	8%	1	100%	30	33%
45+ y/o	0	0%	3	5%	0	0%	0	0%	3	3%
Women	**9**	**69%**	**226**	**78%**	**51**	**68%**	**18**	**95%**	**304**	**77%**
18 - 24 y/o	0	0%	18	8%	24	47%	0	0%	42	14%
25 - 34 y/o	7	78%	99	44%	15	29%	4	22%	125	41%
35 - 44 y/o	2	22%	88	39%	11	22%	6	33%	107	35%
45+ y/o	0	0%	21	9%	1	2%	8	44%	30	10%
Grand Total	**13**	**100%**	**288**	**100%**	**75**	**100%**	19	**100%**	**395**	**100%**

ANNEX III

Descriptive statistics of participating workers disaggregated by gender, age, and migration status.

Gender/ Age	Migrant		Non-Migrant		Total	
Men	**53**	**25%**	**38**	**21%**	**91**	**23%**
18 - 24 y/o	12	23%	9	24%	21	23%
25 - 34 y/o	21	40%	16	42%	37	41%
35 - 44 y/o	17	32%	13	34%	30	33%
45+ y/o	3	6%	0	0%	3	3%
Women	**162**	**75%**	**142**	**79%**	**304**	**77%**
18 - 24 y/o	16	10%	26	18%	42	14%
25 - 34 y/o	70	43%	55	39%	125	41%
35 - 44 y/o	62	38%	45	32%	107	35%
45+ y/o	14	9%	16	11%	30	10%
Grand Total	**215**	**100%**	**180**	**100%**	**395**	**100%**

ANNEX IV

Descriptive statistics of participating workers disaggregated by gender, age, and level of education.

Gender/ Age	1. Never attended school		2. Some primary		3. Completed primary (Grade 6)		4. Some secondary		5. Completed secondary (Grade 9)		6. Some high school		7. Completed high school		8. More than high school		Total	
Men	**1**	**7%**	**19**	**19%**	**6**	**15%**	**14**	**17%**	**16**	**25%**	**13**	**24%**	**16**	**50%**	**6**	**60%**	**91**	**23%**
18 - 24 y/o	0	0%	2	11%	2	33%	3	21%	3	19%	3	23%	7	44%	1	17%	21	23%
25 - 34 y/o	1	100%	4	21%	3	50%	6	43%	6	38%	8	62%	6	38%	3	50%	37	41%
35 - 44 y/o	0	0%	12	63%	1	17%	5	36%	7	44%	2	15%	3	19%	0	0%	30	33%
45+ y/o	0	0%	1	5%	0	0%	0	0%	0	0%	0	0%	0	0%	2	33%	3	3%
Women	**14**	**93%**	**82**	**81%**	**33**	**85%**	**67**	**83%**	**47**	**75%**	**41**	**76%**	**16**	**50%**	**4**	**40%**	**304**	**77%**
18 - 24 y/o	0	0%	4	5%	3	9%	9	13%	8	17%	14	34%	4	25%	0	0%	42	14%
25 - 34 y/o	3	21%	30	37%	11	33%	30	45%	22	47%	21	51%	5	31%	3	75%	125	41%
35 - 44 y/o	6	43%	38	46%	14	42%	23	34%	13	28%	5	12%	7	44%	1	25%	107	35%
45+ y/o	5	36%	10	12%	5	15%	5	7%	4	9%	1	2%	0	0%	0	0%	30	10%
Grand Total	**15**	**100%**	**101**	**100%**	**39**	**100%**	**81**	**100%**	**63**	**100%**	**54**	**100%**	**32**	**100%**	**10**	**100%**	**395**	**100%**

ANNEX V

Descriptive statistics of participating workers disaggregated by gender, age, and monthly salary.

Gender/ Age	$101-$200		$201-$300		$301-$400		≥ $401		Total	
Men	**2**	**20%**	**60**	**22%**	**24**	**28%**	**5**	**21%**	**91**	**23%**
18 - 24 y/o	1	50%	18	30%	2	8%	0	0%	21	23%
25 - 34 y/o	0	0%	23	38%	12	50%	2	40%	37	41%
35 - 44 y/o	1	50%	19	32%	9	38%	1	20%	30	33%
45+ y/o	0	0%	0	0%	1	4%	2	40%	3	3%
Women	**8**	**80%**	**215**	**78%**	**62**	**72%**	**19**	**79%**	**304**	**77%**
18 - 24 y/o	1	13%	36	17%	4	6%	1	5%	42	14%
25 - 34 y/o	4	50%	87	40%	32	52%	2	11%	125	41%
35 - 44 y/o	1	13%	70	33%	22	35%	14	74%	107	35%
45+ y/o	2	25%	22	10%	4	6%	2	11%	30	10%
Grand Total	**10**	**100%**	**275**	**100%**	**86**	**100%**	**24**	**100%**	**395**	**100%**

Climate, Gender, and Energy

in Cambodia's Garment Footwear Textile Industry