Climate change, gender equality and human rights in Asia

Regional review and promising practices

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Foreword

Amid the global COVID-19 pandemic, communities in Asia continue to face and combat the impacts of climate change, which are more and more devastating. In Asia and globally, 2020 has been the warmest year on meteorological records. Global greenhouse gas emissions dipped temporarily, but are on a trajectory to continue to rise. Travel restrictions, lockdowns and social distancing slowed down the economy, but did not slow down climate change.

Livelihoods across Asia are at risk due both to climate change and the devastating pandemic, and so is the fulfilment and enjoyment of human rights—especially those of women, who are at the frontlines or are otherwise in vulnerable positions. It was reported in many surveys and impact assessments that COVID-19 has put additional burdens on women, who were already suffering disproportionately from adverse climate change impacts. This is visible through increased unpaid care and domestic work and restricted access to resources that affect livelihoods, subsistence, and reproductive activities.

Regardless of the sector in question, it is very often women and girls in the communities who are expected to carry the increased burden caused by climate change as well as the pandemic. Rural women, informal workers, indigenous women, ethnic minority women, women with disabilities—women and girls in all their diversity—experience the differentiated impacts.

The Paris Agreement acknowledged that climate commitments cannot be achieved without giving due respect to human rights and gender and social inclusion obligations. Similarly, inclusive recovery from the pandemic is not possible without consideration of human rights and gender equality.

This report is responding to the crucial question of how policymakers can facilitate inclusion of human rights and gender equality in climate policies and programmes. Ranging from agriculture to education, the report guides us through different livelihood sectors, applying a human rights lens and providing recommendations for policy actors at different levels. In order to formulate holistic policies to address climate change, human rights and gender inequality, we need to start by aligning national policies with the existing international and regional commitments, and recognize the rights related to the environment in national legislation and sectoral policies.

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Acronyms and abbreviations

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CEDAW	Convention on the Elimination of all forms of Discriminations Against Women
CSO	Civil Society Organization
DRR	Disaster Risk Reduction
GHG	Greenhouse gas
ILO	International Labour Organization
IPCC	International Panel on Climate Change
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
OHCHR	Office of the United Nations High Commissioner for Human Rights
RE	Renewable Energy
SAARC	South Asian Association for Regional Cooperation
SEAFDEC	Southeast Asian Fisheries Development Center
SDGs	Sustainable Development Goals
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNWTO	United Nations World Tourism Organization
WHO	World Health Organization
WTTC	World Travel and Tourism Council

Bangladesh

CPD	Centre for Policy Dialogue
DEW Craft	Development Wheel Craft
DIFE	Department of Factories and Establishments
FWF	Fair Wear Foundation
GED	General Economics Division, Government of Bangladesh
GEN Bangla	Gender and Energy Network Bangladesh
IDCOL	Infrastructure Development Company Limited
PSL	Prokaushali Sangsad Limited
UN Women BCO	UN Women Bangladesh Country Office
WFTO	World Fair Trade Organization

Cambodia

CPA	Community Protected Areas
FA	Forestry Administration, Royal Government of Cambodia
PA	Protected Areas
RGC	Royal Government of Cambodia
WCS	Wildlife Conservation Society
WOCAN	Women Organizing for Change in Agriculture & Natural Resource Management

Viet Nam

CECEM	Center for Community Empowerment
FAO	Food and Agriculture Organization of the United Nations
GRAISEA	Gender Transformative and Responsible Agribusiness Investments in Southeast Asia
MOET	Ministry of Education and Training
PI	Plan International
STC	Save the Children

Executive summary

Asia is particularly vulnerable to climate change impacts, due to both its geographic exposure to environmental shocks and stressors, and underlying systemic social inequalities. Sectors that are crucial to the economy and livelihoods in the region, such as agriculture, forestry, energy, manufacturing, construction and tourism, are also key contributors to climate change, and thus are targeted by both adaptation and mitigation policies. Though international laws and frameworks increasingly recognize the interlinkages between climate change, human rights and gender equality, Asian nations have been slow to integrate these concerns into their policies and commitments.

When governance processes fail to address the rights and needs of people who are marginalized or in situations of vulnerability, they compound the negative impacts of climate change on them. However, few studies have unpacked what a focus on human rights and gender equality in the context of climate change entails in practice. This report aims to provide a better understanding for policymakers in Asia. It begins by providing an overview of international frameworks and mechanisms addressing the linkages between human rights, gender equality and climate change, then addresses three research questions:

1. What are the gendered and human rights implications of climate change on key livelihood sectors, and how are climate policies addressing or overlooking these issues?

2. Are there examples of best practices and lessons learned on how to integrate human rights and gender equality in climate change mitigation and adaptation efforts within livelihood sectors?

3. How can climate policies and policymaking processes better integrate gender-transformative and human rights-based approaches, to address underlying power imbalances and inequalities that lead to vulnerability and marginalization?

The report begins with an overview of international and regional frameworks and processes that address the links between human rights, gender equality and climate change. It then examines the gaps between governments' commitments and realities on the ground, drawing on scientific publications and grey literature. The impacts of climate change and climate policies on human rights and gender equality in 10 crucial economic sectors in Asia are examined: agriculture and forestry, fisheries, mining, construction,

energy, manufacturing, wholesale and retail trade, tourism, education and health. Though there are differences among sectors and countries, three broad and interconnected themes emerge as root causes of human rights violations and vulnerability to climate change: i) existing gender inequalities caused by power imbalances in both the private and public spheres, ii) discriminatory laws and practices, and iii) unequal access to and control of resources.

Following this review, Chapter 2 presents six case studies in Cambodia, Viet Nam and Bangladesh that focus on promising practices. The case studies illustrate efforts to integrate human rights and gender equality concerns into climate action in livelihood sectors, showing the diverse ways in which climate action can achieve positive social change, with better outcomes for both environmental action and social justice. The analysis also highlights key enablers as well as persisting barriers to true transformation. Effective collaboration between state and non-state actors across sectors is identified as crucial, and so is meaningful participation of local communities in the policies that affect them. It is also clear that recognizing human rights and gender equality as core principles in national development and climate policy frameworks is essential to achieving transformative change.

Finally, Chapter 3 summarizes the key findings and offers policy recommendations. It details how climate change affects substantive human rights,[1] highlighting issues around governance and accountability, and identifies barriers to the exercise of procedural rights that can result in climate policies that exacerbate discrimination and vulnerability. Integrating and accounting for human rights and gender equality in key livelihood sectors, it shows, is paramount to the achievement of sustainable and inclusive development in the context of climate change. The recommen-

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dations, aimed at policymakers and other stakeholders, describe an intersectional, human rights-based and gender-transformative approach to climate action, aligned with existing commitments in international and regional policies and processes:

Formulate holistic policies to address climate change, human rights and gender inequality together

- Align national policies with international and regional commitments regarding climate change, human rights and gender equality.

- Recognize rights related to the environment in national legislation and advocate for their recognition in international human rights laws. These include the right to a healthy environment, to a safe climate, to non-toxic and healthy ecosystems, to clean air and water, and to healthy and sustainably produced food, and are preconditions to fulfilling all substantive human rights.

- Mainstream provisions for human rights, gender equality and climate action and promote their enforcement across all sectoral policies by:
  » Assessing human rights violations, gender inequalities and exposure to climate change at the national and subnational levels;
  » Designing evidence-based policies to address existing challenges;
  » Identifying entry points for policies and actions to transform unjust social structures and practices.

- Invest continuously in livelihood support sectors such as health and education, to ensure they are accessible to all, resilient to disasters, and actively contributing to climate change adaptation:
  » Health ministries should ensure adequate human resources to deliver health care and proper training for health care workers to identify, prevent and address climate-related diseases, and to respond effectively to disasters.
  » Education ministries should ensure consistent integration of climate change in school curricula at all levels, including for out-of-school children and adults.

- Recognize informal workers and migrant workers as key contributors to Asian countries' economies and ensure that their rights are protected in climate-vulnerable sectors and labour policies.

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1   The justification for the categorization of rights used in this report can be found in the conceptual framework and in Annex 2.

- Explicitly designate roles and responsibilities for women and marginalized groups in governance processes, to ensure their representation and meaningful participation in decision-making at all levels.

Ensure multi-stakeholder cooperation to implement holistic policies and programmes

- Ensure government accountability by:
  - » Clearly defining roles and responsibilities of duty-bearers and other stakeholders at all levels to meet commitments to human rights, gender equality and climate action;
  - » Rigorously monitoring progress on achieving these commitments to address potential gaps, drawing on data and evidence from both the public and private sectors;
  - » Ensuring proper mechanisms to report wrongdoing and for victims to access justice and remedies.

- Strengthen inter-ministerial cooperation to ensure that sectoral approaches at the national and sub-national levels are complementary, especially between ministries in charge of environment and climate change, disaster risk reduction, development, labour, agriculture and women's affairs.

- Facilitate collaboration between state and non-state actors, such as non-governmental organizations and the civil society, recognizing them as key allies to ensure transparency, accountability and access to justice, and to better understand realities on the ground and inform evidence-based policies.

- Assure space for grassroots organizations that can provide space for marginalized communities to organize themselves on the basis of shared identities and/or experiences, and enable them to raise their voice and concerns in local decision-making bodies.

Prioritize actions that redress social and gender inequalities through transformative programmes

- Ensure access to information regarding human rights, gender equality and the effects of climate change and climate policies, translating key policy documents into local languages and raising awareness through communication channels adapted to marginalized communities, such as radio programmes.

- Enable community ownership over climate adaptation and mitigation programmes by ensuring free, prior and informed consent from the outset, and continuous community involvement in decision-making, while paying particular attention to women and marginalized groups and designing actions that challenge the root causes of their exclusion.

- Prioritize targeted initiatives aiming to develop the confidence and leadership skills of women and marginalized groups, challenging discriminatory practices and making sure to avoid reinforcing traditional gender norms. Such initiatives can increase these groups' social recognition and enable them to use their agency to demand their rights and challenge unequal power balances.

- Develop and implement essential service packages to prevent and address gender-based violence that is exacerbated by climate change impacts.

Support research to inform evidence-based policies and programmes

- Critically assess how governments in the region translate their commitments to international and regional frameworks on human rights, gender equality and climate change in their national and sectoral policies. This can be done through a policy review, which will establish a baseline and enable governments to identify gaps and monitor their progress.

- Invest in research that documents the ways in which sexual orientation and gender identity expression play a role in shaping differentiated vulnerabilities to climate change, including whether they are currently considered or overlooked in climate action. This pressing research gap hampers efforts to protect and integrate important parts of the population to climate adaptation and mitigation efforts.

- Replicate the intersectional, gender-transformative human rights-based approach developed for this study. This framework can be adapted to other topics, which would contribute to mainstreaming such integrated and holistic approaches in a way that leaves no one behind.

Introduction

Climate change represents one of the gravest threats to human well-being around the world. Impacts such as rising temperatures, water scarcity, and more frequent and severe extreme weather events are seriously affecting human health, security and livelihoods, and exacerbate poverty (IPCC 2014). Asia is particularly vulnerable, due to both its geographic exposure to environmental shocks and stressors, and to systemic social inequalities (Hijioka et al. 2014). From a human rights perspective, climate change is a grave concern, as it threatens fundamental rights: to life, to health, to shelter, and to key resources such as food and water that are becoming increasingly scarce in some places. Climate change also raises concerns about procedural human rights, such as the rights to information, consultation and participation, as climate action is determined through governance processes that may not include the voices or address the rights and needs of all groups of society.

Within societies, marginalized groups, whose human rights are already imperilled, are also particularly vulnerable in the context of climate change. Multiple and intersecting forms of discrimination and inequality, based on gender, class, race, sexuality, age, disability and other characteristics, undermine many people's capacity to cope with and adapt to climate change (Resurrección et al. 2019). Indeed, though both women and men may depend on nature-based resources and activities for their livelihoods, patriarchal structures shaping social, economic and political systems undermine women's access to resources, productive assets, technology and information needed to adapt to climate change (OHCHR 2019). Indeed, climate change may exacerbate those barriers. Similarly, gendered and social norms, such as unpaid care and domestic work, impact women's representation, participation and leadership in decision-making (UNGA 2019). This results in women's rights and needs being overlooked by policy-making processes, including those that shape climate mitigation and adaptation strategies (OHCHR 2019).[2]

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2 Climate change mitigation strategies are human interventions to reduce emissions or reduce sinks of greenhouse gases. Adaptation in human systems is the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities (IPCC 2018a).

Thus, if climate action does not recognize and address existing discrimination and inequalities, it is likely to exacerbate them. In Asia, key livelihood sectors that are crucial to the economy, such as agriculture, forestry, energy, manufacturing, construction and tourism, are both subject to climate change impacts, and contributors to climate change (ILO 2018c). As governments develop adaptation and mitigation strategies targeting those sectors, it is crucial that both the policies and the processes to develop them are inclusive. The education and health sectors are also crucial to effective climate action, as they play central roles in the adaptive capacities of affected communities.

International laws and frameworks increasingly recognize that climate change, human rights and gender equality are closely interlinked, but Asian countries have been slow to integrate gender and human rights concerns in their climate policies and commitments. There is also scarce research on what such an approach would entail in practice in the Asian context (as explored by Christoplos and McGinn 2016). This report aims to provide a better understanding for decision-makers and other stakeholders in Asia.

An intersectional, gender-transformative, human rights-based approach

This study is using an intersectional, gender transformative, human rights-based approach. It is important to note that there are multiple human rights-based approaches, tailored to different contexts. The one developed for

Table 1. Core elements of a human rights-based approach

Substantive rights	Substantive rights are those recognized in international human rights instruments, including the right to life, to health and well-being, to physical integrity and human dignity, to adequate standards of living, to a decent livelihood, and to education. Environmental human rights, such as the right to clean air and water, healthy and sustainably produced food, non-toxic environment and healthy ecosystems, are not standalone rights with universal recognition,[3] but they are a logical extension in a context where substantive rights can be threatened by "dangerous anthropogenic interferences with the climate system" (UN 1992, article 2; UNGA 2016). Therefore, in this report, we treat the right to a safe climate as a substantive human right, a necessary condition for the fulfilment of other human rights. From that perspective, we can assess the impacts of climate change on essential rights, with a focus on people whose substantive rights tend to be overlooked by policy-makers.
Governance and accountability	Governance mechanisms are crucial to the effective implementation of human rights and gender equality commitments. This aspect of the analysis focuses on the roles and responsibilities of duty-bearers in the context of climate action, including elements of transparency and access to justice that are essential means to hold duty-bearers accountable for meeting their responsibilities. We assess how well governance mechanisms recognize the needs and rights of all social groups in the application of climate and environmental strategies. We also consider what options are available to the groups that are left behind to hold duty-bearers accountable for preventing and addressing discrimination in the context of climate action.
Procedural rights	This element of the human rights-based approach analyses how people are included in decision-making regarding their climate and environment, through consultation and direct participation, and whether relevant information is made accessible to them so that they can meaningfully influence the discussions. The principle of Free, Prior and Informed Consent (FPIC) is particularly relevant in the context of this study, as it is a crucial right of communities to have access to full information before participating in consultations for initiatives that can impact their environment, such as the exploitation of natural resources or infrastructure development.

this report focuses on three categories of human rights covered in international human rights treaties and literature, adapted to better align with climate issues: substantive rights, governance and accountability, and procedural rights. Table 1 explains each category in more detail; the linkages between these core elements and international human rights frameworks are outlined in Annex 2.

Acknowledging that women's rights are an inherent component of human rights, this study pays particular attention to gender. It applies an intersectional lens, identifying the multiple and intersecting forms of discrimination, inequality and power dynamics that affect people's rights (Lykke 2010; Cho, Crenshaw, and McCall 2013). This approach helps avoid the common pitfall of generalizing the strengths and challenges of some social groups based on the assumption that they are homogenous. Indeed, factors such as race, ethnicity, religion, class, caste, age, sexual orientation, location, education, health and disability intersect with gender, meaning that some women—for

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3   Although the rights to a safe climate and to a healthy environment are currently not recognized in international human rights frameworks, more than a 100 States have recognized some form of a right to a healthy environment in international agreements or in their national frameworks (UNGA 2018). This focus on environmental human rights also aligns with the development in the work of human rights treaty bodies, judicial decisions, environmental law and of the resolutions of the Human Rights Council and the United Nations Environment Assembly.

instance, those who are rich—may have more privileges and power than some men. An intersectional analysis also recognizes that gender goes beyond the male-female binary, allowing for a better understanding of how sexual orientation (such as being gay, lesbian, bisexual, queer) and gender identity expression (such as non-binaries, transgender people, *Baklas*, *Hijras* and others) can intersect with other identities and affect human rights. While human rights-based approaches usually incorporate a fourth element, the concept of "non-discrimination", our analysis mainstreams non-discrimination and intersectionality across the three elements of the framework. Indeed, human rights scholars have underlined that one of the greatest threats for a genuine human rights based-approach is the "splitting and dividing of class, gender, and race interests"—in other words, considering these categories as separate instead of recognizing how they intersect (Clark, Matthew, and Burns 2018, 109). The approach used in this study and summarized in Figure 1 therefore attempts to unpack how intersecting discriminations and inequalities affect substantive and procedural rights, and how they are reflected in governance and accountability systems.

This approach also enables a rigorous analysis of how social, cultural, economic and political structures and systems shape people's vulnerability to climate change (Kaijser and Kronsell 2014; Ribot 2013), though applying it consistently presents some challenges. Furthermore, the regional scope of this report limits our ability to delve deeper into how intersecting identities might affect people's experiences in different local contexts. However, the case studies in Chapter 2 provide some country-specific insights.

Climate change and climate action can either reinforce or challenge gender inequalities (Kaijser and Kronsell 2014), depending on the chosen responses. As illustrated in Figure 2, we distinguish between three approaches to gender: Gender-*blind* policies and measures do not recognize the different roles and needs of women and men, and thus maintain or reinforce the status quo of inequalities and discriminations (UN Women n.d.). Gender-*responsive* approaches do acknowledge those differences and tailor measures accordingly, but do not address the structural causes of gender inequality. Gender-*transformative* approaches, meanwhile, require climate action to transform the underlying power dynamics and structures (Resurrección et al. 2019). This is the closest step to gender equality, and the perspective taken in the human rights-based approach used in this report. Using a gender-transformative human rights-based approach can help identify promising practices and entry points to critically question gender and social norms and tackle the root causes of vulnerability to climate change (Hillenbrand et al. 2015). In conjunction with a human rights-based approach, they can ensure that women's rights are central to climate policy and practice (Bendlin 2014).

Figure 1. Integrating human rights-based approaches and intersectionality
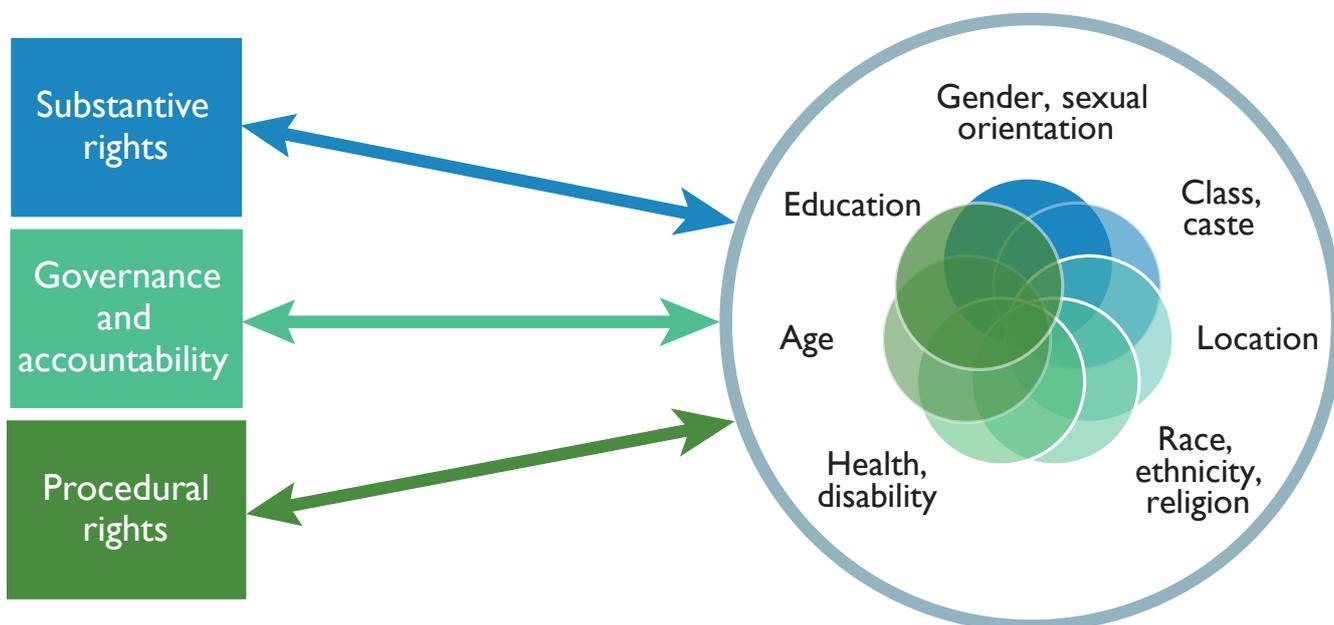
Figure 2. The gender equity policy continuum

Gender inequality → → Gender equality

| Gender-blind: ignores gender norms, discriminations and inequalities | Gender-responsive: acknowleges and consideres gendered needs | Gender-transformative: transform the structures causing gender inequality |

| Exploit | Accomodate | Transform |
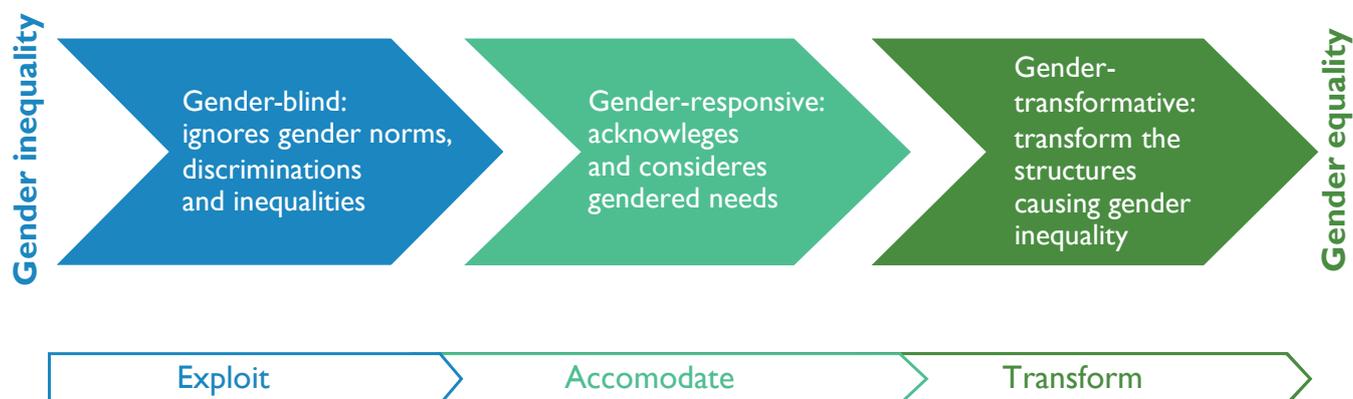
Adapted from UNICEF and UNFPA (2020)

Methodology and structure of the report

Despite considerable progress in research and policy processes, challenges faced by States in promoting, protecting and fulfilling human rights are compounding the negative impacts of climate change on people in situations of vulnerability. This report therefore aims to understand the human rights impacts of climate change in key livelihood sectors, with a particular focus on women's human rights. It begins by providing an overview of the international frameworks and mechanisms addressing the linkages between human rights, gender equality and climate change, then addresses three research questions:

1. What are the gendered and human rights implications of climate change on key livelihood sectors, and how are climate change policies addressing or overlooking these issues?

2. What are some examples of best practices and lessons learned of how livelihood sectors can integrate human rights and gender equality in climate change mitigation and adaptation efforts?

3. How can climate policies and policymaking processes better integrate gender-transformative and human rights-based approaches, to address underlying power imbalances and inequalities that lead to vulnerabilities and marginalization?

The report devotes a full chapter to each question, as follows:

Chapter 1 presents a review of scientific evidence on climate change impacts in key livelihood sectors in Asia, analysing how climate change and climate policies exacerbate pre-existing violations of human rights and gender inequality in those sectors. The key issues identified in each sector are summarized at the end of the sections following a gender-transformative human rights-based approach.

Chapter 2 builds on that analysis, which helped identify promising initiatives applying a gender-transformative human rights-based approach to climate change action in three focus countries: Bangladesh, Cambodia and Viet Nam. Combining a scientific literature review and semi-structured key-informant interviews, the analysis of six case studies highlights enabling conditions, key successes and promising practices, as well as remaining challenges.

Chapter 3 summarizes the study's findings and offers policy recommendations to scale up the best practices and facilitate policymaking processes that promote inclusive and stronger resilience to climate change, while avoiding practices that infringe on human rights and gender equality. These recommendations, along with the findings of the study, have been triangulated and validated through a regional online consultation with international organizations, civil society, non-governmental organizations and researchers in Asia.[4]

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4   See Annex 1 for the list of participants to the inception and validation workshops.

Key commitments on climate change, human rights and gender equality

Asian countries are State Parties to several international frameworks and regional cooperative bodies that address climate change, human rights and gender equality,[5] and are thus committed to addressing these issues through their national institutions and policies. This section offers an overview of key international commitments, and the next section discusses some of the gaps between countries' obligations and their implementation on the ground.

The **2030 Agenda for Sustainable Development**[6] (2015) acknowledges that climate change undermines countries' ability to achieve sustainable development, and disproportionately affects those who are marginalized. The 2030 Agenda is strongly anchored in human rights-based principles and commits to leaving no one behind. In addition to Sustainable Development Goal (SDG) 10, which aims to reduce inequality within and among countries, gender equality in itself constitutes a standalone goal, SDG 5, urging governments to end all forms of discrimination and to "ensure women's full and effective participation and equal opportunities for leadership and all levels of decision-making in political, economic and public life" also mainstreamed across most of the other SDGs, such as SDG 2, End Hunger, which encourages governments to securing land access for those working in resource-based sectors, including women and indigenous people, and SDG 13, Climate Action, which calls upon governments to promote the participation of women and marginalized communities in climate action.

The **United Nations Framework Convention on Climate Change**[7] (1992) underpins the substantive obligation of Member States to create a safe climate for all. In a 2010 decision, the Parties acknowledged that adverse effects of climate change have implications for enjoyment of human rights and are felt most acutely by the vulnerable population, which obliges States to fully respect human rights in all climate-related actions (UNFCCC 2010). Meanwhile, more than 60 UNFCCC decisions by the Parties have addressed gender issues (OHCHR 2019). The preamble of Paris Agreement acknowledges the human rights dimensions of climate change, with a particular focus on the differentiated impacts of climate change on various groups; Article 7(5) and 11(2) call for gender-responsive climate adaptation and capacity building (UNFCCC 2015a). The Lima Work Programme and its Gender Action Plan aim to advance gender-responsive climate action throughout UNFCCC processes and urge States to integrate human rights and gender equality perspectives in their climate policies and relevant institutions, by engaging with women's groups and gender-focused government agencies in developing and implementing climate policies, enhancing the availability of sex-disaggregated data, and appointing national focal points to monitor the implementation of the obligations (UNFCCC 2019).

The **Beijing Declaration and Platform for Action**[8] (1995) calls for States to promote and protect all human rights and fundamental freedoms, regardless of their political, economic and cultural system. Acknowledging that environmental degradation affects rural, indigenous and poor women the most, the Platform obliges governments, the international community and civil society to take strategic action on gender inequalities in the management of natural resources and in the safeguarding of the environment. It urges duty-bearers to advance women's participation in decision-making at all levels and integrate gender perspectives to sustainable development policies and assessments of development and environment policies. As 2020 marked the 25th anniversary of the Platform, a formal review sets priority areas to accelerate its implementation in conjunction with the 2030 Agenda, to ensure (1) inclusive development, decent work and well-being; (2) poverty eradication, social protection, and social services; (3) freedom from violence, stigma and stereotypes, (4) participation, gender-responsive institutions and accountability; (5) peaceful and inclusive societies; and (6) environmental conservation, protection and rehabilitation.[9]

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5   For instance, all Asian countries are State Parties (through ratification, acceptance, approval or accession) to the United Nations Framework Convention on Climate Change (UNFCCC), and all but Iran are State Parties to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).

6   See https://sustainabledevelopment.un.org/post2015/transformingourworld.

7   See https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.

8   See https://www.unwomen.org/en/digital-library/publications/2015/01/beijing-declaration.

9   See https://undocs.org/E/CN.6/2020/3

The **Addis Ababa Action Agenda**[10] of the Third International Conference on Financing for Development (2015) calls for duty-bearers to adopt gender equality and women's empowerment at all levels of policies and climate finance. It calls for States to integrate gender mainstreaming in the formulation and implementation of economic, financial, environmental and social policies as well as to ensure women's full and equal participation and leadership in the economy. In adopting the agenda, States need to commit to generate full and productive employment and decent work, through collaborations with private sector and development banks. The agenda emphasizes the importance of national efforts in capacity-building in areas of social and gender-responsive budgeting, agricultural productivity, fisheries, climate services, and water and sanitation related activities and programmes.

The **Convention on the Elimination of All Forms of Discrimination Against Women**[11] (1979) prohibits discrimination based on gender and requires duty-bearers to guarantee women's right to representation and participation in decision-making. General recommendation 37, issued under the Convention in 2018, applies a human rights-based approach to climate change and disaster risk reduction (DRR) policies, which should incorporate "human rights principles of substantive equality and non-discrimination, participation and empowerment, accountability and access to justice, transparency and the rule of law" (CEDAW 2018, 13). It also calls for State Parties to ensure all policies, legislation, plans, programmes and budgets related to climate and DRR are gender-responsive and reflect human rights principles, allocating sufficient resources to foster women's leadership and institutionalizing their leadership in DRR and climate action.

The **Sendai Framework for Disaster Risk Reduction**[12] (2015) applies principles of inclusive and non-discriminatory participation to DRR activities. It encourages States to promote the leadership of women and marginalized groups in DRR, while also urging States to collect and use sex-, age- and disability-disaggregated data to inform inclusive DRR policies. The framework also underlined a priority to strengthen accountability and good governance in DRR strategies at national, regional and local levels. For a detailed review of the current state of implementation of the Sendai Framework, see Nguyen, Pross and Han (2020).

In addition to these global frameworks, two regional organizations in Asia have explicitly addressed gender equality and human rights in the context of climate action:

The **South Asian Association for Regional Cooperation**[13] (SAARC) was launched in 1985 with the objective to promote the well-being of the people of South Asia, and its Social Charter, enacted in 2004, explicitly commits to promote "universal respect for and observance and protection of human rights" as well as gender equality and women's empowerment. Member States have also expressed dire concern over environmental degradation, climate change and disaster risks and called for regional cooperation on climate action in its several declarations, such as the Dhaka Declaration on Climate Change and the Thimphu Statement on Climate Change non-discrimination.

The **Association of Southeast Asian Nations**[14] (ASEAN), established in 1967, has led efforts to develop platforms and implement programmes on climate change and DRR, such as the Agreement on Disaster Management and Emergency Response, the ASEAN Climate Change Initiative, and the Multi-sectoral Framework on Climate Change and Food Security-sectoral Framework urges ASEAN countries and line ministries to implement, monitor and evaluate climate-smart, rights-based and gender-sensitive policies, programmes, plans and investments in the food, agriculture and forestry and other relevant sectors (ASEAN 2018). Moreover, the ASEAN Working Group on Climate Change has played a key role in enhancing regional cooperation on climate issues since 2009, and it aims to actualize strategic climate change measures noted in the ASEAN Socio-Cultural Community Blueprint 2025.[15] The Blueprint calls for States to promote and protect the human rights of women and other vulnerable groups and strengthen institutional and human capacity to implement climate change adaptation and mitigation, especially in vulnerable communities (ASEAN 2016b).

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10 See https://www.un.org/esa/ffd/publications/aaaa-outcome.html.

11 See https://www.un.org/womenwatch/daw/cedaw/.

12 See https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030.

13 See https://www.saarc-sec.org.

14 See https://asean.org.

15 See http://environment.asean.org/awgcc/.

Chapter 1

Gender, human rights and climate change in Asian livelihood sectors

Climate change is already leading to an increase in the frequency of extreme temperatures, precipitation, droughts and cyclones, as well as rapid sea-level rise and ocean acidification, among other impacts (Hijioka et al. 2014), according to the Intergovernmental Panel on Climate Change (IPCC). The implications for human well-being are significant, including increased risk of crop failure and related food insecurity; water shortages in arid regions; increased flooding in both rural and urban areas, damaging infrastructure, settlements and livelihoods; and more disease, injuries and deaths.[16]

Research has shown that people's vulnerability to climate change and capacity to adapt can differ significantly, depending on factors such as human assets (education, skills, access to information and technologies), social assets (community networks, availability of institutional support), and economic status (MacGregor 2010). These factors, in turn, are shaped by multiple and intersecting social structures and inequalities based on characteristics and identities such as gender, race and class.

Against this backdrop, this chapter explores the gendered and human rights implications of climate change on key livelihood sectors, and the extent to which States have obligations to address them, and how well they are doing so. The analysis follows the common categorization of the economy under three main sectors: the primary sector, which involves extraction of raw natural materials or use of natural resources; the secondary sector, which encompasses energy use and generation, industries and manufacturing activities; and the tertiary sector, which refers to services. Within those categories, it focuses on 10 livelihood sectors: agriculture and forestry, fisheries and mining (primary sector), construction, energy and manufacturing (secondary sector), wholesale and retail trade, tourism, education and health (tertiary sector). For each, the intersectional and human rights-based approach out-

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16 For a more detailed overview of key climate risks in Asia, see Hijioka et al. (2014), pp. 1336–1337.

Figure 3: Employment by sector, by subregion, 2000 and 2017 in Asia (% of total employment)

Legend:
- Agriculture; forestry and fishing
- Manufacturing, mining and utilities
- Construction
- Wholesale and retail trade; repair of motor vehicles and motorcycles
- Education
- Other services
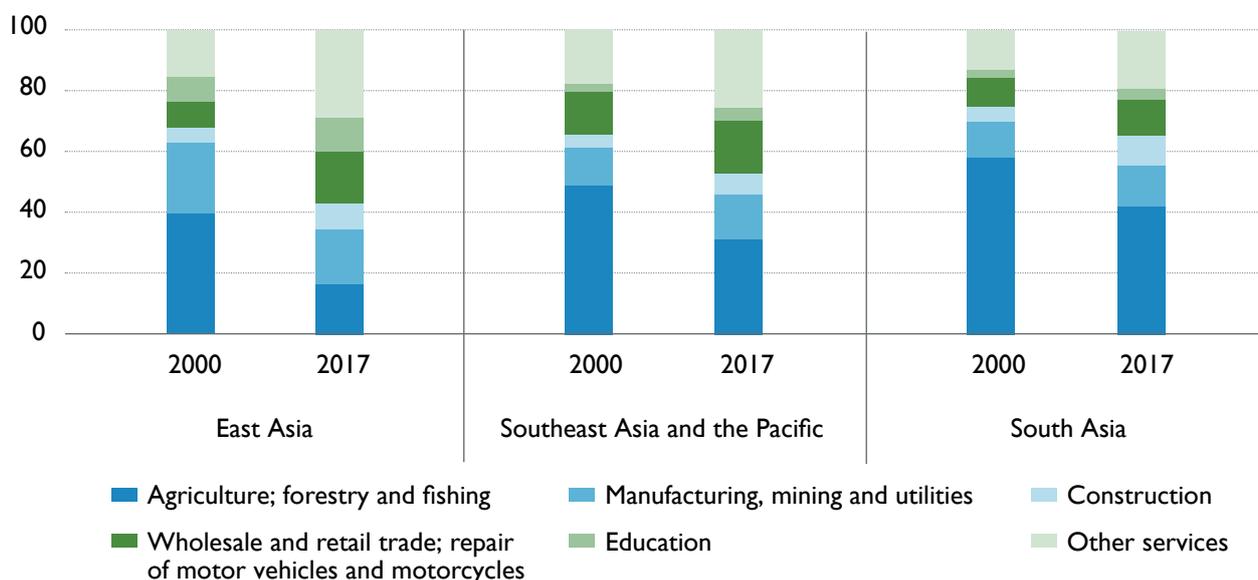
Source: Adapted from ILO (2018a)

lined in the introduction is used to examine the scientific evidence on pre-existing vulnerabilities of people who depend on those sectors and how climate change—and adaptation and mitigation strategies—is affecting their work, livelihoods, and overall human rights.

Although all livelihood sectors are affected by climate change to varying degrees, this chapter focuses on key sectors that are expected to be particularly affected, provide significant employment for people in the region, and are thus the main focus of adaptation and mitigation policies (see Figure 3). Since climate change has direct consequences on natural resources, the primary sector is expected to be the most climate-vulnerable in a biophysical sense (Hoegh-Guldberg et al. 2018). However, other sectors also rely on these resources and/or on products from the primary sector. The secondary sector is often pointed out as a major contributor to carbon emissions, so mitigation policies will have important consequences on these industries and on the people relying on them for their livelihoods. The tertiary sector is particularly vulnerable to endogenous shocks, as the COVID-19 crisis highlighted how small business holders are vulnerable financially, while the health sector is always on the front lines at times of crisis. Education, in turn, supports all other livelihood sectors in a myriad of ways that determine the success of climate policies and the ability of vulnerable populations to adapt to and mitigate climate change impacts.

PRIMARY SECTOR

Agriculture and forestry

Agriculture is a key part of the climate change equation. As noted earlier, it is a sector that is highly vulnerable to the changes in temperature, precipitation and seasonal patterns caused by climate change, and thus a priority for adaptation (Porter et al. 2014). It is also a crucial source of livelihoods, so as climate change leads to reduced agricultural outputs (and outright crop failures), it amplifies what may already be significant hardships in rural communities. At the same time, agriculture is a major contributor to climate change (S. J. Vermeulen, Campbell, and Ingram 2012), through direct emissions but especially by driving land-use change. Globally, about 80 per cent of deforestation involves land-use change related to agriculture, and in Asia, about 35 per cent of deforestation is linked to commercial agriculture (Hosonuma et al. 2012, 5). Forestry itself, a sub-sector of agriculture, is an important source of livelihoods in some places and a critical component of climate change mitigation. Forests are a vital source of food, fuel, construction materials and medicine, all of which are key to meet people's basic needs and generate employment and cash income for many rural households across Asia (Angelsen et al. 2014; FAO 2016). Deforestation thus threatens multiple human rights, as the importance of forests to the livelihoods, cultures and socio-cultural identities of many communities makes it an essential aspect of survival.

Though rural women play key roles in agricultural livelihoods, food security and natural resource management, they face disproportionate barriers to accessing and controlling vital resources such as land, water, forests, information and technologies (Resurrección et al. 2019). These gendered barriers compound rural women's vulnerabilities to climate change impacts on the sector. Such gendered inequalities reduce women's adaptive capacities, which are worsened in the face of extreme climate events. Furthermore, the COVID-19 pandemic has exacerbated the overall situations of forest-dependent communities in the region – one survey found that in Thailand, forest-dependent communities are suffering deeper financial hardships due to lockdown measures and restricted economic activities (RECOFTC 2020).

Gendered roles and access to resources

Farmers' ability to adapt to climate change depends on adopting new practices and technologies (such as irrigation) – which, in turn, requires control and access over key resources such as land and water. However, access to productive agricultural resources and services is highly gendered. Women's access to land assets across Asia is particularly insecure relative to other regions (OHCHR and UN Women 2020). Land tenure structures in many parts of Asia remains patrilineal, which restricts women's access to and ownership of land (Kusakabe et al. 2015). The lack of reliable access to land makes it more challenging for women farmers – and other marginalized groups – to adapt their agricultural practices to a changing climate.

Sociocultural norms around livelihood practices and the gender division of labour further constrain women's access to vital resources in the context of climate change (Levien 2017). For example, women are frequently responsible for the collection and sale of non-timber forest products[17] for food or to supplement household income (Carr and Hartl 2008). Both climate change and conser-

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17 Non-timber forest products, such as berries, mushrooms and medicinal plants, play an important role in climate adaptation, as they provide important livelihood benefits that can help rural populations manage the shocks brought by climate change (Balama et al. 2017).

vation policies may reduce or eliminate the availability of forest products, forcing women to spend more time and effort to collect what they need, which also means they will have less time and options to engage in alternative livelihood activities. Evidence from Nepal also showed that the scarcity of forest resources reduces the incomes of women who sell these products, leaving them in more precarious and vulnerable situations amid climate change (Gentle and Maraseni 2012; Gurung and Bisht 2014).

Land-based conflicts and land grabs

Even as climate change reduces the availability of productive land, in recent decades there has been a significant rush for land for competing purposes. The phenomenon of large-scale land acquisitions, and its associated re-sources, by private and transnational actors is broadly referred to as land-grabbing, which fundamentally shifts resource use towards extractive ends, as a response to the global food, energy and financial crises (Borras Jr and Franco 2012, 851). Such transitions can fundamentally constrain local livelihood options and capacity in the long run, as people face the loss of land and increased resource scarcity and degradation (Montefrio and Sonnenfeld 2011, 2013; Schoneveld, German, and Nutako 2011; S. Vermeulen and Cotula 2010).

Climate action can exacerbate those patterns. In recent years, there has been an increase in land acquisitions driven by both adaptation and mitigation policies (Corbera, Hunsberger, and Vaddhanaphuti 2017). These instances,

collectively labelled as "green grabs" and defined as "appropriation of natural resources for environmental ends" (Fairhead, Leach, and Scoones 2012, 238), include market initiatives such as biofuel production, plantation forestry and carbon offsetting projects. Such activities may inadvertently dispossess communities of land and resources and destabilize existing livelihoods (Cock 2014). For example, evidence from the Prey Lang forest in Cambodia suggest that various climate change mitigation initiatives have led to dispossession and land conflict due to land conversions for economic production (Work and Thuon 2017).

Given the gendered inequalities that already exist in the distribution and access to land and resources, poor and indigenous women are disproportionately affected by land grabs and land-use change that further constrains their livelihood security (Behrman, Meinzen-Dick, and Quisumbing 2012; Daley and Pallas 2014). A study in rural Cambodia documented how land-use change negatively affected indigenous agrarian livelihoods and practices, including through the erosion of traditional labour roles and the consequent shifting of gender relations (Park and Maffii 2017, 1235). Indigenous women and girls risk further marginalization as their spaces of recognition and autonomy are constrained. In many instances, women are also more exposed to increased gender-based violence during social unrest inflicted by land conflict and competition over resources (Faxon, Furlong, and Sabe Phyu 2015; Park 2019).

Food insecurity

The impacts of climate change on agricultural outputs and food security will be felt globally, but particularly in rural areas, where many small-scale farmers depend directly on agriculture for their livelihoods. Across Asia, the overall effect on agricultural production is projected to be negative in the coming decades, with the largest losses expected in South Asia (Krishnamurthy et al. 2015). Considering climate impacts such as droughts and floods, as well as increased competition for land by both state and non-state actors, farmers are increasingly vulnerable to land-use change that threatens their food security.

Women and girls' disproportionate share of unpaid care and domestic work is stark: a report by UNESCAP (2019) found that on average, while women in the Asia and Pacific region worked 7.7 hours daily, only 3.3 hours were paid work; the rest was unpaid care work. When facing food scarcity, research has shown that women are likelier than men to skip meals or reduce consumption when food or water is scarce due to gendered expectations

(WHO 2014). As climate change-related food insecurity becomes increasingly commonplace, women are more prone to suffer from malnutrition (Alston 2015), with specific consequences on reproductive health, including pregnancy, lactation and childbirth (Rylander, Øyvind Odland, and Manning Sandanger 2013). Women's unequal burden of food insecurity can also be reflected in contexts where boys are privileged over girls: a study in India suggests young girls are more likely to be malnourished and underweight than boys after extreme climatic events such as floods, storms, or droughts due to preferential treatment by parents towards sons (Datar et al. 2013).

Unequal access to information and decision-making

In many instances, rural women face persistent barriers to accessing vital information and participating in decision-making affecting their livelihoods, which are exacerbated in a changing climate. Effective adaptation requires developing new skills and having access to climate information. However, the deployment of training and information programmes often perpetuates a male bias in agriculture. For example, evidence from Gujarat, India, demonstrates that agricultural extension trainings designed to provide adaptation strategies for local farmers have often failed to equally reach and engage women, due to gendered norms that restrict participation, for example, as well as barriers to accessing information and technologies (Ahmed and Fajber 2009).

In Ninh Thuan province, Viet Nam, the introduction of drought forecasting tools by the state highlights how new adaptation technologies may not necessarily lead to gender-equalizing outcomes (SERVIR 2018). Though male and female farmers technically have the same access to drought forecasting channels and related meetings, women farmers in practice have few opportunities to reap the benefits due to their marginal positions in agricultural management and decision-making, both at the household and project level. Moreover, men from the Kinh majority ethnic group were found to have privileged access relative to other ethnic groups. This case demonstrates that top-down, technologically focused, and aid-driven strategies often fail to respond to the specific realities of people on the ground, reinforcing gendered hierarchies within households and communities and impeding adaptation (SERVIR 2018).

Table 2 summarizes the findings of the analysis of agriculture and forestry, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 2. Key climate-related human rights and gender equality concerns in agriculture and forestry

Substantive rights	**Right to food and health:** Small-scale farmers are the most vulnerable to the effects of climate change and related policies on their food security and income generation. In the face of food insecurity, women and girls are likelier than men and boys to have less to eat and drink due to discriminatory gender norms around care work and preferential treatment. **Right to decent livelihoods and adequate standards of living:** Competition over land and climate-induced resource scarcity disproportionally affect poor rural and indigenous women by further constraining their already unequal access to resources such as water, food crops and non-timber forest products, and threatens their livelihoods. **Right to physical integrity and human dignity:** Women are more exposed to increased gender-based violence during social unrest due to competition for resources and land conflicts.
Governance and accountability	**Lack of recognition for customary governance systems** puts indigenous people particularly at risk of land grabs and displacements. **Lack of mechanisms to hold duty-bearers accountable, impacting access to justice**: people without land titles, including many women, have little or no resources when their land is being seized. Patrilineal land tenure structures particularly put women at risk of being landless.
Procedural rights	**Unequal access to tools and climate information:** the gendered divisions of tasks in agriculture, results in women's lack of opportunities to participate in critical trainings to build their adaptive capacities. **Lack of consultative and participatory planning processes for climate adaptation and mitigation policies:** the right to free, prior and informed consent of local communities is often overlooked, exposing them to "green grabs", threatening their livelihoods, access to resources and results in unequitable sharing of benefits

Fisheries

Asia is the world's top fish-producing region, with about 52 per cent of the global fishery production (SEAFDEC 2017). Fisheries is an extremely diverse sector, ranging from small-scale to industrial-level fish catching, farming and harvesting, as well as fish processing, marketing and distribution (FAO 2017). Small-scale fisheries and subsistence fishing and fish farming remain key livelihood activities across many countries, contributing significantly to food security (Béné, Hersoug, and Allison 2010; FAO 2015). Recognizing the importance of protecting these livelihoods, the UN Food and Agriculture Organization created voluntary guidelines for securing sustainable small-scale fisheries (FAO 2015) that are underpinned by a human rights approach. A major consultative forum on sustainable fisheries and aquaculture in the Asia-Pacific region also highlighted the importance of gender-sensitive and inclusive fisheries and aquaculture (FAO 2020a).

Climate change poses direct threats to the food security and livelihoods of small-scale and subsistence fishers through impacts such as ocean warming and acidification and the resulting depletion of fish stocks (Allan et al. 2005; Weatherdon et al. 2016). These situations tend to reinforce pre-existing vulnerabilities due to social, economic and political marginalization (Pattanaik 2007; Ratner, Åsgård, and Allison 2014). Small-scale fishers often have limited capacities and resources to adapt to hazardous events (Salagrama, International Collective in Support of Fishworkers, and Heinrich Böll Foundation-India 2012). Compounding the effects of climate change is overfishing caused by commercial fisheries, which has contributed substantially to fish depletion in recent decades (Mansfield 2011). The impacts of overfishing by commercial vessels and natural resource depletion will compromise the livelihoods of many small fishers. The COVID-19 pandemic has placed additional stress on Asian fisheries, with small-scale fishers and

women vendors hit the hardest due to their dependence on direct sales, which have dropped significantly as a result of lockdown measures and restricted economic activities. In addition, border closures have impacted the trade of fish and fish products, and many migrant workers along the supply chain have been left without work and unable to return to their home countries (FAO 2020b).

Gendered vulnerabilities to climate change's impacts on fisheries

Though they play a range of roles in fisheries, women are subject to multiple gendered inequalities related to access and control over productive resources and employment opportunities, and they often have limited power in decision-making (Harper et al. 2013; Upadhyay 2018). For example, women fishers, and especially those from indigenous communities, often lack clear and recognized property rights to the land and water resources that their livelihoods depend on, which constrains their capacity to cope with the impacts of climate change (Capistrano 2010).

Men and women face differentiated vulnerabilities within fisheries, and in industrial fisheries in Southeast Asia, it is young men and boys who are frequently exploited. Commercial vessels and fish processing factories provide employment for many migrant workers, and the fishing industry – both fish catching and processing – is among the most implicated in human trafficking in Southeast Asia (Mutaqin 2018). Migrants' precarious status subject them to various human rights abuses as they are deprived of legal protection and highly exposed to occupational hazards (ILO 2013b; Marschke and Vandergeest 2016; Pearson et al. 2006; Pocock et al. 2016). The depletion of fish stocks in recent decades has also worsened labour conditions. For example, as fish stocks along coastal regions have declined, fishing vessels, both industrial and small-scale, are having to venture further out to locate fishing grounds. The lengthened time at sea, in addition to fiercer competition for fish amid scarcity and the consequential demand for cheap labour, exposes these men and boys to even worse exploitation and abuses (ILO 2013a).

Women's 'invisibility' in fishery sectors

Safeguarding the rights and well-being of vulnerable and marginalized groups in the fisheries sector, as well as their meaningful integration into governance structures, remains a challenge. Inequalities related to gendered fishery practices (such as women's role in post-harvest fish processing and trading) have largely been undervalued economically and sidelined within policymaking (Koralagama, Gupta, and Pouw 2017). One of the reasons for this is that women's role in fisheries have often been overlooked – instead of looking at the whole supply chain, institutions tend to focus on the primary production of fish (that is, fishing), which are predominately male-led (Williams 2016). Since women's fishery activities (such as shellfish gleaning, cleaning, fish processing and trading) are commonly considered as extensions of domestic work rather than productive labour, they are rendered "invisible" by both community members and policymakers (Koralagama, Gupta, and Pouw 2017). Such invisibilities lead to a lack of legal frameworks that prioritize the rights and interests of women fishers, such as access to fishing grounds and legal protection (Kwok et al. 2020).

In the face of climate threats and pressures on resources, several programmes have been promoted to address the need for sustainable and local management of fisheries. In Cambodia, community fisheries have been initiated by the government as a way to enable communities to participate in decision-making processes surrounding resource management of local fisheries. However, such community adaptation measures run the risk of perpetuating inequality if they are designed and implemented without awareness of the gender dynamics that inhibit women's role in fishery governance. Evidence from the Tonle Sap (Resurrección 2006) demonstrates that while women are urged to participate in community fishery institutions by various state and non-state actors, the actual socio-cultural conditions and practices of the community act as a barrier to women's meaningful involvement in fisheries management. Complex webs of patron-driven power relations between male fishing lot owners and actors such as shareholders, local politicians, and village leaders largely dictate who gets access to fisheries resources, with women often excluded. By resting on oversimplified notions of "inserting" women into programmes and decision-making bodies, these efforts may risk exacerbating existing gender inequalities by adding to women's existing workloads and subjecting them even more to male authority (Resurrección 2006, 445).

Table 3 summarizes the findings of the analysis of the fisheries sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 3. Key climate-related human rights and gender equality concerns in fisheries

Substantive rights	**Right to food and health:** Gendered fishery practices, shaped by norms that constrain women's participation in fishing, fisheries governance, and access to fishing grounds, can heighten food insecurity when climate change and unsustainable fishing practices result in depleting fish stocks.
	Right to a decent livelihood: Within both small and large-scale fisheries, the gender division of labour and women's limited access to resources constrain women's participation in recognized and visible income generation activities.
	Right to physical integrity and human dignity can be threatened when competition over fish resources contributes to an increasing demand for cheap and exploitable labour.
Governance and accountability	**National fishery policies and agendas often do not account for the interests of marginalized fishery workers**, such as poor women and migrant workers. Indigenous fishing communities, especially women from these communities, often lack clear and recognized property rights to the land and water resources that their livelihoods depend on.
	Lack of protection from labor laws and institutional support for migrant workers in the fishery sector due to their often irregular legal status, making them highly susceptible to labor exploitation.
	Lack of sex disaggregated data reflecting women's work in fisheries which is often seen as extensions of their domestic work and is thus overlooked or undervalued economically. This lack of data leads to gender-blind fishery policies.
Procedural rights	**Lack of diverse representation and participation in fisheries governance**: poor fishers, migrant workers and others whose labor is made invisible across the fishery supply chains are excluded from influencing policy dialogue. This particularly impacts women due to persistent discriminatory gender norms and male-dominated systems of exchange.
	Lack of access to information, legal protection and social services for migrant workers across fishery supply chains, many of whom are young men and boys.

Mining

The mining sector – including fossil fuel extraction – is not only a significant source of greenhouse gas (GHG) emissions; it is also heavily dependent on local land and water resources, which are directly susceptible to climate change impacts. A recent global assessment projected that between now and 2060, metal and mineral extraction will more than double (OECD 2019). Continued demand growth and resource extraction, coupled with its environmental and social impacts, raise significant human rights concerns.

Despite this reality, there is scant engagement with human rights and gender perspectives in the Asian mining sector's current development plans. For example, the ASEAN Minerals Cooperation Action Plan 2016–2025 (ASEAN 2016a) aims to promote more socially responsible and environmentally sustainable mining development. However, there are no explicit mentions of climate change impacts, human rights perspectives or gender dimensions in the document. Furthermore, COVID-19 has disproportionately threatens mining workers due to their often cramped working conditions, and many mine workers are experiencing economic shocks as mining operations slow down due to the pandemic (Ramdoo 2020).

Environmental impacts of mining and their gendered dimensions
Large land areas are needed to construct mines, especially open-pit mining, which can fundamentally change the physical and social landscape of a region, increasing

its vulnerability to climate change. Since mining operations are often carried out in remote regions with high poverty rates, climate hazards add further pressure on local communities. For example, in the Philippines, the role of mining activities in disasters has been evident. In Benguet province, open-pit mines have led not only to deforestation, but also to erosion of hillsides, which has exacerbated the risks of landslides in the region (Torres 2018).

In addition to these changes, the extraction of surface and groundwater for mining activities, as well as the toxic contamination from mine wastes and chemicals of soil, water and air, directly threaten local communities' right to a healthy environment and their access to resources for sustainable livelihoods (Kemp et al. 2010). For example, rapid expansions of mining activities in Myanmar have contaminated the Chindwin River with various heavy metals, with devastating consequences to the local ecosystem (e.g. depleting and contaminating fish stocks) and the subsistence livelihoods that depend on it (Shrestha et al. 2020).

Current climate mitigation efforts and green economy principles have placed renewable energy transitions at the centre of efforts to combat climate change (see dis-

Photo: Pornvit Visitoran / UN Women

cussion below). This poses a dilemma: while a shift to renewable energy is essential, these technologies are also often heavily material-intensive. For example, wind turbines, solar cells and batteries require minerals and metals such as cobalt, lithium, platinum, and rare earths that are mined in only a few countries. Thus, the increase in extraction associated with the manufacturing of renewable energy technologies is becoming a rising concern (Klare 2012; Vikström 2020).

Studies in India have highlighted the gendered health implications of exposure to toxic contamination of air, water, soil and water resources from mining chemicals and metallic discharges (D'Souza, Somayaji, and Subrahmanya Nairy 2011; D'Souza, Subrahmanya Nairy, and Somayaji 2013), such as dire impacts on women's reproductive health. Furthermore, as women are often responsible for provisioning food for their families and unpaid domestic and care work, women's labour is increased as family members fall sick due to contaminated air, water and food resources from mining pollution.

Exclusionary processes and dispossessions

In addition to producing heavy pollution, large-scale operations can deprive communities of land and other resources that are crucial to their livelihoods through expropriation. Case studies of mining developments across the world have highlighted how local communities are often excluded from decision-making processes initiated by governments and corporations (Fernandes 2007; Kemp et al. 2010). These exclusionary processes directly threaten communities' right to free, prior and informed consent over projects that affect their territories (Anschell 2020), which sideline the interests of poor and already marginalized community members (Cariño 2002; Jenkins 2015; Jenkins and Rondón 2015; Spohr 2016).

Across Asia, indigenous peoples are particularly vulnerable to mining developments that encroach on their ancestral territories due to a lack of recognized land rights. For example, in Indonesia, the Grasberg Gold and Copper open-pit mine has reportedly displaced about 15,000 people during its construction and operation, with the indigenous Amungeme people being disproportionately affected (Ballard 2001). The expropriation of land for mining not only deprives indigenous communities of their rights to territory and livelihoods, but also of their right to cultural integrity, which is tightly linked to their ancestral lands (Anschell 2020). Against this backdrop, indigenous women are particularly vulnerable to the impacts of mining activities as well as

its associated environmental impacts due to the multiple and intersecting forms of discrimination they face (UNFCCC 2019).

Furthermore, the arrival of large-scale-mining activities in communities has been associated with increased gender-based violence (Jenkins 2014). Evidence from Mongolian mining communities (Cane, Terbish, and Bymbasuren 2014) suggests that the heightened violence can be attributed to the dominant patriarchal culture in the mining sector, as well as the influx of cash earnings for men that can translate to higher alcohol consumption and demand for prostitution.

Artisanal mining

In contrast to the largely negative impacts that large-scale mining can have on both the environment and surrounding communities, artisanal and small-scale mining has served as a source of local livelihoods, weaving together the social fabric of communities. Notably, women played an active part in small-scale mining activities, with some estimates suggesting that women constitute about a third of the artisanal and small-scale mining sector globally (Weldegiorgis, Lawson, and Verbrugge 2018). For example, in the province of Benguet, Philippines, small-scale gold mining has long been an important part of community life and has provided a stable source of income for generations. While this is still practiced by the Ibaloy and the Kankanaey people of Benguet, these activities have declined drastically as the presence of large-scale mining operations has increased (Cariño 2002).

At the same time, measures that are intended to mitigate negative mining impacts – reforestation to prevent landslides or banning mining activities – such as the National Greening Program of the Ministry of Environment and Natural Resources in the Philippines, have restricted local livelihoods dependent on small-scale mining instead of targeting large-scale mining operations (Torres 2018). Such restrictions on small-scale mining activities, coupled with climate change and mining pollution impacts on local agriculture, have profoundly hindered women's roles in both small-scale mining and alternative livelihood options. As a result, many women have become more economically dependent on men, relegated to unpaid care and domestic work (Cariño 2002; Deonandan, Tatham, and Field 2017).

Table 4 summarizes the findings of the analysis of the mining sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 4. Key climate-related human rights and gender equality concerns in mining

Substantive rights	**Right to a healthy environment**: Impacts of large scale-mining, such as land degradation, loss of biodiversity, and water and soil contamination, directly threaten the affected population's right to a healthy environment. These impacts have gendered implications (e.g. women's increased care burdens and risks to women's reproductive health caused by mining pollution). **Right to safety:** Increasing climate hazards, as well as mining-related impacts such as deforestation, will exacerbate the risks of disasters (e.g. landslides), directly threatening the safety of surrounding communities. **Right to decent work:** Artisanal and small-scale mining, an important source of income for some communities, is being displaced by large-scale mining operations. Measures that are intended to mitigate negative mining impacts (e.g. reforestation to prevent landslides or banning of mining activities) can further restrict local livelihoods dependent on small-scale mining.
Governance and accountability	**Lack of government accountability** for issues around land expropriation, dispossession, displacement, and environmental degradation in the mining sector. **Lack of inclusive climate mitigation planning** often restricts local livelihoods dependent on small-scale mining. This impact is gendered, as women constitute a large share of the workforce in small-scale mining communities.
Procedural rights	**Exclusion from decision-making processes due to lack of recognized land rights** particularly affects women and indigenous groups whose territories are often a target for mining operations. **Inconsistent enforcement of the principle of free, prior and informed consent** excludes local communities from decision-making processes around mining operations that affect their territories.

SECONDARY SECTOR

Construction

The rapid urban development taking place in Asia has created significant livelihood opportunities in the construction sector. From a climate perspective, meanwhile, the sector is of great interest, as it is a major contributor to carbon emissions due to its significant energy consumption and heavy transportation requirements. Buildings produce 26 per cent of total emissions from fossil fuel combustion (IEA 2019). This has made construction a priority sector for mitigation – from more sustainable brick and cement production, to energy-efficiency retrofits. From the adaptation perspective, climate change requires the construction industry to plan for and invest in temporary flood protections, slope stabilization, dewatering of foundations and other measures, and may require more resilient building materials in the face of more uncertain, frequent and extreme climate events (Arent et al. 2014).

A study conducted in Japan, Thailand, South Korea, Mongolia and Singapore found that institutional systems, economic factors, stakeholder roles and relations, and social factors can be both enablers and barriers to adopting more sustainable practices in the construction industry (Henry and Kato 2014). Those same factors are also important to understand the working conditions of those employed by the construction industry in the region, as these workers are particularly vulnerable to human rights abuses and to the impacts of climate change, especially in the form of heat exposure.

The construction sector relies heavily on low-skilled, temporary workers, attracting many poor and illiterate migrants who work under precarious conditions, with little or no social protection. This makes them particularly vulnerable to human rights abuses and hinders their capacities to adapt to a changing climate (Bhattacharyya and Korinek 2007).

In Asia, workers in the construction sector are among the most exposed to labour precarity, according to the International Labour Organization (ILO 2018a), as they often lack written contracts. Poor conditions are common not only in the building trades, but in the production of materials. Brick kiln production, for example, is one of the industries with the highest prevalence of forced labour. This lack of accountability allows for abuses, such as working overtime with few breaks and alarmingly low wages (Acharya, Boggess, and Zhang 2018; Bhattacharyya and Korinek 2007; Dutta 2017). Intermediary labour brokers are also common; brokers will secure employment in exchange for a percentage of workers' wages, resulting in many workers being indebted (Platt et al. 2017). The burden of having to pay off these debts sometimes leaves workers with no choice but to work faster, sometimes at the expense of safety measures, which increases the risk of potentially disabling injuries (Hassan and Houdmont 2014). Studies on migrant workers on construction sites in Singapore and in India found that illness and injuries are common, but precarious conditions often keep workers from seeking treatment, which can lead to chronic diseases (Sett and Sahu 2014). A growing concern is many construction workers' extended exposure to severe heat while labouring outdoors; as temperatures rise and extreme heat becomes more common, heat-related health problems are very likely to increase (Acharya, Boggess, and Zhang 2018).

Gendered impacts of climate change on construction workers

Across Asia, the exponential demand for low-skilled labour on construction sites presents a livelihood opportunity for many young and illiterate workers escaping unemployment and/or irregular incomes in rural areas for urban construction sites, either in their own country or abroad (Sett and Sahu 2014). Most *international* migrant construction workers are male, temporarily leaving their families to work in other countries in Asia or in the Middle East, as they are expected to provide for their families at home (ADB, OECD, and ILO 2016). When migrant workers are employed on construction sites in fast-developing and densely populated cities such as Singapore, accessible housing options are limited to shared facilities arranged by their employer. This often entails living in shared dormitories, with a lack of adequate bathroom facilities and long transportation time from the dorms to the construction sites, all of which impact their well-being (Dutta 2017). Such crowded places with limited hygiene also facilitate the transmission of diseases. Indeed, construction dorms have been found to contribute to the spread of COVID-19 in Singapore (Cai and Lai 2020). The absence of kitchens in

these facilities also impacts workers' access to food, and skipping meals during the workday is a common practice in this sector (Dutta 2017). In India, despite the Contract Labour Act stipulating that employers must provide suitable accommodations to construction workers, migrant workers in Delhi live in dehumanizing conditions, with no access to safe water and sanitation (Bhattacharyya and Korinek 2007).

The impacts of climate change on construction workers are gendered, as women and men perform different tasks within the industry. In India, women represent a large share of workers in brick factories, where they are exposed to solar radiation and the intense heat of brick kilns. The lack of heat-proof equipment makes them particularly vulnerable to heat-related injuries (Sett and Sahu 2014). Exposure to heat not only affects women's health, but also their livelihoods – as many work as brick carriers and are paid according to their output, high heat can affect their work pace and consequently their income (Dutta 2017; Sett and Sahu 2014). Rising temperatures due to climate change will likely further depress women's productivity and incomes; increasing work hours to compensate would come at the expense of their physical and mental health, compounded by the additional burden of unpaid care and domestic work. Women working in construction are thus often forced to just work faster, resulting in more fatigue and risk of injuries (Sett and Sahu 2014).

Inconsistent enforcement of labour policies resulting in violations of labour rights

The construction sector relies on diverse groups of often poor and illiterate workers who have few means of redress when their labour and human rights are systematically violated. For instance, a 2007 study found 95 per cent of female construction workers in India reported being illiterate and were generally unaware of government rules and regulations that could protect them from abuses by employers (Bhattacharyya and Korinek 2007). Indeed, despite India's Equal Remuneration Act, female construction workers were paid about 10 to 30 rupees less per day than male workers. The same study found that there were often no mechanisms in place to report sexual harassment. Moreover, the absence of provisions for day care and schools for children living on site increased women's unpaid care and domestic work and therefore fatigue at work, and could also lead to child labour.

Effective enforcement of regulations and increased access to information could also help alleviate many of the challenges faced by migrant construction workers. For in-

stance, some Middle Eastern countries have policies that restrict work during the hottest part of the day, but these regulations are inconsistently enforced on construction sites (Acharya, Boggess, and Zhang 2018). International migrant workers on these sites are the most affected by the lack of implementation of these rules (Amnesty International 2013), since language barriers limit their access to information, make them more vulnerable to mistreatment, and make it more difficult to report abuses (Dutta 2017).

Even when there are mechanisms in place to report abuses, these systems can be biased towards the interests of the construction industry. For instance, in Singapore, the Ministry of Manpower only keeps records of employee complaints against a company when the authority arbitrates in favour of the worker, but deletes records if the employee drops the case (Yea 2017). Such process means that if employers put pressure on workers to drop their complaints, the company record will remain clear while the issue is left unaddressed by the relevant duty-bearers. Migrant workers on temporary contracts, meanwhile, often have no access to formal welfare schemes and live in the fear of their contract being terminated and being deported. The lack of effective labour rights, protections and access to justice in the construction sector leaves workers vulnerable, threatening their most basic human rights without the resources to hold duty bearers accountable.

Table 5 summarizes the findings of the analysis of the construction sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 5. Key climate-related human rights and gender equality concerns in construction

Substantive rights	**Right to health:** The lack of safety regulations or their inconsistent enforcement lead to high risks of injury and intense exposure to heat, which can have long-lasting consequences on workers' health. These can be expected to increase under the effects of climate change.
	Right to physical integrity and human dignity: Mistreatment and abuse, including sexual harassment, are alarmingly common in the construction industry.
	Rights to an adequate standard of living and decent work: Construction workers are poorly paid; forced labour is prevalent in some parts of the construction sector, such as the brick kiln industry; and working conditions are woefully inadequate overall. Construction workers, particularly migrants, often live in dehumanizing conditions that deprive them of adequate access to food, water and sanitation, and their overall dignity.
Governance and accountability	**Lack of formal employment contracts** result in limited or no social protection and makes construction workers vulnerable to precarious livelihoods, workplace abuses and indebtedness due to their reliance on labour brokers.
	Inconsistent enforcement of labour regulations, especially to protect workers from heat exposure and other workplace health and safety issues contribute to increasing workers' vulnerability to injuries and illness.
	Lack of formal mechanisms to protect migrant workers' rights result in overall lack of accountability of employers and duty-bearers both in countries of origin and destination.
Procedural rights	**Workers' lack of awareness about mechanisms that could offer potential protection** may limit their ability to contest their working conditions and demand fair treatment.
	Lack of access to adequate training and security equipment also increases the risk of workplace injuries.

Renewable energy

The energy sector is a top priority for climate change mitigation, as fossil fuel combustion is by far the largest source of GHG emissions, globally and within Asia.[18] To enable a transition away from fossil fuels, massive investments have been made in the development and rapid upscaling of renewable energy technologies, including hydropower, wind and solar power, along with biofuels. These trends have been driven by countries' GHG emission reduction commitments – stepped up since the Paris Agreement in 2015 – and, in developing countries, also by opportunities created by carbon market mechanisms (Borras et al. 2016; Cock 2014; Corbera, Hunsberger, and Vaddhanaphuti 2017; McMichael 2010). Several Asian countries, most notably China, India and Japan, but also smaller nations, are now global leaders in renewable energy technology.[19]

Multiple studies have shown, however, that national energy policies tend to overlook the gender equality and social equity aspects of energy transitions, which can lead to inequitable outcomes (ENERGIA 2019, 29). As awareness of some of those social equity issues has grown in recent years, many have highlighted the need for a "just transition" to clean energy (see, e.g., ILO 2018d), but even in that context, the focus has been mainly on workers and communities who might be affected by the phase-out of fossil-fuel industries. Significantly more attention needs to be paid to the well-documented ways in which energy transitions and energy access projects have differentiated outcomes for men and women, including the gendered dimensions of land loss, displacement, employment opportunities, human rights abuses, and the use of and access to renewable energy.

Renewable energy related land loss and displacement

There is growing evidence that development of renewable energy can lead to land-loss and threaten local communities' rights to food, livelihoods and decent work. Various instances of large-scale land acquisitions and their negative impacts on local communities have been documented for hydropower development (Baruah 2012; Cooke et al. 2017), large-scale solar energy projects (Yenneti, Day, and Golubchikov 2016), biofuel plantations (Hought et al. 2012; Montefrio and Sonnenfeld 2013), and wind power developments (Avila 2018). These impacts, in turn, affect men and women differently, due to pre-existing inequalities in resource access, control and distribution. For example, in West Kalimantan, Indonesia, the shift in control of land to large-scale oil-palm plantations and contract farming systems has further undermined indigenous women's social positions, land rights and livelihoods (Julia and White 2012). Similarly, in Laos and Viet Nam, displacement due to hydropower development has forced much of the population out of traditional agricultural livelihoods and into informal wage labour or illegal work, such as timber harvesting (Hill et al. 2017). In those cases, men have been reported to have an easier time finding work within the market economy than women due to gendered norms and access to opportunities, which makes women more dependent on men and further marginalizes them. In India, research on a large dam development found an increase in alcoholism and gender-based domestic violence as a result of land loss and subsequent livelihood struggles (Levien 2017).

Precarious Employment

Under some conditions, large-scale renewable energy projects can create job opportunities in local communities and contribute to poverty alleviation (Du and Takeuchi 2019; Kattumuri and Kruse 2019). However, opportunities to participate in the renewable energy labour force are gendered and often unequal. For example, evidence from Papua New Guinea suggests that while men tend to participate in income-generating activities in oil palm plantations, women have less access to these activities due to gender roles. At the same time, the expansion of plantations limits the land available for women to cultivate food crops and thereby jeopardizes household food security (Friends of the Earth International 2009). Furthermore, the promise of employment is undermined by precarious job arrangements that do not provide sustainable livelihoods in the long term.

In Gujarat, India, while development of the Charanka Solar Park promised large number of jobs in the surrounding area, interviews with community respondents revealed that the job opportunities were inadequate to achieve long-term poverty alleviation (Yenneti, Day, and Golubchikov 2016). Most of the unskilled construction jobs related to the project are short-term and underpaid, and ultimately would not compensate for the precarity caused by the loss of community land due to the project development. A study on the impacts of hydroelectricity develop-

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18 See https://www.climatewatchdata.org/ghg-emissions for sector-by-sector and regional breakdowns.

19 To learn more, see https://www.eastasiaforum.org/2020/05/13/the-renewable-energy-transition-is-coming-to-asia/.

ment on rural livelihoods in Sikkim, India, highlights a similar pattern of change in land use and subsequent labour shift from traditional, long-term livelihoods to short-term, precarious ones (Chandy et al. 2012). While job creation in the studied village brought about important socioeconomic benefits, most of the jobs were temporary ones in the construction phase of the projects. Thus, the jobs that many local farmers took up did not translate into a sustainable solution for poverty alleviation. Instead, the increasing dependence of the local villagers on temporary company work, as well as the shifts in labour structures, risks eroding their existing social networks and undermining their adaptive capacities in the long run.

With the growth of renewable energy enterprises, women are increasingly becoming renewable energy entrepreneurs,[20] including through small-scale energy initiatives managed by women in rural villages. However, many renewable energy initiatives lack clear criteria for social inclusion and gender equality. Although women's share of employment in the renewable energy sector (32 per cent) is greater than in the oil and gas industry (22 per cent), women hold only 28 per cent of jobs in science, tech-

nology and engineering in the renewable energy sector (IRENA 2019). As women tend to have weaker access to new technologies (including renewable technologies such as off-grid solutions for electrification), issues of unequal access are a central concern in the transition to low-carbon economies (Fernández-Baldor, Lillo, and Boni 2015; Goswami, Bandyopadhyay, and Kumar 2017; Ishara Mahat 2004; Rosser 2005; Skutsch 2005). Furthermore, the gendered gap in access to technologies and economic assets may limit women's potential to take up renewable energy enterprises; there is a risk of elite capture of renewable energy entrepreneurship by women with more education and economic and social capital (Resurreccion et al. 2019).

Women's access to renewable energy technologies

Despite mixed evidence on the gendered impacts of access to renewable energy technology, studies across Asia have highlighted how small-scale solar energy deployment has contributed significantly to rural communities, and especially to rural women's right to an adequate standard of living (E. Kabir, Kim, and Szulejko 2017; Millinger, Mårlind, and Ahlgren 2012; Wijayatunga and

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20 For a detailed review of job creation in the global renewable energy sector, see IRENA (2020).

Attalage 2005). This includes increased energy self-sufficiency and educational opportunities, and the alleviation of overall poverty and women's unpaid care and domestic work (Millinger, Mårlind, and Ahlgren 2012). However, despite the progress made, unequal access to energy remains a critical concern. For example, several cases in South Asia have documented that although solar home systems have improved many rural women's standard of living, the affordability of solar home systems remains a key issue, as many poor households are unable to afford the expensive down payments and subscription fees despite subsidy programs (E. Kabir, Kim, and Szulejko 2017; Amin and Langendoen 2012; Wong 2012; Laufer and Schäfer 2011;1 Mahat 2004). Thus, when energy programmes do not actively integrate concerns of gendered access and usage in their design and implementation, existing inequalities can actually deepen. However, while the poor lag behind, households that can afford solar home systems tend to have improved education opportunities, health and means of communication (Johnson et al. 2020; Wong 2012).

Table 6 summarizes the findings of the analysis of the energy sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 6. Key climate-related human rights and gender equality concerns in the energy sector

Substantive rights	**Right to adequate standard of living:** Evidence across Asia has demonstrated that in some cases, renewable energy deployment can contribute significantly to rural women's overall poverty alleviation, including decreasing labour burdens and improving health, educational, and work outcomes. **Right to a healthy environment:** Large-scale renewable energy projects such as hydropower, mega solar-energy projects, biofuel plantations and wind power developments can lead to environmental degradation that threatens the health and livelihoods of impacted communities. **Right to physical integrity and human dignity:** Large-scale renewable energy developments can lead to right abuses related to issues of land loss and displacement. In some instances of land loss, women become more susceptible to male violence in the aftermath of displacement and disintegrated support systems.
Governance and accountability	**Lack of criteria for social inclusion and gender equality** in national targets for reducing carbon emissions. **Lack of formal mechanisms to ensure sustainable and lasting livelihoods for affected communities:** while many large-scale renewable energy developments have promised job creation to local communities, evidence has shown that many of these opportunities are temporary and precarious, and do not alleviate poverty in the long run. **Inadequate governance mechanisms** lead to unequal access to renewable energy, where the wealthier can enjoy improved education opportunities, health and communication but poor households cannot afford access to energy systems.
Procedural rights	**Many large-scale renewable energy projects are implemented without the free, prior, informed consent of local communities**. Rural women, and in particular indigenous women, who have no recognized land rights suffer disproportionately from land loss related to renewable energy projects. **Rights to information and participation in such developments are constrained** when communities are not given sufficient opportunities for inputs and consent on local renewable energy projects, which may prevent them from reaping the benefits of these initiatives.

Manufacturing

Manufacturing is a major source of GHG emissions, accounting for more than 36 per cent of CO_2 emissions from fossil fuel combustion in 2018 (IEA 2019). It is also a growing priority for climate change mitigation in Asia, as industrialization drives up fossil fuel demand and GHG emissions (ACE 2020). At the same time, given the increasing importance of manufacturing to Asian economies and livelihoods, concerns about climate change impacts and adaptation have risen to prominence (Woetzel et al. 2020).

The manufacturing sector's long supply chains and fixed asset requirements makes it susceptible to direct damage caused by extreme hazardous events such as flash fires, floods, and torrential wind and rains (Odell, Bebbington, and Frey 2018). In addition, secondary repercussions such as the growing need to retrofit infrastructure are expected to have long-term implications. Rising temperatures can also affect firm-level productivity (Burke et al. 2015; Chen and Yang 2019; Dell, Jones, and Olken 2012; Zhang et al. 2018). For example, a study on the impacts of climate change on Chinese manufacturing estimated that by the middle of the 21st century, climate change could reduce annual output by 12 per cent if no proactive adaptation measures are put in place (Zhang et al. 2018).

By driving migration (for instance, due to increasingly constrained rural livelihoods) and deepening poverty, climate change can also indirectly trigger changes in the composition of the manufacturing workforce, labour patterns and working conditions, with persistent gender disparities likely to be exacerbated as a result. Labour precarity in the manufacturing sector has worsened in the wake of COVID-19. For example, as of April 2020, more than 120 factories in Myanmar, equivalent to approximately 20 per cent of all garment factories in the country, had halted clothing production.[21] Recently, a large garment factory in Yangon fired all 520 unionized workers in the factory and withheld their wages, attributing the layoff to COVID-19.[22]

Manufacturing is a broad and diverse sector. It is beyond the scope of this report to analyse each sub-sector in detail, but the following section delves deeper into the garment industry, which employs mainly women, produces about 60 per cent of globally traded of garment and textiles (ILO 2018b), and has significant environmental impacts, including on climate change.

Climate change, labour migration and work in garment manufacturing

Across Asia, climate change effects on agricultural livelihoods, among other factors, have propelled an influx of rural inhabitants towards urban and peri-urban areas for waged work (Bello 2004), with many entering the manufacturing workforce (Lyu et al. 2019). Traditionally, migrant workers have largely been men, while women and children stayed left behind in impoverished rural areas (Ajibade, McBean, and Bezner-Kerr 2013; Bello 2004). However, across South and Southeast Asia, migration has become increasingly feminized, and there are large influxes of poor, rural women into urban areas in search of work due to the scarcity of employment opportunities in villages and the demand for female labour in the manufacturing sector (Kumar Ashish et al. 2018; Phouxay and Tollefsen 2011). For example, the ready-made garment industry in Bangladesh employs roughly 4 million workers, with women – many of them rural-urban migrants – accounting for 85 per cent of the workforce (ILO 2015; Oishi 2005). As extreme weather events increase with climate change, causing economic hardship in many rural and agrarian settings and spurring climate-related labour migration, the number of workers in exploitative work arrangements in factory settings may substantially increase (Goering 2014).

Many of the women garment workers in Dhaka, Bangladesh, are rural migrants and live in slums or informal settlements that are highly vulnerable to environmental risks (Evertsen and van der Geest 2020), such as air pollution and storms, floods, mudslides and other hazards of a changing climate (Ajibade, McBean, and Bezner-Kerr 2013). Furthermore, the risks faced by women workers are compounded by the lack of labour rights and workplace safety compliance in many factories, as well as their unpaid care and domestic work responsibilities (Ajibade, McBean, and Bezner-Kerr 2013; ILO and ADB 2011).

Furthermore, climate change-induced temperature rise can translate to increased heat stress on women factory

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21 See https://cleanclothes.org/news/2020/live-blog-on-how-the-coronavirus-influences-workers-in-supply-chains to learn more about how COVID-19 affects garment workers.

22 To learn more, see https://www.solidaritycenter.org/myanmar-factory-uses-covid-19-to-union-bust/

workers, which directly threatens their substantive right to health. This is often compounded by inadequate labour standards in factories, which results in a lack of both the infrastructure and relevant policies to ensure workers' well-being (Barua and Ansary 2017). For example, increased frequency of high temperatures and heat waves can cause dehydration, heat strokes, headaches, and kidney disease among factory workers (Nerbass et al. 2017). This is exacerbated by the lack of cooling systems and sanitation facilities in factories (Barua and Ansary 2017; Khosla and Masaud 2010).

Local productions systems embedded within global production networks

Climate change has affected the labour composition of manufacturing, and the manufacturing sector as a whole has been attempting to reduce its carbon footprint and fortify supply chains against climate change. Supply chain flexibility has been promoted as a way of "climate-proofing" supply chains from climate impacts, especially transnational supply chains. The concept suggests that supply chains with diversified sources and reduced dependency on a single location for supplies will be more climate-resilient. However, such supply source diversification means supplier switching and weakening of legal contracts for

supply, which undermines the labour conditions and job security of mostly poorly paid, low-skilled workers at production sites (Resurrección et al. 2019).

In recent years, high-profile industrial disasters, such as the Rana Plaza factory collapse in Dhaka in 2013, have put the sector under critical scrutiny for its failure to comply with international standards of workplace safety and decent working conditions (Ashraf and Prentice 2019; Hossain 2019). In Bangladesh, the majority of ready-made garment factories do not meet national and international standards in terms of construction and fire safety, safe working environments, and basic labour rights to prevent wage exploitation and long working hours (Barua and Ansary 2017). Despite the emergence of collective agreements initiated by global brands that seek to improve safety and working conditions in the ready-made garment industry, structural problems related to exploitative procurement practices and pricing (e.g. short production windows, pressures to find the lowest cost of production, and fluctuations in orders by brands) remain unsolved (Alamgir and Banerjee 2019).

Table 7 summarizes the findings of the analysis of the manufacturing sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 7. Key climate-related human rights and gender equality concerns in manufacturing

Substantive rights	**Right to decent livelihood:** Across Asia, economic hardship, coupled with climate change, has driven many rural inhabitants and poor farmers, many of whom are women, to migrate to urban areas for wage work in manufacturing, only to encounter exploitative working conditions in the garment industry.
	Right to physical integrity and human dignity: Women workers are overrepresented in the garment industry and are susceptible to a myriad of labour rights abuses and environmental hazards due to a lack of legal protections.
	Right to health: Climate change-induced temperature rise means increased heat stress on women factory workers.
Governance and accountability	**Lack of enforcement of occupational and safety standards** in many of the top garment manufacturing countries due to lack of compliance by manufacturing firms and political action.
	Weak legal contract for supply undermine labor standards at production sites: while supply-chain flexibility has been promoted as a way to fortify the climate resilience of supply chains it has also impacted workers' job security, and resulted in lower wages and pressure to work longer hours.
Procedural rights	**Weak negotiating power** of women migrant workers who are often poor and lack alternative livelihood options, putting them at risk of exploitative working conditions in factories.

TERTIARY SECTOR

Wholesale and retail trade

Wholesale and retail trade, considered an intermediary between producers and consumers, is embedded within local and transnational supply chains. Urban and rural markets are crucial in Asia: communities rely on them for their daily needs; as a consequence, communities are greatly affected by climate risks and related damage in earlier stages in the supply chain or on market infrastructure itself. In rural areas, many livelihoods rely on selling agricultural products, which makes them highly vulnerable to climate change. Such uncertainties contribute to migration to urban areas, where street vendors are often amongst the poorest, living and working in fragile houses and shops that offer no protection against heat and disasters. Working in markets is often a family or individual business, often without contracts and legal recognition, as well as limited social protection, all of which increase vulnerability to shocks.

Climate change impacts on supply chains and infrastructure

Retail trade is often an essential part of the livelihoods of farmers and fishers in rural and coastal Asia, but the effects of climate change on the quantity and quality of products sold makes this particularly precarious (see sectoral analyses above). In Nepal, most of the farmers who travel to markets on a daily basis are women; transportation by trucks, tractors or bus – or walking for long distances if they cannot afford these options – can expose

Photo: Pathumporn Thongking / UN Women

them to gender-based violence (Ensor et al. 2019). Moreover, transportation and infrastructure are also susceptible to climate-related disaster impacts, which are notably increasing (IPCC 2018b), and which in turn affects the livelihood strategies of both producers and the intermediaries they might employ to deliver their products to markets. Poole et al. (2019) observed that when rural producers in Afghanistan are unable to access markets after disasters, they rely on village traders to buy their goods – but for less than they would normally be able to charge. Climate change thus further isolates rural communities that are already vulnerable, in some cases pushing people to migrate to cities where informal retail trade is one of the only livelihood options for those with little capital to invest and who lack skills to get jobs in the formal economy (Basu and Nagendra 2020; Hussain 2019).

Increased vulnerabilities of street vendors in the context of climate change

In many countries in Asia, informal street vendors are a critical component of local economies, as they make food and other goods available at low prices while supporting small-scale producers and industries. However, persistent poverty and lack of social and legal protection makes them particularly vulnerable to shocks (Basu and Nagendra 2020). In Viet Nam and Cambodia, women form the majority of informal street vendors (Bhowmik 2005) and in the Philippines, women who migrated from rural areas to cities are the country's primary market traders (Milgram 2011). In India, studies found that the income of women vendors is lower than men's because of lack of capital to invest in their businesses and limited time to sell on the street due to their unpaid care and domestic work responsibilities (Bhowmik 2005). Evidence from Dhaka, Bangladesh, shows that while men constitute the majority of street vendors there, they depend on the women in their households for preparing items to sell (Bhowmik 2005, 2258). This indicates that while women are essential to these markets, their roles are often rendered invisible due to the gender division of labour. As a consequence, women often do not reap the benefits of their labour and are constrained to the domestic sphere.

Studies in Hyderabad, India, and Dhaka, Bangladesh, found that street vendors earn barely enough to feed themselves and their families, leaving them no other choice than to live in slums with minimal water and sanitation and little protection from heat, which affects both health and the quality of food items prepared for sale (Basu and Nagendra 2020; Hussain 2019). Because their stalls are located on roadsides, where concrete and asphalt intensify heat, street vendors are doubly exposed to heat stress (Sánchez, Peiró, and González 2017). Street vendors' ability to adapt to climate change is crucial both for themselves and for local communities who depend on them for accessible, affordable and high-quality food (Chiang and Ling 2017).

Lack of consideration for small business in urban and disaster planning

Street vendors are essential in Asian cities but are largely confined to the informal economy, characterized not only by a lack of formal recognition, but precarity, violence, and little or no social protection. In the Philippines, women informal vendors tend to be exposed to violence and other forms of harassment by police and other authorities, as well as by rival street vendors and local mafias; street vendors live in the fear of eviction and confiscation of their merchandise, since they are often considered a "public nuisance" by local authorities (Basu and Nagendra 2020, 199; Milgram 2011). Street vendors are often obliged to negotiate with local authorities to avoid persecution and to secure a location on sidewalks and busy areas, but these informal agreements can easily be broken, resulting in mistrust of formal power structures (Hussain 2019). In order to protect their livelihoods, vendors sometimes take collective action, as successfully demonstrated in Baguio, Philippines, where women organized themselves in vendor associations to claim their rights and overcome a legal ban on street trade in the local business district (Milgram 2011).

In general, informal workers and city dwellers are often not consulted in urban planning, resulting in a lack of dedicated and well-structured vendor zones. Having such zones could increase their resilience, as the capacity to anticipate and recover from disasters is strongly linked to knowledge of the areas in which retail workers live and work (Basu and Nagendra 2020; Chiang and Ling 2017). This lack of consultation and participation, combined with street vendors' distrust in local authorities, increases their overall vulnerability, as their needs and rights are not recognized and addressed; moreover, their informal status is often not compatible with insurance schemes and social security – two other key sources of resilience to climate change and disasters (Hussain 2019; Paul et al. 2019).

Table 8 summarizes the findings of the analysis of the wholesale and retail trade sectors, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 8. Key climate-related human rights and gender equality concerns in wholesale and retail trade

Substantive rights	**Right to adequate standard of living:** The incomes of wholesale and retail traders is often barely sufficient for them to ensure their food security and be able to afford decent shelter with access to water and sanitation. This precarity increases as climate change affects supply chains and disasters, threatening their living and working areas. **Right to physical integrity and human dignity:** Informal street vendors face harassment and are disproportionately exposed to violence, including gender-based violence and forced evictions.
Governance and accountability	**Street vendors are rarely recognized as legal workers**, but tend to rely on informal agreements with local authorities to protect their livelihood assets. Such agreements offer **no accountability** and reinforce vendors' vulnerability, as informal workers often have **no access to insurance and social protection**.
Procedural rights	**Lack of consultation and participation in urban and disaster planning** results in policies that overlook daily challenges faced by street vendors, such as exposure to heat and floods. Migrant workers and those living in slums are particularly marginalized from formal decision-making processes.

Tourism

Tourism is crucial in Asian economies, but also a major contributor to carbon emissions and a highly vulnerable sector in the context of climate change (Pang, McKercher, and Prideaux 2012; UNWTO and UNEP 2008). Tourism relies on coastal, mountain and forest landscapes that are highly exposed to climate change (e.g. coastal erosion, avalanches, loss of biodiversity) and climate change adaptation and mitigation measures such as the construction of dykes or wind turbines can also affect tourism demand.

The tourism industry relies on complex local and international systems to create demand and satisfy tourist needs. While the positive effects of tourism on economic development are often highlighted, it is debatable whether employment in this sector is effective as a means to alleviate poverty and redistribute growth more equitably, as it often leaves behind some of the most vulnerable (Jeyacheya and Hampton 2020). In the context of COVID-19, the tourism industry across Asia has been severely affected by travel restrictions, lockdowns and other preventative measures during the pandemic, highlighting the vulnerability of this sector to shocks in demand, which are also expected to be more frequent in a changing climate. The complex global interconnections among stakeholders in the tourism sector make it particularly relevant to efforts to protect both local communities and the tourists themselves. In 2014, for example, the ASEAN tourism ministers made a joint declaration committing themselves to raising awareness of the Global Code of Ethics for Tourism (ASEAN 2014). The code, adopted in 1999 by the UN World Tourism Organization, notably mentions the responsibility of the tourism industry to be environmentally sustainable (Article 3) and to benefit the host countries and communities (Article 5), as well as the responsibility of States in tourism destinations to protect the rights of salaried and self-employed tourism workers (Article 9) – but it is not legally binding (UNWTO 1999).

Climate change threatens tourism livelihoods

Many Asian economies are dependent on tourism: in 2017, tourism accounted for 12 per cent of Southeast Asia's GDP and 11.8 per cent of total employment in the sub-region, in addition to indirectly contributing to livelihoods that provide goods and services to tourists (WTTC 2018). While a large share of tourism in the region is seasonal, the impacts of climate change on Asian environments (e.g. coral bleaching and beach erosion) and weather patterns (e.g. droughts and floods) can have major consequences for tourism-dependent livelihoods, especially for those with little job security (Cheablam and Shrestha 2014; Hoang and Pulliat 2019). Research has found that most tourism jobs available to local people in Asia are characterized by low levels of quality, pay and security, and that gender and other forms of discrimination are common in the industry (Jeyacheya and Hampton 2020).

Women accounted for 53 per cent of formal tourism workers in the Asia-Pacific region between 2009 and 2018, but according to the World Tourism Organization, they are over-represented in low-paid positions with poorer working conditions and disproportionately exposed to harassment and violence at their workplace (UNWTO 2019). Moreover, women's employment remains concentrated in hospitality, which reproduces their gendered roles and is often associated with informal employment, and thus is not accounted for in official disaggregated data on tourism employment. In addition, and despite women accounting for the majority of tourism workers, only 10 per cent of tourism ministerial positions in the Asia-Pacific region were held by women in 2019, which is even less than 10 years earlier, when 15 per cent were women (UNWTO 2019). This lack of representation and female leadership also contributes to undermining women's role in tourism and to overlook their rights and interests in policy-planning, including with regard to climate change.

In many places, tourism sites attract migrant workers whose temporary and precarious contracts offer fewer benefits and job security compared with local workers, making them more vulnerable to climate shocks (Lee, Hampton, and Jeyacheya 2015; UNWTO and UNEP 2008). This instability is especially critical in Small Island Develop-

ing States, such as the Maldives, whose economies rely disproportionately on tourism, with few livelihood alternatives (Lee, Hampton, and Jeyacheya 2015; Pang, McKercher, and Prideaux 2012). At the same time, because tourism sites are located in disaster-prone coastal and mountain areas, the impacts of climate change on tourism not only threaten workers' livelihoods, but also their substantive right to life and health as disasters become more frequent and more intense (Nyaupane and Chhetri 2009; Seekamp, Jurjonas, and Bitsura-Meszaros 2019).

Tourism affects community resource rights and increases vulnerability to climate change

Poverty and the lack of alternative livelihoods are crucial factors in shaping vulnerability to climate change, especially for rural communities involved in tourism (Nitivattananon and Srinonil 2019). The prospect of tourism's economic benefits often comes at the expense of local resource rights. For example, in coastal areas in Thailand , water scarcity, wastewater and pollution caused by tourism are critical challenges for local communities (Nitivattananon and Srinonil 2019). While tourism projects may aim to improve local livelihoods, they often end up threatening community rights to a healthy environment. Similarly, tourism infrastructure development often requires expropriation or purchase of agricultural land at unfair prices from local landowners, especially when their rights

to information and participation are not respected and state or private investors are not acting with transparency (Ojeda 2012). Women and indigenous people are particularly vulnerable to such land grabs, as their lack of formal land ownership gives them little leverage to oppose to such projects.

In Small Island Developing States, foreign-owned tourism infrastructure has compromised agriculture sector and food security, restructuring local economies towards the tertiary industry (Lee, Hampton, and Jeyacheya 2015). However, tourism demand is highly volatile, and climate change is likely to result in a redistribution of tourists from more to less climate-sensitive destinations (Pang, McKercher, and Prideaux 2012; Scott, Hall, and Gossling 2019). While large-scale tourist operations might have the capacity to adapt to these changes, small businesses, such as handicraft and souvenir shops where women are overrepresented, face the double burden of increased ex-

posure to climate change and livelihood precarity in the absence of long-term adaptation strategies. Studies in the Mekong Delta in Viet Nam found that the lack of long-term adaptation planning by government in consultation with local stakeholders in touristic areas leads to small businesses adopting low-cost solutions, such as saving water in tanks to prepare for water shortages in the dry season or providing raincoats to tourists during heavy rains, which do not reduce their overall climate vulnerability (Huynh and Piracha 2019). Structural and sustainable changes to protect the tourism industry from an uncertain future can only be achieved through policies which take into account the needs and vulnerabilities of all stakeholders in the tourism industry, especially those who tend to be left behind (UNWTO and UNEP 2008).

Table 9 summarizes the findings of the analysis of the tourism sector, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 9. Key climate-related human rights and gender equality concerns in tourism

Substantive rights	**Right to life:** Tourism infrastructure is often located in disaster-prone areas, requiring adequate DRR planning to protect the lives of those living and working on these sites.
	Right to a healthy and clean environment: Unplanned and unsustainable tourism development can lead to environmental degradation and pollution.
	Right to decent livelihoods: Many tourism jobs are seasonal, so workers experience fluctuating incomes and depend on tourism demand for their livelihoods. In parallel, though they make up the majority of the workforce in the tourism sector, women experience gendered pay gaps and are overly represented in activities that are extensions of their unpaid care and domestic work.
Governance and accountability	**Power imbalances between large-scale investors and local communities** can result in the interests of the tourism industry being prioritized over the needs and rights of local communities when planning for infrastructure development or adaptation policies. This particularly affects women without land titles or indigenous people who have customary or collective ownership of land and resources.
	Lack of contracts, particularly for women and migrant workers, leaves them without access to social protection.
	Lack of representation and female leadership in higher decision-making spheres such as ministries of tourism contributes to overlooking the rights and needs of women.
Procedural rights	**Inconsistent implementation of the principle of free, prior and informed consent** when developing tourism infrastructure, especially in rural areas, can lead to land grabs and shifts from primary to tertiary economies, making local communities more reliant on unstable income sources.
	Lack of long-term adaptation planning in consultation with small-scale actors increases their vulnerability even if they adopt low-cost and short-term solutions.

Livelihood support sectors: Health and education

Health care and education are basic human rights and critical livelihood assets, defining people's ability to choose and sustain their livelihoods, and also to adapt to a changing climate. The universal rights to health and education are recognized in the International Covenant on Economic, Social and Cultural Rights, which has been ratified by almost all countries in Asia.[23] By ratifying this international treaty, State Parties commit to ensuring that all their citizens have access to these rights (Saul, Kinley, and Mowbray 2014). Given that both health and education are essential to the realization of gender equality and the protection of human rights in all other key livelihood sectors, they are included in this analysis as key livelihood support sectors that in themselves also face significant climate change, human rights and gender equality challenges.

Both the health and education sectors are deeply gendered: 94 per cent of teachers in preschool education worldwide are women (UNESCO 2019), and in the Asia-Pacific region, women account for 55 per cent of teachers (average across all levels of teaching); they also make up 60 per cent of the workforce in the health sector (ILO 2018e). However, these figures only account for paid care work in the health and education sectors, while women in Asia and the Pacific perform 80 per cent of the unpaid share of care and domestic work. This includes looking after children, the elderly and the sick in their families. Many formal jobs in the health and education sectors can be considered as extensions of these tasks and responsibilities. This can also explain why such jobs are usually considered as socially acceptable for women, contributing to women's overrepresentation in those sectors. Men, meanwhile, disproportionately hold more prestigious positions within these sectors, such as university professors or doctors, and in higher spheres of decision-making (UNESCO 2019; WHO 2016).

The COVID-19 pandemic has led to health care workers being labelled as "essential", recognizing their key roles at the frontlines of the health crisis, but also putting their own right to health at stake, with over 12,000 health workers infected and more than 170 who died from the virus in the region as of June 2020 (Butt 2020). The pandemic has also affected teachers' livelihoods, especially women working in low-paid and informal jobs with no safety net,

which is sometimes the case in private schools, such as in Afghanistan (Teter and Wang 2020). Similar to health disasters, climate change and climate-related disasters can disrupt the delivery of health and education services, and make access to these key services more difficult, thereby affecting the realization of human rights in all other livelihood sectors.

Climate change threatens the fundamental right to health

According to the World Health Organization, climate change is the indirect cause of 150,000 deaths per year, and projections for the future indicate an additional 250,000 deaths per year between 2030 and 2050 (WHO 2018, 2013). Climate change is already directly affecting health through diseases related to heat stress and pollution, but also through food insecurity, malnutrition, water- and vector-borne diseases, sudden cardiac death, premature births, gastrointestinal illnesses and depression (Smith et al. 2014). In Southeast Asia and parts of Indonesia and Thailand, where malaria has been halted, the disease could resurface under the effects of climate change, while northern parts of the Philippines could be brought more definitively into being year-round malaria zones (McCracken and Phillips 2016). In the Sikkim Himalaya, changing snowfall patterns and melting glaciers discharged in the rivers has impacted the health of the communities settled in the surroundings areas, with a study noting the significant spread of skin problems and asthma, which were rare earlier (Chattopadhyay, Dahal, and Das 2016).

The health effects of climate change can exacerbate underlying or chronic conditions or pre-existing health vulnerabilities of young children, pregnant women and the elderly (Leffers and Butterfield 2018; McDermott-Levy et al. 2019; Walker et al. 2020). Already marginalized people, such as the poor, migrants, women and other gendered groups, are more vulnerable to the health impacts of climate change (Watts et al. 2015). Similarly, disasters hit the hardest those who are already marginalized, as found in the Philippines after Typhoon Haiyan, where two-fifths of the deaths involved people over the age of 60, even though they only made up 8 per cent of the population (Kulcsar 2013). Gender-based violence has also been found to increase under the effects of climate change, as pressure on natural resources can lead to conflicts, and women standing up to defend their environmental rights are often targeted (Castañeda Carney et al. 2020).

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23 See https://www.ohchr.org/en/professionalinterest/pages/cescr.aspx. The countries in Asia that have not signed or ratified the International Covenant on Economic, Social and Cultural Rights, which entered into force in 1976, are Bhutan, Brunei Darussalam, Malaysia and Singapore.

Climate change threatens the fundamental right to education

Access to education is also aggravated by climate change. Children from poorer households are likelier to miss or drop out of school to help their parents when climate change affects their livelihoods (UNICEF 2019). Girls' access to education is further compromised; for instance, in rural India, school enrolments have been found to fall more drastically for girls than for boys after extreme weather events (Zimmermann 2020). Disasters can indeed have long-term effects on access to education, as over a billion students in the world attend primary and secondary schools in disaster-prone areas (Paci-Green et al. 2020), which can threaten the lives of students and cause loss of materials (e.g. textbooks, desks and chairs) that take time to replace (UNICEF 2019). Children's right to education is also compromised by damage to school and road and transport infrastructure; disasters also increase girls' exposure to violence while traveling to school (Bradshaw and Fordham 2015).

In the context of climate change, the rights to health and to education can be considered as interconnected, both in terms of ensuring people's well-being and in building their capacities to mitigate the effects of climate change. Indeed, school attendance and adult literacy are crucial in disaster prevention, especially for women and girls, as highlighted by two studies on water-borne diseases in Cambodia (Davies et al. 2015; McIver et al. 2016). This interrelation has also been found during heatwaves in Seoul, South Korea, where residents with lower education were more at risk of dying (Son et al. 2012). Other studies found that people are more engaged with the issue of climate change when they understand its public health implications, and achieving such public awareness requires an educated population (Myers et al. 2012; Ung et al. 2017). In other words, ensuring universal access to health and education is a crucial requirement for States in terms of substantive human rights, but also a necessary pre-condition for effective climate change action.

Table 10 summarizes the findings of the analysis of the education and health sectors, applying the gender-transformative, human rights-based approach outlined in the introduction.

Table 10. Key climate-related human rights and gender equality concerns in education and health

Substantive rights	**Right to health:** Climate change has direct and indirect impacts on health, and those with pre-existing physical or social vulnerabilities are the most at risk. Poor and rural communities are likelier to face difficulties in accessing health services, which hinders their adaptive capacities. **Right to physical integrity:** Women and girls are increasingly exposed to gender-based violence in the context of disasters and climate change. **Right to education:** Climate change and disasters can damage education infrastructures and disrupt livelihoods, sometimes requiring children to help their parents instead of attending school. Girls in rural areas have been found to be likelier to drop out of school after extreme climate events.
Governance and accountability	**Lack of accountability in times of disasters:** despite having recognized the rights to health and education through the International Covenant on Economic, Social and Cultural Rights, countries in Asia often struggle to protect and promote these rights in all circumstances, leaving little or no recourse for those affected.
Procedural rights	**Lack of female representation in decision-making positions:** while women are overrepresented in jobs that perpetuate traditional gender roles in the health and education sector, decision-making positions are held by men. Such imbalances can result in sectoral policies that overlook the needs of women workers, whose hands-on experience could help inform policies for more targeted interventions. **Access to climate change and disaster information** effectively channels through schools, but these infrastructures can be impacted by disasters.

KEY INSIGHTS

This chapter has explored the gendered and human rights implications of climate change on key livelihood sectors, and how climate policies are addressing or overlooking these issues. While some human rights and gender equality concerns are sector-specific, there are common challenges across all sectors. In particular, the review showed that the differentiated impacts of climate change on women and men centre on three broad themes, summarized in Table 11: (1) existing gender inequalities caused by unequal power dynamics in both the private and public spheres, (2) discriminatory laws and customs, and (3) unequal access to and control of resources.

Many human rights issues observed in different sectors are linked to access and control over natural resources in particular. Marginalized groups such as rural and indigenous communities are often the most vulnerable to distributive injustice, dispossession, and changes in use of land, water, forests and other resources they depend on for their livelihoods. Climate change and other pressures, such as large-scale extraction and appropriation, on agricultural livelihoods may lead to migration to urban areas or overseas, and to jobs in different sectors.

Lack of labour regulations and social protection, coupled with limited access to information, makes migrants vulnerable to human trafficking and subject to precarious and unprotected labour contracts. Migrant workers in all sectors have been found to be worse off than local workers, often working without contracts or in temporary jobs, having little to no access to health care, living in precarious conditions, isolated by language barriers, and in constant fear of being deported.

Multiple and intersecting forms of discrimination and inequalities in all sectors have consequences for specific groups of people. In all sectors, women workers face multiple challenges and entrenched gender norms and discrim-

Table 11. Differentiated impacts of climate change across sectors

Theme	Examples from sectoral analysis
Unequal power dynamics and norms in both the private and public sphere	Gender divisions of labour mean women are over-represented in low-skilled, low-paid work in the informal economy, exposing them to precarious working conditions and increased climate change impacts.
	Migrant and informal workers have limited legal rights and access to social protection, which becomes all the more urgent as climate change further exacerbates precarious working conditions.
	Women are disproportionately responsible for unpaid care and domestic work, which means they bear the brunt of climate change impacts on households, such as water scarcity and food shortages. Additionally, their capacities to adapt to climate change through alternative livelihood opportunities are limited.
	Resource struggles and climate-induced displacement increases the risks of women to gender-based violence.
Discriminatory laws and customs	Patrilineal customary land tenure systems across Asia expose rural women to insecure land tenure and risk of landlessness, which can significantly reduce their livelihood options and capacities to adapt to climate change.
	Entrenched gender norms and customs exclude women from meaningful participation in community processes and decision-making, constraining women's adaptive capacities and involvement in climate change mitigation efforts.
Unequal access to and control of resources	Gendered access to resources, including land, water, food crops, etc., shape differentiated vulnerabilities in the context of climate change.
	Marginalized groups (e.g. poor, rural and indigenous communities) are often the most vulnerable to distributive injustice, changes in land use, and dispossession.

ination. Gender divisions of labour in all sectors, including unpaid care work, mean women are over-represented in low-skilled, low-paid jobs, often in the informal economy. Consequentially, women's work is often overlooked by official statistics, which contributes to gender-blind policymaking. As demonstrated in the manufacturing sector, women and migrant workers can also face barriers to participation in male-dominated and often patriarchal labour unions, so they are unable to voice their concerns and hold duty-bearers accountable for their human rights.

Climate change and related disasters exacerbate pre-existing vulnerabilities; therefore, it is imperative that they be considered by climate mitigation and adaptation strategies in each sector. Adopting a gender-transformative rights-based approach to climate policies can help identify entry points to initiate the necessary changes. To ensure that substantive human rights are protected by climate policies, policymakers also need to ensure that affected populations have access to information and can fully participate in decision-making and governance systems. They also need to be able to hold duty-bearers accountable for effective and fair implementation of mitigation and adaptation strategies for the benefit of all, particularly the marginalized and those who are too often left behind.

Chapter 2

Promising practices and lessons learned: cases from Bangladesh, Cambodia and Viet Nam

Stakeholders across Asia are actively working to achieve social and environmental justice and end human rights violations and gender discrimination in the context of climate change and beyond. Promising initiatives have emerged to protect human rights and transform gender norms in all economic sectors, while effectively addressing climate risks. This chapter provides examples in the three countries of the EmPower project: Bangladesh, Cambodia and Viet Nam. The case studies were identified as part of the literature review that informed Chapter 1, and selected to highlight different aspects of how human rights-based approaches and intersectional perspectives can unfold. They are not meant to be representative of the most common approaches in any given sector or country.

In Bangladesh, the case studies focus on rights-based manufacturing and garment industries, as well as wom-en-centred and women-led renewable energy initiatives. In Cambodia, promising practices involve natural resource management through community-based ecotourism, and sustainable forestry. The Viet Nam case studies review initiatives that challenge the gendered division of labour in fisheries, and how child-centred approaches can increase resilience to disasters.

The key informants who generously contributed to these case studies were selected because of their personal or institutional experience and knowledge about the selected practices. Interviews with experts helped to identify enablers for the success of these practices, and also pointed at critical gaps and challenges in achieving truly transformative change. In the case studies, the interviews are referenced simply as "interview with" and the organization involved; details on the interviews are provided after the main reference list at the end of the report.

Rights-based manufacturing and garment industries in Bangladesh

As discussed in Chapter 1, the manufacturing sector is susceptible to climate change and disasters all along the supply chain, directly and indirectly (Odell, Bebbington, and Frey 2018). In Bangladesh, women make up a large share of the labour force in the ready-made garment industry, often working without the benefit of welfare, safety or social security measures (Kabir, Maple, and Fatema 2018). This renders them highly vulnerable to climate change and other shocks (Evertsen and van der Geest 2020). The COVID-19 pandemic, for instance, hit women and migrant workers particularly hard (ILO 2020). However, several initiatives to address gender-based violence, protect women's labour rights, give them representation, and strengthen safety measures have been shown to reduce vulnerability to both climate and disaster risks in the manufacturing sector.

Policy environment and national initiatives for manufacturing and garment industry

Several of Bangladesh's national policies on climate change, gender and labour have highlighted the need to protect industrial workers' safety and rights, including in the ready-made garment industry. This commitment is embedded in the Labour Law reform of 2013, the Bangladesh Climate Change and Gender Action Plan (MoEF Bangladesh 2013), and the 7th Five-Year Plan FY2016–FY2020 (GED 2015). At the sectoral level, the Department of Factories and Establishments of the Ministry of Labour and Employment drafted a Gender Roadmap (2020–2030) that calls for equal opportunities, gender-responsive budgeting, collection and usage of sex-disaggregated data, and women's leadership in policy- and law-making and administration, especially within the ready-made garment industry, where gender issues are prevalent (DIFE 2020).

Fostering promising manufacturing practices through right-based standards

Amid increasingly constrained agricultural livelihoods due to climate change, migrant workers, including many women, have been drawn from rural areas to the fast-growing garment factories in urban (Evertsen and van der Geest 2020). Subpar living and working conditions expose them to air pollution and climatic hazards such as floods and heat stress (Ajibade et al., 2013; Evertsen and van der Geest 2020). Female migrants are also likely to end up as irregular workers, and they face multiple layers of discrimination due to their social and employment status (CPD 2019). Given the level of marginalization, ensuring these workers' substantive rights and safe working conditions requires a strong basis of rights-based standards. Several initiatives on right-based standards and interventions for the textile and garment industry, such as ones by World Fair Trade Organization (WFTO) and Fair Wear Foundation (FWF), are identified as promising practices, as they aim to make a tangible contribution for greater economic and labour justice and to address issues of poverty, inequality and discrimination (Fair Wear 2018; Rahman 2015).[24]

Fair Trade standards focus on the need to create opportunities for economically disadvantaged producers, pay a fair wage, and actively encourage better environmental practices (WFTO 2017). Development Wheel (DEW) Crafts in Bangladesh is an example of a WFTO-certified social enterprise aiming to ensure women's socioeconomic empowerment by building female producers' capacities and teaching them business skills (interview with DEW Crafts).[25] Guided by Fair Trade principles, DEW Crafts disseminates mitigation and natural resource management strategies, including helping women to plant trees (e.g. bamboo) in their community, which then provide materials for their craft products. Participants are also trained on how to recover and rebuild from disasters and prolonged floods, in collaboration with NGOs such as the national Fair Trade network ECOTA[26] and WTFO Asia (see also DEW 2013). Such measures help mitigate environmental and climatic risks while creating economic opportunities and building women's skills, which reduces their vulnerability within the garment sector and beyond.

The Fair Wear Foundation, meanwhile, promotes right-based standards and interventions for brands and factories in the ready-made garment industry, including in Bangladesh. Climate change is seen as a cross-cutting and overarching issue in the industry that affects labour rights and gender equality (interview with FWF).[27] Guided by the

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24 See https://wfto.com/who-we-are for more information on World Fair Trade Organization.

25 To learn more about the DEW Crafts, see http://dewbd.org/dew/.

26 To learn more, http://eftfbd.org/web/.

27 To learn more about FWF's work in Bangladesh, see https://www.fairwear.org/programmes/countries/bangladesh/.

International Labour Organization's Codes of Practice[28] and the Universal Declaration of Human rights,[29] FWF works to ensure a living wage and safe, healthy working conditions and compliance with measures to prevent gender-based violence in factories (see also Fair Wear 2018). It achieves its aims through audits, corrective action plans and other activities. FWF also encourages its partners to provide equal opportunities to female workers for training and promotions, and to set policies to help them rise to supervisory positions. Such measures have led to changes in managers' mindsets and increased the number of women in mid-level management. FWF's latest strategic partnership with international and local partners established a Gender Platform that seeks to advance policies and laws to prevent sexual harassment. The group has submitted a draft law on gender-based violence to the Ministry of Labour and Employment and Ministry of Law.

Challenges and ways forward

The case study's key informants identified several major challenges regarding gender norms and coordination among actors. They noted that the factories and brands that comply with rights-based standards are only a minority, so it is difficult to make a meaningful sector-wide impact (interview with DEW Crafts, FWF and CPD). FWF has tried to address that issue through partnerships that aim to drive collective action by various international, national and local stakeholders. It also lobbies policymakers to protect the rights of the garment workers, works to avoid duplication of efforts, develops and standardizes training materials on gender and gender-based violence, provides soft and technical skills training for female operators to obtain a higher position, and enhances the capacity of local organizations (interview with FWF). However, the manufacturing and garment industry supply chains are complex, with a myriad of actors, which make it difficult to have meaningful collaboration and communication (interview with CPD).

Although women are part of various committees within garment factories concerning the welfare and safety of workers, formal leadership and managerial positions are majorly taken up by men. A study by CPD in 2018 found only one female manager in 226 factories (interview with CPD). Due to social norms that limit women's career prospects, families invest less in their daughters' education or skill-oriented trainings. This, in turn, results in fewer women being promoted to upper positions due to their poor educational attainment and lower skills (CPD 2019). Women themselves have few aspirations to be supervisors, because the increased responsibilities and working hours – perhaps with insufficient extra pay – conflict with their household responsibilities.

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28 See https://www.ilo.org/global/topics/safety-and-health-at-work/normative-instruments/code-of-practice/.

29 See https://www.un.org/en/universal-declaration-human-rights/.

Women's lack of participation in leadership also limits opportunities to voice their concerns in formal committees, and factories continue to show reluctance to improve day care, women's washrooms, training and learning facilities that would greatly benefit female workers (CPD 2019). Thus, it is crucial for rights-based manufacturing initiatives to place more emphasis on female workers' skill development, better working environments, and meaningful representation, especially in middle and senior management positions. Limited opportunities and poor working conditions also create vulnerabilities that deepen the harm caused by climate change and disaster. Duty-bearers need to ensure garment workers' substantive and procedural rights and set up proper governance systems through gender-responsive policies in the manufacturing sector.

Women-centred and women-led renewable energy initiatives in Bangladesh

One of the main barriers for women to fully exercise their human rights is the burden of unpaid care and domestic work. These traditional gendered expectations involve spending long hours at home, cooking and taking care of their family. The lack of modern energy access makes those activities more arduous. About 85 per cent of people in Bangladesh had access to electricity as of 2018.[30] Especially in rural areas, the only energy source available to some households comes from burning traditional biomass such as firewood and crop wastes, which fills homes with smoke, causes health problems, and contributes to climate change (Biswas, Kabir, and Khan 2019). For women, this also takes up valuable time they could otherwise spend studying or engaging in income-generating activities (Hemson and Peek 2017). This case study examines how off-grid renewable energy, an important climate change mitigation strategy, can contribute to better human rights outcomes by simultaneously challenging traditional gender norms.

Policy environment and stakeholder engagement on the gender and renewable energy nexus

Bangladesh is a signatory of both CEDAW and the UNFCCC, recognizing the importance of involving women in climate change mitigation and adaptation, but most of its national policies do not mention the differences in energy needs, access and use between men and women, or how women can be involved in the development of the renewable energy sector (ADB 2018; Moniruzzaman and Day 2020). The Bangladesh Climate Change and Gender Action Plan (MoEF Bangladesh 2013) aims to facilitate transformative change through women's empowerment, including in mitigation and low-carbon initiatives, but important gaps remain in implementing this plan (interview with UN Women BCO). Still, an enabling environment has been created to facilitate the engagement of different stakeholders in addressing gender concerns related to renewables.

For instance, the Infrastructure Development Company Limited (IDCOL)[31] is a government-owned structure operating under a co-financing scheme with private-sector contributions to implement development programmes. This arrangement was initially facilitated by the World Bank, and the involvement of international organizations and donors can be considered as a strong enabler for more inclusive renewable energy programmes in the country, as they are mainstreaming their own requirements regarding human rights and gender equality (interview with IDCOL). The private sector is also focused on the nexus of gender and renewable energy. For instance, Grameen Shakti,[32] a nonprofit company under Grameen Bank, has been working since 1996 to delivering renewable energy to off-grid households in Bangladesh, and its projects also include a component on women's empowerment (Amin and Langendoen 2012). In parallel, an informal network of professionals and organizations emerged in 2004, the Gender and Energy Network Bangladesh (GEN Bangla), and it has been conducting research, raising awareness and delivering programmes and trainings to women across the country (ADB 2018).

Promoting women's human rights and challenging gender norms through rural electrification

Renewable energy development in Bangladesh has focused on rural and remote areas, which are particularly affected by energy poverty (Hemson and Peek 2017). As noted above, in these settings, access to electricity has crucial impacts on women's basic human rights, such as their right to health and their physical integrity. Clean cookstove initiatives help reduce women and girls' exposure to indoor

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30 See https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BD.

31 To learn more, see https://idcol.org.

32 To learn more, see http://www.grameen.com/grameen-shakti/.

pollution, improving their overall health (ADB 2018). Similarly, in rural settings, bathrooms are often separated from the house, and walking outside in the dark often dissuades women and girls from using them at night, as they fear for their security, which can impact their hygiene and health (interview with PSL-GEN Bangla).

Electrification projects can help address both these human rights issues, especially when women are able to participate in decision-making, voice their needs and concerns, and have the power to influence where solar panels and lamps are placed in the village and in the house (interview with IDCOL). Women also tend to choose having access to electricity in the kitchen, which allows the use of electric appliances such as refrigerators, and being able to store food helps to alleviate their time poverty, as they need to spend less time going to the market (interview with Jahangirnagar University). Having access to electricity in the household indeed gives women more power to decide how to organize their time outside daylight hours, enabling them to have leisure time, such as watching TV or listening to the radio. This also improves their access to information, as women are culturally and socially restricted in their interactions outside the house (ADB 2018).

Access to renewable energy can bring new opportunities for women to engage in income-generating activities, as they save time on household chores and can be involved in local businesses or create their own enterprises. This can be illustrated with an example of initiative conducted by Prokaushali Sangsad Limited (PSL), a female-led engineering consulting firm specializing in renewable energy development in rural Bangladesh. While implementing a renewable energy programme, PSL decided to give women the opportunity to be energy providers instead of only beneficiaries, creating a women-led cooperative trained to assemble solar components.[33] This ambitious project employed local women with limited education and provided them with technical training, including on how to market their products. While external factors such as international competition weakened the economic impacts of the projects after a few years, PSL noticed that some women managed to continue using their newly acquired skills with other companies, but also that the initiative had wider impacts in the community. Indeed, the women involved in the cooperative not only challenged gender norms by taking part in activities that are usually considered masculine (such as electrical engineering), but they also inspired and encouraged their daughters to follow their lead. PSL observed that the enrolment rate

of girls in schools increased in the village, and an uncommon number of girls from the village continued their education in the engineering field, proving that such initiatives can be transformative when the design and implementation take into account girls and women's needs, potential and human rights (interview with PSL-GEN Bangla).

Challenges and ways forward

Renewable energy initiatives have offered opportunities for women's empowerment and overall human rights in Bangladesh, but the interviews for this case study identified several challenges remain, mostly linked to social norms. For instance, renewable energy initiatives in Bangladesh often rely on international consultants, because such capacities are lacking at the national level (interview with IDCOL). While there is a slow change in the education sector to open new programmes related to this field, the quality of the courses offered is not standardized, and it is still considered a masculine subject (interviews with IDCOL and PSL-GEN Bangla). For the rare women who engage in this field, practical issues constrain their employment in Bangladesh, driving many female engineers to leave the country (interview with PSL-GEN Bangla). Indeed, qualified women often struggle to find a job in the renewable energy sector in Bangladesh. Not only do they face discrimination in the hiring process, but they may not feel safe taking public transport to work or going on field trips with groups of men; they may not even have separate bathrooms at work. Because of such issues, many women do not apply for positions in this sector, despite companies being increasingly more aware of the necessity to reach a better gender balance, but corporate and social norms are not easy to overcome, especially as women are largely under-represented in decision-making levels.

Similarly, when working with rural communities, stakeholders observed that initiatives tend to be increasingly gender sensitive (that is, ensuring a certain percentage of female participation in meetings and of female beneficiaries), but noted that access to energy does not mean women's empowerment if these initiatives do not trigger social change (interviews with IDCOL and PSL-GEN Bangla). However, such change takes time and can be achieved if all stakeholders adopt an explicit human rights-based approach with the aim to transform gender norms: considering women not as beneficiaries but as actors of change, not as tools to achieve economic targets but as right holders, entitled to decent livelihoods, equal opportunities and access to public services (interview with Jahangirnagar University).

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33 To learn more, see the solar projects section at https://www.psldhaka.net.

The COVID-19 pandemic is highlighting some of the weaknesses of the renewable energy sector, as revealed by a rapid assessment conducted in Bangladesh (UN Women and UNEP 2020). Renewable energy products and services require households to invest their savings or to use loans, but the current crisis left many struggling to fulfil their most essential needs, so their access to energy is compromised. The pandemic is also affecting energy providers, as importing material components and traveling within the country to project sites is being more difficult. Such challenges can be temporary, but the long-term socioeconomic consequences of COVID-19 on poor and rural households is likely to hinder access to renewable energy and its benefits.

Community-based ecotourism in Cambodia

The tourism industry is highly vulnerable to climate change and sometimes presents limited development opportunities for local communities (see tourism section in Chapter 1). Still in Cambodia, tourism provides socioeconomic opportunities for many livelihoods in both urban and rural areas. Notably, ecotourism has been drawing increased visitors in recent years, even as the rest of the tourism industry stagnated (Rawlins et al. 2020). With such potential, ecotourism appears as a promising practice to address climate and human rights issues in the Cambodian tourism sector. Priorities include emphasizing community participation, including women and ethnic minorities, and trying to make a positive impact on the natural environment and local biodiversity (Khon 2011; Toko 2018; Walter and Sen 2018). Community-based ecotourism also has the advantage of offering livelihood opportunities for local residents, as guides or in hospitality, and it usually does not require building infrastructure that could harm the environment (Reimer and Walter 2013; Walter and Sen 2018).

Enabling environment for ecotourism and community-based ecotourism

The Royal Government of Cambodia has shown increased support for ecotourism and community-based ecotourism, acknowledging the need for environmental conservation and alternatives to conventional mass tourism. These interests are noted in various national development and climate change frameworks (National Climate Change Committee 2013; RGC 2019). The Ministry of Tourism developed sectoral policies and plans recognizing ecotourism as part of vision for sustainable development of tourism sector (MoT

Cambodia 2015; Quartly 2019). In addition, the Ministry's Climate Change Action Plan 2015–2018 includes a core strategic objective of reducing gender-based vulnerability to climate change impacts (MoT Cambodia 2015). The Ministry of Environment, meanwhile, has underlined ecotourism as core strategy for financing nature protection and has outlined requirements to engage with marginalized groups within communities and to integrate gender-mainstreaming efforts (MoE Cambodia 2017).

Environmentally sustainable and right-based ecotourism

Stakeholders in Cambodia have highlighted key successes and promising practices to achieve environmentally sustainable activities that enhance the human rights of the involved communities. One example is the Chambok community-based ecotourism site, in Kampong Speu province in southwestern Cambodia, which has managed to minimize deforestation and other environmentally destructive practices and protects around 3,400 hectares of community forest.[34] This initiative is led by the Cambodian NGO Mlup Baitong, which started by consulting with community members and government institutions, ensuring free, prior and informed consent to the project (Moeurn, Khim, and Sovanny 2012). Community members demonstrated continued commitments to community-based ecotourism, building the necessary infrastructure and engaging as tour guides and in hospitality (interview with UBC; Communication with Mlup Baitong). Women working in Chambok's homestays were able to generate income, which contributed to their economic empowerment, and their individual efforts were recognized with the ASEAN Homestay Standard Award in 2016, which gave them pride and self-confidence (Sen and Walter 2020). In addition, some women were able to take up leadership roles, such as a head of kitchen, and participate in the meetings of community-based ecotourism committee (interview with UBC). Such roles contribute to developing women's self-confidence and their ability to raise their voices and concerns to the community, which can strengthen their adaptive capacities as they become more visible. The benefits generated by community-based ecotourism are shared through a community development fund, which contribute to supporting a Women's Association, women's self-help groups, and health and micro-enterprise initiatives. Chambok community-based ecotourism has thus created community ownership while also contributing to women's empowerment and community forest protection, which can help stabilize the climate (interview with UBC).

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34 To learn more, see https://chambok.org.

Another promising practice of community-based eco-tourism has been identified in the Tmatboey community of Preah Vihear province of Cambodian Northern Plains. This project has been initiated by Wildlife Conservation Society (WCS) Cambodia, which pays particular attention to securing land tenure and user rights for previously disenfranchised communities of the region (Sinclair 2015). Through the WCS-founded tour operator and now-independent local NGO Sam Vaesna Centre, community members take ownership in communicating directly with the tourists to organize activities and manage their own funds coming from ecotourism revenues (interview with WCSa). The direct revenue generated from community-based ecotourism activities are invested back in community infrastructure, such as school repair and construction of bridges and roads. Community members deciding how to spend these funds during community-based ecotourism committees, and parts of the benefits are also directed to agricultural activities, such as wells, irrigation tools, land and fishponds, enhancing villagers' adaptive capacity.[35] At the outset of the project, almost no women participated in community-based ecotourism committees, but that has changed over time, and now represent about 30 per cent of the members and actively take part in decision-making.

Challenges and ways forward

Community-based ecotourism efforts in Cambodia show promise in terms of community participation and environmental protection, but stakeholders identified several limitations and challenges. The first is the limited mechanisms to ensure local ownership of community-based ecotourism sites. Without solid policies safeguarding procedural and substantive rights of local communities, these initiatives will lack robust contributions from the communities, and NGOs and relevant stakeholders can fall short in delivering relevant capacity-building activities. At another community-based ecotourism site in Mondulkiri province in Eastern Cambodia, home to the Bunong ethnic minority group, neither the involved NGO nor donors committed to providing sustained support for the community until the site could be fully run by the community (interview

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35 See a detailed project description at https://www.ltandc.org/tmatboey-community-protected-area-ecotourism-project-cambodia/.

with UBC). The Bunong people demonstrated extensive traditional knowledge, but community-based ecotourism activities in the region were suspended, and their capacities left unrecognized.

This also highlights a second challenge regarding women's engagement. Although stakeholders highlighted women's increased participation and leadership, women are still mostly involved in community-based ecotourism through activities that are extension of their domestic work, such as working in hospitality, which perpetuates gender stereotypes instead of challenging them (interview with UBC). Indeed, stakeholders described a gendered division of labour due to social norms, with outdoor activities in the forest or as a tour guide seen as masculine and dangerous, and women presumed to have no time for them given their domestic responsibilities (interview with WCSa). A more committed approach to transform gender norms is therefore required, and so is more consideration for ethnic minorities.

It is important to also note that the success of community-based ecotourism depends not only on the local context and community engagement, but also on large-scale issues such as deforestation, illegal logging, and land concessions, as they have major impacts on ecosystem and local livelihoods (Argyriou et al. 2018; Chanrith, Baromey, and Naret 2016). Similarly, COVID-19 has had tremendous effects on tourism, sharply reducing demand and hitting community-based ecotourism sites particularly hard (Rawlins et al. 2020). There is a risk that the loss of livelihoods caused by COVID-19 will leave little other choice for poor people than to turn to environmentally harmful practices such as illegal logging and wildlife poaching in community forests and protected areas.

Sustainable forestry and community protected areas in Cambodia

Cambodia's forests are important carbon sinks, but forest cover in the country is shrinking rapidly: from 73 per cent of the land area in 1965, to 58.6 per cent in 1996, to 48.1 per cent in 2016 (MoE 2018; Nhem, Lee, and Phin 2018). A global mapping study looking at 2000–2012 found Cambodia had the fastest deforestation rate in the world (Hansen et al. 2013). By 2013, virtually all forest clearance was associated with economic and concessions

– long-term leases that allow land-clearing for industrial agriculture (Davis et al. 2015; Vigil 2019).[36] Community participation in forestry conservation is thus critical not only for protecting Cambodia's forests and protecting the climate, but also for equitable resource management.

Cambodia's forestry laws do not address gender perspectives, however, nor do they include concrete measures for women's participation. Limited budgets and human resources are allocated to gender mainstreaming efforts, hinder the effective planning and implementation of approaches that would contribute to protecting human rights and gender equality in the forestry sector (FAO and RECOFTC 2015). Indeed, conservation initiatives in Cambodia have led to land grabs violating the human rights of vulnerable communities (Vigil 2019). The COVID-19 pandemic has further worsened the issue by preventing key conservation bodies from accessing Cambodia's protected areas, creating an opening for illegal deforestation and logging activities to occur (Humphrey 2020).

Forest conservation in Cambodia: policy context

Since the late 1990s, community-based natural resource management in Cambodia has been an appealing strategy to tackle the dual challenge of deforestation and natural resource needs of local communities of resource management (Jensen and Marshall 2019; San 2006). The Forestry Law (2002), the Protected Area Law (2008), and the National Forest Programme (2010–2029) all underscore the need to involve local communities in forest management and protection, acknowledging their legal and customary user rights (RGC 2002). The National Forest Programme also explicitly identifies climate change mitigation and adaptation as key objectives. Still, in practice, the implementation of these policies has been limited, and there is scant explicit mention of gender and ethnic dimensions to forestry governance. While the National Forest Programme (2010–2029) encourages women's involvement in community forestry management, it includes no specific provisions to achieve that. The only such effort was a Gender Mainstreaming Policy and Strategy for the Forest Sector (2009–2013) that aimed to enhance gender awareness among staff in the forestry sector at every level, integrate gender analysis and sex-disaggregated reporting, and increase rural women's access to technical services and management of forestry resources (WOCAN, UN-REDD, and USAID 2013).

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36 See OHCHR overview: https://cambodia.ohchr.org/en/economic-social-rights/economic-and-other-land-concessions.

Against this backdrop, initiatives such as community protected areas (CPAs), which are backed by both legislation and NGO efforts, are increasingly integrating gender priorities throughout their practices. CPAs are zones within a nationally designated protected area in which pre-existing customary rights of the local community are recognized (Borrini-Feyerabend and Ironside 2010, 7). Within CPAs, the establishment of by-law agreements has secured land rights and thus access to vital resources for communities.

Community participation in forestry conservation

A study of two CPAs in Preah Vihear province reveals that forest-resource dependent households inside the protected areas enjoy significantly more livelihood benefits due to better access to resources (especially non-timber forest products) and tenure security (Lambrick et al. 2014). Despite this, gender norms can impede women's equitable access to such resources, as well as their meaningful participation in broader CPA activities (interview with WCS). Evidence from a CPA in Phnom Kulen National Park highlights how informal rules and resources (including social, natural, and economic resources) affect men's and women's participation in CPA management (Koerper 2019). In particular, gendered norms, education level (e.g. literacy), and poverty status are key determinants of women's participation and have often left poor women out of decision-making bodies.

As a way in redressing this issue, the Wildlife Conservation Society (WCS) has been involved in designing CPA institutional arrangements (for instance, shaping the CPA committee) that mandate women's representation in CPA decision-making forums (interview with WCSb). While it was recognized that this would not necessarily guarantee meaningful participation, it was seen as a crucial first step in shifting the gender dynamics of CPA governance. It was also a way to engage with community stakeholders to gain the contextual understanding of local conditions and culture needed to successfully mainstream gender concerns into CPA governance. Although women-led initiatives within CPAs are scarce, an increasing amount of smaller-scale activities (for example, bamboo planting in deforested areas) are being led by women. This has brought about community-wide benefits, since women, who are typically responsible for collecting non-timber forest products, tend to have diverse experiences and more unique knowledge that can contribute to conservation efforts (such as awareness of pests that can harm bamboo). The smaller activities and programmes led by women can serve as an opening for women to spearhead larger initiatives in the future.

Challenges and ways forward

Despite the strides that have been made, gender norms continue to hinder progress towards ensuring women's meaningful engagement and leadership in CPAs. Communities can be reluctant to accept women's leadership, and the domestic labour and care work expected of women can get in the way of active participation in CPA activities (interview with WCSb). Furthermore, while the success of CPAs largely comes down to the commitment and work of local actors, people's motivation and incentives for participating vary greatly (interview with UNEP). A study of community-led monitoring in Prey Lang forest, Cambodia, found that a connection between livelihoods (i.e., forest dependence) and forest resources is a key motivation for participating in forest-monitoring activities (Turreira-García et al. 2018).

Another study, of eight CPA projects, found that community members who were very poor often could not afford to participate, as they are not paid for forest management activities, and families facing shortages had to focus meeting their subsistence needs, though they still might help patrol the forest while collecting non-timber products (San 2006). In such instances, women and women-headed households are likelier to be excluded due to pre-existing inequalities in resource distribution and access. In addition, norms around what is considered gender-appropriate activities and safety issues also deter women from participating in certain activities, such as patrolling.

Finally, an important limitation to successful CPAs is the general lack of financial support or ongoing monitoring (interview with UNEP), which can affect capacity-building and training. While external facilitators play a vital role in implementing a CPA, some facilitators do not have sufficient experience or skills to put theory into practice (San 2006). Insufficient training and experience can lead to mismanagement and, in some cases, may result in poor cohesion within the communities. Thus, dedicated and longitudinal funding is needed to ensure sustainable operation and monitoring of CPAs. Importantly, such funding should ensure an intentional gender and human rights-based agenda that pushes for gender transformative CPA governance.

Challenging the gendered division of labour in Viet Nam's fisheries

Fisheries are a vital sector to Viet Nam's economy; as of 2016, the country was the world's fourth-largest fish producer (FAO 2019). In Viet Nam, the fishery sector is characterized by a gendered division of labour, with men predominantly represented in primary fishing activities (that is, catching fish) and women largely tasked with selling and processing fish; about 80–85 per cent of seafood processors are women (Harper et al. 2017; Matthews et al. 2012). The uneven division of labour and the economic and social privileging of men's roles within fisheries leads to inequities in wages and access to productive resources (fishing grounds), technologies and markets. It also limits women's opportunities to partake in adaptation training activities. This threatens their right to participation and livelihood security and further widens the gap between men and women's capacities to respond to climate change. Furthermore, the economic undervaluing of women's fisheries-related work has led to women's presence being largely overlooked in official statistics, and the lack of sex-disaggregated data within fisheries can lead to gender-blind policymaking (Gopal et al. 2020).

The COVID-19 pandemic has pushed many fisheries workers in Viet Nam and across Asia deeper into poverty, exacerbating poor working conditions and threatening the livelihoods of many small-scale fishers due to lockdown measures and restricted economic activities (FAO 2020b).

Policy environment on gender in fisheries

Provisions for gender equality are largely missing in the central policy frameworks of the fisheries sector. Viet Nam's first comprehensive Fisheries Law (Socialist Republic of Vietnam 2003) established a legal framework of ownership and rights for individuals and organizations and highlighted the need to ensure the sustainable development of fisheries. However, it did not account for the diverse socioeconomic conditions of fishers and their differentiated needs. Even though the Master Plan for Fisheries Development to 2010 and Orientation Toward 2020 (Socialist Republic of Vietnam 2006) had policy goals related to poverty alleviation, it did not mandate women's participation in fishery decision-making bodies or address women's differential contributions and

needs (Pomeroy, Thi Nguyen, and Thong 2009). The policies of fishery-related companies in Viet Nam (e.g. fish processing companies), meanwhile, are almost always gender-blind, which can lead to women along the value chain not receiving sufficient benefits such as health insurance and child-care support (interview with Oxfam Vietnam). While the Vietnamese Ministry of Fisheries has developed a series of Gender Action Plans for the sector that are supported by laws on the national gender strategy, analysis has shown that Gender Action Plans in itself are insufficient to redress patriarchal norms (Bosma et al. 2019). In the context of climate change and increased resource scarcity, the lack of gender-specific policies and the persistent male bias in aquaculture makes women workers' vulnerabilities invisible, which could threaten their substantive rights.

Collective action and engagement: Opening dialogues on the gender division of labour

To redress the lack of gender-responsive policies in Viet Nam's fisheries, fundamental changes to the perception of women's roles in the sector are needed (interviews with CECEM, FAO, and Oxfam Vietnam). This entails challenging stereotypes, including pushing for women's meaningful presence in governance bodies such as fishery associations (interviews with Oxfam Vietnam and FAO). The Gender Transformative and Responsible Agribusiness Investments in Southeast Asia (GRAISEA) program, led by Oxfam Vietnam, is working to do that.[37] GRAISEA takes a rights-based and systemic approach to women's economic empowerment and aims to challenge perceptions that lead to the undervaluing of women's contributions to shrimp aquaculture. This approach is critical because women in Vietnamese fisheries face inequities in wages and in access to resources, so climate-change induced resource and economic shocks (such as reduced catches and related household indebtedness) can particularly threaten women's adaptive capacities and various substantive rights such as the right to food and to health.

Oxfam Vietnam has collaborated with the Center for Community Empowerment (CECEM) to support partners in implementing a set of Gender Action Learning Systems tools to collect data and engage with communities at the local level in Viet Nam's shrimp value chains. The training highlighted the gender dimensions of ensuring equitable shrimp value chains, including the role of unequal social norms and women's overrepresentation in unpaid care work.

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37 To learn more about GRAISEA, see https://graisea.github.io.

A key strategy in GRAISEA is to actively engage, educate, and facilitate dialogues around gendered norms and barriers within shrimp value chains (interviews with CECEM and Oxfam Vietnam). This includes promoting holistic engagement across different levels of stakeholders, with the goal of strengthening community action. Since smallholder farmers often have the least voice in the value chain, GRAISEA has brought smallholder shrimp farmers together to conduct trainings and discuss their rights and positions within the value chain (interview with CECEM). Women's increased presence in fishery cooperative meetings has improved women's involvement in negotiating fishery contracts with buyers, enabling them to refuse unfair contracts (interview with Oxfam Vietnam). This has community-wide benefits, since the fact that women are typically tasked with buying food for their households, they also tend to know the market price better and are able to carry out more detailed and practical cost calculations.

Challenges and ways forward

GRAISEA shows that promoting collective community action is a key enabler for improving gender equality within the fisheries sector. Still, entrenched norms around gender roles and labour are a persistent barrier (interview with CECEM). For example, many women may feel reluctant to be involved in production roles, an arena which is dominated by men. Furthermore, despite many smallholder shrimp farmers' improved negotiating capacity through relevant trainings, the power imbalance continues to exist between farmers and buyers. In conjunction, climate change impacts continue to have gendered effects on the resource availability, income, and labour burdens of fishing communities. One of GRAISEA's pilot studies revealed that the increased salinity of the Mekong River has not only reduced the productivity of shrimp, but also has wider implications in aquaculture: since more freshwater is required for aquacultural shrimp ponds, women fish farmer's labour increased, as the responsibility to fetch fresh water for the ponds largely fell on women (interview with Oxfam Vietnam).

Inclusive education for climate change adaptation: child-centred disaster risk reduction in Viet Nam

Children are among the most vulnerable to climate change. Recognizing and protecting the needs and rights of children in times of disasters is not only a matter of basic human rights, but also a requirement of intergenerational justice, as the generations whose actions have caused climate change and environmental harm have a duty to those who will face the consequences (Sanson and Burke 2020). The education sector presents a unique entry point to spread awareness about these issues and to foster children's agency to reduce their vulnerability.

One practice that shows promise is child-centred DRR. Plan International (2010) defines it as a "flexible rights-based approach combining child-focused (for children) and child-led (by children) activities with interventions geared

towards bringing about change in communities, local and national duty bearers. It applies strategies such as awareness raising, capacity building, group formation, institutional development, research and influencing and advocacy across a range of arenas" (p. 3). Such approaches are particularly promising to advance gender equality, as "child-centred DRR not only emphasizes girls' unique perspectives but also gives girls an opportunity to prove to themselves and others that they are just as capable as boys, and challenge embedded gender norms in communities" (ibid, p. 43).

An enabling environment for child-centred DRR in Viet Nam

Viet Nam's national climate change and DRR policy framework is increasingly highlighting the role of education in building resilient communities. Such commitments can be found in the National Target Programme to Respond to Climate Change (MONRE 2008), the National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020 (Socialist Republic of Vietnam 2007), and the Law on National Disaster Prevention and Control of 2013 (Socialist Republic of Vietnam 2013). While these policies do not specifically emphasize the needs and rights of children and women, they set a framework for the Ministry of Education and Training (MOET) to develop sectoral policies that have contributed to the wide dissemination of climate and DRR education from the elementary to the university level (Kieu, Singer, and Gannon 2016). In line with this mandate, the MOET also engaged in cross-sectoral collaboration with the Ministry of Agriculture and Rural Development and the Viet Nam Disaster Management Authority (UNDP 2018; Interview with STC). In the meantime, international NGOs and civil society play a crucial role in advocating and implementing child-centred initiatives with the support of the MOET (interview with STC). However, while such organizations often also have dedicated programmes focusing on girls' rights, there are still gaps in delivering targeted interventions for them in the context of child-centred DRR (interview with PI).

Building children's confidence and encourage wider participation in decision-making

Save the Children (STC) and Plan International (PI) are two of the main international NGOs implementing child-centred DRR programmes in Viet Nam. Their experience sheds light on the promise of such initiatives for inclusive DRR that can also transform social and gendered norms. For instance, group activities and exercises have been shown to increase children's confidence and their capacities to be more articulate, especially when programmes pay special attention to girls and children from ethnic minorities that

tend to be shier in the beginning (interviews with STC and PI). Such targeted actions have the potential to transform existing social disadvantages and to develop crucial skills, enabling children to exercise their right to participation and to hold adults accountable for protecting their human rights in disaster planning processes (interview with PI).

In a project in Ho Chi Minh City and the provinces of Dien Bien and Ninh Thuan, UNICEF consulted boys and girls on their experience and concerns regarding disasters, which led to the incorporation of a child rights and gender equal approach in the Viet Nam national Law on Environmental Protection in 2014 (Reeve 2015). Thanks to the children's inputs, the law is now aligned with Viet Nam's commitments under the UN Convention on the Rights of the Child, and contributes to increasing State accountability with regard to children's rights and gender equality in DRR (Reeve 2015).

The integration of DRR in school curricula and activities is crucial to disseminate knowledge on climate change and disasters, not only to children, but also to their families and communities, with whom they share what they learn (Thi and Shaw 2016; interview with PI). Incorporating climate change and DRR into school curricula is also a good way to ensure that girls have equal access to information, as national data on literacy and educational attainments at all levels show no significant gender differentials (UNICEF 2017). Some child-centred DRR activities take place outside the classroom, either in clubs where children go after school, or in community-based DRR activities at the municipal level (interview with PI). Children's clubs working on DRR make information accessible by using child-friendly tools and methods, such as games and simulations (interview with STC). In the context of community-based DRR, STC and PI encourage children to participate in activities such as hazard mapping and contributing to preparedness plans, all of which help to protect children's right to life and limit the physical and psychological impacts on survivors when disasters hit (Benson and Bugge 2007; interviews with STC and PI). Such initiatives contribute to a better recognition of children's rights in the context of disasters, including among local authorities, CSOs and community members (interview with PI).

Challenges and ways forward

Stakeholders working on child-centred DRR in Viet Nam identified three main challenges. First, the lack of coordination between the State and other stakeholders, but also among stakeholders, leads to sometimes overlapping initiatives and duplication of efforts, which could be avoided if all

actors agreed on a common understanding of child-based DRR (interviews with STC and PI). This relates to the second challenge, which is the tendency to consider children only as a vulnerable and homogenous group, instead of focusing on their capacities to participate in planning, which would help reduce their vulnerability (interview with STC).

Child-centred approaches also challenge social norms and require time to be understood and accepted by families, communities and policymakers. Such issues are particularly common when trying to promote girls' participation, as entrenched gender roles and norms have deep effects since childhood, and parents tend to be more protective towards their daughters than their sons (interview with PI). The last challenge is to ensure that child-centred DRR reaches all children without discrimination based on ethnicity, gender, class or ability, and to adopt more transformative approaches. Though national policies strive for non-discrimination, the lack of data to identify gaps and needs in different parts of the country affects resource allocation to schools in implementing child-centred DRR activities (interview with SCT). For example, national guidelines for DRR education are often not translated into the languages of Viet Nam's many ethnic communities, which in addition to these children's lower school attendance,[38] risks reinforcing existing inequalities, as most child-centred DRR initiatives take part in schools (interview with PI).

Similarly, about 90 per cent of children with disabilities aged 5–17 have never been to school or dropped out (UNICEF 2017), meaning they are deprived of their right of education, but also tend to be excluded from child-centred DRR programmes, especially girls with disabilities (interviews with STC and PI). It also appears that most child-centred DRR programmes do not apply a gender-responsive approach, assuming that because girls have equal opportunities to participate in activities, clubs and community-based DRR activities will have the same positive outcomes for all children. Overlooking existing social and gendered power dynamics amongst groups of children and how adults react to them may therefore lead to reinforcing stereotypes. The way forward would be to fill gaps in understanding and addressing how children and girls' intersecting identities overlap to create unique strengths and vulnerabilities, and to incorporate such concerns when designing targeted interventions that can contribute to challenging gendered and social norms (interview with STC).

KEY INSIGHTS

Climate change affects all sectors of the economy, but the manner and extent are strongly determined by local contexts. In order to be efficient, mitigation and adaptation strategies must therefore take into account the needs and rights of those who derive their livelihoods from these sectors. By taking a deep dive into six promising approaches in three different countries, this chapter identified key enablers for applying a human rights-based and gender-transformative lens to climate action.

It is clear that it is crucial to have a favourable policy context, in which States can be held accountable for their commitments to human rights and gender equality in their development efforts and climate action. In the case studies on rights-based manufacturing in Bangladesh and ecotourism in Cambodia, sectoral policies incorporated an explicit commitment to gender equality. In other cases, the advocacy of NGOs also helped put rights-based approaches to climate change on the political agenda, such as in the case study on child-centred DRR in Viet Nam. Collaboration between national agencies and between state and non-state actors facilitates evidence-based climate action that address the needs of the most vulnerable, while collective community action can also allow bottom-up approaches, as seen in the case study on fisheries in Viet Nam.

Building on these enabling conditions, the six initiatives presented successes that are specific to their field and social context, but present similarities. All contributed to advancing women's human rights – in some cases, their substantive rights (such as through access to clean energy), but often especially their procedural rights. The most successful initiatives have actively challenged gender norms and contributed to improving the recognition of women and marginalized groups, giving them more opportunities to exercise their agency, including in climate action. This is notable in the case study on renewable energy in Bangladesh.

However, most of the promising approaches reviewed here did not explicitly adopt a gender-transformative human-rights based approach, which sometimes led key social barriers being overlooked. For example, in the case study on forestry in Cambodia, women still faced barriers to meaningfully participate in decision-making on community-protected areas because of deeply entrenched gender norms that were not addressed. The case study

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38 Just over 60 per cent of ethnic minority children complete the first five years of primary school, compared with 86 per cent of Kinh children (Ha 2020).

on child-centred DRR, meanwhile, despite using an explicit human rights-based approach, could achieve better results by also committing to a gender-transformative approach and contributing to challenging gender norms from an early age.

Finally, this chapter highlighted the challenges in applying an intersectional lens to promising practices, as almost none of the stakeholders mentioned particular efforts to include marginalized groups – such as people with disabilities or non-binary people (with the exception of the interview with Save the Children in Viet Nam). In sum, the challenges identified by the key-informants related mostly to persistent social and gender norms, which can be aggravated by gender-blind initiatives that are not actively trying to transform these norms. This is often the case when there is a lack of understanding of the pre-existing inequalities and power relations, which is needed to target interventions. The key enablers, successes and challenges are further detailed in Table 12 below.

Table 12. Key enablers, successes and challenges highlighted in the six case studies

Enablers for rights-based and gender transformative climate action	• National development and climate change frameworks recognizing human rights and gender equality as core principles, including trough mandating roles and responsibilities of women in decision-making • Sectoral policies integrating climate change, human rights and gender equality objectives • Cross-sectoral policies and partnerships to break down silos • Collaboration between state and non-state stakeholders • Collective community action
Key successes	• Increased social recognition of women and opportunities for them to use their agency, demonstrating successful social change • Development of new skills and capacities allowing diversified livelihood options and increasing resilience to climate change • Access to clean energy contributing to improving women's health, security and access to information, decreasing their time poverty and creating new opportunities for income-generating activities • Increased representation and participation of women and marginalized groups in decision-making, facilitated by targeted interventions enabling them to develop their confidence and skills to demand the protection of their human rights • Increased awareness on individual and collective strategies for climate mitigation and adaptation • Community ownership over development projects, enabling the sustainability of such initiatives
Main challenges and barriers to overcome	• Social norms and stereotypes hindering women's access to information, representation and meaningful participation in decision-making • Women's time poverty due to care and domestic work • Extension and reproduction of women's traditional gender roles in initiatives that do not commit to a gender-transformative approach • Lack of inclusive workplace environment and of opportunities for career progression due to stereotypes and discrimination • Limited mechanisms to ensure local ownership and meaningful participation of the communities in the projects; without solid policies safeguarding the rights of communities, the sustainability of initiatives is undermined • Lack of an intersectional lens results in overlooking the needs and rights of marginalized groups within different social categories, such as landless women, women from ethnic minorities, or girls with disabilities

Chapter 3

Synthesis and recommendations for policymakers and stakeholders

This report examined the impacts of climate change and climate policies on key livelihood sectors in Asia, taking an intersectional, gender-transformative, human rights-based approach. Then it presented six case studies in three countries to help identify key gaps and challenges when trying to implement sustainable and inclusive adaptation and mitigation initiatives, as well as promising practices to address these barriers. This chapter summarizes the main issues related to human rights and gender inequality that arise from the analysis and offers recommendations. The issues are organized under the three core elements of the intersectional, gender-transformative and human rights-based approach. The recommendations can be seen as tools for policymakers and other relevant stakeholders such as development partners, NGOs and CSOs to better integrate intersectional, gender-transformative human rights-based approaches into climate policies and programmes, and thus work to transform the power imbalances that exacerbate vulnerabilities and marginalization.

Key barriers to the fulfilment of substantive rights in the context of climate change

Existing power dynamics within societies in Asia lead to the uneven fulfilment of substantive human rights, and such inequalities are further reinforced by climate change. The **rights to health and to life** can directly be threatened by disasters, as seen, for instance, in the mining, tourism and health and education sectors, when critical infrastructure is situated in disaster-prone areas. The review of scientific literature also highlighted that these rights can be affected indirectly through climate-related health impacts, with the most vulnerable being those with pre-existing health and social vulnerabilities. Heat stress in particular affects those performing physical and outdoor labour, such as workers in the primary sector, in construction, and in some manufacturing plants. Those health impacts are also increasing with climate change.

The rights to health and to life can be further affected in contexts of **food insecurity**, as highlighted in the discussions of agriculture, forestry and fisheries, as climate change affects food production. Gender norms around caregiving and the preferential treatment of males can then lead to women and girls' access to food being more compromised than men's and boys'.

The **right to decent livelihoods** is particularly under threat for those working in natural resources-based sectors, as disasters and changes in weather patterns directly affect their income. The section on fisheries also highlighted that many workers are trafficked and subjected to forced labour. Resource depletion due to climate change and overfishing can exacerbate this by not only leaving more people desperate for income, and thus subject to precarious employment, but also creating an increasing demand for cheap and exploitable labour. This affects workers' **rights to physical integrity and human dignity**. Economic development and climate strategies, in turn, may restructure livelihoods, which can affect unskilled and low-skilled workers the most. In the manufacturing and tourism sector analyses, many of the available jobs were found to rarely offer social protections or job security.

Climate change impacts and precarious livelihoods sometimes lead to migration in the search for better opportunities, but migrant and informal workers often cannot access **adequate standards of living** and have to live on their work site. For example, in the construction sector, workers are often packed in crowded dorms. Poor street vendors engaged in the wholesale and retail trade sectors, meanwhile, tend to live in urban slums. Common mistreatments and abuses in these sectors, as well as in manufacturing, constitute infringements of the **right to human dignity and physical integrity**.

Unequal access and control over resources, including natural resources, is worsened under the impacts of climate change, as pressure over land and water increases and can sometimes lead to conflict. Such pressure can be caused by new economic activities (as seen in the discussions of mining and tourism) or by climate policies that fail to adequately consider the rights of affected communities (as seen in the section on renewable energy). These conflicts can lead to land grabs and forced relocations (also discussed in the context of agriculture and forestry), which in some cases increase the risk of violence, including gender-based violence, again depriving people of their **right to human dignity and physical integrity**.

The section on livelihood support sectors revealed that the **right to education** is crucial in delivering information about climate change and human rights, but disasters can hinder the effective delivery of education services. Rural children, the poor and girls are the likeliest to drop out of school after extreme climate events because of resource constraints and care needs in their households.

The **right to public services and infrastructure**, such as hospitals or social protection, can also be disrupted by disasters. Access to high-quality public services can also be threatened when providers are not prepared to address the challenges caused by climate change, such as when healthcare workers are not fully aware of the wide range of climate-related health impacts, which also affects their patients' right to health.

Human rights related to the environment, such as the right to a healthy environment and to a safe climate, are affected by human activities that increase greenhouse gas emissions. Human activities such as mining, renewable energy and tourism can cause land degradation, deforestation, biodiversity loss and pollution, which directly affect the rights to clean air and water and to live in non-toxic environments. These human activities also impact the right to healthy and sustainably produced food. Infringements of environmental rights thus affect other substantive rights as well, and this interconnection will be more visible with the environmental and socioeconomic consequences of climate change.

Ways forward for climate action that respects, protects and fulfils substantive rights

The case studies presented in Chapter 2 helped to identify promising practices that contribute to the respect, protection and fulfilment of substantive rights in the context of climate change and through climate action. Promising results have been achieved when combining broader national development goals, such as increasing access to electricity, with climate mitigation strategies and targeted programmes to involve the most marginalized. The case study on renewable energy in Bangladesh is a good example: Women's access to renewable energy has not only contributed to improving their health and security, but also reduced their time poverty, enabling them to take part in income-generating activities and to challenge gender norms at the local level. The stakeholders contributing to that case study also highlighted the role of climate finance institutions, such as the Green Climate Fund, in mainstreaming gender concerns through climate mitigation programmes and national climate action plans.

Climate policies need to be properly informed by the reality on the ground to be able to address the main barriers that marginalized communities face in enjoying their substantive rights. Indeed, evidence from the fisheries sector presented in Chapter 1 and further examined in the Vietnamese fisheries case study shows that women's labour in this sector is commonly overlooked or undervalued economically, which renders women "invisible" within communities, decision-making bodies and fisheries statistics. This, in turn, leads to gender-blind policies that do not efficiently protect women fishers from the impacts of climate change on their livelihoods.

It is also crucial to support women's access to good livelihoods in a changing climate, especially as issues arise that exacerbate pre-existing vulnerabilities and can lead to conflicts, displacement and migration. The case study on manufacturing in Bangladesh highlighted promising practices to support women's livelihoods by implementing international human rights standards. This case study also demonstrated commitments to address the gender-based violence to which women can be exposed, especially in the contexts of displacement and livelihood struggles. The case study on child-centred DRR in Viet Nam, on the other hand, demonstrated how education and rights-based approaches can help challenge social norms that shape vulnerability to climate change. Indeed, promoting the right to education and adapting school curricula has been found to be a promising enabler for transformative change, tackling stereotypes at a young age and increasing children's chances of survival and resilience against climate-related disasters.

Key issues around governance and accountability in relation to climate change

While States across Asia have widely adopted international frameworks related to climate change, human rights and gender equality, the gaps between these commitments and their implementation on the ground remain one of the main barriers to the achievement of inclusive and transformative climate action. These commitments might be translated into national policies, but the case studies revealed that their **implementation is sometimes lagging or inconsistent**. This can also be observed in the sections on tourism and on wholesale and retail trade, when disaster planning aims to reduce vulnerability to extreme climate events, such as urban floods, but fails to recognize the needs and rights of many city dwellers, such

as informal workers. Indeed, the sectoral review showed that informal labour is extremely common across Asia, and particularly among women. Many States do not recognize informal labour, meaning they tend to be invisible in official statistics and remain legally unprotected, which presents a major barrier to **holding duty-bearers accountable** for discrimination and human rights violations.

Similarly, vulnerable international migrant workers often experience different layers of human rights violations, as observed in the sections on fisheries and on construction, but reporting these abuses and **seeking justice can be challenging when responsibilities to protect human rights are not clearly defined among duty-bearers** in their home country, their destination country, or the industry that employs them. As vulnerability to climate change is strongly linked to people's livelihoods, labour laws play a crucial role in ensuring stable living conditions and access to social protection. However, across sectors and in the region, the scientific literature largely showed a **lack of consistent enforcement of labour laws** or limited labour rights (see sections on construction, manufacturing and tourism). Similarly, these labour laws usually do not protect informal workers in the region. These gaps have also been found to increase workers' vulnerability to climate change, especially in sectors in which workers are exposed to heat, or in disaster-prone settings with no protective provisions. The **lack of formal employment contracts** in many sectors also **limits workers' rights to hold their employers accountable in cases of injustices**, while also excluding them from formal social security schemes that are crucial for their resilience, especially in the context of climate change.

In parallel, the section on agriculture and forestry revealed a common **lack of recognition for customary governance structures**, defining and regulating the traditional land rights of indigenous peoples. This important gap has been found to hinder indigenous peoples' access to resources. It also makes them disproportionately vulnerable to land grabs and displacements, which then affect their capacities to mitigate and adapt to climate change.

Ways forward for better governance and accountability in the context of climate change

The main challenges identified in relation to governance and accountability come down to incoherent policies caused by flawed governance mechanisms and duty-bearers working in silos. The main promising practice identified through the case studies is to ensure rigorous cooperation among state

agencies, and between state and non-state actors. This is key to conceptualize and implement gender-transformative human rights-based action. For instance, advocacy efforts by NGOs contributed to adding child-centred DRR to the political agenda in Viet Nam, while cross-sectoral collaboration between the Ministry of Education and Training and the Ministry of Agriculture and Rural Development led to a better incorporation of climate change into school curricula. Similarly, the case study on garment industries in Bangladesh illustrated how the involvement of the World Fair Trade Organization enabled the implementation of human rights standards in some manufacturing industries.

Key barriers to the exercise of procedural rights in the context of climate change

Access to information, consultations and participation in decision-making are profoundly shaped by power dynamics within societies, translating into important barriers that limit women's and marginalized groups' abilities to use their procedural rights. The case studies confirmed that in many settings women have less access to education and to the public sphere, which limits their **access to information** about their human rights entitlements and how climate change might affect their lives and livelihoods. Both the sectoral analysis and the case studies highlighted that gendered norms also affect women's opportunities to voice their concerns and to **participate in decision-making processes**, as they are expected to take care of their families, often in addition to their productive work, which limits their time availability. The case study on child-centred DRR in Viet Nam showed that gendered stereotypes can also hinder participation by keeping girls from developing skills such as confidence in public speaking, which is often not emphasized in their education.

The section on livelihood support sectors in Chapter 1 also highlighted the **lack of women's representation in leadership position**, even in sectors where women account for a major part of the workforce. These issues result in women's concerns and rights often being overlooked, including when planning for climate adaptation and mitigation policies, which increases their vulnerability to climate change. Such challenges are also faced by other marginalized groups, such as migrant workers and indigenous peoples.

Indigenous communities, including indigenous women, also face barriers in exercising their procedural rights, despite the wide recognition of the principle of **free, prior and informed consent**, which entitles any affected community to information and consultation when state or non-state actors plan to modify the natural environment of established communities. The review of the literature on the primary sector, on renewable energy and on tourism revealed that the power imbalances between indigenous communities and large-scale investors often interfere with the fulfilment of this set of rights, including for climate mitigation and development goals (such as establishing protected areas or developing renewable energy projects). Such projects can lead to land grabs and forced evictions, which are human rights abuses that also hinder these communities' abilities to adapt to climate change.

Ways forward to respect, protect and fulfil procedural rights in climate action

Access to information can be considered a requirement for meaningful participation, and the case studies on renewable energy in Bangladesh and on community-based ecotourism in Cambodia highlighted some entry points to enable better access to this right. In Bangladesh, rural women's access to electrification allowed them to have more leisure time and to listen to the radio or watch TV at home. This helps to overcome two barriers to women's access to information: time poverty, which limits their availability to attend public meetings, and limited access to the public sphere due to social norms. However, this example cannot be considered as gender transformative, as it did not actively challenge the underlying, discriminatory gender norms.

The example of community-based ecotourism in Cambodia highlights how free, prior and informed consent can be crucial to creating community ownership over development projects. It also shows how community-owned projects can create space for women to take part in decision-making, including on important matters such as how to invest revenues back into the community. The other Cambodia case study, focusing on community-protected areas, shows how some initiatives explicitly mandate that women have roles in decision-making forums to guarantee their representation in governance structures.

The two case studies in Viet Nam, meanwhile, showcased two different approaches that can help overcome barriers faced by marginalized groups in exercising their procedural rights. The selected initiative in the fisheries sector focused on fostering collective action that empowered women to negotiate fairer contracts and enhance their voice across the supply chain. The case

study on child-centred DRR is using targeted approaches to develop children's confidence to voice their needs and demand the protection of their human rights. By focusing on those who are usually less confident and less likely to be heard, such as ethnic minority children, especially girls, such initiatives can better prepare children to be active citizens and take part in climate action. However, the case study on renewable energy in Bangladesh also underlined that such initiatives need to be coupled with efforts to challenge broader discriminatory social structures and work with those who might feel threatened by women's empowerment. Indeed, as more and more women become qualified to work in the renewable energy sector, corporate and social norms are keeping them from gaining employment in the male-dominated field.

Recommendations for an intersectional, gender-transformative human rights-based approach to climate action in Asia

Climate action requires a holistic approach that embeds an intersectional, gender-transformative human-rights based approach to overcome the challenges summarized above. The promising practices and enablers identified through the case studies informed the following recommendations, which can help States across Asia, along with relevant stakeholders, to design and implement actions towards environmental and social justice.

First, it is crucial for States to align their national policies with the commitments expressed in international and regional frameworks relevant to the nexus between human rights, gender equality and climate change. These recommendations are aligned with those frameworks, including the 2030 Agenda for Sustainable Development, the United Nations Framework Convention on Climate Change, the Beijing Declaration and Platform for Action, the Addis Ababa Action Agenda, the Convention on the Elimination of All Forms of Discrimination Against Women, the Sendai Framework for Disaster Risk Reduction, and key statements by the Association of Southeast Asian Nations (ASEAN) and of the South Asian Association for Regional Cooperation (SAARC) on this nexus.

In this context, States and stakeholders, including development partners, non-governmental organizations and the civil society could consider the following recommendations:

> **Formulate holistic policies to tackle climate change, human rights violations and gender inequality.**

- Align national policies with international and regional commitments regarding climate change, human rights and gender equality.

- Recognize rights related to the environment in national legislation, and advocate for their recognition in international human rights laws. These include the rights to a healthy environment, to a safe climate, to non-toxic and healthy ecosystems, to clean air and water, and to healthy and sustainably produced food, and are pre-conditions to fulfilling all substantive human rights.

- Mainstream provisions for human rights, gender equality and climate action and promote their enforcement throughout all sectoral policies, by:
  - » Assessing human rights violations, gender inequalities and exposure to climate change at the national and sub-national levels;
  - » Designing evidence-based policies to address existing challenges;
  - » Identifying entry-points for policies and actions to transform unfair social structures and practices.

- Invest continuously in livelihood support sectors such as health and education, to ensure they are accessible to all, resilient to disasters and actively contributing to climate change adaptation:
  - » Health ministries should ensure adequate human resources to deliver health care and proper training for health care workers to identify, prevent and address climate-related diseases, and to respond effectively to disasters.
  - » Education ministries should ensure consistent integration of climate change in school curricula at all levels, including for out-of-school children and adults.

- Recognize informal workers and migrant workers as key contributors to Asian countries' economies and ensure that their rights are protected in climate-vulnerable sectors and labour policies.

- Explicitly designate roles and responsibilities of women and marginalized groups in governance processes, to ensure their representation and meaningful participation in decision-making at all levels.

Ensure multi-stakeholder cooperation to implement holistic policies and programmes.

- Ensure government accountability by:
  - » Clearly defining roles and responsibilities of duty-bearers and other stakeholders at all levels to meet commitments to human rights, gender equality and climate action;
  - » Rigorously monitor progress on achieving these commitments to address potential gaps, drawing on data and evidence from both the public and private sectors;
  - » Ensuring proper mechanisms to report wrongdoing and for victims to access justice and remedies.

- Strengthen inter-ministerial cooperation to ensure that sectoral approaches at the national and sub-national levels are complementary, especially between ministries in charge of environment and climate change, disaster risk reduction, development, labour, agriculture and women's affairs.

- Facilitate collaboration between State and non-State actors, such as non-governmental organizations and civil society, recognizing them as key allies to ensure transparency, accountability and access to justice, and to better understand realities on the ground and inform evidence-based policies.

- Assure space for grassroots organizations that can empower marginalized communities to organize themselves on the basis of shared identities and/or experiences, and enable them to raise their voice and concerns in local decision-making bodies.

Prioritize actions that redress social and gender inequalities through transformative programmes.

- Ensure access to information regarding human rights, gender equality and the effects of climate change and climate policies, translating key policy documents into local languages and raising awareness through communication channels adapted to marginalized communities (for example, radio programmes, which enable people who are not literate to obtain information).

- Enable community ownership of climate adaptation and mitigation programmes by ensuring free, prior and informed consent from the onset, and continuous community involvement in decision-making, while paying particular attention to women and marginalized groups and designing actions that challenge the root causes of their previous exclusion.

- Prioritize targeted initiatives to develop the confidence and leadership skills of women and marginalized groups, with care to avoid reinforcing traditional gender norms, and contribute to challenging discriminatory practices. Such initiatives can increase social recognition and enable these groups to use their agency to demand their rights and challenge unequal power balances.

- Develop and implement essential service packages to prevent and address gender-based violence that is exacerbated by climate change impacts.

Support research to inform evidence-based policies and programmes.

- Critically assess how governments in the region translate their commitments to international and regional frameworks on human rights, gender equality and climate change in their national and sectoral policies. This can be done through a policy review, which will establish a baseline and enable governments to identify gaps and monitor their progress.

- Invest in research that document the ways in which sexual orientation and gender identity expression play a role in shaping differentiated vulnerabilities to climate change, including whether they are currently considered or overlooked in climate action. This pressing research gap hampers efforts to protect and integrate important parts of the population to climate adaptation and mitigation efforts.

- Replicate the intersectional, gender-transformative human rights-based approach developed for this study. This framework can be adapted to other topics, which would contribute to mainstreaming such integrated and holistic approaches in a way that leaves no one behind.

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Key informant interviews (case studies)

Bangladesh

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FWF (2020). Interview with Bablur Rahman – Fair Wear Foundation. Conducted by Dayoon Kim and Jenny Yi-Chen Han, 21 September 2020, online.

IDCOL (2020). Interview with Mafruda Rahman - Infrastructure Development Company Limited. Conducted by Camille Pross, 16 September 2020, online.

Jahangirnagar University (2020). Interview with Sharmind Neelormi - Jahangirnagar University. Conducted by Camille Pross, 17 September 2020, online.

PSL-GEN Bangla (2020). Interview with Asma Huque and Hasna Khan - Prokaushali Sangsad Limited & Gender and Energy Network Bangladesh. Conducted by Camille Pross, 17 September 2020, online.

UN Women BCO (2020). Interview with Dilruba Haider and Priodarshine Auvi – UN Women Bangladesh Country Office. Conducted by Camille Pross and Jenny Yi-Chen Han, 29 June 2020, online.

Cambodia

Mlup Baitong (2020). Communication with Cham Nut - Mlup Baitong. Information received by Dayoon Kim via email, 25 September 2020, online.

UBC (2020). Interview with Vicheth Sen - University of British Columbia. Conducted by Dayoon Kim, 16 September 2020, online

UNEP (2020). Interview with Georgina Lloyd – United Nations Environment Program. Conducted by Jenny Yi-Chen Han, 10 September, 2020, online.

WCSa (2020). Interview with Sithan Phann and Nicholas Spencer - Wildlife Conservation Society Cambodia. Conducted by Dayoon Kim and Camille Pross, 30 September 2020, online.

WCSb (2020). Interview with Sereyrotha Ken – Wildlife Conservation Society Cambodia. Conducted by Jenny Yi-Chen Han, 25 September 2020, online.

UNEP (2020). Interview with Georgina Lloyd – United Nations Environment Program. Conducted by Jenny Yi-Chen Han, 10 September, 2020, online.

Viet Nam

CECEM (2020). Interview with Thuy Linh – Center for Community Empowerment. Conducted by Jenny Yi-Chen Han, 9 September 2020, online.

FAO (2020). Interview with Angela Lentisco – Food and Agriculture Organization. Conducted by Jenny Yi-Chen Han, 22 September 2020, online.

Oxfam Vietnam (2020). Interview with Chu Thi Mai Anh – Oxfam Vietnam. Conducted by Jenny Yi-Chen Han, 23 September 2020, online.

PI (2020). Interview with Nghia Trinh Trong and Renar Berandi – Plan International Vietnam. Conducted by Camille Pross, 10 September 2020, online.

STC (2020). Interview with Dang Nguyen Hai and Sharon Hauser– Save the Children Vietnam. Conducted by Camille Pross, 10 September 2020, online.

Annex 1 – List of participants in inception and validation workshops

Inception workshop, 9 April 2020, online

	Name	Organization
1	Amy Reggers	UNEP
2	Bernadette P. Resurrección	SEI
3	Camille Pross	SEI
4	Georgina Lloyd	UNEP
5	Inkar Kadyrzhanova	UN Women
6	Jenny Yi-Chen Han	SEI
7	Katia Chirizzi	OHCHR (UN Office of the High Commissioner for Human Rights)
8	Kirke Kyander	UNDP
9	Maria Holtsberg	UN Women
10	Natalia Biskupska	SEI
11	Nisha Onta	WOCAN (Women Organizing for Change in Agriculture and Natural resources management)
12	Prakriti Naswa	ARROW (Asia-Pacific Resource and Research Center for Women)
13	Priodarshine Auvi	UN Women, Bangladesh country office
14	Radhika Lal	UNDP
15	Riina Haavisto	UN Women
16	Romchat Wachirarattanakornkul	OHCHR
17	Sabastian Saragih	RWI (Raoul Wallenberg Institute)
18	Sara Vigil	SEI
19	Sean Christopher Davy	OHCHR
20	Sri Aryani	RWI
21	Suparnee (Jay) Pongruengphant	UNDP
22	Veronica Persanowska	Sida
23	Victor Bernard	RWI
24	Yamini Mishra	Amnesty International

Validation workshop, 19 October 2020, online

	Name	Organization
1	An, Nguyen Thi Minh	Save the Children (STC) Vietnam
2	Annette Wallgren	UNEP
3	Ariela Mcdonald	ADPC (Asia Disaster Preparedness Center)
4	Athena Denise Galao	ADPC
5	Bobae Lee	UN Women
6	Bui Thi Minh Hue	STC Vietnam
7	Camille Pross	SEI
8	Dang Nguyen Hai	STC Vietnam
9	Dayoon Kim	SEI
10	Fazle Rabbi Sadeque Ahmed	PKSF (Palli Karma Sahayak Foundation)
11	Inkar Kadyrzhanova	UN Women
12	Jenny Han	SEI
13	Kamal Uddin Ahmed	National Human Rights Commission, Bangladesh
14	Leakena Duong	UN Women
15	Manh, Tran Duc	STC Vietnam
16	Md. Azahar Hossain	National Human Rights Commission, Bangladesh
17	Natalia Biskupska	SEI
18	Nisha Onta	WOCAN (Women Organizing for Change in Agriculture and Natural Resource Management)
19	Priodarshine Auvi	UN Women, Bangladesh country office
20	Riina Haavisto	UN Women
21	Romchat Wachirarattanakornkul	OHCHR
22	Sara Vigil	SEI
23	Sharon Hauser	STC Vietnam
24	Sri Aryani	RWI
25	Thuy Linh	CECEM (Center for Community Empowerment) Vietnam
26	Victor Bernard	RWI

Annex 2 – International human rights frameworks and instruments reflected in the human rights-based approach

The core elements of the intersectional, gender-transformative human rights-based approach developed for this research, as well as the rights analysed throughout the report, are grounded in international human rights law. The principle of non-discrimination is mainstreamed throughout the three elements. This table presents a brief overview of the main human rights discussed through this report, and links them to the relevant international human rights frameworks and instruments in which they are mentioned.

Rights assessed in the human rights-based approach	Linkages to international human rights frameworks and instruments	Significance and implications
Substantive Rights		
Life	• Universal Declaration of Human Rights (UDHR) • International Covenant on Civil and Political Rights (ICCPR) • Human Rights Committee (HRC) General Comment No. 36	• Everyone has the right to life, liberty and the security of person (UDHR, Article 3). • State Parties are obliged to respect and to ensure the right to life, to give effect to it through legislative and other measures, and to provide effective remedies and reparation to all victims of violations of the right to life. (ICCPR, Article 6 and Human Rights Committee comment No. 36 Article 6).
Food	• International Covenant on Economic, Cultural and Social Rights (ICECSR) • Committee on Economic, Social and Cultural Rights (CESCR) General Comment 12 on the right to adequate food	• State Parties need to recognize the right of everyone to an adequate standard of living, including adequate food, clothing and housing, and to the continuous improvement of living conditions (ICECSR, Article 11). • States have a core obligation to take the necessary action to mitigate and alleviate hunger, even in times of natural or other disasters (CESCR comment 12, 6).
Health and well-being	• UDHR • ICECSR • CEDAW General Recommendation No. 37 on gender dimensions of disaster risk reduction in the context of climate change	• Everyone has the right to a standard of living adequate for their health and well-being (UDHR, Article 25). • State Parties recognize the right of everyone to the enjoyment of the highest attainable standards of physical and mental health (ICECSR, Article 12). • States should invest in climate and disaster resilient health systems and services as well as ensure the removal of all barriers to access for women and girls to health services (CEDAW GR No. 37, VI.D.).

Physical integrity and human dignity	• UDHR • Convention on the Rights of Persons with Disabilities (CRPD) • Convention on the Rights of the child (CRC)	• All human beings are born free and equal in dignity and rights (UDHR, Article 1). • Every person with disabilities has a right to respect for his or her physical and mental integrity on an equal basis with others (CRPD, Article 17). • A child rights-based approach to child caregiving and protection requires respecting and promoting the human dignity and the physical and psychological integrity of children as right-bearing individuals (CRC, Preamble)
Adequate standards of living	• UDHR • ICECSR • CEDAW General Recommendation No. 37	• Everyone has the right to a standard of living adequate for their health and well-being (UDHR, Article 25). • State Parties need to recognize the right of everyone to an adequate standard of living, including adequate food, clothing and housing, and to the continuous improvement of living conditions (ICECSR, Article 11). • States should promote and protect women's equal rights to food, housing, sanitation, land and natural resources (CEDAW GR No. 37, VI.E.).
Decent livelihood	• UN Declaration on the Rights of Peasants and Other People Working in Rural Area	• States shall take all appropriate measures to ensure that their policies and programmes contribute effectively to protecting and strengthening local livelihood options and to transition to sustainable modes of agricultural production (UN Declaration, Article 16.4).
Education	• UDHR • CEDAW • CEDAW General Recommendation No. 36 on rights of girls and women to education • CEDAW General Recommendation No. 37	• Everyone has the right to education (UDHR, Article 26). • State Parties shall take all appropriate measures to eliminate discrimination against women in order to ensure to them equal rights with men in the field of education and in particular to ensure, on a basis of equality of men and women (CEDAW, Article 10). • State Parties should raise awareness in society of the importance of education as a fundamental human right and the basis for the empowerment of women (CEDAW GR No. 26, 24 (a)). • State Parties should ensure that educational infrastructure is safe to withstand disaster and adequate resources are dedicated to protection of students and educators from impacts of climate change and disasters (CEDAW GR No. 37, VI.B.).

Decent work	• UDHR • ICECSR • ILO Declaration on Fundamental Principles and Rights at Work • CEDAW • CEDAW General Recommendation No. 37	• Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment (UDHR, Article 23). • State Parties recognize the right of everyone to the enjoyment of just and favourable conditions of work (ICECSR, Article 7). • State Parties shall take all appropriate measures to eliminate discrimination against women in the field of employment in order to ensure, on a basis of equality of men and women, the same rights (CEDAW, Article 11). • State Parties should guarantee women's equal right to decent and sustainable employment opportunities, as well as apply such right in the context of disaster prevention, management, recovery and climate change adaptation (CEDAW GR No. 37, VI.C.).
Environmental human rights	• Human Rights Committee (HRC) resolution 37/8 on Human rights and the environment • HRC resolution 31/52 on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment. • HRC resolution 41/21 on Human rights and climate change • HRC resolution 36/15 on implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes • UNEA Resolution 4/17 on promoting gender equality and the human rights and empowerment of women and girls in environmental governance.	• States have the obligation to respect, protect, and fulfil human rights, including in all actions undertaken to address environmental challenges and to take measures for those who are particularly vulnerable to environmental harms (HRC/37/8). • States have obligations to protect against the infringement of human rights by climate change (HRC/31/52, 37). • States need to adopt a comprehensive, integrated, gender-responsive and disability-inclusive approach to climate change adaptation and mitigation policies, consistent with UNFCCC (HRC/41/21, 5). • States and other duty bearers are encouraged to promote the full enjoyment of human rights by enabling the environmentally sounds management and disposal of hazardous substances and wastes (HRC/36/15, 6). • UNEA recognizes that impacts of climate change and different forms of environmental degradation can interfere with the enjoyment of a safe, clean, healthy and sustainable environment and that the damages have both direct and indirect implications for effective enjoyment of all human rights, especially those of vulnerable groups such as women and girls (UNEP/4/17).

Governance and Accountability

Accountability	• CEDAW General Recommendation No. 37 • CEDAW General Recommendation No. 33 on women's access to justice	• State Parties should ensure accountability and access to justice, which require the provision of appropriate and accurate information and mechanisms to ensure that all women and girls whose rights are affected by disaster and climate change are provided with adequate and timely remedies (CEDAW GR No. 37, General Principle C). • State Parties should improve the gender responsiveness of the justice system as well as women's unhindered access to justice systems (CEDAW GR No.33, General recommendations 15).
Transparency	• CEDAW General Recommendation No. 33 • UN Declaration on the Rights of Peasants and Other People Working in Rural Area	• State Parties should develop effective and independent mechanisms to observe and monitor women's access to justice, ensuring efficiency and transparency of the judicial, quasi-judicial and administrative bodies that take decisions affecting women's rights (CEDAW GR No.33, 20(a)). • States should establish by law that guarantees basic social security. Impartial, transparent, effective, accessible and affordable grievance and appeal procedures should also be specified (UN Declaration on the Rights of Peasants, Article 22.4).
Access to justice	• CEDAW General Recommendation No. 37 • UN Declaration on the Rights of Peasants and Other People Working in Rural Area	• State Parties should ensure accountability and access to justice, which require the provision of appropriate and accurate information and mechanisms to ensure that all women and girls whose rights are affected by disaster and climate change are provided with adequate and timely remedies (CEDAW GR No. 37, General Principle C). • Peasants and other people working in rural areas have the right to effective and non-discriminatory access to justice, including access to fair procedures for the resolution of disputes and to effective remedies for all infringements of their human rights (UN Declaration on the Rights of Peasants, Article 12.1).

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Information	• UN Declaration on the Rights of Peasants and Other People Working in Rural Area • HRC General Comment No. 36 on ICCPR	• States shall take appropriate measures to ensure people in rural areas have access to relevant, transparent, timely, and adequate information (UN Declaration on the Rights of Peasants, Article 11.2). • State Parties should provide appropriate access to information on environmental hazards and pay due regard to the precautionary approach (HRC No.36 on ICCPR, 62).
Consultation	• CEDAW General Recommendation No. 37 • CEDAW General Recommendation No. 33 • UN Declaration on the Rights of Peasants and Other People Working in Rural Area	• State Parties should incorporate climate information into disaster planning and decision making at the subnational and national levels by ensuring that diverse groups of women are consulted as valuable sources of community knowledge on climate change (CEDAW GR No. 37, 40(d)). • State Parties should seek consultations with women's groups and civil society organizations in developing legislation, policies, and programmes in areas of women's rights and justice (CEDAW GR No. 33, 51(d)). • States shall consult and cooperate in good faith with peasants and other people working in rural areas through their own representative institutions, engaging with and seeking their support who could be affected by decisions before those decisions are made (UN Declaration on the Rights of Peasants, Article 2.3.).
Participation	• CEDAW General Recommendation No. 37 • UN Declaration on the Rights of Peasants and Other People Working in Rural Area. • UNEA Resolution 4/17	• State Parties should ensure participation and empowerment through adoption of effective processes and allocation of resources for opportunities of diverse group of women to participate in policy development, implementation and monitoring at all levels of government (CEDAW GR No. 37, General Principle B). • States shall promote the participation of people in rural areas in decision-making processes and promote their participation in the preparation and implementation of food safety, labour and environmental standards (UN Declaration on the Rights of Peasants, Article 10.2). • State Parties should strengthen and implement policies aimed at increasing the participation and leadership of women in environmental decision-making and measures (UNEA/4/17, 1(f)).

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