

Empowering Women for Climate Resilience in Cambodia



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GLOSSARY

Adaptive capacity	is the coping ability of a system to adapt to climatic stimuli (including climate variability and extremes) to regulate their potential impacts and benefit from their opportunities or mitigate their consequences.
Agency	is the ability to make decisions about one's own life and act on them to achieve desired outcomes.
Climate Smart Agriculture (CSA)	is a set of agricultural practices and technologies which simultaneously boost productivity, enhance resilience, and reduce greenhouse gasses emissions.
Empowerment	can be economic, social, psychological, and/or political empowerment of women and girls to promote women's economic independence, improve relationships, and promote equitable gender power relations within households, communities, and society.
Exposure	refers to the nature and degree that a community is exposed to the frequency of extreme weather events.
Gender	refers to characteristics of women, men, girls, and boys that are socially constructed. This includes norms, behaviors, and roles associated with being a woman, man, girl, or boy, as well as relationships with each other. As a social construct, gender varies from society to society and can change over time.
Gender mainstreaming	is an approach to policy making that takes into account both women's and men's interests and concerns. The concept of gender mainstreaming was first introduced at the 1985 Nairobi World Conference on Women.
Gender-responsive	refers to a policy or program which fulfills two basic criteria: a) gender norms, roles, and relations are considered and b) measures are taken to actively reduce the harmful effects of gender norms, roles, and relations—including gender inequality.
Green jobs	are decent jobs that contribute to preserving or restoring the environment, be they in traditional sectors such as manufacturing and construction or in new and emerging green sectors such as renewable energy and energy efficiency.
Participation	refers to women's engagement in political, economic, and local institutions by participating in bureaucracies, policy-making bodies, governance structures, and representative organizations.
Resilience	is the ability to withstand, recover from, and reorganize in response to crises so that all members of society may thrive.
Sensitivity	refers to the level of exposure that a system is susceptible to climate variabilities, either adversely or positively.

ABBREVIATIONS

CCA	Climate Change Adaptation
CCCSP	Cambodia Climate Change Strategic Plan
CCWC	Commune Committee for Women and Children
CDP	Commune Development Plan
CF	Community Forestry
CFi	Community Fishery
CPA	Community Protected Area
CSA	Climate-Smart Agriculture
DRR	Disaster Risk Reduction
FGD	Focus Group Discussions
GCCAP	Gender and Climate Change Action Plan
GCCSP	Gender and Climate Change Strategic Plan
GDP	Gross Domestic Production
GHG	Greenhouse Gas
GMAG	Gender Mainstreaming Action Group
KII	Key Informant Interview
LEAP	Livelihood Enhancement and Association with the Poor
MAFF	Ministry of Agriculture, Forestry, and Fisheries
MME	Ministry of Mines and Energy
MoE	Ministry of Environment
MoI	Ministry of Interior
MoP	Ministry of Planning
MoWA	Ministry of Women's Affairs
MSME	Micro, Small, and Medium-sized Enterprises
NCDD	National Committee for Democratic Development
NCSD	National Council for Sustainable Development
NDC	Nationally Determined Contribution (UNFCCC document that outlines national climate objectives)
NGO	Nongovernmental Organization
NP2	National Priority Phase 2
NTFP	Non-Timber Forest Products
REDD+	Reducing Emissions from Deforestation and Forest degradation
SDF	REDD+ Taskforce
SHG	Self-Help Group
SME	Small and Medium-sized Enterprises
SNA	Subnational Administrations
STEM	Science, Technology, Engineering, and Mathematics

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EXECUTIVE SUMMARY

Cambodia has experienced significant economic growth and improved living standards over the last two decades, and gender equality has also improved, especially on outcomes such as girls and women’s human capital accumulation in education. However, the impacts of climate change could put the hard-earned economic development gains including those of women, at risk. Climate change impacts are profoundly uneven; women in low-income communities and other vulnerable groups are disproportionately affected because of social and economic factors that increase their vulnerability. Specifically, more women than men live below the poverty line, limiting women’s access to resilient housing, safe water, and sanitation in Cambodia. This situation is further exacerbated by persistent inequalities in terms of access to jobs, livelihood opportunities, finance, and information. Therefore, addressing climate change needs to be combined with efforts to address gender inequalities to ensure women and men can benefit equitably from climate policies and actions.

Cambodia has made concerted efforts to address climate change and to transition to low-carbon development. In its updated Nationally Determined Contribution (NDC), the country seeks to decrease greenhouse gas (GHG) emissions by 41.7 percent with outside support, of which half of the reduction will come from the forestry and land use sectors, and the rest will primarily come from the energy, agriculture, industry, and waste sectors. Cambodia’s Country Climate and Development Report (CCDR) recommends that the country embrace resilient and decarbonization pathways and integrate measures to address risks for poor households and vulnerable population.

This report aims to inform policy makers, national and local government actors, World Bank task teams, and development partners on opportunities to ensure climate resilient actions are also addressing differentiated needs of women and men and ensure equitable development outcomes. It examines gender-differentiated climate vulnerabilities and how these relate to changes in local livelihood strategies and broader responses to cope with climate change impacts. Furthermore, it identifies barriers to enhancing women’s climate resilience and suggests entry points in low-carbon sectors to enhance women’s economic empowerment and resilience against climate shocks.

This report is informed by analysis of qualitative and quantitative data. Primary data was collected between September and October 2023 through a household survey (309 households) and 12 focus group discussions (six women-only and six men-only) from three communes in three provinces: Srae Sangkom commune (Mondulkiri Province); Sambour commune (Siem Reap Province); and Chamkar Samrong commune (Battambang Province). These provinces were selected due to their vulnerability to climate and disaster risks. This data was complemented with key informant interviews with government officials and stakeholders at the national and subnational levels and reviews and analysis of documents (e.g., policies, regulations, reports, and academic studies) and secondary data.

Climate change has resulted in increased occurrences of climatic hazards that adversely affect livelihoods and daily activities in surveyed communes. These include heat, floods, droughts, changes in rainfall patterns, windstorms, insect outbreaks, and wildfire. The survey revealed that communities have experienced flooding which destroyed or damaged rice paddies, household residences, infrastructure,

and livestock, whilst prolonged droughts have led to crop production failure. The total losses are estimated at US\$7,454 per year per household, of which business losses account for 63 percent, followed by crop damage, losses of livestock and assets, and health expenses.

Moreover, climate impacts have further contributed to out-migration and indebtedness among these rural households. As agricultural production, especially rice farming, becomes more expensive, unpredictable, and vulnerable to climatic hazards, rural households often take loans to cover the costs of agricultural production and address damages due to climate impacts. The survey showed that nearly 15 percent of annual income is used for debt repayment. When debts grow, rural Cambodians migrate to urban centers and abroad as a coping strategy. The report shows that men tend to migrate more than women, leaving women to take charge of rural livelihood activities such as agriculture and fisheries. With limited access to training, technical and financial resources, and information on climate resilient agriculture, women are less equipped to respond and adapt to climate shocks.

While men and women contribute to household livelihoods, this report found discrepancies between men and women in their access to formal employment, income, and engagement in unpaid care work. The survey showed that men earn higher incomes and have better access to formal employment opportunities as compared to women. Childcare responsibilities remain predominantly shouldered by women despite their contribution to household income. This finding aligns with an ILO report (2018) documenting that on average Cambodian women spent 3 hours and 8 mins per day in unpaid care compared to men's 18 minutes per day. This can lead to time poverty, as women have less time to develop new skills, be involved in the public sphere, and contribute more broadly to human and capital development.

Existing patterns of social exclusion based on gender and other social differences shape vulnerabilities to climate impacts. Men's and women's experiences of climate impacts depend not only on their exposure to climate risks but also on the sensitivity of their livelihoods and socioeconomic situations to climatic changes and their capacity to cope with these changes. Both men and women in the study sites appear in either high or very high levels of vulnerability to climate change. But comparatively, men are more likely to have low or very low vulnerability, while more women than men appear in the moderate level of vulnerability. In Monduliri, more women appear in the high or very high levels of vulnerability (47.2 percent of women compared to 45.3 percent of men).

Existing barriers to Cambodian women enhancing their resilience against climate shocks persist. *First*, access to resources is key for adaptive capacity and women tend to have limited access to assets and resources, such as access to land ownership and green technologies and practices. *Second*, women do not have equal access to finance compared to men; this could hinder their ability to fully benefit from what economic growth is generated in the transitions to low-carbon economies. *Third*, women continue to be underrepresented, underpaid, and undervalued in the labor market and, as a result, do not earn on par with men and so cannot invest equally in building their climate resilience. *Fourth*, unpaid care work is predominantly shouldered by women, which negatively impacts their access to educational, employment, and economic opportunities and their overall abilities. *Fifth*, women are underrepresented in climate decision-making processes. *Sixth*, there are still provisions in the legislation and legal practices that limit women's participation in the labor market on equal terms with men.

However, women could be well-placed to reap the benefits of opportunities arising from transitions to low-carbon economies if they are provided with capacity and regulatory support, as well as access to resources. Climate-smart agriculture can play a vital role in reducing the gender gap in the burden of agricultural labor, as well as promote a variety of technologies, practices, and services that aim to help users mitigate and adapt to the impacts of climate change. Emerging performance-based mechanisms in the forestry sector (such as Payment for Ecosystem Services and Reducing Emissions from Deforestation and Forest Degradation (REDD+) and sustainable forest management could provide rural women with a clear opportunity to contribute to sustainable forest management and potential paid employment opportunities. It could also generate opportunities for social entrepreneurship especially for non-timber forest products. Transitions to low-carbon energy could generate opportunities for not only employment but also social entrepreneurship for women and women-led businesses. It is essential to improve the enabling environment for women's participation in low-carbon economies and to address social norms that might limit women's participation. This could include providing regulatory support to enable women to access affordable care facilities and sufficient paid maternal and parental leave that in turn could allow women to have more time to enhance their capacity and access to employment opportunities, including in green jobs.

Recommendations

Policy recommendations

- **Implement gender-responsive climate budgeting to ensure necessary resources are allocated to enable an equitable transition to low-carbon development.** Line ministries should demonstrate both gender and climate impacts in budget submissions and allocate resources to advance gender equality in their respective sectors at multiple governance levels. This could be done by budget tagging for gender and climate and linking them to ensure a consistent approach and increased public investment to advance gender equality. Furthermore, it is important to ensure that budget allocation reaches local levels through commune/sangkat funds.
- **Integrate gender targets and objectives into existing and new economic and climate policy instruments to enhance women's climate resilience and ensure women benefit equally with men.** Cambodia's climate policies, such as its National Adaptation Plan, Nationally Determined Contribution (NDC), Neary Rattanak VI and Long-Term Low-Emission Development Strategies, present excellent examples of policies that have included gender targets and objectives. These policies must be effectively implemented to ensure impacts at scale. While other policies, such as the Circular Strategy on Environment, gender targets and objectives still need to be strengthened.
- **Enhance coordination and facilitation between ministries through strengthening gender mainstreaming action groups (GMAGs) and across government levels to promote consideration of gender equality and address climate impacts.** Specifically, enhance the coordination mechanism between the MoWA, the Ministry of Environment (MoE), the Ministry of Mines and Energy (MME), the Ministry of Agriculture, Forestry and Fisheries (MAFF), Ministry of Planning (MoP), and the Ministry of Interior (Mol). Furthermore, it will be essential to update the Gender and Climate Change Action Plan (GCCAP) 2013-2023 and ensure its effective implementation. Capacity support could be provided to ensure gender considerations are fully included in climate change planning, budgeting, implementing, monitoring, and evaluating.

- **Introduce or enhance policies to remove barriers to women accessing employment opportunities, including green jobs, focusing on addressing social norms and women's time burden.** A key area could be formalizing the childcare system by developing and implementing a sub-decree on the establishment and operation of affordable and quality childcare solutions. Policy reform, particularly Labor Law revision, could mandate sufficient paid leave, not only maternal but also parental.

Operational recommendations:

- **Promote women's participation, agency, and leadership in decision-making processes and dialogues related to climate change.** This could include providing access to climate related information, awareness raising, and capacity support for women and women's groups to enable meaningful participation and representation in climate policy and program planning and implementation across different levels. At the local level, women's knowledge and contributions should be enabled to shape the agenda and solutions to address climate impacts within commune development and investment plans.
- **Enhance women's access to vocational training and address the gender gap in education to prepare them to access opportunities in emerging green sectors.** This could include a combination of supportive education policies, curriculum, and capacity building in green sectors; support for strong female role models; and support mechanisms for women to access opportunities in emerging sectors. In terms of reskilling, the Cambodian governments need to scale up efforts to retrain and reskill the labor force to enable workers' transitions from obsolete sectors and jobs to emerging low-carbon sectors. This could include dedicating a specific program/fund window in Cambodia's Skill Development Fund (SDF) to enhance women's skills in social entrepreneurship and low carbon sectors.
- **Provide institutional support to women's groups and women-owned and -led enterprises and raise awareness about ways in which they can enhance their resilience to climate change.** Cambodian women's capacity to cope with climate impacts can be enhanced by supporting collective action through women-led cooperatives, self-help groups, and associations and by enabling women to have greater access to knowledge, income-generating activities, and markets.
- **Enhance access to green finance opportunities by women's groups and women-led businesses, combined with capacity support for financial literacy and management as well as business management.** Women entrepreneurs in Cambodia are underserved by the financial system. The situation is even more difficult for women's groups, which are often informal and have limited access to resources and low financial and digital literacy. Therefore, it is important to support women micro-entrepreneurs and smallholders to gain greater access to green finance opportunities and markets and, at the same time, to provide support to improve their capacity in financial literacy and management as well as digital literacy. Such support could enable women to take advantage of opportunities related to emerging green finance.

Chapter 1.

INTRODUCTION

Cambodia is among the countries most vulnerable to the impacts of climate change, putting at risk its economic development goals and men’s and women’s livelihoods. Climate change impacts in the country have manifested in severe water scarcity, more frequent floods, agricultural production failures and food shortages, and increased biodiversity loss, resulting in subsequent decline of ecosystem services (World Bank and ADB 2021). Climate-sensitive sectors, such as agriculture, forestry, and fisheries, are not only foundational to Cambodia’s economic growth but also sources of livelihood for the majority of the population. It is estimated that almost two-thirds of Cambodia’s population depend on these sectors for their livelihoods, in which women have large representations.

Cambodia has made concerted efforts to address climate change and to transition to low-carbon development. In its updated Nationally Determined Contribution (NDC), the country seeks to decrease greenhouse gas (GHG) emissions by 41.7 percent with outside support, of which half of the reduction will come from the forestry and land use sector and the rest will primarily come from the energy, agriculture, industry, and waste sectors (GSSD/MoE 2020). The NDC also includes a strong climate adaptation component. While the country has experienced rapid economic growth and significant declines in poverty in the last three decades, the COVID-19 pandemic caused a temporary setback that led to 3.1 percent contraction in 2020 and 3 percent growth in the following year (World Bank 2023). Without action, it is projected that climate change impacts could lower Cambodia’s Gross Domestic Production (GDP) by around 3 to 9 percent by 2050 (World Bank 2023). Many of the climate changes projected are likely to disproportionately affect the poorest and most vulnerable groups in society.

Climate change impacts are profoundly uneven; women and vulnerable groups tend to be hit the hardest by extreme weather events, floods, prolonged droughts, sea level rise, and erratic rainfalls. Cambodia’s Country Climate and Development Report (CCDR) highlights that people residing in poorer regions along the Mekong River and Tonle Sap Lake live with higher risks of flooding and are expected to cope with disasters worse than most people living in cities (World Bank 2023). Similarly, people living in the northern and western provinces are highly exposed to heat waves, but the higher poverty rates leave them few resources to manage heat risk. In Cambodia, more women than men live below the poverty line: for every 100 men, 104 women live in poverty (UN Women 2022). Poverty limits women’s access to resilient housing, safe water, and sanitation (World Bank 2023). This situation is exacerbated by systemic barriers often experienced by women, such as unequal access to jobs, livelihood opportunities, finance, and information (Setyowati, Pichon, and Khan 2023). Therefore, to ensure women and men can equitably benefit from climate policies and actions, and investments to address climate change need to be combined with efforts to address gender inequalities.

Climate change impacts are profoundly uneven; women and vulnerable groups tend to be hit the hardest by extreme weather events, floods, prolonged droughts, sea level rise, and erratic rainfalls.

If effectively managed, transitions to low-carbon development can generate opportunities for women and vulnerable populations who might otherwise be at risk of experiencing decreased livelihood options. Investments in climate adaptation, emission reductions, and rehabilitation of local ecosystems could create and diversify opportunities for households and populations who are vulnerable to climate change and environmental degradation. Integrating gender-inclusive policies and interventions to transition to greener economies could create new opportunities for women (Deininger et al. 2023). By adopting such measures, the emergence of new green sectors, such as renewable energy, climate-smart agriculture, and sustainable forestry, could provide opportunities for employment and social entrepreneurship for both men and women.

In Cambodia, some policy documents showcase the government’s commitment to promote gender equality in its efforts to mitigate and adapt to climate change impacts. For instance, Cambodia has developed a Master Plan on Gender and Climate Change (2018–2023) to strengthen gender mainstreaming across sectoral ministries to enhance women’s resiliency to cope with climate impacts (MoWA 2018). The Ministry of Women’s Affairs (MoWA) has specifically developed a Gender and Climate Change Strategic Plan (GCCSP) (2013–2023) to ensure that gender and climate change agendas are fully integrated into public policy making within MoWA and other line ministries (MoWA 2014). However, operationalizing these commitments and agendas remains challenging due to several factors, including the scarcity of data on gender-differentiated climate vulnerabilities and on how gender relations shape local adaptation responses and capacities to address the impacts of climate change and disasters. Furthermore, inconsistencies remain in the integration of these plans into climate strategies and action plans, leading to missed opportunities to fully tap into the potential of green and inclusive transitions. Further data collection and analysis is needed to fill this gap.

This report aims to inform policy makers, national and local government actors, World Bank task teams, and development partners on potential entry points to advance gender-responsive measures in climate policies and climate-resilient actions in Cambodia. The report examines gender-differentiated climate vulnerabilities and how these link to changes in local livelihood strategies and broader responses to coping with climate change impacts. Further, it examines the barriers to women’s access to emerging opportunities in low carbon transitions and identifies entry points for harnessing opportunities in low-carbon sectors for women’s economic empowerment and gender equality. The findings of this report could inform climate policies to better integrate gender-responsive measures.

This report is structured as follows: The second section describes the data collection methodology. This is followed by a section that identifies existing policies and institutional frameworks related to the nexus of gender and climate change in Cambodia. The fourth section discusses the report’s key findings which include: gender-differentiated climate vulnerabilities, livelihoods, and adaptations; barriers that women face to cope with climate change; and opportunities to tap into low-carbon sectors for women’s empowerment and climate resilience. This is followed by the conclusions and recommendations.

Chapter 2.

METHODOLOGY

2.1 Data Collection Methods

This study combined quantitative and qualitative methods and gender-responsive approaches to design the research methodology and tools. The primary data collection methods included a household survey, key informant interviews (KIIs), and focus group discussions (FGDs), which were carried out between September–October 2023 in three communes in Siem Reap, Battambang, and Monduliri provinces. A total of 309 households were surveyed and 12 FGDs (six women-only and six men-only) were conducted. The survey respondents were 49.50 percent women and 50.50 percent men. A total of 16 key KIIs were held at the national level with key government actors and at local levels with subnational government and community representatives. The survey questionnaire included questions about households' socioeconomic situations, livelihood-related information, and household members' experiences of climate events and their livelihood impacts. The FGDs and KIIs were carried out to further understand gender-differentiated livelihood roles and climate impacts as well as barriers that women experience in enhancing their climate resilience and seizing opportunities in agriculture, forestry, and energy, the three key sectors that are critical for a low-carbon transition in Cambodia. To complement this primary data collection, reviews of documents, reports, and government statistics were carried out. The study also acquired a wide range of climate change variables, including temperatures, rainfalls, and natural disaster events, from relevant data sources. These data fed into sex-disaggregated analysis of climate vulnerability.

The demographic profile of respondents to the household survey across the three study sites is as follows: The average age of male and female respondents is 50 years (see Annex 1a for a detailed summary of respondent characteristics). The majority of households have an average of 2.5 members, which are categorized into two main groups: ages 0–14 and ages 64 and above. Concerning education, most respondents from both genders have completed primary school (48.4 percent male and 48.7 percent female). Chamkar Samrong commune in Battambang Province exhibits the lowest rate of uneducated respondents, while Sambour commune in Siem Reap Province demonstrates the highest percentage of male respondents with a university education. The poverty level of household respondents is diverse across the study sites. The majority of respondents in Siem Reap Province fall into very poor (55 percent) and poor (22 percent) categories, followed by those in Monduliri Province (20 percent very poor and 50 percent poor). By contrast, the poverty level of households in Battambang Province is much lower; the majority of respondents are non-poor (70 percent) and very few are poor or very poor (see Annex 1b).



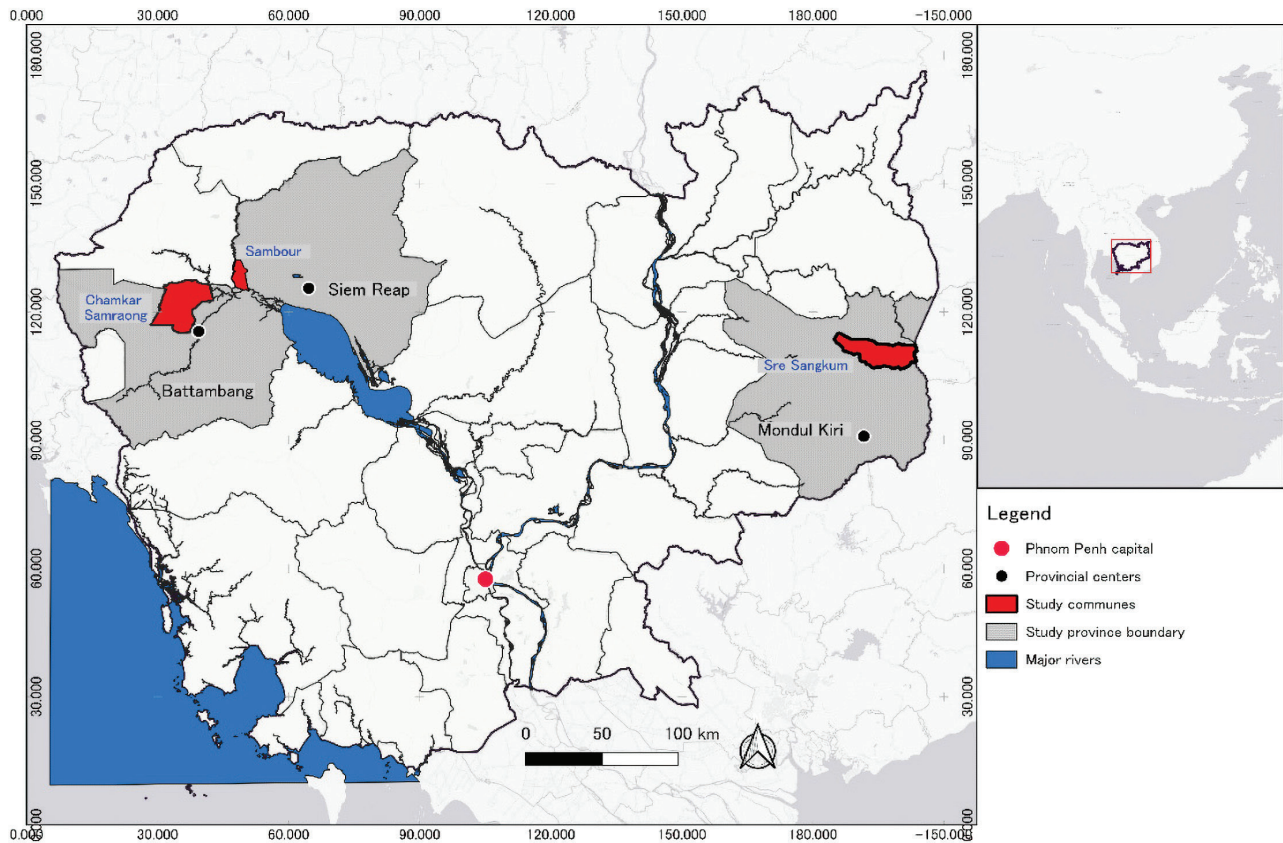
2.2 Field Research Sites

Primary data collection was conducted in the following communes (see figure 1 for a map of the study sites):

- Srae Sangkom commune, Mondulkiri Province, is situated in Koh Nhek district, around 100 kilometers from the provincial center, and consists of nine rural villages. It has rich natural resources, particularly forests, and agricultural potential. Most villagers depend on farming, fishing, and nonforest timber products (NTFPs).
- Sambour commune, Siem Reap Province, is located in the southern Krolanh district, bordering Banteay Meanchey Province, and is divided by a stream. It comprises eight villages connected by one main asphalt road to the district center. About half of the commune, mainly in the south, is covered by inundated forests, while the northern part is mostly paddy fields. The geography of this commune is considered lowland and is often flooded if the Tonle Sap water level is high.
- Chamkar Samrong commune, Battambang Province, is situated about three kilometers away from Battambang town along Sangker Stream. It is a prime location for residents to conveniently commute to work in the town, with the majority of the population engaged in small family businesses in various sectors and very few involved in agriculture.

Within each commune, 103 households were selected using a random sampling design. To facilitate comparability of findings, the sample respondents were recruited based on demographic characteristics (i.e., gender and age) and occupation, ensuring a balanced representation of genders and diverse involvement of respondents with various economic backgrounds.

FIGURE 1. MAP OF STUDY SITES



Chapter 3.

POLICIES, REGULATIONS, AND INSTITUTIONS IN CAMBODIA: THE GENDER AND CLIMATE NEXUS

3.1 Policies, Regulations, and Institutional Frameworks

Cambodia has stipulated policy and regulatory frameworks and established institutional arrangements that could advance climate resilience and gender-responsive climate actions. These include the main frameworks as described below. Detailed policies and regulatory frameworks are described in Annex 2.

Cambodia's Nationally Determined Contribution (NDC): As a part its commitment under the Paris Agreement, the Government of Cambodia submitted its first and second NDCs in 2016 and 2020 respectively (GSSD/MoE 2020). The NDCs outline Cambodia's commitments to reduce GHG emissions and to implement adaptation measures in various sectors, including agriculture, water resources, forestry, coastal zones, health, and infrastructure. It includes gender as a cross-cutting theme and lays out six actions to address gender inequalities and improve gender integration and responsiveness in climate change policies and programs. In terms of climate adaptation, for instance, it aims to strengthen institutional capacities at national and subnational levels to integrate gender responsiveness in climate change adaptation policy making, planning, programming and budgeting.

Cambodia Climate Change Strategic Plan (CCCSP) (2014–2023): This policy document provides an overall strategy as well as priority actions for climate adaptation and mitigation (NCCC 2013). The plan highlights the significance of addressing gender-differentiated climate vulnerabilities and integrates gender-sensitive approaches into climate change responses. It further acknowledges the need to prioritize women's needs in climate adaptation and mitigation as well as in community-based approaches to climate adaptation. The government is currently preparing a new strategic plan, which will provide a timely opportunity for further advancing gender integration into the CCCSP and subsequent climate policies.

Nary Rattanak VI (2024–2028): This is a guiding gender equality strategy, developed by MoWA, to advance gender mainstreaming and women's empowerment in strategic plans and development programs across all sectors and at every level, with a special emphasis on key strategic areas such as women's economic empowerment, well-being, legal protection, leadership, and governance; climate change; and promotion of social ethics and values of women and families (MoWA 2024). Its institutional support strategy focuses on programs of capacity development and efficiency to enhance gender mainstreaming and women's empowerment. Within this strategy, gender, climate change, green growth, and disaster risk management are considered cross-cutting issues; it recognizes that climate change affects women differently and requires gender-responsive approaches at all sectors and levels. Specifically, this strategy emphasizes: (i) recognizing the importance of gender-responsive and transformative approaches to addressing the impacts of climate change on women and girls; (ii) promoting gender equality in the economic sector; and (iii) strengthening legal frameworks and enforcement mechanisms to protect the rights of women and girls.

The Pentagonal Strategy Phase I for Growth, Employment, Equity, Efficiency, and Sustainability:

Issued in 2023, this strategy reaffirms the Government of Cambodia's commitment to gender equality for resilient, sustainable, and inclusive development (RGC 2023). The strategy commits the government to: (i) promote skills enhancement and entrepreneurship; (ii) strengthen sexual and reproductive health services; (iii) encourage women and girls in the fields of economics, education, health, and public leadership; (iv) create conditions to help women participate in household decision-making; and (v) reduce gender-based violence.

National Program Phase 2 (NP2): Climate actions in Cambodia will be implemented in the decentralized context; the Government of Cambodia has established decentralized development planning and financing, particularly through commune development plans (CDPs) and fiscal transfers to commune councils, which currently receive US\$100,000–200,000 per commune depending on population sizes and other criteria.¹ In the second phase of decentralization outlined in the NP2 (NCDD 2021), the government aims to: mainstream efforts to build resilience to climate change and disasters into service delivery; enable subnational administrations (SNAs) to effectively address climate change vulnerabilities, natural disasters, and serious infectious diseases; and include gender as a cross-cutting theme in these efforts. In short, the programme creates opportunities for SNAs to play key roles in accelerating climate actions by bringing resilience planning into local development, enhancing awareness, influencing behavioral change within communities, and ensuring gender integration in local climate actions.

The MoWA is playing a coordinating role for mainstreaming gender in national development strategies and providing a platform for women's rights. It has two specific policies related to gender integration in climate change policies and programmes:

- Master Plan on Gender and Climate Change (2018-2023): This policy focuses on the institutionalization of gender mainstreaming in climate adaptation and disaster risk reduction (DRR) investments to achieve equitable climate resilience and a sustainable society (MoWA 2018).
- Gender and Climate Change Strategy Plan (GCCSP) (2013–2023): The GCCSP calls for gender measures in climate adaptation and mitigation strategies through increased gender awareness, capacity building to reduce the impacts of climate change, participation in climate change-responsive policy development and decision-making, research and development, and financing. It also promotes green job opportunities and economic development (MoWA 2014).

MoWA assists other line ministries to mainstream gender into their programmes. It has appointed gender focal points, supported the establishment of gender mainstreaming action groups (GMAGs), and promoted gender-responsive budgeting in other ministries. Although gender perspectives are integrated into many ministries' strategic and action plans, gender-responsive work remains unsatisfactory. One of the main challenges is that there are no definite indicators to measure the achievement of each ministry's implementation of its gender-related commitments.

¹ Two subnational committees have played a central role in implementing the national policies from NCDD and MoWA to address gender and climate change. The Commune Committee for Women and Children (CCWC) and the Commune Committee for Disaster Management (CCDM) are operating under the commune chiefs and are the closest to the villagers. Although CCWC has a major role in addressing women's and children's issues, their contribution is essential to address the issues of gender and climate change and disaster risks in the local communities.

3.2 Local Institutions

Women's groups play a key role in local adaptation and mitigation efforts, building their communities' climate resilience. It is critical to support women's collective action given the multiple economic and social benefits that arise from supporting women's groups: collective action enhances women smallholders' access to finance and markets, while women may end up having greater autonomy over the use of agricultural incomes and be consulted more on community and organizational decision-making. Overall, women's groups in Cambodia still have limited access to decision-making processes, highlighting the need to empower both women individually and women's groups to promote, advocate for, and implement climate change adaptation initiatives (UNDEF 2018). Women in Cambodia experience greater challenges in coping and rebuilding after a crisis due to their lack of access to information, resources, finance, and technologies.

In Cambodia, women-led groups at the local level exist and could be reinvigorated to increase resilience to climate shocks. For example, the World Bank project Livelihood Enhancement and Association with the Poor (LEAP) supports self-help groups (SHGs), which are village-based organizations that focus on building the savings and credit as well as social empowerment of their (mostly female) members. A study found that the project has been successful in increasing participation in SHGs, strengthening SHG-related networks, significantly increasing the number of households with non-zero savings as well as their savings levels, and leading to a noticeable shift in household production towards livestock (Ban, Gilligan and Rieger 2020). With such support, the communities have improved social cohesion and their economic situation, which could directly and indirectly lead to resilience against climate and economic shocks.

Furthermore, as climate actions in Cambodia are implemented in the context of decentralization, local development planning through commune development plans (CDPs) is an important avenue for accelerating climate actions and delivering climate finance to the local level. Therefore, integrating gender-responsive and climate resilience measures into overall CDP processes could ensure that women's knowledge, needs, and priorities are included in climate-smart investments.

Chapter 4.

CLIMATE IMPACTS, VULNERABILITY, AND ADAPTATION

4.1 Perceptions of Local Climate Impacts

Climate change has manifested in increased occurrence of climatic hazards in the studied communes, including heat, floods, droughts, changes in rainfall patterns, windstorms, insect outbreaks, and wildfires.

Each commune grapples with distinctive climate challenges and susceptibilities, as figure 2 outlines, in Battambang, community members perceived higher temperatures (74.5 percent) and changes in rainfall patterns (56.8 percent), while others observed extreme events such as floods, droughts, windstorms, and insect outbreaks that occasionally occurred. In Mondulkiri, communities observed a high and very high frequency of high temperatures (91.5 percent), floods (26,4 percent), changes in rainfall patterns (63.2 percent), windstorms (87.7 percent), insect outbreaks (67.9 percent), and wildfires (65.6 percent). Located in mountainous and plateau regions, the communities in Mondulkiri rarely face flooding, so that level of change was very low. Located along Tonle Sap Lake, the communities in Siem Reap noted that floods are more frequent (72.3 percent) as well as higher temperatures (89.1 percent), while droughts, changes in rainfall patterns, and windstorm events were perceived as high or very high at 55.4 percent, 43.6 percent, and 46.5 percent respectively. In short, communities experience higher temperatures, floods, droughts, changes in rainfall patterns, and windstorms.

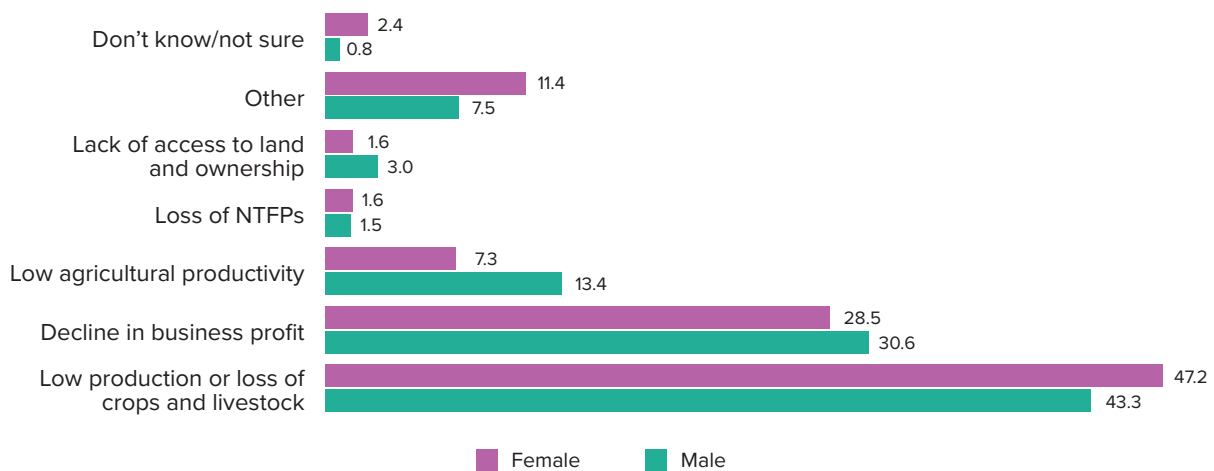
FIGURE 2. COMMUNITIES' PERCEPTIONS OF LOCAL CLIMATE IMPACTS

Level of perceived change	High temperature	Flood	Drought	Change in rainfall	Windstorms	Insect outbreak	Wildfire
Battambang							
Never happened	5.9	50.0	62.8	28.4	27.5	73.5	100.0
Low	2.9	2.0	0.0	0.0	6.9	1.0	0.0
Moderate	16.7	7.8	10.8	14.7	12.8	4.9	0.0
High	25.5	17.7	15.7	38.2	28.4	6.9	0.0
Very high	49.0	22.6	10.8	18.6	24.5	13.7	0.0
Mondulkiri							
Never happened	2.8	54.7	13.2	10.4	2.8	27.4	30.2
Low	0.0	1.9	0.9	0.9	0.0	0.0	0.0
Moderate	5.7	17.0	13.2	25.5	9.4	4.7	4.2
High	17.9	15.1	34.0	29.3	27.4	27.4	20.8
Very high	73.6	11.3	38.7	34.0	60.4	40.6	44.8
Siem Reap							
Never happened	5.0	22.8	20.8	49.5	26.7	66.3	66.3
Low	0.0	0.0	3.0	0.0	3.0	0.0	0.0
Moderate	5.9	5.0	20.8	6.9	23.8	6.9	6.9
High	38.6	31.7	26.7	19.8	24.8	12.9	12.9
Very high	50.5	40.6	28.7	23.8	21.8	13.9	13.9

Source: Household survey, September 2023

Women and men have varied perceptions of the causes of climate change and concerns relating to climate impacts. The studied communities perceive the major cause of climate change to be the loss of forests. More men (34.4 percent) than women (30.4 percent) perceive that climate change results from the loss of forests, while 32 percent of both men and women believe that climate change occurs naturally. Overall, more women (11.1 percent) than men (5.7 percent) say they do not know what the causes of climate change are. The survey shows that women are more concerned about crop loss, decline in agricultural production, loss of NTFPs, and other consequences such as human and animal diseases, indebtedness, and property loss as the results of climate change, while men are worried about loss of business profits and lack of access to land and land ownership (see Figure 3).

FIGURE 3. PERCEPTIONS OF IMPACTS OF CLIMATE CHANGE ON LIVELIHOODS BY GENDER (PERCENT)

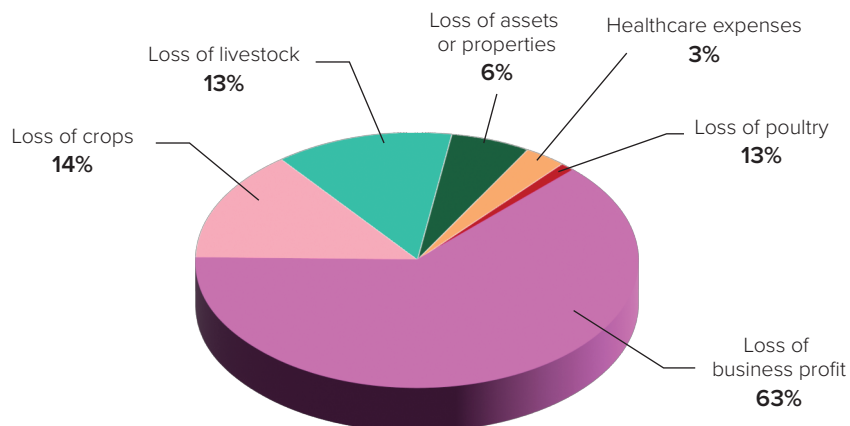


Source: Household survey, September 2023

Climate change has adversely affected communities' livelihoods and daily activities. The survey reveals that communities have experienced flooding leading to the destruction of rice paddies, household residences, infrastructure, and livestock, whilst droughts have proved similarly problematic. Total losses were estimated at US\$7,454.80 per year per household, of which business losses account for 63 percent (figure 4), followed by crop damage; loss of livestock, assets, and properties; and health expenses. In Sambour, Mondulhiri Province, for instance, the women-only focus groups reported prolonged drought that has led to crop production failure and floods which have damaged rice fields and roads, which in turn lead to difficulties transporting agricultural products such as rice. Moreover, windstorms have destroyed villagers' houses and made some people homeless. As noted by women FGD respondents: "[T]he dry season lasted longer every year with little rain . . . the weather was so hot and dry that the soil cracked while the canals were dried out. This leads to lack of water for household consumption and irrigation."² In Siem Reap, respondents noted substantial decline in rice yields due to erratic rainfalls and floods. In Battambang, women participants noted that increased temperature and heat waves have caused illness, particularly among older community members and children.

² FGD, September 2023.

FIGURE 4. SHARED LOSSES CAUSED BY CLIMATE IMPACTS.

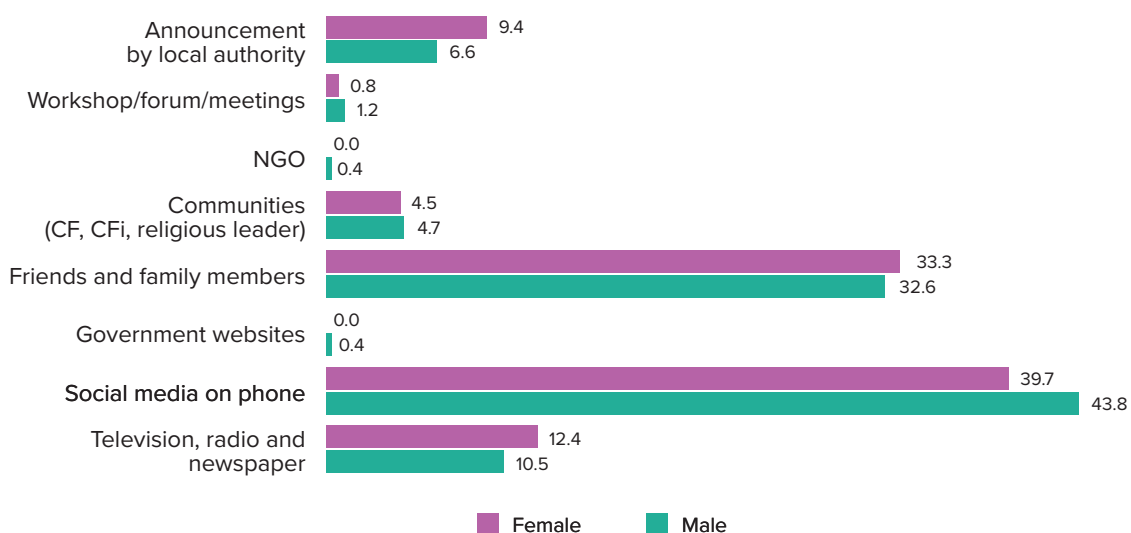


Source: Household survey, September 2023

Local communities use various channels to access information related to extreme weather events.

Some rely on traditional practices to predict the weather, while others pay more attention to the weather broadcast on TV or social media. Figure 5 shows the information sources relating to weather events that both men and women use. Social media is the major information source, followed by friends and family members and then broadcasting by TV, radio, and newspapers. Compared to men, women commonly depend on family members, relatives, or neighbors (33.3 percent); news from TV or radio (12.4 percent); and information shared by local authorities (9.4 percent). However, women have less access to information through social media (39.7 percent) compared to men (43.8 percent). Women also find it hard to get information disseminated by NGOs or community forestry (CF) or community fisheries (CFi) groups. Access to information via workshops, forums, and meetings is also limited for women.

FIGURE 5. ACCESS TO WEATHER-RELATED INFORMATION BY GENDER (PERCENT)



Source: Household survey, September 2023

4.2 Gender-Differentiated Climate Vulnerabilities

Existing patterns of social exclusion because of gender and other social differences shape vulnerabilities to climate impacts. Men’s and women’s experiences of climate impacts depend not only on their exposure to climate risks but also on the sensitivity of their livelihoods and socioeconomic situations to climate changes and their capacity to cope with these changes. To understand gender-differentiated climate vulnerabilities, this report adopts the IPCC framework for climate vulnerability (IPCC 2001) and analyzes sex-disaggregated data from the household survey (see Annex 3 for the method for calculating vulnerability).

Communities experience varied exposure to climate impacts due to the different geographical conditions of each commune.

The survey shows that Srae Sangkom commune in Mondulhiri is more adversely exposed to climate impacts than other study sites. The commune has experienced various extreme weather events, including storms, droughts, erratic rainfalls, forest fires, and rising temperatures, which have become increasingly concerning over the past 10 years. The roads in the commune are in very poor condition, limiting communities’ access to basic services. In Siem Reap, the Sambour commune is situated approximately 10 kilometers from the district center with poor road conditions, particularly during the rainy season. Over the past 5–10 years, the weather patterns in the commune have been notably shifting, with rising temperatures and more occurrences of floods, droughts, unpredictable rainfalls, and thunderstorms. Chamkar Samrong commune is situated within Battambang city and has well-developed infrastructure, with concrete and paved roads. Although some roads are flooded after heavy rainfalls, access to health care facilities and schools is easier compared to the other study sites. Over the past 5–10 years, extreme weather conditions such as rising temperatures, floods, windstorms, and changes in rainfall have been observed by villagers. They noted that floods resulting from heavy rainfalls are more common than those caused by river overflows. In the study areas, men and women have different perceptions of their exposure to extreme weather events. In Mondulhiri, a vast majority of both men (75.5 percent) and women (79.2 percent) perceive high or very high levels of exposure to climate impacts. Majorities of both men and women in Battambang and Siem Reap perceive either very low or low exposure to extreme events, while few respondents in these provinces see themselves as facing the highest level of exposure (figure 6).

Sensitivity to climate change means the extent to which people, households, or communities are susceptible to the effects of climate stress. For example, households living along Mekong River are likely to be more sensitive to flooding, but one household might be more sensitive than others. The sensitivity of a community increases when households rely heavily on nature-based income from agriculture, livestock, or NTFPs because those income sources are highly sensitive to climate. In contrast, sensitivity is reduced for households with a higher share of income sources that are not based on climate-sensitive sectors, such as salaried jobs, remittances, and skilled nonfarm jobs. The study shows that people in Siem Reap have the highest level of sensitivity to climate hazards, followed by those in Battambang, while Mondulhiri is ranked as less sensitive. Overall, more men (high: 24.0 percent; very high: 20.0 percent) than women (high: 26.9

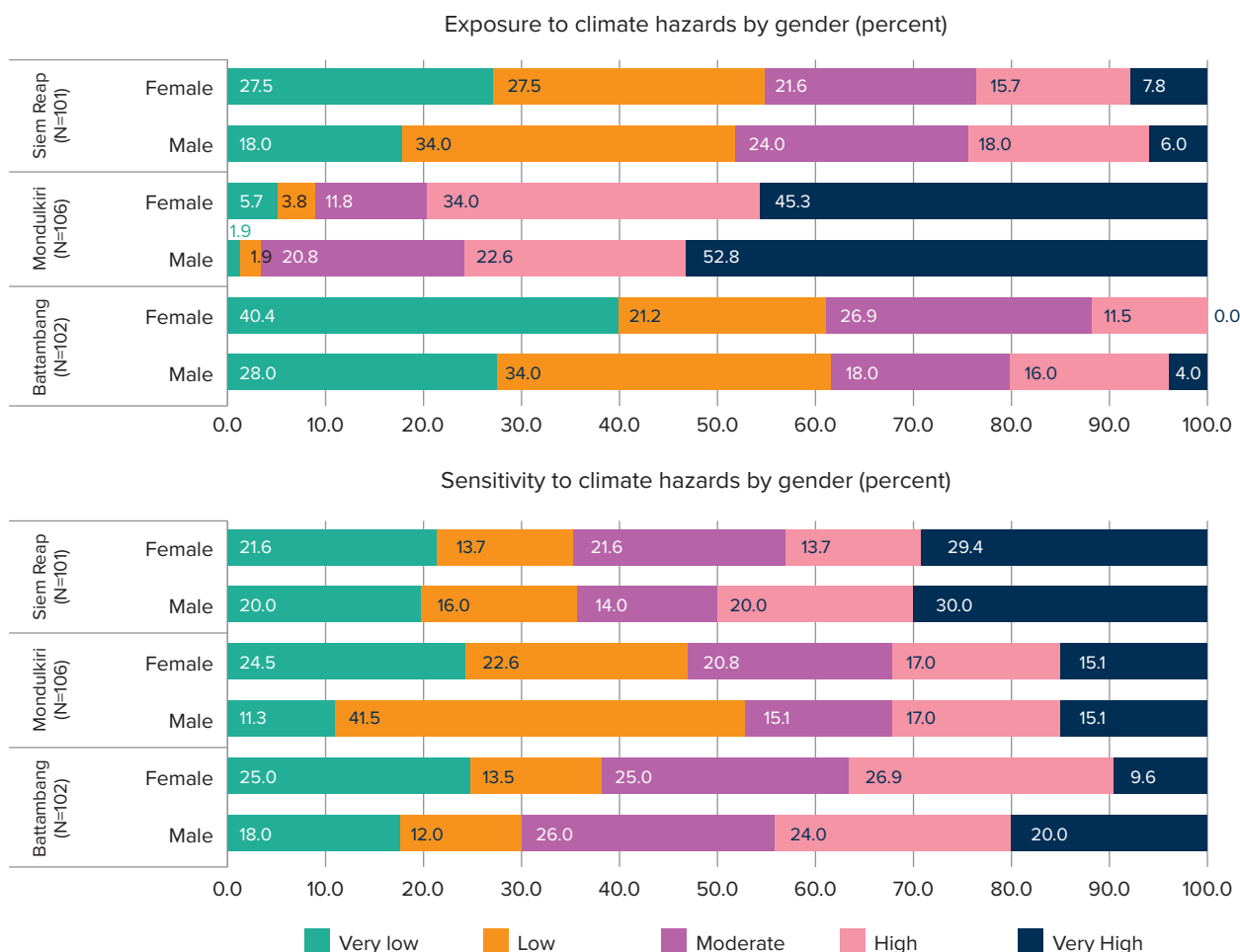
BOX 1. UNDERSTANDING CLIMATE CHANGE VULNERABILITY

Climate vulnerability is understood as a function of one’s level of exposure, sensitivity, and coping capacity (IPCC 2001).

- **Exposure:** the nature and degree that a community is exposed to the frequency of extreme weather events.
- **Sensitivity:** the level of exposure at which a system is susceptible to climate variabilities, either adversely or positively.
- **Adaptive capacity:** the coping ability of a system to adapt to climatic stimuli (including climate risk and extreme weather events) to regulate their potential impacts and benefit from their opportunities or mitigate their consequences.

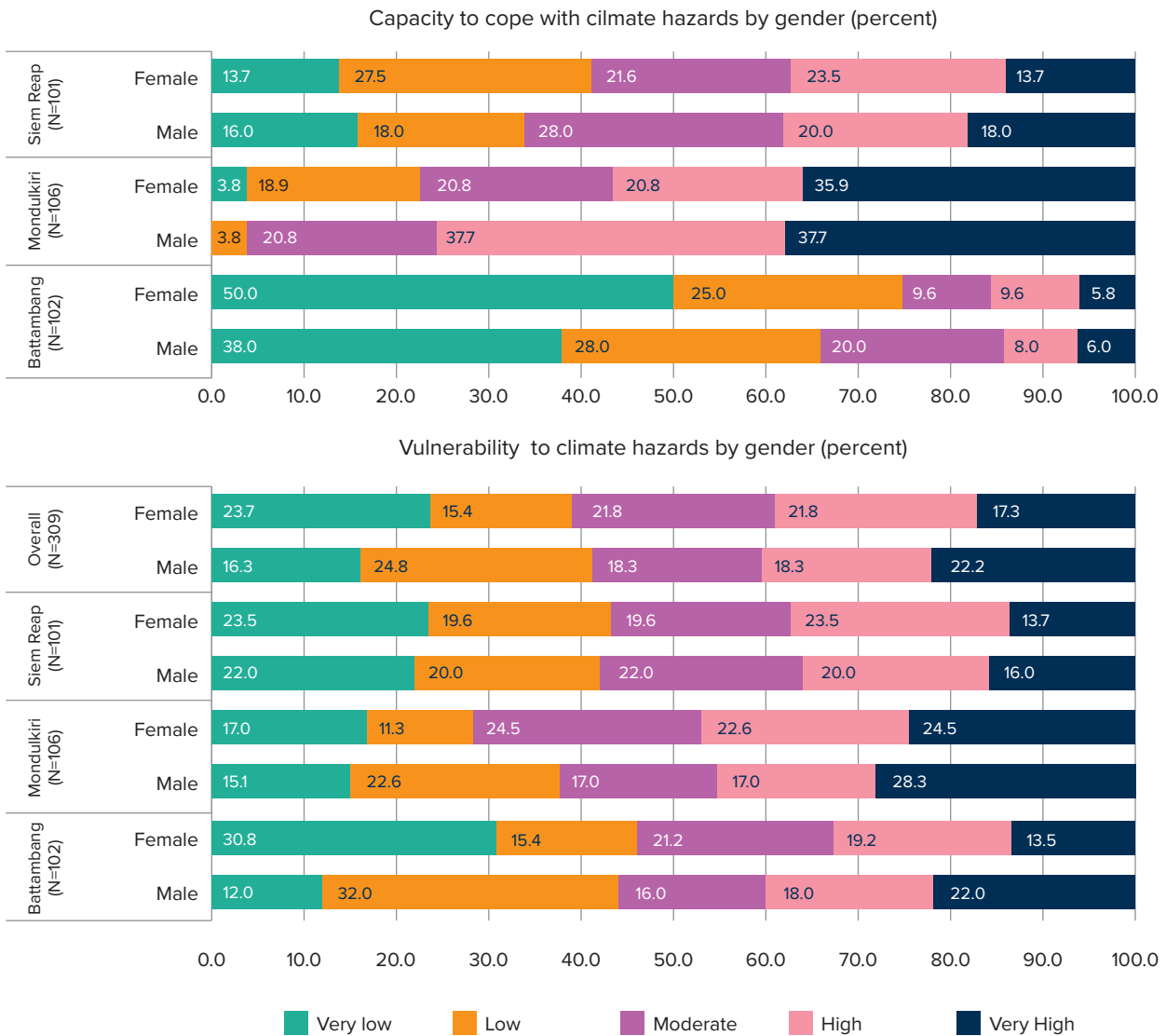
percent; very high: 9.6 percent) in Battambang ranked a high level of sensitivity to climate hazards, and this also holds true in Siem Reap (for men, high: 20 percent, very high: 30 percent; for women, high: 13.7 percent, very high: 29.4 percent).

FIGURE 6. EXPOSURE AND SENSITIVITY TO CLIMATE CHANGE BY GENDER



Adaptive capacity refers to the ability to draw on financial resources, social networks, information, protective infrastructure, and political systems to help cope with and manage climate impacts. Within the same community, and even within households, adaptive capacity will vary based on poverty, gender, age, and a range of other socioeconomic and political factors. These components of vulnerability are interrelated: high exposure and high sensitivity to climate impacts are likely to undermine adaptive capacity. Overall, women have a lower level of adaptive capacity compared to men. By province, Battambang has the lowest level of adaptive capacity compared to the other two provinces, and women in Battambang have lower levels of adaptive capacity compared to men. Similarly, in Siem Reap, more women than men have low and very low adaptive capacity. In Monduliri, both men and women have high and very high adaptive capacity (figure 7).

FIGURE 7. ADAPTIVE CAPACITY AND CLIMATE VULNERABILITY BY GENDER



Source: Household survey, September 2023

Overall, substantial percentages of both men and women in the study sites appear in either high or very high levels of vulnerability to climate change. But comparatively, men are more likely to have low or very low vulnerability, while more women than men appear in the moderate level of vulnerability. In Monduliri, more women appear in the high or very high levels of vulnerability (47.2 percent of women compared to 45.3 percent of men), while more men are in the low or very low levels (37.7 percent of women compared to 28.3 percent of men). Also, higher proportions of women have a moderate level of vulnerability, accounting for 24.5 percent. The results on overall vulnerabilities can be explained by the differences in geography and socioeconomic situation of each commune. The commune in Monduliri is located about 100 kilometers from the provincial center and is predominantly remote. The area is known for its concentration of natural resources with forestry and agricultural potential, where most villagers rely on farming, fishing, and collecting NTFPs. In Battambang, villagers rely more on nonagricultural occupations, while those in Siem Reap have access to both agricultural and nonagricultural jobs. Further, local communities in Monduliri have low access to education (11.3 percent of people are uneducated, while 54.7 percent only complete primary education) and other social infrastructures and have lower standards of living, with more people living in poverty than living in affluence.

4.3 Gender-Differentiated Roles in Livelihood Strategies and Adaptation

Across the study sites, both men and women actively contribute to livelihood activities, although they have different roles. The communities' sources of livelihood come from agriculture, fishing (particularly in Siem Reap), non-agriculture, and the collection of NTFPs. Nonagricultural activities include working in government offices or factories (and sending remittances home) or running small businesses such as buying or selling vegetables, fish, or groceries. Agricultural activities include rice and vegetable cultivation, livestock raising, cassava farming, sales of agro-processed food, and wage farm labor.

- In agricultural activities, men mostly engage in heavy work such as ploughing, preparing the soil, sowing seeds, weeding, irrigating, and fertilizing while the majority of women do work such as taking care of livestock, sowing and storing seeds, transplanting, and carrying out pest management. Men in Mondulkiri are mostly involved in agricultural activities (particularly cassava planting) and then, after the harvesting season, some of them become waged workers at banana farms or on construction sites in other provinces.
- Overall, men are the ones who go out fishing; women sometimes accompany them, but there is a clear division of labor. In family-based fishing, a woman usually helps to collect fish, remove fish from the nets, splash water out of the boat, and take over the boat steering. During fishing, a man lays and gathers the fishing nets, washes, and repairs the nets, looks after the boat, and washes the boat. However, due to limited income from fishing, families often supplement or switch from fishing to working at construction sites as fishing alone does not provide enough income to support their livelihoods.
- Men working in forestry in Mondulkiri are mainly waged workers, oftentimes employed by rich landowners to clear forests, while women are mostly engaged in the sector informally and focus on the collection of NTFPs. In Chamkar Samrong, all NTFP collectors are women, while in Sambour commune, this task is exclusively undertaken by men. NTFPs collected include wild fruit, honey, mushrooms, and firewood.

Overall, men earn higher incomes and get better access to formal employment opportunities compared to women. While men earn an estimated total annual income of US\$7,671, women earn US\$7,400, which is slightly lower (Table 1).³ It is noteworthy that across all communes, men predominantly hold positions as salaried staff or workers, constituting 61.9 percent in Chamkar Samrong and Srae Sangkom and 75 percent in Sambour. Both men and women earn less income from agricultural activities, although women earn slightly more than men from these activities. This result could indicate that more women than men participate in agricultural activities. Both men and women earn significantly less income from NTFPs, indicating that the collection of NTFPs is to supplement household diets rather than for commercial purposes. On average, each household spends up to US\$8,905 (for male households) and US\$7,892 (for female households) (Table 2). Expenses exceed the total income households earn per year, indicating that households often seek loans as a supplementary source of income or for investment in agricultural production (see Table 1). Ranked third after expenses for business and foods, debt repayment accounts for 14.9 percent of total annual expenditures (table 1).

³ The total income is based on estimated income from different sources of livelihoods informed by household survey respondents as found in Table 2. It is important to note that the estimated annual income is based on the average income of all respondents in the three communes with diverse economic statuses (see Annex 1b)

TABLE 1. ANNUAL HOUSEHOLD INCOMES AND EXPENSES BY GENDER (IN USD)

Household incomes and expenses in USD per year	Battambang (N=102)		Mondulhiri (N=106)		Siem Reap (N=101)		Overall (N=309)	
	Male	Female	Male	Female	Male	Female	Male	Female
Total income	10,533.5	8,870.9	6,845.7	8,630.8	5,683.8	4,622.3	7,671.1	7,400.3
• Income from agriculture	550.8	564.8	2,544.2	4,485.6	2,721.7	1,762.4	1,950.8	2,288.4
• Income from nonagriculture	9,981.7	8,234.4	4,146.2	4,117.8	2,957.1	2,859.5	5,664.6	5,078.6
• Income from NTFPs	1.0	71.7	155.2	27.3	5.0	0.4	55.7	33.3
Total expenses	11,501.8	10,371.2	7,955.3	7,932.7	7,317.6	5,322.4	8,905.9	7,892.2
Net income	(968.3)	(1,500.3)	(1,109.6)	698.1	(1,633.8)	(700.1)	(1,234.8)	(491.8)

Source: Household survey, September 2023

TABLE 2. ANNUAL EXPENDITURES BY ITEM AND GENDER (IN USD)

Expense in USD per year	Male	Female	Total	(%)
Agriculture	595.50	475.70	535	6.4%
Social events	390.80	341.80	366	4.4%
Food consumption	1,837.60	1,752.80	1,794.70	21.4%
Health care	416.60	477.10	447.10	5.3%
Education	407.80	516.50	462.70	5.5%
Utilities	168.60	175.50	172.10	2.0%
Debt repayment	1,255.70	1,246.90	1,251.20	14.9%
Bank loan	56.90	63.20	60.10	0.7%
Business	3,224.90	2,454.20	2,835.80	33.8%
Supplements	204.70	189.10	196.80	2.3%
Others	347	199.50	272.50	3.2%
Total	8,905.90	7,892.20	8,394.10	100.0%

Source: Household survey, September 2023

Recent research suggests that rural farmers in Cambodia borrow substantial loans to cover agricultural production costs and address damages due to climate impacts. In 2021, the microfinance level in Cambodia reached US\$4,213 per capita, more than double the GDP per capita (Guermond et al. 2022). Rural farmers often take loans to cover upfront costs of agricultural production and repay the loans later. As agricultural production, especially rice farming, becomes more expensive, unpredictable, and vulnerable to floods, droughts, and rising temperatures, agricultural income is not guaranteed (Diepart and Ngin 2020; Guermond et al. 2022; Nguyen and Sean 2021). When debts grow, rural Cambodians perceive migration as a coping strategy. Remittances are sent by migrant workers to their rural families to help with debt management (Bylander and Hamilton 2015).

While both women and men contribute to income-generating activities, women still shoulder significant care responsibilities, which can lead to time poverty. In the study sites, women continue to take charge of domestic chores such as cooking, taking care of young children and older adults, cleaning the house, and doing laundry. Most men focus on income-generating roles and to a certain extent contribute to care works as well as gathering wood and water for domestic consumption. A report published by ILO (2018) documents that, on average, Cambodian women spend 188 minutes per day on unpaid care, compared to 18 minutes per day spent by men. This time poverty can hinder women's access to trainings, taking leadership positions, and expanding their employment and business opportunities.

Migration has long been a livelihood adaptation strategy for both men and women in Cambodia. While survey respondents shared that the migration pattern is primarily influenced by aspirations to seek economic opportunities, the severity of climate impacts such as agricultural production failures contribute to the increasing trend of migration. In the study site in Mondulkiri, villagers, particularly men, migrate seasonally after the harvesting season in January and February to work as agricultural laborers on cassava farms within the province. Others migrate to urban areas, such as Phnom Penh and Siem Reap, and abroad, with Thailand as the primary destination. A report by ILO (2022) indicates that Cambodian migrants in Thailand work in various industries, including fishing, agriculture, livestock, construction, manufacturing, services, and domestic work. In 2019, there were 950,079 rural migrants who migrated internally in Cambodia to seek employment opportunities, of whom women constituted 40.4 percent (NIS 2020). Agriculture, forestry, and fisheries accounted for 73.3 percent of employment of women migrants. They also worked in wholesale and retail businesses (11.1 percent) and manufacturing (5.9 percent). Similarly, men migrants were concentrated in agriculture, forestry, and fisheries (65.4 percent) and wholesale and retail jobs (6.8 percent), but also in construction (5.8 percent) and public administration and security guards (5.6 percent).

Men tend to migrate more than women to seek job opportunities and better income, which leaves women to increasingly take charge of agricultural activities. As a participant of an all-women FGD in Siem Reap put it: "In this village, the majority of women are engaged in raising chicken and ducks. While some choose to migrate to Thailand, those with small babies or young children stay at home."⁴ According to a 2015 World Bank report on Cambodia's agriculture, approximately 2.3 million families engage in farming, and 75 percent of the farmers are women due to migration (World Bank 2015).

Through remittances, migration can enhance the resilience of those who are left behind against economic and climate shocks, but it can also generate some disadvantages for female migrants. Respondents informed that they used the remittances sent by family members to renovate houses, support children's education, pay debts, and cover daily expenses. However, migration can come with disadvantages, especially for women. The FGD with women in Kouk Chas Village, Siem Reap, revealed that those with lower levels of education, particularly women, might only be able to find low-paying jobs when migrating and would find it more difficult to find decent work with high pay.⁵ Therefore, enhancing women's access to vocational training and higher education is essential to enable them to have access to better economic opportunities if they decide to migrate.

Building local resilience by diversifying livelihood options is a key strategy to cope with climate impacts in rural Cambodia; this will enable individuals and communities to better manage the risks associated with climate variabilities.

⁴ FGD, September 2023

⁵ FGD, September 2023

Building local resilience by diversifying livelihood options is a key strategy to cope with climate impacts in rural Cambodia; this will enable individuals and communities to better manage the risks associated with climate variabilities. As described earlier, self-help groups (SHGs) that usually have majority women members are important local institutions that could be reinvigorated to enhance resilience against climate shocks. Support for SHGs could enable women to save money, access microloans to finance the inputs they need to generate income, secure assets, and improve household food and nutrition security. In the study communes, some SHGs exist and have been supported by NGOs which provide technical agricultural training (e.g., aquaculture, rice farming, and training to use farm technologies) and vocational training. This support has been significantly beneficial for local people, particularly women, in enhancing their knowledge and skills to improve their farming and livelihoods. However, the scope of the support remains limited and inadequate. Such initiatives need to be expanded to ensure impact at scale for climate resilience.

Chapter 5.

BARRIERS TO AND OPPORTUNITIES FOR BUILDING WOMEN'S CLIMATE RESILIENCE

5.1 Barriers Cambodian Women Face in Building Their Climate Resilience

Women in Cambodia tend to have limited access to the assets and resources that are necessary to build their adaptive capacity to climate change.

This particularly holds true for women in rural areas, whose livelihoods are extremely dependent on climate-sensitive sectors such as agriculture, forestry, and fisheries. Structural barriers, gender biases and inequalities, gendered division of labor, and unequal power relations impede the contribution of climate-smart agriculture (CSA) to reducing climate-related vulnerability. Unequal access to land and livestock, inputs (such as adapted seeds and fertilizers), information, and climate services exclude women from climate-



smart agricultural investments that could enhance their productivity. For instance, women's ownership of land titles stood at only 10.2 percent in 2014, significantly lower than men's ownership of land titles (World Bank 2023). Although the Land Law recognizes women's and men's equal rights to own land, the registration of joint titles does not guarantee de facto access to land because customary practices may not fully recognize women's ownership rights (WOCAN, UN-REDD, and LEAF 2013; FAO 2019). Limited land ownership combined with lack of financial capital has hindered rural women in Cambodia from fully benefitting from the agricultural sector and diversified livelihood options. Joint land ownership between husbands and wives is increasing, yet many women need their husband's permission to transfer or sell their land. Only about 20 percent of women own an asset that they could sell without their husband's permission (WOCAN, UN-REDD, and LEAF 2013). Female-headed households and separated and divorced women are more vulnerable to land grabbing, partly due to their lack of knowledge of land rights and land titling procedures (WOCAN, UN-REDD, and LEAF 2013). Women also tend to have more limited access to networks and social capital than men.

Women do not enjoy equal access to finance compared to men. About 32.52 percent of Cambodian women owned a bank account in 2021, a lower rate than men (34.41 percent) (World Bank 2023). This means that women have fewer resources to invest in purchasing climate-resilient technologies, either as agricultural workers practicing CSA, water harvesting, or agroforestry; as sustainable forest managers engaging in income-generating activities from NTFPs; or as workers in the fisheries sector.

Accessing green finance opportunities to enhance their climate resilience constitutes yet another challenge for local women's groups and women-led businesses in Cambodia. Women's limited access to green finance hinders their ability to fully benefit from growth being generated in the transition to net-zero emissions. In 2018–2019, 80 percent (US\$418.1 billion) of Asian and Pacific climate finance was raised and spent in the East Asia subregion and targeted at the energy and transport sectors. Cambodia's finance needs stand at US\$5.8 billion (2021–2030) for mitigation and US\$2 billion (2021–2030) for adaptation, mainly for infrastructure, water, and agriculture (ADB 2023). Only a small fraction of that funding is accessed by women entrepreneurs or women's organizations in Cambodia. The role women's organizations can play is restricted due to limited access to social networks or information that would help channel green finance flows to them. Women's groups and women-led businesses have limited access to information about green finance opportunities (for instance, the Green Climate Fund and Climate Investment Funds) and hence rarely submit finance applications or project proposals.

Women continue to be underrepresented, underpaid, and undervalued in the labor market and, as a result, do not earn on par with men to invest in building their climate resilience. Cambodia has a considerably high level of female labor force participation, standing at 79 percent for women and 89 percent for men (NIS 2020). Despite this, women's productive potential is not fully realized. Women's labor participation is less likely to be in formal, better paid, and more secure forms of employment. Women's limited participation in education, particularly in science, technology, engineering, and mathematics (STEM) subjects, results in gender segregation in the labor market and a mismatch between green jobs and women's skills and qualifications. Only 14 percent of students enrolled in STEM-related subjects in higher education are women, which is very low compared to other ASEAN countries (for example, 52 percent in Thailand and 48 percent in Malaysia) (UNESCO 2023, 53). Since girls and women do not have equal access to STEM education opportunities, skills development, or capacity building compared to men, it will be difficult for them to access green job opportunities.

Moreover, childcare responsibilities are predominantly shouldered by women (both the child's mother and grandmothers), which negatively impacts their access to educational, employment, and economic opportunities and their overall ability to enhance their resilience to climate change. Women spend 13 percent of their time on unpaid domestic work, compared to 1 percent of the time men spend on these tasks, demonstrating women's time poverty.⁶ This disparity is attributed to social norms identifying women as naturally better caregivers for newborns and young children than men, putting a burden on women, including both working and nonworking mothers (World Bank forthcoming). Extreme weather events resulting from climate change add to women's unpaid work in affected regions; this work may be transferred to girls, often negatively impacting their education. Women's burden of unpaid work keeps them in vulnerable employment and constitutes a barrier to women expanding businesses, progressing their careers, or assuming leadership roles (WOCAN, UN-REDD, and LEAF 2013). This study finds that employed women are more likely to receive childcare support from their family. However, they still need to carry a "double shift" of paid work in addition to household chores and care activities, with some mothers even noting challenges in getting back to work because of the childcare burden.

Since girls and women do not have equal access to STEM education opportunities, skills development, or capacity building compared to men, it will be difficult for them to access green job opportunities.

⁶ <https://data.worldbank.org/indicator/SG.TIM.UWRK.MA?locations=KH>

Not least, women's under-representation in climate decision-making processes constitutes yet another barrier to climate resilience. Climate change is a critical challenge, and yet women in Cambodia are still not adequately represented in decision-making processes. Overall, women's representation to Cambodia's parliament stands at only 13.6 percent. At subnational levels, women represent only 8 percent of subnational governors, around 10.5 percent of commune chiefs, and 23.9 percent of female commune councilors (UN Women 2022; Koemseoun 2022). This is unfortunate as research suggests that female leaders are more likely to support climate action and sustainability; countries with higher representations of women in parliament are more likely to ratify environmental treaties and adopt climate policies (Norgaard and York 2005; Women Deliver 2019). Women face persistent barriers due to time poverty and lack of confidence to take on leadership opportunities, even when policies are in place to encourage women in leadership positions. As an interviewee pointed out:⁷

The Cambodian government has supported gender policy and encouraged women's quota in leadership positions at all levels, and now the number of women in high-level positions is increasing but still lower than the number of men. Women are to blame for their fears and lack of confidence about roles and responsibilities at their work. It's true that women bear children and devote much time to taking care of themselves, their children, and family members, which limits their time and effort putting to work.

Unfortunately, there are still provisions in Cambodian legislation that limit women's participation in the labor market on equal terms with men. According to the Women, Business, and the Law 2023 database, Cambodia scores 81.3 out of 100 on the index structured around the life cycle of working women, which is higher than the East Asia Pacific average. However, the country has the lowest score on indicators measuring laws affecting women after having children: 20 out of 100. This is because no specific provisions have been made to mandate equal remuneration for work of equal value. Moreover, paid maternity leave available to mothers is relatively limited (90 days) for those who have worked at least a year for the same employer. At the same time, there is a complete lack of paid paternity or parental leave, with women entirely shouldering the burden of care. Furthermore, deep-rooted gender stereotypes and structural inequalities reflect social norms dictating that women should do most unpaid care work, effectively depriving them of career growth and other economic opportunities.

There are specific barriers to women in three key sectors, as follows:

Agriculture

While Cambodian women represent a significant proportion of the agricultural labor force, they encounter challenges to fully benefit from the sector. Women represented 39 percent of the labor force in agriculture in 2021, but they predominantly perform low-wage manual work (World Bank 202). Cambodia's socioeconomic survey (NIS 2020) reveals that on average, female-headed households cultivate 1.5 hectares and harvest 1.1 hectares of farmland, which is less than those operated by male-headed households (3.2 cultivated hectares and 2.5 harvested hectares).⁸ Increased mechanization in agricultural production activities can generate unintended consequences for women, as they are often considered incapable of handling machinery or performing physical labor (UN Women and CDRI 2021). The findings from interviews suggest that women-headed households whose livelihood depends on farming are particularly vulnerable to climate impacts that significantly reduce food security and their ability to

⁷ KII, MAFF representative, September 29, 2023.

⁸ A cultivated area is the total land area prepared for agriculture, while a harvested area is the portion of the cultivated area where crops are collected during the harvest period. The harvested area does not include any damaged cultivated area resulting from floods, droughts, and other factors.

cover their children's education expenses.⁹ Thus, access to modern technology gives men a comparative advantage to undertake commercial or higher-income agricultural activities, while women lose out in the sector. Similarly, women do not always benefit from the access to information or extension services needed to adopt climate-resilient agricultural practices.

Forestry

Various barriers hinder women's full and equal participation in decision-making processes and accessing benefits from the forestry sector. These include social norms, a perception that forestry is strictly a men's profession, limited financial resources and lack of capacity for gender-responsive budgeting, absence of a quota for women's participation, lack of awareness on gender issues, limited capacity of human resources at the subnational level, and inadequate sex-disaggregated data. In the study areas, interviews reveal that while women have great knowledge regarding the identification of forest species and the preparation of nutritious forest foods, women seem to be restricted from being selected as members of community forest committees or engaging in forestry related training or paid work in the forest sector.¹⁰ Forested areas are often considered to be unsafe for women. Women are assumed to have poor strength to patrol or join in forest activities such as firewood collecting and forest management; they are seen as having low capacity to use equipment such as matches, axes, and saws or to take part in forest activities that require effort and time. These are the reasons that women restrict themselves from not going hunting, fishing, or collecting NTFPs at far distances or in deep forests, instead collecting edible forest plants, fruits, and medicines near home.

To address deforestation and enhance forest carbon stocks, Cambodia has continued to uphold its commitments in the forestry and land use sector, particularly through initiatives such as Reducing Emissions from Deforestation and Forest Degradation (REDD+). While REDD+ is designed to provide triple-win solutions for the climate, biodiversity, and enhanced local community wellbeing, studies document risks that communities, particularly women, could encounter. Gender has not been systematically incorporated into the policy development processes related to REDD+ in Cambodia, and women are still minimally involved in the decision-making processes. Despite high levels of interest from staff members of MoWA and some NGOs focusing on gender issues in REDD+, limited technical knowledge has restricted women from fully participating in policy development and project implementation (WOCAN, UN-REDD, and LEAF 2013). Cambodia's REDD+ Gender Group was established by the REDD+ Taskforce (RTF) to enhance the gender capacity of RTF members and other technical teams, review and provide gender-specific inputs to the development of the National REDD+ Strategy, and collect sex-disaggregated data as a priority. The four members of the gender group are affiliated with the Forestry Administration, MAFF, MoE, and MoWA, demonstrating a cross-departmental collaboration. With support from the Forest Carbon Partnership Facility, Cambodia enhances institutional capacities to promote gender equality in forestry at all levels, including through gender trainings and workshops. Over time, women's higher representation in forest governance institutions will have a positive impact on forest conditions and conservation, as women bring in their local indigenous knowledge of forest products.

The establishment of a Community Protected Area (CPA) can limit participation, displace livelihoods, and increase workloads for women (UN Women and CDRI 2021). The zoning and management of CPAs restrict women from certain livelihood activities such as farming in the CPA zones and increase their workload because of changes in resource access and management due to the need to travel longer distances to collect necessary resources.

⁹ KII, key informants in Monduliri, October 2023.

¹⁰ KII, Development and Partnership in Action representative, November 03, 2023.

Energy

Addressing gender inequalities in the energy sector remains key to transitioning to low-carbon energy in Cambodia. The government aimed for at least 90 percent of households to access quality grid electricity by 2023 (MME 2020). As of December 2023, 94 percent of the total households were electrified (EAC 2024). However, access to electricity is unequal. Notably, fewer female-headed households than male-headed households have access to grid electricity. In 2018, only 65.4 percent of female-headed households had grid access (Dave et al. 2018). Firewood and charcoal are the primary sources of fuel for rural households. In 2018, 66.7 percent of households used a biomass stove, 62 percent used firewood, and 5 percent used charcoal for cooking (Dave et al. 2018). Further, women and girls are more prone to health problems due to their exposure to pollutants and emissions from the poor ventilation structures of their kitchens (UN Women and CDRI 2021).

Women experience structural barriers to access benefits from the renewable energy sector in Cambodia. An interview with a government representative suggests that there is a perception among Cambodian women that the energy sector is not a suitable career path for them. This belief has led to a low level of interest and participation from females in this field.¹¹ Furthermore, energy remains a traditionally male-dominated sector with limited opportunities for women to access employment, which hinders their participation in energy-related projects. In Cambodia, about 26 percent of women who have pursued studies in potentially green fields end up working as secondary education teachers, which is not a green job (World Bank 2023). Women are not usually trained to be the solar agents who sell solar home systems to communities in rural areas.

5.2 Opportunities to Enhance Women's Climate Resilience

Women could be well-placed to reap the benefits of opportunities arising from transitions to low-carbon economies if they are provided with capacity and regulatory supports and access to resources. This study finds that men tend to migrate to cities or other countries in search of jobs much more often than women, leading to labor shortages in community forests and the agricultural production chain. Therefore, women are likely to play a more significant role in forest and agricultural activities. The government needs to create an enabling environment such as by providing women with technology training and easy access to resources. Through capacity building, enhanced access to training opportunities, reskilling, upskilling, and mentoring schemes, women can assume active roles in climate decision-making processes and enter the green jobs market in areas such as climate-smart agriculture, forestry, and renewable energy. This study has identified green job opportunities for women in Cambodia in the following sectors:

Climate-smart agriculture (CSA) can play a vital role in reducing the labor burden for women involved in agriculture. CSA practices aim to find solutions that enhance agricultural productivity, promote resilient food production systems, and minimize GHG emissions (FAO 2010; Steenwerth et al. 2014). CSA encompasses a variety of technologies, practices, and services that aim to mitigate the effects of climate change on agriculture and can be accessed by women farmers to build their resilience. A relevant literature review on the nexus of gender and CSA shows that gender-responsive CSA can potentially close the gap in agriculture (Huyer et al. 2024). CSA presents an opportunity even though adoption rates in Cambodia are still low. Only around 20–26 percent of farmers are known to apply climate-smart technologies and practices such as resilient crop varieties (World Bank 2023). With enhanced access to agricultural tools

¹¹ KII, MME representative, October 18, 2023.

and capacity-building programs on technology use, women will be able to make decisions on the adoption of CSA technologies. Implementation of climate-smart practices, such as integrating cover crops and utilizing organic crop protection methods alongside no-till farming techniques, can yield multiple benefits. Given agriculture is a sector where women predominate, women can access green job opportunities in sustainable agriculture and organic farming, including “green certification” and “labeling,” which can help access premium markets. The statement from a female farmer below showcases the benefit of participating in CSA training:¹²

Initially I thought joining the meeting was a waste of time and money. Later on, I observed that women living near my house who have joined the climate-smart agriculture project have better lives and livelihoods. They are offered technical training on organic rice cultivation and provided with resilient seeds from the project. They applied the knowledge and were successful with using the technique and making contract farming agreements. They have the market to buy their rice after harvesting and can sell it at high prices.

Significant opportunities for women also arise in fisheries, a critical sector for Cambodia given 6 million people are engaged in it, of which approximately 50 percent are women (FAO 2022). About 70 percent of Cambodian women and 59 percent of men are engaged in vulnerable employment, often in the agricultural sector and fisheries. There seems to be a gendered division of labor along the fisheries value chain, with women assuming roles in collecting fish, removing fish from the nets, splashing water out of the boat, and taking over the boat steering. One of the key challenges women face in the sector is the lack of recognition of or compensation for women’s work, which is often more vulnerable to climate shocks; women often perform unpaid tasks along the fisheries value chain. Women need to be able to access formal jobs in sustainable fishing and equally benefit from aquaculture income generation. Formalizing women’s employment and investing in their education can help improve gender equality and outcomes in sustainable fisheries.

Women already play a key role in forest management—albeit informally. About 41 percent of rural households in Cambodia obtain 20–50 percent of their total livelihoods from forest use, while 15 percent of households obtain more than half of their total livelihoods from forest use and harvesting. Around 80 percent of rural women collect NTFPs for household consumption and sale (WOCAN, UN-REDD and LEAF 2013), demonstrating women’s key role in contributing to family livelihoods through the utilization of forest resources. Women’s engagement in sustainable forest management is often performed through volunteer roles and is not remunerated, which presents an opportunity to translate this work into paying jobs in the green economy. For example, remunerated reforestation schemes and forest ranger schemes or economic instruments leveraging payment for environmental services or even carbon credits could incentivize women’s contributions to and engagement in forestry conservation and sustainable forest management. There are some initiatives in Cambodia such as community forests and community protected areas (CPAs) in which the Government of Cambodia entrusts local communities with the management of forests and their resources. The community forestry (CF) initiative allows communities to oversee designated production forests, enabling them to harvest and sell NTFPs as well as timber from trees they have cultivated within these forests. Similarly, the CPAs program empowers communities to manage sections of protected areas, such as national parks. In these areas, communities can utilize and market NTFPs, offer ecotourism services, and access timber for non-commercial uses. Enhancing women’s participation in these initiatives will enable them to not only access forest resources and benefits but also realize their full potential in contributing to and engaging in forest management.

¹² KII, November 10, 2023.

The carbon markets could potentially provide significant financial flows to women's cooperatives and/or micro, small, or medium-sized enterprises (MSMEs) engaged in forest management activities, thereby addressing the gender gap in women's access to finance in the forestry sector. Women's unpaid activities can be rewarded from the proceeds of carbon credit sales; buyers can ensure they are purchasing carbon credits that contribute to reducing gender inequalities and reward women's contributions to climate adaptation. Increasingly, buyers of carbon credits demand higher social integrity/quality of credits, which include measures for empowering women who engage in climate action. Moreover, demand for carbon credits outstrips supply, and technical support can help ensure project developers design and implement activities that measure impacts on women and label projects as "empowering women" by applying relevant standards (such as the W+ Standard, which aims to measure women's empowerment and assign a monetary value to results).

The carbon markets could potentially provide significant financial flows to women's cooperatives and/or micro, small, or medium-sized enterprises (MSMEs) engaged in forest management activities, thereby addressing the gender gap in women's access to finance in the forestry sector.

Transitions to low-carbon energy could generate opportunities for employment and social entrepreneurship for women and women-led business. Green job opportunities are promising since Cambodia has abundant sources of renewable energy and aims to increase its present share of 62 percent of domestic power production to 70 percent by 2030. The transition to low-carbon economies could give rise to opportunities for women to claim new jobs as engineers, energy efficiency advisers, environmental advisers, green procurement consultants, and green innovators as well as taking on the technical and laboratory roles required in the renewable energy sector. Women can seek green job opportunities for mini-grid renewable installation and maintenance and last-mile connections to rural areas that have no access to electricity. Moreover, since most small businesses are run by women, they will have great opportunities to engage in green investments offered by the clean energy industry. The official representative of the Provincial Department of Environment in Battambang stressed the importance of women's participation in the green sector in leadership roles, ways in which women can do better in various fields compared to men, and different ways in which women can engage in meaningful participation with the development process.¹³ Women-led small and medium-sized enterprises (SMEs) can become active in installing solar panels across the country, entering the heavily male-dominated sector. Other indirect gains for women could stem from the introduction and adoption of clean cooking devices that, apart from the significant health benefits due to the reduction of indoor air pollution, also reduce women's time burden. They can then spend this time on other income-generating, educational, or networking activities.

It is important to improve the enabling environment for women's participation in low-carbon economies and address social norms that might limit women's participation. This can be achieved by ensuring that national legislation and policies are not discriminatory and address the gender gap in education and the labor market. The introduction of gender-responsive public policies can pave the way for women to enter traditionally male-dominated sectors and create strong female role models. Addressing social norms such as balancing women's and men's care responsibilities will require a shift of perceptions and practices that may require a longer time. Reducing the gender gap in education and the labor market is critical to enhance women's access to high-quality green jobs in certain sectors which hold deeply rooted gender

¹³ KII, September 2023.

stereotypes about what jobs are acceptable for women. The new economic policy and climate instruments are an opportunity not to be missed; they can include gender targets to promote women's access to green job opportunities and enhance their access to benefits from the transitions to low-carbon economies. Moreover, affirmative green and sustainable public procurement initiatives can also include gender targets and promote women-led businesses to public contracts and build their capacity to access public tenders.

BOX 2. EXAMPLE OF INITIATIVE FOR ENHANCING WOMEN LEADERSHIP AND CAPACITY IN CLIMATE ACTIONS

ActionAid has implemented the *Women-led Alternative to Climate Change in Cambodia Project* since April 2022 with support from relevant stakeholders, government institutions, development partners, civil society, and women champions in the Disaster Risk Reduction and Climate Change Network. The project is implemented in two coastal provinces (Kampot and Koh Kong) and two other provinces (Kampong Thom and Pursat). Essentially, the aim is to strengthen climate resilience in Cambodia by building women's leadership and strengthening their collective voice and leadership in DRR and climate change adaptation through empowerment, solidarity, and advocacy on women's rights and needs during disasters at local, subnational, and national levels. The Cambodia Women's Resilience Index shows that women's unstable income weakens their resilience index score in economic factors. In terms of infrastructure, women have less access to early warning systems and other information than men. Limited social security or protection and limited knowledge of DRR and adaptation also affect women's resilience to climate change (ActionAid Cambodia 2022).

Chapter 6.

CONCLUSIONS

Cambodia is among the countries most vulnerable to the impacts of climate change, putting at risk economic development goals and men’s and women’s livelihoods. Climate change impacts are profoundly uneven; women and vulnerable groups tend to be hit the hardest from extreme weather events, floods, prolonged droughts, sea level rise, and erratic rainfalls. More women than men live below the poverty line, limiting women’s access to resilient housing, safe water, and sanitation. This situation is further exacerbated by systemic barriers such as unequal access to jobs, livelihood opportunities, finance, and information. Therefore, addressing climate change needs to be combined with efforts to address gender inequalities to ensure women and men can equitably benefit from climate policies and actions.

Overall, respondents report climatic hazards, including heat, floods, droughts, changes in rainfall patterns, windstorms, insect outbreaks, and wildfires. Existing patterns of gender inequalities shape vulnerabilities to climate impacts. Men’s and women’s experiences of climate impacts depend not only on their exposure to climate risks but also on the sensitivity of their livelihoods and socioeconomic situations to climatic changes and their capacity to cope with these changes. Women have lower adaptive capacity than men. Moreover, men earn higher incomes and have better access to formal employment opportunities compared to women, while women still shoulder significant care responsibilities, which can lead to time poverty.

Women in Cambodia face significant barriers to building their climate resilience compared to men. Women tend to have limited access to the assets and resources necessary to build their adaptive capacity to deal with climate change. Their limited access to finance means they are less likely to invest in purchasing climate-resilient technologies. Women continue to be underrepresented, underpaid, and undervalued in the labor market despite Cambodia’s considerably high level of female labor force participation. As a result, women do not earn on par with men to invest in building their climate resilience. Moreover, childcare responsibilities are predominantly shouldered by women, which negatively impacts their access to educational, employment, and economic opportunities and their overall ability to enhance their resilience to climate change. Not least, women’s under-representation in climate decision-making processes constitutes yet another barrier to climate resilience.

Nevertheless, this study has identified opportunities for women in low-carbon development, especially in CSA, sustainable forestry, and renewable energy. Enabling women to access the opportunities that arise in these specific sectors is key to ensuring women equally benefit from transitions to low-carbon economies. At the same time, it is critical to address social norms and improve the enabling environment for women’s participation in low-carbon economic activities. Relevant national legislation and policies on low-carbon transition should include provisions to advance gender equality, balance women’s and men’s care responsibilities, and address the gender gap in educational attainment and labor participation.

Enabling women to access the opportunities that arise in climate smart agriculture, sustainable forestry and renewable energy is key to ensuring women equally benefit from transitions to low-carbon economies.

Chapter 7.

RECOMMENDATIONS

Some recommendations are proposed to address barriers to and enhance women's climate resilience in Cambodia:

Policy Recommendations:

Recommendation 1: Enhance coordination and facilitation between ministries and across government levels to promote gender equality considerations and address climate impacts. Specifically, enhance the coordination mechanism with a formalized structure between the MoWA, the MoE, the MME, the MAFF, the MoP, and the Mol. This can be done by improving the working and coordination of the NCSD, the Technical Working Group on Climate Change, and the gender focal points at each ministry as well as effective implementation of the ministries' commitments in the Master Plan on Gender and Climate Change 2018-2030, Neary Rattanak VI 2024-28, and the GCCAP. It is also critical to enhance institutional capacity at the national and subnational governments for integrating gender-responsive measures in overall development planning and implementation cycles, supported by sound coordination among donors and other funding agencies to provide both technical and financial support. This could be done, for example, by developing a specific curriculum on gender-responsive and climate resilient local development planning in the training for sub-national administrations.

Recommendation 2: Integrate gender targets and objectives into existing and new economic and climate policy instruments to enhance women's climate resilience and ensure women benefit equally with men. Climate policies such as the National Adaptation Plan, the NDC, the Long-Term Strategy for Carbon Neutrality, Neary Rattanak VI 2024-28, the Long-Term Low Emissions Development Strategy, and the Circular Strategy on Environment present excellent opportunities to include gender targets and objectives to ensure that gender differences are recognized in adaptation and mitigation needs and capacities. Systematic and continued gender-disaggregated data collection is also essential for informing the attainment of progress in gender-responsive climate policies and initiatives. Women could thus fully participate in and benefit from decision-making processes as well as have equal access to financial resources and other benefits resulting from climate-smart investments. Examples of successful affirmative action in other policy areas can serve as models for green economy policies and instruments that establish gender objectives and targets. These may include establishing targets for female employment in green finance projects and instruments, implementing affirmative green public procurement initiatives through preferential access for women-led businesses, and the establishment of tax incentives and business incubators for green innovation and green start-ups with incentives for women-led MSMEs to participate, building their capacity to access public tenders.

Recommendation 3: Ensure that, through gender-responsive climate budgeting, necessary resources are allocated to enable gender-just transitions to low-carbon economies. Line ministries should demonstrate separate gender and climate impacts in budget submissions and show allocations for advancing gender equality in respective sectors. This could be done by budget tagging for gender and climate and linking them simultaneously to ensure a consistent approach and increase public investment to support women's economic empowerment and advance gender equality. At the local level, it will be

key to reinvigorate CDPs to support climate change adaptation planning and budgeting and to include measures to integrate gender perspectives in the development of CDP. These will help ensure necessary resource allocations for activities to enhance women's climate resilience.

Recommendation 4: Introduce or enhance policies to remove barriers so women have greater access to green job opportunities, focusing on addressing social norms and women's time burden. It is necessary to introduce care infrastructure and policies that address women's and men's unequal care burden. World Bank research (forthcoming) suggests that to close the gaps in the service of childcare in Cambodia, there is a clear need for a sub-decree on the establishment and operation of affordable and quality childcare solutions to formalize the childcare system. The sub-decree may cover public investment, governance, and stakeholders' identification and responsibilities. A specific childcare policy for children aged 3 months to 3 years should be introduced to fill policy and financing gaps. Public investment is key to accessibility, affordability, quality, and sustainability of childcare services. Employers' investments are also required to comply with the proposed sub-decree on childcare system, while users' fees are also critical. Furthermore, policy reforms are also needed to reduce women's care burden, for example by substantially extending paid maternity, paternity, and parental leave to account for women's increased time burden due to unpaid care work. This would in turn further enable women to engage in more full economic participation and thus attain greater climate resilience.

Operational Recommendations:

Recommendation 5: Promote women's participation and leadership in decision-making processes and dialogues related to climate change and low-carbon development. This could include providing capacity support for women and women's groups for meaningful participation and enhance women's representation in climate policy and program planning and implementation across different levels. At the local level, women's knowledge and contributions should be integrated to shape the agenda and solutions to address climate impacts, such as through enhancing women's participation in CDPs and allocated specific investments for women's groups or women-led initiatives (e.g., women saving groups for social entrepreneurship). This approach could ensure that local development investments not only integrate climate risks and resilience but also women's knowledge and priorities.

Recommendation 6: Enhance women's access to vocational trainings and address the gender gap in education to better prepare women to access opportunities in emerging green sectors. This could include a combination of supportive education policies, curriculum, and capacity building relevant to green sectors; support for strong female role models and networks at national and sub-national levels; and support mechanisms for women to access opportunities in emerging sectors, such as renewable energy and CSA, to reduce gender segregation in education and the labor market. It is critical to encompass all areas of the education system from primary to tertiary, including vocational education and training. In terms of reskilling, the Cambodian government needs to scale up efforts to retrain and reskill the labor force to enable workers' transition from obsolete sectors and jobs to emerging low-carbon sectors. Women should be well-positioned to access new opportunities in sectors where they currently predominate, but the greening of jobs will require new skills which could be addressed by capacity building and trainings—for example, in agriculture and services. This could be achieved through providing access to higher education through funding support or scholarship programs, encouragement from the institutional level, and developing programs that address needed skills at the local level and create an enabling environment in the community and workplace. Furthermore, a specific program /fund window in Cambodia's SDF¹⁴ could be dedicated to enhancing women's skills in social entrepreneurship and low-carbon sectors.

¹⁴ Skill Development Fund (SDF) is a trust fund financing platform for demand-driven and sustainable skill development to support the 2030 & 2050 visions of the Royal Government of Cambodia. <https://sdfcambodia.org/en>

Recommendation 7: Enhance women’s access to climate-resilient knowledge and technologies to further boost their adaptive capacity to climate change. Access to knowledge, information, and technologies that promote climate-smart practices is necessary to enable women to build their resilience. Training and technical assistance should also become available to support women to have a better understanding of climate risks and avenues to enhance their climate resilience. This could include providing women with training and technical assistance on CSA and sustainable forest and fisheries management, ensuring CSA options are tailored to meet women’s needs and priorities, and taking into consideration the climatic risks women farmers experience given the structural gender inequalities that disproportionately affect women. Technology demonstration workshops—such as drip irrigation, agricultural equipment modernization, solar technologies, and cold storage, among others—could ensure wider dissemination of information on these activities. Promotion of labor-saving technologies could increase the adoption of CSA practices by women and enhance their productivity, so long as women do not have concerns about potentially increased workloads because of it. For the successful adoption of CSA practices by women, both women and men need to be consulted, meaningfully participate in decision-making, equally access productive resources and information, and have reduced workloads. Introducing gender-responsive awareness-raising programs on climate change and DRR as well as promoting increased information sharing of the weather forecast and early warning systems would better equip women for disaster resilience.

Recommendation 8: Provide institutional support to women’s groups and women-owned and -led enterprises and raise awareness about ways in which women can enhance their resilience to climate change. Supporting women for collective action through women-led cooperatives, self-help groups, and associations and enabling women to gain greater access to knowledge, income-generating activities, and markets are critical to enhance women’s capacity to cope with climate impacts. The Cambodian Women Entrepreneurs Association can be a promising entity to collaborate with for these efforts. It is also critical to provide technical and resource support to women-led organizations to explore integrating climate-resilient strategies into their respective areas of entrepreneurship and income-generating activities. Discussions with banks and other financial institutions should be initiated with a view to create dedicated financing schemes that support women’s groups and women-led businesses and ensure women are aware of such financing opportunities.

Recommendation 9: Enhance access to green finance opportunities by women’s groups and women-led businesses, combined with capacity support for financial literacy and management. Women entrepreneurs in Cambodia are underserved by the financial system: even though they own 61 percent of businesses, only 3 percent of women have access to formal credit (IFC 2019). The situation is even more difficult for women’s groups, which are often informal and have limited access to resources, which hinders their access to loans due to their lack of collateral. Therefore, it is important to support women micro-entrepreneurs and smallholders to gain greater access to green finance and markets by enhancing their capacity to access green finance opportunities; ensuring that women’s groups, cooperatives, and women-led MSMEs have access to relevant information and can join forces with other actors to submit proposals for green financing is critical. It is important to address some practices, such as traditional inheritance practices in some ethnic groups, that restrict women’s access to land and other productive resources, which in turn hinder women from accessing finance. This can be achieved through the government’s collaboration with microfinance institutions, recognizing the unique vulnerabilities of marginalized communities and women to climate risks. Loans should be easily accessible to women microentrepreneurs, including smallholder farmers, coupled with insurance products that shield them from extreme weather events and climate disasters. At the same time, it is important to provide capacity support for women on financial literacy and management to enable them to effectively manage their finances and avoid being trapped in indebtedness. Enhancing women’s digital literacy is also key to enabling them to expand their market access.

Recommendation 10: Expand the capacity of women’s groups to access and absorb financial and nonfinancial support through targeted interventions, with a view to enhance their resilience to climate impacts. The capacity of existing women’s community groups, such as saving groups, CF, CPAs, water user groups, and agriculture cooperatives, should be improved so they can better access and absorb assistance to build their resilience. Women could benefit from these collective groups in terms of knowledge of climate change adaptation, weather-related information, technical training and support in agriculture, market access, and management skills. Targeted interventions such as the following for these groups will accelerate women’s empowerment to cope with climate impacts: (a) engaging local women as decision-makers and key consultants to ensure their views are integrated in project design and implementation; (b) holding information sessions with local women’s groups to inform them of various financing opportunities, both locally and nationally, and to coordinate with other actors who submit applications for climate financing; (c) ensuring coordination and building synergies among local women’s groups to ensure knowledge sharing.

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ANNEXES

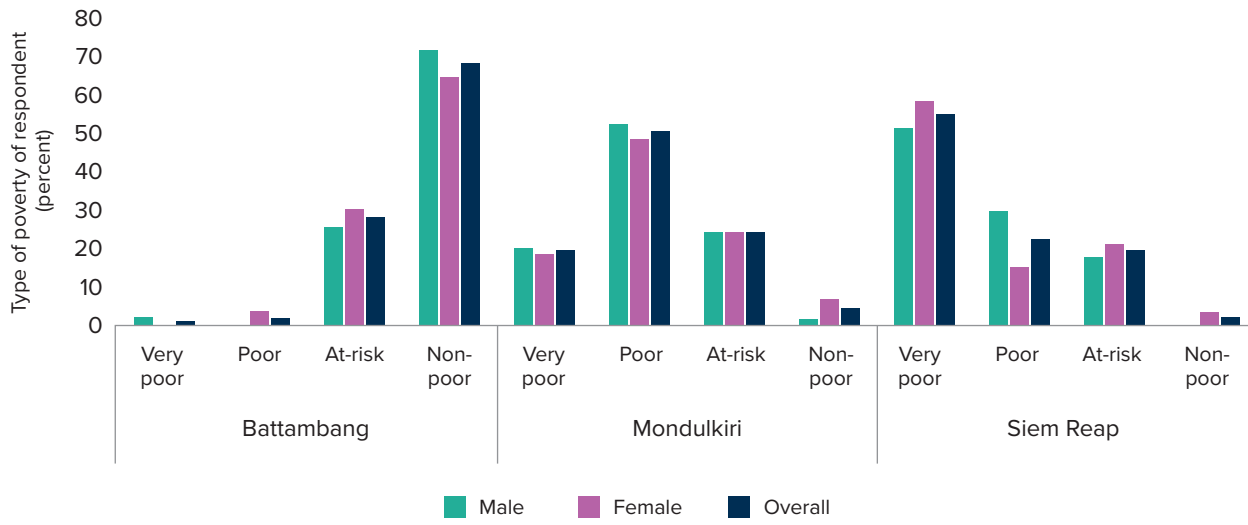
Annex 1. Summary of Household Survey Respondents

Annex 1a. Demographic Information on Household Respondents

Demographic information	Battambang (N=102)		Monduliri (N=106)		Siem Reap (N=101)		Overall (N=309)	
	Male	Female	Male	Female	Male	Female	Male	Female
Gender (percent)	49.0	51.0	50.0	50.0	49.5	50.5	49.5	50.5
Average age (in years)	50.1	50.3	43.7	44.4	44.6	44.6	46.2	46.4
Number of members (average)								
Total members	2.7	2.9	2.3	2.4	2.6	2.4	2.4	2.5
Members aged 0-14	0.7	0.8	0.7	0.8	1.1	0.8	2.4	0.8
Members aged 64 and above	0.3	0.5	0.2	0.2	0.2	0.9	2.4	0.5
Education (percent)								
No schooling/Uneducated	6.0	13.5	11.3	20.8	32.0	37.3	16.3	23.7
Primary school	38.0	32.7	54.7	58.5	52.0	54.9	48.4	48.7
Secondary school	38.0	42.3	26.4	15.1	8.0	7.8	24.2	21.8
High school	16.0	9.6	7.6	3.8	4.0	0.0	9.2	4.5
University	2.0	1.9	0.0	1.9	4.0	0.0	2.0	1.3
Main occupation (percent)								
Farmer	38.0	28.9	81.1	58.5	58.0	43.1	59.5	43.6
Agricultural laborer	0.0	1.9	3.8	13.2	8.0	11.8	3.9	9.0
Salary staff or worker	26.0	15.4	5.7	5.7	12.0	3.9	14.4	8.3
Business owner	32.0	32.7	5.7	7.6	6.0	13.7	14.4	18.0
Housewife or stay-at-home	4.0	19.2	0.0	15.1	4.0	25.5	2.6	19.9
NTFPs collector	0.0	1.9	3.8	0.0	2.0	0.0	2.0	0.6
Fisher	0.0	0.0	0.0	0.0	10.0	2.0	3.3	0.6

Source: Household Survey, September 2023

Annex 1b. Poverty Level of Household Respondents



Annex 2. List of Cambodian Policies and Regulations Related to the Climate and Gender Nexus

Policy frameworks	Provisions related to gender and climate nexus
Cambodian Constitution	<ul style="list-style-type: none"> Ensuring gender equality in all aspects of life and prohibiting discrimination against women (Articles 31–36, 43–47) Emphasizing the importance of environmental protection and resource management (Article 59)
The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	<ul style="list-style-type: none"> Cambodia has ratified this treaty, including its general recommendations, particularly number 37 adopted in 2018 to guide State Parties in addressing gender equality and women’s human rights in climate change action and disaster risk reduction (DRR)
Pentagonal Strategy Phase I	<ul style="list-style-type: none"> Promoting gender equality Ensuring sustainable socioeconomic development and building resilience to climate change Outlining priority actions to promote environmental sustainability, integrity, climate change resilience, and a green economy
Nearly Rattanak V (2019–2023)	<ul style="list-style-type: none"> Integrating gender considerations into climate change policies, programs, and actions Recognizing the importance of gender-responsive and transformative approaches to address impacts of climate change on women and girls Strengthening legal frameworks and enforcement mechanisms to protect the rights of women and girls
Cambodia’s Updated Nationally Determined Contribution (NDC) (2020)	<ul style="list-style-type: none"> Highlighting the roles of women and vulnerable groups in decision-making processes related to climate change Prioritizing adaptation actions to enhance resilience and reduce risks due to climate change impacts, especially on agriculture, water resources, coastal zones, and human health Identifying the needs for and barriers to financing, capacity development, and technology transfer for climate change mitigation and adaptation
National Climate Change Strategic Plan (CCSP) (2014–2023)	<ul style="list-style-type: none"> Promoting adaptive social protection and participatory approaches, which include the integration of gender considerations and the empowerment of women in climate change adaptation and mitigation strategies Improving food, water, and energy security; reducing vulnerability and health risks; ensuring the resilience of critical ecosystems; promoting low-carbon development and technologies
National Adaptation Plan	<ul style="list-style-type: none"> Reducing vulnerability to impacts of climate change and integrating climate adaptation into relevant policies and plans Discussing climate financing and the financial gap for adaptation
Master Plan on Gender and Climate Change (2018–2030)	<ul style="list-style-type: none"> Institutionalizing gender mainstreaming in climate change adaptation, mitigation, and DRR investments Directing gender mainstreaming efforts and interventions at national and subnational levels Providing operationalization mechanisms such as preconditions, prioritized initiatives, and indicators for monitoring, evaluating, and reporting the progress and outcomes of gender mainstreaming in climate change investments

Policy frameworks	Provisions related to gender and climate nexus
Gender and Climate Change Action Plan (2014-2018)	<ul style="list-style-type: none"> • Recognizing that climate change affects men and women differently, and that women are more vulnerable and less empowered to cope with impacts • Strengthening institutional capacity, improving knowledge and awareness, reducing vulnerabilities of disadvantaged women, reducing GHG emissions, involving women in public decision-making, addressing climate change, and promoting green growth
National Programme Phase 2 (NP2)	<ul style="list-style-type: none"> • Identifying gender equality as a cross-cutting issue and recognizing the importance of addressing climate change vulnerability • Promoting social equity and inclusiveness in natural resource management and the reduction of climate change impacts • Including DRR as part of the strategy to combat effects of climate change
National Strategic Plan on Green Growth (2013–2030)	<ul style="list-style-type: none"> • Continuing the stimulation of economic growth and environmental protection, sustainable natural resources management, poverty reduction, and enhancement of gender equality, social equity, and good governance • Improving green growth by focusing on strategic directions, including green environment and natural resources management
Cambodian Sustainable Development Goals Framework (2016–2030)	<ul style="list-style-type: none"> • Including targets to end all forms of discrimination and violence against women and girls • Recognizing and valuing unpaid care and domestic work • Promoting women’s full participation and equal opportunities for leadership at all levels of decision-making
Circular Economy Strategy and Action Plan	<ul style="list-style-type: none"> • Providing directions to ensure gender and social inclusion in the implementation of the Sustainable Consumption and Production Roadmap • Including guidance on promoting women’s leadership in businesses and workplaces that promote sustainability in production and consumption
Circular Strategy on Environment 2023–2028	<ul style="list-style-type: none"> • Outlining priority actions to ensure environmental sustainability, integrity, climate change resilience, and the promotion of a green economy • Mobilizing green financing to support the development of programs and projects related to the environment, climate change, biodiversity, and sustainable development • Prioritizing community engagement in natural resource management
National Energy Policy (2022–2030)	<ul style="list-style-type: none"> • Aiming to develop the energy sector in a balanced, sustainable, and efficient manner aligning with the principles of environmental sustainability • Contributing to climate action in the cooling sector and energy efficiency
Cambodia’s National Cooling Action Plan	<ul style="list-style-type: none"> • Promoting equal access to cooling services for men and women and capacity-building programs for women in the cooling sector • Promoting gender-sensitive approaches to the design and implementation of cooling solutions • Adopting climate-friendly cooling technologies and resilience measures to protect vulnerable populations from the impacts of heat waves and other climate-related risks

Policy frameworks	Provisions related to gender and climate nexus
Power Development Plan (2022–2040)	<ul style="list-style-type: none"> • Aiming to increase the share of clean energy, including renewable and variable renewable energy, and to improve energy efficiency • Proposing a rapid transition to renewable energy, aiming for 35 percent of domestic generation by 2030 and over 43 percent by 2040
Forestry Law (2002)	<ul style="list-style-type: none"> • Aiming to ensure the sustainable management of forests for social, economic, and environmental benefits for all, including conservation of biological diversity and cultural heritage • Promoting equitable participation of men and women in sustainable forest management
Environmental and Natural Resource Code (ENRC)	<ul style="list-style-type: none"> • Integrating gender concerns in plans and strategies to achieve gender equality in environmental and natural resource management • Including significant provisions to build climate resilience, disaster risk management and reduction, and climate change adaptation and mitigation
Protected Area Law (2008)	<ul style="list-style-type: none"> • Promoting the management and conservation of biodiversity and sustainable use of natural resources in protected areas • Promoting both men and women’s participation in sustainable forest use and management
Sub-Decree on Community Forest Management (2003)	<ul style="list-style-type: none"> • Encouraging participation of women in Community Forestry Management Committees • Promoting sustainable management and use of community forests
National Action Plan for Disaster Risk Reduction (NAP-DRR) (2019–2023)	<ul style="list-style-type: none"> • Acknowledging that women and children are among the most vulnerable groups to disasters and climate change, and that their participation and leadership are essential for effective DRR • Promoting gender equality and social inclusion in DRR policies, plans, programs, and projects • Including measures to address the needs and capacities of women and other marginalized groups • Including women and vulnerable groups on disaster management committees
Guideline for Mainstreaming Gender in Inclusive Disaster Risk Management	<ul style="list-style-type: none"> • Including measures to ensure the needs and capacities of women and men are equally considered and addressed in disaster risk reduction, response, and recovery
Law on Disaster Management	<ul style="list-style-type: none"> • Emphasizing the needs of women, children, elderly, handicapped, and disabled persons in disaster events • Regulating disaster management activities, including prevention, mitigation, preparedness, response, and recovery
Plan of Action for Disaster Risk Reduction in Agriculture 2014–2018	<ul style="list-style-type: none"> • Outlining strategies for climate change adaptation and disaster risk reduction in agriculture • Emphasizing sustainable land management as a key strategy to mitigate impacts of climate change

Policy frameworks	Provisions related to gender and climate nexus
Agricultural Sector Master Plan 2030	<ul style="list-style-type: none"> • Promoting the participation of women and vulnerable groups in agriculture • Recognizing the need to adopt climate-smart agricultural practices and technologies to enhance the sector’s resilience and adaptation • Promoting the use of renewable energy and water-saving techniques • Strengthening the capacity of farmers and extension workers in climate change adaptation and mitigation
Agricultural Sector Strategic Development Plan 2014–2018	<ul style="list-style-type: none"> • Promoting participation of marginalized groups and women in climate change adaptation and mitigation • Promoting and up-scaling climate-smart farming systems that are resilient to climate change • Developing knowledge and information systems on climate change
Rural Development Strategy Action Plan 2019–2023	<ul style="list-style-type: none"> • Recognizing the importance of women’s empowerment in rural development • Proposing to integrate women’s empowerment into rural development programs • Acknowledging challenges posed by climate change for rural development and aiming to access international climate finance and private sector investment to address these challenges

Annex 3: Method for Calculating the Vulnerability Index

This study uses a vulnerability index score employing Principal Component Analysis (PCA) to understand the distribution of exposure, sensitivity, and adaptive capacity from weighted scores of the combined three categories of parameters. Each component variable was generated. The first principal component, which is considered the largest amount of variation in the data, is utilized as each index score. The values of the Kaiser-Meyer-Olkin measure of sampling adequacy range from 0.60 to 0.80, representing minimum acceptable values.

Vulnerability is a multidimensional and complex interrelationship of multiple factors. To measure the vulnerability of a community, all variables related to the components must be converted to indices. Vulnerability, based on the definition of IPCC (2001), is a function of exposure, sensitivity, and adaptive capacity. Exposure refers to the nature and degree that a community is exposed to climatic variations. Sensitivity is the level of exposure at which a system is susceptible to climate variabilities, either adversely or positively. Adaptive capacity is the coping ability of a system to adapt to climatic stimuli (including climate variability and extremes), to moderate potential damage and benefit from its opportunities or cope with its consequences.

Exposure is the historical change in the following climate variables: average annual minimum temperature, maximum temperature and precipitation, and extreme climate events (frequency and level of change in climate-related natural disasters such as floods, droughts, seasonal changes, lightning strikes, insect outbreaks, and wildfires over the last 10 years). The study used data collected from household survey respondents on their perceptions of the levels of occurrence and changes in extreme weather events over the past 10 years.

TABLE A1. INDICATORS FOR EXPOSURE

Component indicators	Description of indicators	Unit of measurement	Hypothesized relation
Extreme weather events occurred in the past 10 years	High temperature	1 = Not happened	+
	Flood	2 = Low	+
	Drought	3 = Moderate	+
	Seasonal changes	4 = High	+
	Windstorm	5 = Very high	+
	Insect outbreak		+
	Wildfire		+

Sensitivity

The sensitivity of the household is measured by loss and damage to property and change in income structure over the last 10 years. Property damage (land, livestock, and crops) represents an increase in sensitivity. The sensitivity of a community increases when households rely heavily on nature-based income from agriculture, livestock, and NTFPs because those income sources are highly sensitive to the climate. In contrast, sensitivity is reduced for households with a higher share of nonnatural income sources, such as salaried jobs, remittances, and skilled nonfarm jobs.

TABLE A2. INDICATORS FOR SENSITIVITY

Component indicators	Description of the indicators	Unit of measurement	Hypothesized relation
Family members directly or indirectly affected by climate hazards	Loss of assets (motorcycles, land, etc.)	In USD	+
	Damage to all kinds of crops	In USD	+
	Loss of animals (cattle, buffalo, horse)	In USD	+
	Medical treatment expenses	In USD	+
	Loss of profits from agricultural products or other agriculture-related aspects	In USD	+
	Loss of livestock	In USD	+

Adaptive capacity

The adaptive capacity component consists of five groups of assets: human, physical, natural, financial, and social. The selection of indicators for adaptive capacity is based on the British Department for International Development's sustainable livelihoods framework, whereby adaptive capacity is taken to be a function of household access to or ownership of these assets (Aggarwal et al. 2010). Subcomponents of each asset group are generated from different types of indicators. These indicators measure the positive and adverse effects of access to or ownership of those assets on household adaptive capacity.

TABLE A3. INDICATORS FOR ADAPTIVE CAPACITY

Component indicators	Description of the indicators	Unit of measurement	Hypothesized relation
Human asset	Level of education	Year of schooling	+
	Number of dependents	Person	-
	Access to a source of information	1 = access to any source, 0 = No	+
	Has attended training/meeting/workshop	1 = Yes, 0 = No	+
Physical asset	Source of fuel for cooking (electricity, LPG, wood, or charcoal)	1 = Electricity and LPG, 0 = Wood or charcoal	+
	Type of house roof (concrete, wood, zinc, thatch)	1 = Concrete, wood, or zinc, 0 = Thatch	+
	Access to markets	1 = Yes, 0 = No	+
	Source of water (domestic use)	1 = Yes, 0 = No	+
Financial asset	Income (regular, salary, wages)	In USD	+
	Livestock	Number	+
	Access to credit	1 = Yes, 0 = No	+
	Properties	Number	+

Component indicators	Description of the indicators	Unit of measurement	Hypothesized relation
Natural asset	Farmland	In ha	+
	Fertilized soil	%	+
	Source of water for farming	1 = Yes, 0 = No	+
	Access to forest or aquatic resources	1 = Yes, 0 = No	+
Social asset	Community groups (saving groups)	1 = Yes, 0 = No	+
	Community supports	1 = Yes, 0 = No	+
	Social security	1 = Yes, 0 = No	+
	Savings	1 = Yes, 0 = No	+
	Relative supports	1 = Yes, 0 = No	+

