

# 4 Empowering women to become agents of change for a climate-resilient world

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This chapter explores the gendered dimensions of climate change impacts, focusing on three climate change responses (i) resilient agriculture, (ii) disaster risk reduction and (iii) renewable energy. It examines existing systemic barriers hindering women's empowerment to respond to, adapt to and mitigate climate change. The chapter seeks to inform policy makers at the regional and national levels on how they can better incorporate a gender lens in the implementation of their policies, programmes and strategies under the Paris Agreement. Finally, the chapter aims at supporting countries to enhance gender equality and mainstream a gender-transformative approach into sectoral and broader climate change policies and actions.

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# In Brief

**Women and girls are disproportionately impacted by climate change. Yet, they are key agents of change in mitigation and adaptation strategies.**

## **Empowering women through climate-resilient agriculture**

- Globally, women play important roles in agriculture and in building strong and resilient global food systems. About, 25% of women's employment is in agriculture.
- However, climate change disproportionately affects women farmers and rural women due to structural gender inequalities and discriminatory social institutions.
- Traditional gender roles and stereotypes can exclude women farmers from decision-making processes at the household and public levels, hindering women's ability to take actions to combat the effects of climate change in their farms and communities.
- Empowering women in agriculture and providing them with equal access to productive resources could increase the production of women-owned farms by 20% to 30% in developing countries.

## **Making disaster-risk reduction gender-inclusive to enhance women's resilience**

- Climate disasters are not gender neutral. Women and children are 14 times more likely to die than men during a disaster.
- In the aftermath of disasters, women and girls are vulnerable to sexual and gender-based violence (SGBV), early and forced marriages, loss of livelihood, restricted access to education, deterioration in sexual and reproductive health and increased domestic workload.
- In pre- and post-disaster contexts, unequal access to resources and decision-making power between women and men affects how they prepare for and respond to disasters.
- However, evidence shows that women can be powerful agents of change during and after disasters. For instance, in Bangladesh, a women-led committee created in the aftermath of the floods taught other women how to build portable clay ovens, elevate their houses, and use radios to learn about possible floods or other climate-related events.

## **Empowering women as agents of change in the renewable energy sector**

- Women are the main providers and users of energy within their homes and communities. They are at the forefront of the negative effects stemming from the use of traditional energy sources, such as firewood, animal dung, crop waste and charcoal.
- Women remain under-represented in the renewable energy sector. They account for only 32% of employees in the renewable energy sector, notably due to gender stereotypes, biases and structural barriers.
- Empowering women would strengthen the renewable energy industry, support the deployment of more projects and, ultimately, help mitigate climate change. Projections anticipate that a 90% reduction in global carbon dioxide (CO<sub>2</sub>) emissions by 2050 can be achieved by further deploying renewable energy, and efforts that leverage women as agents of change in their communities could multiply those benefits.

**Infographic 4.1. Women's empowerment is key to improve mitigation and adaptation strategies**



**To make the world more climate-resilient, empower women**

Women and children are **14 times more likely to die** than men during natural disasters

Women and girls spend **200 million hours** walking every day to collect water for their households globally

Discriminatory social institutions exacerbate the gendered impacts of climate change

Weak land ownership increases women's vulnerability

In **20%** of countries (36 in total) daughters do not have the same rights to inherit as sons

Only **32%** of employees in the renewable energy sector are women

What can policy makers do?

Reform laws to guarantee women's rights

Include women and other vulnerable groups in decision-making processes

Develop gender-transformative plans and policies

Improve adaptation through better access to land, credit and knowledge

Protect women and children from violence in the aftermath of disasters

Climate change refers to long-term shifts in temperatures and weather patterns (UNDP, 2023<sup>[11]</sup>). These shifts may be natural, for example through variations in the solar cycle. However, since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas and to exploitative agricultural practices that contribute to human-induced greenhouse gases (GHG) (European Commission, 2023<sup>[2]</sup>). Human activities and burning fossil fuels have accelerated greenhouse gas emissions to a point where the Earth cannot process them anymore and therefore can no longer maintain the planet's temperature stable. This has triggered severe climatic disruptions and a global increase in temperatures (European Commission, 2023<sup>[2]</sup>). The Earth is now about 1.1°C warmer than it was in the late 1800s, and the last decade (2011-20) was the warmest on record (WMO, 2022<sup>[3]</sup>). Global surface temperatures have increased faster since 1970 than in any other 50-year period over the last 2 000 years (IPCC, 2021<sup>[4]</sup>). The ramifications of climate change are already reshaping our world as we know it. While no region of the world is spared, countries and groups of people are differently affected by the life-threatening effects of climate change.

Climate change affects various aspects of life, from the environment to human health and socio-economic systems, but its impacts vary across populations and are compounded by intersecting discriminatory social institutions related to gender, ethnicity, age, socio-economic status or location. Women are among the most affected by climate change due to their social, economic and cultural roles and responsibilities, which further exacerbate their vulnerability to climate-related risks and disasters (UNHCHR, 2022<sup>[5]</sup>; Nelleman, Verma and Hislop, 2011<sup>[6]</sup>). Therefore, understanding how climate change impacts women and their communities is crucial for achieving climate justice and building a sustainable future for all.

The link between climate change and gender has been recognised since the early 1990s. The impact of climate change on gender equality was first acknowledged during the Earth Summit in Rio de Janeiro (1992) (United Nations, 1992<sup>[7]</sup>). Since then, there has been growing consensus that gender inequality and climate change must be addressed hand in hand, and the international community has continued to underscore women's important role in managing natural resources and securing sustainable livelihoods (UNFCCC, 2021<sup>[8]</sup>). In addition, the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) General Recommendation 37 calls on states to advance gender mainstreaming into all areas and elements of climate action (OHCHR, 2018<sup>[9]</sup>). The 2030 Agenda provides the overarching policy framework linking gender, the rule of law and climate change, as expressed in Sustainable Development Goals (SDGs) 5 (Gender Equality and Women's Empowerment), 7 (Affordable and Green Energy), 13 (Climate Action) and 16 (Peaceful, Just and Inclusive Societies) (United Nations, 2015<sup>[10]</sup>). Nearly all of the SDGs intersect with gender equality and the impacts of climate change, but the nine environment-related SDGs fall short of embedding gender equality concerns and hence do not adequately support policy makers in designing gender-transformative policies. Only 20 of the 114 indicators with an environmental angle in the SDG framework account for a gender dimension (Cohen and Shinwell, 2020<sup>[11]</sup>; OECD, 2021<sup>[12]</sup>).

Recently, these efforts have been strongly accelerated through the 2015 Paris Agreement which establishes the link between gender and climate change, recognising the need to develop and implement gender-transformative national climate policies. The Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) recognises the need for gender equality and the empowerment of women in addressing climate change (UNFCCC, 2023<sup>[13]</sup>), and the Glasgow Climate Pact calls upon states to increase the full, meaningful and equal participation of women in climate action (UNFCCC, 2021<sup>[14]</sup>). The enhanced Lima Work Program on Gender for the UNFCCC further promotes activities to advance knowledge and understanding of gender-transformative climate action and its coherent mainstreaming (UNFCCC, 2023<sup>[15]</sup>). Lastly, the Sendai Framework for Disaster Risk Reduction 2015-2030 emphasises the importance of women's participation in effectively managing disaster risks and the need for gender-disaggregated data (UNDRR, 2015<sup>[16]</sup>). International conventions all call for financial assistance to prevent and cope with climate change. Financial mechanisms, such as the Global Environment Facility (GEF) and the Green Climate Fund (GCF), incorporate a gender lens. For instance, the GCF Gender

Policy requires entities seeking funding to include a gender assessment of their proposal and develop a project-level gender action plan (Green Climate Fund, 2019<sup>[17]</sup>). Currently, however, only 0.01% of all worldwide funding supports projects that address both climate change and women's rights (UNDP, 2016<sup>[18]</sup>).

While there is an increased awareness of the nexus between climate change and gender, the path towards achieving sustainable and inclusive development is still far from reach. In 2022, despite an increasing integration of a gender perspective in climate-related national plans and policies, nearly 60% of long-term low-emission development strategies continue to be gender-blind (UNFCCC Secretariat, 2022<sup>[19]</sup>). This chapter seeks to analyse three key areas connected to climate change and their gendered dimensions:

1. **Climate-resilient agriculture**, given women's significant role in agriculture, rural economies, and the creation of strong and resilient global food systems. As the global population continues to grow, the agricultural sector is crucial to decreasing food waste and ending extreme poverty and hunger.
2. **Disaster risk reduction**, as the growing toll of climate-related disasters and the need for readiness and risk management increases, women find themselves among the most impacted by such hazards.
3. **Renewable energies**, as women are the primary energy users and producers at the household level globally. They represent key actors in reducing emissions and shifting to sustainable energy sources and more productive energy uses – such as clean cooking, lighting and cooling.

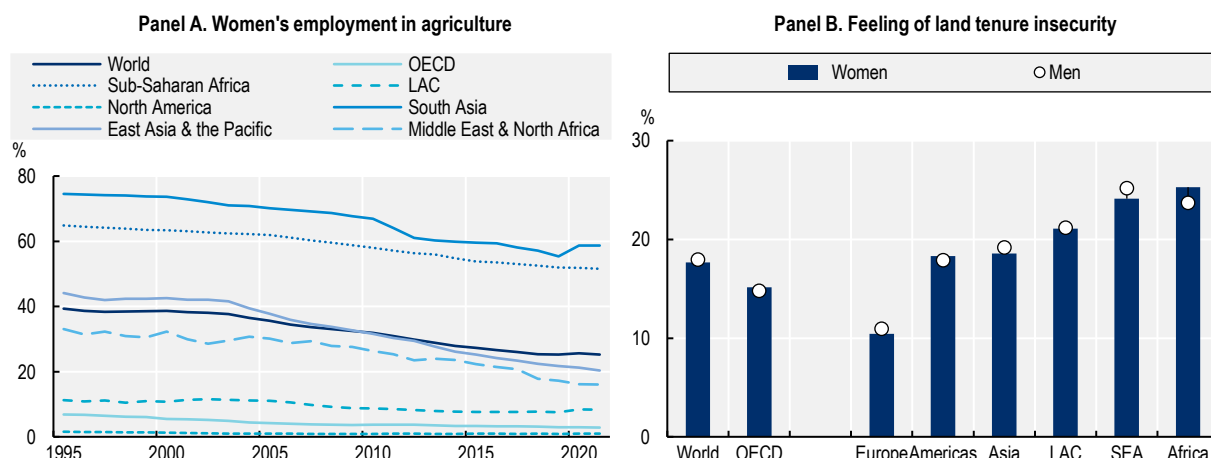
These three areas play crucial roles in mitigating the impacts of climate change and building resilience and capacity to adapt to its detrimental effects. Tackling the challenges created by climate change requires both a mitigation approach to address the causes of climate change and adaptation strategies to address its impacts. Incorporating a gender perspective in climate change policies and initiatives can ensure that the vulnerabilities of women are addressed and that their capacities and roles are strengthened to cope with the impacts of climate change. Analysing the nexus between gender and climate change in these three key areas is essential to identify and address gender inequalities that exacerbate climate change vulnerability, ensure the inclusion of women's needs and experiences in climate change policies, and promote women as agents of change in mitigating the effects of climate change.

## Empowering women through climate-resilient agriculture

Around the world, women play significant roles in agriculture, rural economies and in building strong and resilient global food systems (Giner, Hobeika and Fischetti, 2022<sup>[20]</sup>). The agricultural sector remains one of the largest employers of women in developing countries. Globally, 25% of women's employment is in agriculture (Figure 4.1, Panel A). This percentage reaches peaks of 80% in Mozambique, 76% in Burkina Faso, 75% in South Sudan and Nepal, 74% in the Central African Republic and 72% in Madagascar (World Bank, 2022<sup>[21]</sup>). Women farmers contribute to all the stages of the agribusiness value chains, from the work in the field to the sale, processing and consumption of products (FAO, 2011<sup>[22]</sup>).

## Figure 4.1. Many women are employed in agriculture and experience land tenure insecurity

Share of women employed in agriculture, 1995-2021 (Panel A) and share of men and women feeling land tenure insecurity (Panel B)



Note: LAC refers to Latin America and the Caribbean, and SEA refers to Southeast Asia. In Panel B, land tenure insecurity is calculated as the share of the population who believe it is likely that they could lose the right to use their property or part of it against their will in the next years. Data cover 140 countries.

Source: (World Bank, 2022<sup>[21]</sup>), "Employment in agriculture, female (% of female employment)", *World Development Indicators (WDI)* (database), <https://data.worldbank.org/indicator/SL.AGR.EMPL.FE.ZS>, and (Prindex, 2020<sup>[23]</sup>), Women's perception of tenure security: Evidence from 140 countries, <https://www.prindex.net/reports/womens-perceptions-tenure-security-evidence-140-countries/>.

StatLink  <https://stat.link/rc475s>

Nevertheless, women's jobs in agriculture tend to be more precarious, and their working conditions are likely to be worse than men's (FAO, 2023<sup>[24]</sup>). In the agricultural sector, women are overrepresented in seasonal, informal, part-time and low-wage work and often do not have adequate access to work-based social protection schemes (ILO and FAO, 2021<sup>[25]</sup>). For instance, in 2022, 43% of women in the agricultural sector worked as contributing family workers compared to only 15% of men. Conversely, 14% and 65% of men working in the agricultural sector worked as employers or own-account workers respectively, compared to 8% and 47% of women (ILO, 2022<sup>[26]</sup>). Likewise, in OECD countries, women are less likely than men to own and administer a family business. On average, approximately 30% of farms in the European Union are supervised by a woman (Giner, Hobeika and Fischetti, 2022<sup>[20]</sup>). The gender gap in average wages in agriculture also remains a concern. In 2023, on average, women earn 18% less than men in wage employment in agriculture (FAO, 2023<sup>[24]</sup>). Women who are contributing family workers in the agricultural sector are less likely to receive remuneration than their male counterparts and they usually do not have access to workers' social security and pension rights. In addition, female contributing family workers might be overlooked from agricultural projects as they have limited decision-making power in major farming and agricultural activities (FAO, 2023<sup>[24]</sup>).

Climate change disproportionately affects women farmers and rural women due to structural gender inequalities and discriminatory social institutions (FAO, 2020<sup>[27]</sup>). Globally, women represent the majority of the world's poor and are more likely to depend on the availability of natural resources for securing food, water and fuel and for their agricultural work. Structural gender inequalities imply that women agricultural producers generally have limited access to land, financial services, labour, smart technologies, agricultural inputs, cooling services as well as social and institutional networks. Women also tend to have less diversified sources of employment and income. Discriminatory social norms and practices – such as

negative attitudes towards women's paid work outside the home or limited freedom of movement – further restrict women's agency and decision-making power over land and resources at the household level and in the economic sphere (see Chapter 2). For instance, women's unpaid care burden limits their ability to cope with, react to, adapt to and mitigate the negative effects of climate change (FAO, 2017<sup>[28]</sup>). Overall, these combined socio-economic barriers lead to women farmers being more exposed than their male counterparts to the effects of climate shocks, particularly smallholder women farmers (FAO, 2020<sup>[27]</sup>).

### ***What are the differentiated effects of climate change on women in agriculture?***

The adverse consequences of climate change increase the time that women and girls spend on unpaid care and domestic work and limit the time they could dedicate to their education or other activities. Globally, women dedicate 2.6 more time to unpaid care and domestic work than men (see Chapter 2). In low-income countries, women and girls are the main actors responsible for household water supply, homestead irrigation and energy supply for cooking and heating (UNIDO and UN Women, 2013<sup>[29]</sup>). Women farmers and rural women allocate a considerable proportion of their time to undertake various agricultural activities and household tasks simultaneously, often to the detriment of their productivity (Katila et al., 2019<sup>[30]</sup>). For instance, in 2016, women and girls spent 200 million hours walking every day to collect water for their households at the global level (UNICEF, 2016<sup>[31]</sup>). In this context, the effects of climate change on food security, access to clean water and other vital resources disproportionately affect women (OXFAM, 2022<sup>[32]</sup>). Water scarcity, droughts and depletion of forests would translate into longer walking distances for women and girls, having negative consequences on their health and even becoming dangerous activities. For instance, carrying heavy vessels of water for long periods of time can be dangerous for pregnant women (UN-Water, 2023<sup>[33]</sup>). In addition, as women walk increasingly long distances to find water and other resources, the risk of sexual assault increases (Soliman, Carlsson and Warren, 2022<sup>[34]</sup>).

Climate change is a significant factor that affects both food security and the livelihoods of women farmers and rural women. At the global level, although food production has doubled over the last three decades, the number of people affected by hunger has increased since 2014 (FAO et al., 2020<sup>[35]</sup>). The gap between men's and women's food security is growing globally. In 2021, 32% of women were moderately or severely food insecure compared to 28% of men – a gap of more than 4 percentage points, compared with 3 percentage points in 2020 (FAO et al., 2022<sup>[36]</sup>). Due to climate-related shocks, conflicts and insecurity affecting agricultural production, women farmers are also more vulnerable to the four dimensions of food security: availability, access, utilisation and stability. For instance, women farmers resort to extreme coping mechanisms such as reducing their food intake to feed their children, with consequences on their daily productivity, and may take on precarious and dangerous forms of agricultural work to increase their income (OXFAM, 2019<sup>[37]</sup>).

Climate-resilient agriculture (CRA) is crucial to achieving the SDGs (2, 3, 4, 7, 8, 11, 12, 13 and 15) by 2030, delivering food security to feed 9.7 billion people projected by 2050 and fostering inclusive development (OECD, 2021<sup>[12]</sup>; OECD, 2020<sup>[38]</sup>; United Nations, 2019<sup>[39]</sup>). Climate resilience refers to the ability of an agricultural system to forecast, prepare for, adapt to, absorb and recover from the effects and impacts of climate change and extreme weather events. CRA encompasses many practices such as climate-smart agriculture, biotechnology and agroecological approaches, as well as sustainable forest, fisheries and soil management (FAO, 2021<sup>[40]</sup>). As the global population continues to increase, the production of sustainable agriculture is key to ending extreme poverty, hunger and the worst forms of malnutrition at the global level. In 2018, agriculture accounted for 4% of global domestic product (GDP), and in some developing countries, it reached more than 25% of GDP (IDA, 2018<sup>[41]</sup>). In addition, sustainable agriculture contributes to inclusive economic growth. For example, small-scale farming that applies gender-smart solutions could enable more women to join the agricultural value chains (OECD and FAO, 2021<sup>[42]</sup>).

### ***What systemic barriers limit women's capacity to adopt climate-resilient agriculture?***

Weak land tenure disproportionately affects women and smallholder women farmers due to discriminatory laws and social norms in more than half of the world. Regardless of the land regime, tenure security for women is described as a situation where women can use or manage land predictably for an established timeframe (Doss and Meinzen-Dick, 2018<sup>[43]</sup>). Discriminatory formal and informal laws undercut women's ownership and management of agricultural land (UNFCCC Secretariat, 2022<sup>[44]</sup>). Women are often denied fundamental human rights such as the right to own the land they cultivate and to manage and take decisions over land. For example, in Cameroon, Equatorial Guinea, Guinea-Bissau, Mauritania, Niger and Sudan, wives do not have the same rights as their husbands to own land. In 11 countries<sup>1</sup> out of 178, married women do not have the same rights as their husbands to use land and 36 countries<sup>2</sup> do not provide daughters with the same rights as sons to inherit (OECD Development Centre/OECD, 2023<sup>[45]</sup>). Customary laws may also undermine existing statutory laws and may prevent women from inheriting, acquiring, using, managing and/or owning land.

Land tenure security is not only based on the legal recognition of ownership and management of assets. Perceived tenure security is gaining considerable attention as an important behavioural incentive (Murken and Gornott, 2022<sup>[46]</sup>). In 2020, perception data from 140 countries revealed that 487 million women considered it likely or very likely that they would have to forcibly leave their land or property in the next five years (Figure 4.1, Panel B). A greater proportion of women than men were concerned about relinquishing their property rights after divorce or during widowhood. Among the respondents to the survey, almost 48% of married women in sub-Saharan Africa reported feeling insecure about their property rights in the context of divorce, compared to 34% of married men (Prindex, 2020<sup>[23]</sup>).

Land tenure insecurity hinders women's adaptive capacity and limits their ability to adopt CRA approaches and innovations. This, in turn, increases their vulnerability to the effects of climate change (IPCC, 2022<sup>[47]</sup>). It compels women farmers and rural women to adopt negative coping strategies such as reducing their food consumption, temporarily migrating or engaging in non-agricultural activities in response to climate change effects (Dibakoane, Siyongwana and Shabalala, 2022<sup>[48]</sup>; Feyertag, 2022<sup>[49]</sup>). Unsustainable coping mechanisms often induce desertification, erosion and land deterioration, with impacts on the ecological environment. Studies in Ethiopia and Uganda have revealed that individuals who have secure land rights and tenure are more likely to use and invest in soil conservation approaches to prevent land erosion (Deininger and Ayalew, 2008<sup>[50]</sup>; Deininger and Jin, 2006<sup>[51]</sup>). Research on the links between agricultural innovation and women farmers conducted in Africa showed that women do not have adequate incentives to adopt soil management methods on their parcels due to the possibility of losing their assets and investments. This, in turn, makes women farmers more exposed and vulnerable to the negative consequences and risks of climate change (Doss, 2001<sup>[52]</sup>).

Climate-smart agriculture (CSA) innovations have the potential to significantly address and mitigate the impacts of climate change. However, the adoption of these innovations is hindered by gender-based discrimination, particularly affecting women in agricultural systems (Giner, Hobeika and Fischetti, 2022<sup>[20]</sup>; IFPRI, 2019<sup>[53]</sup>). CSA encompasses various climate-friendly techniques and solutions, including water irrigation systems, solar energy, dry-seeded crops, and soil conservation measures. The approach is built upon three interconnected pillars: i) improving agricultural output and earnings, ii) enhancing resilience to climate change, and iii) reducing greenhouse gas emissions (Lipper et al., 2018<sup>[54]</sup>). However, the main factors required for CSA – human, financial, and social capital – are unevenly distributed among different socio-demographic groups in agriculture. In general, women farmers are particularly disadvantaged compared to men farmers in the adoption of the CSA innovations due to unequal power dynamics (Mwesigye, Guloba and Barungi, 2019<sup>[55]</sup>). Despite possessing valuable knowledge and expertise in sustainable agricultural practices, indigenous women often face intersecting forms of discrimination based on both their gender and indigenous identity (CIF, 2021<sup>[56]</sup>).



Lack of information, awareness, education and skills related to means of production and technology restricts women farmers from implementing CSA innovations. For instance, limited access to climate information services further hampers women's capacities to adopt and manage climate-related risks. Recent data reveal that women farmers do not have access to timely weather and climate information, which in turn reduces the effectiveness of the adoption of CSA practices (Partey et al., 2018<sup>[57]</sup>). Likewise, successful uptake of CSA demands technical expertise, such as proper selection and use of herbicides and insecticides. This knowledge of and access to improved seeds often require enrolment in co-operatives or farmers' associations. Nonetheless, women farmers are less likely to have durable networks outside of their communities and are rarely perceived as equal members of co-operatives. To address these shortcomings, some countries, such as Greece, have set up a framework for women-led farmers' cooperatives to support their agricultural activities (OECD, 2022<sup>[58]</sup>).

Furthermore, women's lack of access to financial resources and credit is one of the main constraints that explain women farmers' limited uptake of agricultural technologies. Access to flexible credit lines can support low-income women, particularly smallholder farmers, boost their investments in innovative and clean technologies and encourage the adoption of CRA practices (UN Women, 2021<sup>[59]</sup>). Access to credit provides women farmers with more options to invest in agricultural inputs (e.g. quality seeds, fertilisers, solar systems) and enhance their productivity (UN Women, 2021<sup>[59]</sup>; Nyasimi et al., 2014<sup>[60]</sup>). Nevertheless, many women smallholders lack access to the assets or the financial services – sometimes even the knowledge to use such services – that would allow them to invest in enhancing their resilience to climate change. Many women agricultural producers work in remote areas and are less likely to benefit from loans or programmes from formal financial institutions as they often require land titles, statutory proof of identity and collateral to receive a credit application (FAO, 2017<sup>[61]</sup>).

Discriminatory social norms that confine women to domestic roles have a significant impact on their access to knowledge, capacity-building opportunities, and technology adaptation trainings, which are crucial for mitigating the effects of climate change. These norms create barriers that hinder women's empowerment and their active participation in various aspects of agricultural development. At the global level, rural women work on average 16 hours per day, combining both unpaid care and domestic work and income-generating activities (FAO, IFAD and World Bank, 2015<sup>[62]</sup>). Women's unpaid care and domestic work burden exacerbates their time poverty, which limits the hours women and girls can dedicate to learning, working and investing in income-generating activities as sellers, employers or employees, or taking on leadership positions in agricultural cooperatives (Huot et al., 2023<sup>[63]</sup>). It can also hinder their ability to access and benefit from services and social networks such as rural co-operatives and organisations (FAO, 2023<sup>[24]</sup>).

Traditional gender roles and stereotypes that exclude women farmers from decision-making processes at the household and public levels limit women's ability to take actions to combat the effects of climate change on their farms and in their communities. In general, particularly in developing countries, women farmers have less decision-making power than male farmers when it comes to critical assets such as land, livestock, credit, and farm equipment and tools (Quisumbing et al., 2013<sup>[64]</sup>). Yet, the adoption of climate-resilient agricultural practices is intrinsically linked with women's ability to take decisions regarding all these resources on the farmland. Studies have revealed that women farmers with greater decision-making power in agriculture are more likely to adopt CSA practices than those with reduced decisional power (Shahbaz et al., 2022<sup>[65]</sup>). Likewise, in Bangladesh, evidence concluded that women who have equal participation in decision-making processes at the household level are more likely to cultivate a larger variety of crops, which in turn, reduces the risk that climate change poses to food security and nutrition (De Pinto et al., 2020<sup>[66]</sup>).

Gender biases and gender-blind approaches at the institutional level pose significant challenges for women farmers in strengthening their leadership skills and sharing their knowledge in various agricultural and governance bodies such as cooperatives, associations, and land committees. For instance, a study in Ethiopia concluded that women farmers face limited access to extension services and training opportunities, as these resources are predominantly provided to men and male-headed households

(Lecoutere, 2017<sup>[67]</sup>). Even when women farmers can participate in cooperatives or farmers' organisations, the impact on household dynamics and the equal division of labour and domestic tasks may be limited (Lecoutere, 2017<sup>[67]</sup>). Additionally, in some regions, rural cooperatives and farmers' organisations may not even exist, further exacerbating the challenges faced by women farmers. The absence of these social networks and structures deprives both women and men farmers of opportunities to collectively acquire agricultural inputs, access markets, and leverage their collective bargaining power.

### ***Strengthening women's roles in climate-resilient agriculture is a key way forward***

It is crucial to highlight the role of women farmers and smallholders as key agents of change in shifting towards climate-resilient agriculture. They are active members in co-operatives, producer organisations and rural committees. Their knowledge is an invaluable source and should be used to guide the implementation of climate-resilient agriculture, as well as adaptation and mitigation measures more generally. Among others, women have expertise in local crops, plants and trees and have a comprehensive knowledge of traditional, sustainable, and local farming and agricultural practices (FAO, 2017<sup>[61]</sup>).

The multiple impacts of climate change on women farmers' livelihoods require to accelerate gender mainstreaming and call for an institutional shift in agricultural policies, strategies, and development plans. The pace of adopting gender mainstreaming in agricultural programming and policies has been slow, and concrete changes have not yet been fully realised at the institutional, national, and local levels. It is important to recognise that gender mainstreaming efforts alone may not automatically lead to sustainable change in the lives of women farmers at household and public levels. The integration of a gender-transformative approach in agriculture has sometimes been considered as a technical fix without necessarily tackling the root causes of gender inequalities, social exclusion and gaps within the agricultural and rural sectors (Verma, 2014<sup>[68]</sup>). To ensure meaningful and sustainable change, it is crucial to embrace a gender-transformative approach throughout all phases of the policy-making process (Schiebinger, 2014<sup>[69]</sup>).

In order to build CRA in the advent of climate change, gender mainstreaming should include clear identification of the differentiated needs of women regarding their capacities, priorities and roles. Gender mainstreaming should be also accompanied and supported by adequate budgetary allocations. In addition, funds and investments in climate information services should be accessible and user-friendly for women agricultural producers. Among the key barriers stand the lack of technical expertise and the limited awareness of existing actions aimed at supporting women smallholders and climate change adaptation and mitigation (Howland, Le Coq and Acosta, 2019<sup>[70]</sup>). To guarantee and foster women's uptake of CSA practices and innovations, it is essential to eliminate discriminatory social norms and practices concerning women's role in agriculture and their adoption of innovations and technologies (FAO, 2017<sup>[61]</sup>). More generally, agricultural policies and programmes should address harmful social norms against women and girls, discriminatory attitudes and unequal power dynamics at all levels of society.

## **Policy recommendations: Towards gender-transformative agricultural measures in climate action**

Governments and development partners face a unique chance to fast-track the road to climate action by incorporating and mainstreaming gender into their agricultural initiatives, policies, actions, strategies and plans at all levels. A gender-transformative approach to climate change is based on a holistic system that focuses on the economic, political, ecological and cultural causes of vulnerability of different groups. These measures are generally targeted to shift power relations shaped by discriminatory social norms and practices and to empower women so that they have a greater capacity to adapt, mitigate and strengthen their resilience to the effects of climate change.

### Shifting normative frameworks to guarantee women's land rights on equal footing with men

- Governments should close legal loopholes in women's land rights and tenure to ensure women's and men's equal access to, ownership of, use of and decision-making power over the land.

*In 2022, the Government of Sierra Leone adopted the Customary Land Act and the Land Commission Act which granted equal rights for men and women to own and use land. Both laws aim to promote gender equality and guarantee that married couples can jointly register land ownership (Government of Somalia, 2022<sup>[71]</sup>).*

- Governments should harmonise customary laws with national laws in line with international human rights commitments (e.g. CEDAW) to strengthen women's land tenure and ensure the effective enforcement of the law.
- Governments should make use of other legal tools to protect women's land rights such as joint titling, providing equal inheritance rights and recognising female heads of households.
- Governments and stakeholders should carry out public information and outreach campaigns on legal land reforms. Sensitisation programmes and advocacy efforts are critical to shifting discriminatory attitudes in the use and management of land.

*To bridge the gap between legal frameworks and local practices on women's land rights, the World Bank, Landesa Global Land Tool Network (GLTN) Partners, UN-Habitat, Habitat for Humanity, the Huairou Commission, together with local women's organisations at the global level launched a global advocacy campaign entitled "Stand for Her Land" (Stand for Her Land, 2023<sup>[72]</sup>).*

### Designing capacity-building programmes that reach women farmers and enhance their adaption capacities

- Stakeholders should design adequate incentives such as financial grants and technical support to encourage women farmers to proactively invest ex-ante in risk prevention and mitigation measures and preparedness to face the adverse effects of climate change on agriculture.
- Stakeholders should ensure that training on the adoption of CSA technologies is accessible and affordable to women farmers, as well as tailored to their educational and technical knowledge. Programmes and initiatives should be adapted to the local and agroecological context and result from participatory processes so the direct users of the innovations can evaluate the advantages and disadvantages.

*The Consultative Group on International Agricultural Research implemented a programme in India to work with women-led organizations to strengthen their capacity to adopt climate-smart agricultural technologies and innovations and to access climate information services. Furthermore, the programme prioritised the involvement of women's self-help groups and enhanced women's agency and voice (Huyer, 2021<sup>[73]</sup>).*

### Allocating financial resources and investments towards women farmers

- Stakeholders should re-direct and prioritise climate finance, investments and funding towards the most marginalised and impacted groups – including indigenous, rural and poor women – in the most affected geographic regions by the impacts of climate change.
- Climate finance should in particular ensure long-lasting support to women's cooperatives, associations and feminist networks, which strengthen women's voice and role as agricultural producers.
- The private sector should shift from a traditional approach to financing, based on collateral loans, to one that handles risks and leverages innovative sources of guarantees (moveable assets, such as livestock, machinery and tools). Alternative distribution channels that use mobile

banking and mobile phone payments can also be very effective to reach women farmers living in rural and remote areas. Policies need to unlock access to data for farmers and support the objectives in emerging markets to reduce trade barriers to digital infrastructure, promote policies for infrastructure sharing, and avoid taking the digital ecosystem as a tax collection tool but as a social inclusion one.

*In 2018, E-Granary, a digital platform which delivers financial services to smallholder farmers was launched in Uganda and Rwanda. The mobile platform employs alternative collateral/ mechanisms such as group guarantees for credit access to enable women farmers to access credit lines and financial services (E-granary, 2023<sup>[74]</sup>).*

- Stakeholders should further support and encourage women to join women farmer's organisations, including grassroots, forest and farm producers' organisations and cooperatives to build community climate resilience. Social structures and groups are particularly important to access data, resources and economic opportunities needed to address the effects of climate change.

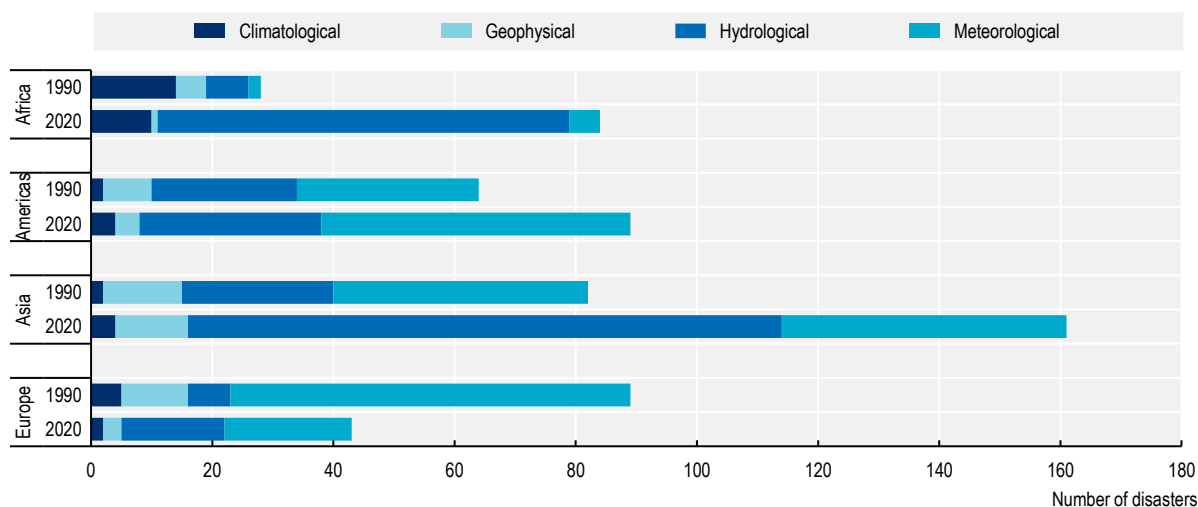
## Making disaster risk reduction gender inclusive to enhance women's resilience

Climate change is leading to an increase in the frequency and intensity of various climate-related disasters. Rising global average temperatures (Hansen et al., 2020<sup>[75]</sup>) contribute to the extreme weather events such as heatwaves, droughts, flooding, winter storms, hurricanes and wildfires. Over the last 20 years, more than 7 000 disasters have been recorded worldwide. These events have claimed approximately 1.23 million lives, affected over 4 billion people, and led to global economic losses of nearly USD 3 trillion (UNDRR and CRED, 2020<sup>[76]</sup>). These numbers will only increase in the future.

Climate-related disasters can take different forms. Worldwide, floods are the most common type of disaster, accounting for 44% of total events considered. Storms are the second most common, accounting for 28% of events worldwide. Droughts and wildfires account for 5% and 3% of total events respectively (UNDRR and CRED, 2020<sup>[76]</sup>). Geophysical disasters, such as earthquakes and volcanic activity, make up a total of 9% of all events, the majority of which are earthquakes (Figure 4.2). Overall, the number of disasters between 2000 and 2020 reached an average of 367 recorded events per year (UNDRR and CRED, 2020<sup>[76]</sup>), representing an increase by a factor of 5 over the last 50 years (WMO, 2021<sup>[77]</sup>).


## Figure 4.2. Climate-related disasters have been increasing steadily since 1990, specifically in Africa and Asia

Number of climate-related disasters, 1990 and 2020



Note: Climatological events include droughts and forest and land fires. Geophysical events include earthquakes, tsunamis, volcanic activity and mass movement. Hydrological events include floods, landslides and wave action. Meteorological events include storms and extreme temperatures.

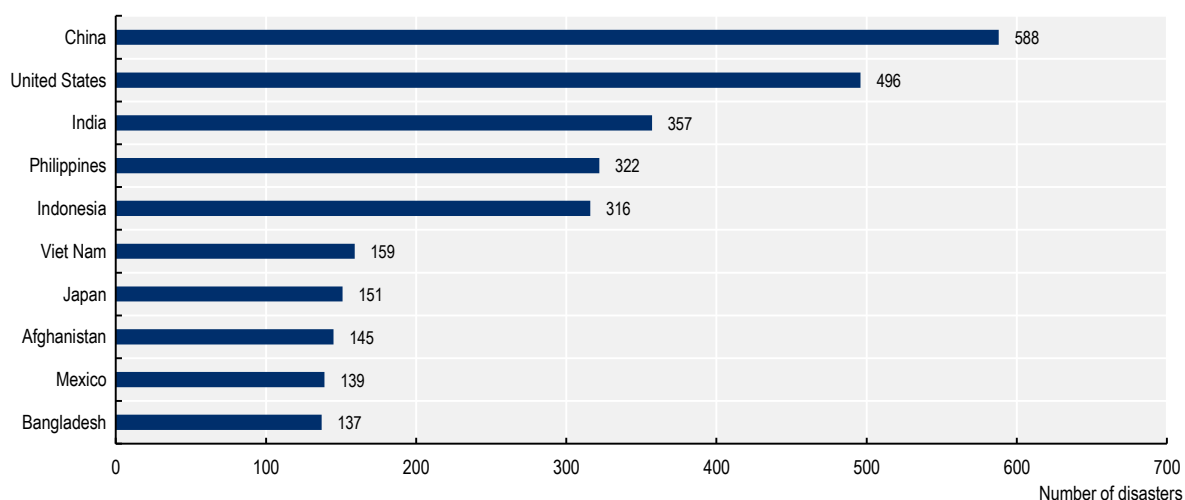
Source: (EM-DAT, 2023<sup>[78]</sup>), EM-DAT Public, <https://public.emdat.be>.

StatLink  <https://stat.link/ie3uv2>

Climate-related disasters affect certain regions and countries more than others. Between 2000 and 2019, Asia suffered the highest number of disaster events. In total, there were 3 068 events in Asia, followed by 1 756 in the Americas and 1 192 in Africa (UNDRR and CRED, 2020<sup>[76]</sup>). The most affected countries in this period have been China and the United States (Figure 4.3). Overall, eight of the top ten countries affected by disaster events are in Asia. There are notable differences between the types of events experienced by these countries. For example, 30% of disasters in Indonesia are geophysical events, and 65% are hydrological events. In contrast, in Viet Nam, 52% of events are hydrological, and 45% are meteorological. China and India account for over 2.8 billion disaster-affected people between 2000 and 2019, approximately 70% of the global total (UNDRR and CRED, 2020<sup>[76]</sup>).

**Figure 4.3. China and the United States were the most affected countries by climate-related disasters between 2000 and 2020**

Number of climate-related disasters, 2000-20



Source: (EM-DAT, 2023<sup>[78]</sup>), EM-DAT Public, <https://public.emdat.be>.

StatLink  <https://stat.link/kqh6gv>

Disaster risk reduction (DRR) policies and programmes can help countries cope with climate-related disasters. DRR is about identifying, assessing and reducing the risk of disasters which is important to strengthen resilience and mitigate exposure of the affected communities (UNESCO, 2023<sup>[79]</sup>; UNDRR and CRED, 2020<sup>[76]</sup>). The prevention of and preparation for disasters can alleviate the burden left in their aftermath and are critical to minimise the impact on human lives, infrastructure and economic activity.

DRR is crucial to achieving the SDGs. Target 5 of SDG 11 (Sustainable Cities and Communities) aims to “significantly reduce the number of deaths and the number of people affected by disasters” by 2030 (United Nations, 2023<sup>[80]</sup>). In this context, the main global protocol regulating DRR is the Sendai Framework for Disaster Risk Reduction, an international agreement adopted in 2015 which aims to reduce disaster risk and minimise the damage caused by natural and human-induced hazards. The Sendai Framework also includes implementing measures to reduce communities’ vulnerability to disasters and increase their resilience, as well as improving early warning systems and access to information about risks and hazards (UNDRR, 2015<sup>[16]</sup>). Due to the gendered impacts of climate change, the Sendai Framework also recognises the importance of integrating a gender perspective into all DRR policies and practices and the need to empower women and promote a more equitable and universally accessible response, recovery and reconstruction (UNDRR, 2023<sup>[81]</sup>).

### ***What are the differentiated impacts and consequences of climate-related disasters on women and girls?***

Climate disasters are not gender neutral. They affect men and women differently, mainly due to the distinct gender roles that men and women have historically assumed. Socio-economic factors, cultural norms and traditional practices are the root causes of the inequality between women, girls, men and boys and determine the gendered impact of climate-related disasters. When disasters strike, women and children are 14 times more likely to die than men (UNHCHR, 2022<sup>[5]</sup>; CARE International, 2014<sup>[82]</sup>). For instance, of the 230 000 people killed in the 2004 Indian Ocean Tsunami, 70% were women (Okai, 2022<sup>[83]</sup>). During

the heatwaves that erupted across Europe in 2003, the excess of deaths for women was 75% higher than that for men in France (Fouillet et al., 2006<sup>[84]</sup>). When cyclone Gorky hit Bangladesh in 1991, 90% of the fatalities were women. Research conducted following the cyclone highlighted that gender roles and norms played a significant role in the difference in evacuation decisions and limited women's mobility during the event (Ayeb-Karlsson, 2020<sup>[85]</sup>).

Women and girls are subject to indirect impacts that arise in the aftermath of disasters, such as sexual and gender-based violence (SGBV), early and forced marriages, loss of livelihood, reduced access to education, deterioration in sexual and reproductive health, and increased workload, all of which compound the gender-specific impacts of disasters. For example, a needs assessment conducted by Mercy Corps in Karamoja, Uganda, revealed that harmful practices, including domestic violence, child marriage, statutory rape and female genital mutilation or cutting, spike during droughts and prolonged dry spells (GFDRR et al., 2020<sup>[86]</sup>). Likewise, in 2005, SGBV against women increased in the areas of the United States affected by Hurricane Katrina (Anastario, Lawry and Shehab, 2009<sup>[87]</sup>). Risks of SGBV are particularly acute in displacement contexts as displaced women often have to reside in congested evacuation centres and informal settlements (UNHCHR, 2022<sup>[5]</sup>). According to a 2011 joint study of the United Nations International Centre for Integrated Mountain Development and the Centre for International Climate and Environmental Research, the trafficking of girls and women and other forms of SGBV have considerably grown due to disasters in Southern Asia (Desai and Mandal, 2021<sup>[88]</sup>). Child marriage rates also spike in the aftermath of a disaster. Evidence from different countries and regions struck by climate disasters, such as Bangladesh, Ethiopia and Kenya, shows that child marriage is often seen as a means to cope with the economic consequences of these events by securing funds or assets (UNFCCC Secretariat, 2022<sup>[44]</sup>).

In addition, climate-related disasters increase women's unpaid care and domestic work. Discriminatory social norms confine women to their role of primary caretakers of the household (see Chapter 2). In developing countries, it translates into women being mainly tasked with gathering firewood for cooking and fetching water for daily use. The impact of climate change on food security, access to clean water, health and the difficulties with securing resources escalate during climate shocks, further augmenting women's time spent on unpaid care and domestic work (Hu, 2022<sup>[89]</sup>). Increasing women's unpaid care work translates into further losses of opportunities, impacting their income and education prospects and exacerbating existing inequalities and unbalanced power relations with men. These difficulties are further compounded by the fact that women are also more vulnerable to the economic impacts of climate disasters, as they are often employed in sectors that are more exposed to climate risks, such as agriculture, or in vulnerable forms of employment such as the informal sector, which account for 58% of employed women globally (ILO, 2018<sup>[90]</sup>).

Furthermore, climate-related disasters weaken the capacity of health systems and hinder access to SRHR services. The impacts of climate change are linked to some components of SRHR more than others. There is strong evidence analysing how climate change results in negative maternal health outcomes and an overall lack of access to SRHR services, which are crucial for women's and children's well-being (UNFPA, 2021<sup>[91]</sup>). When health facilities and supply chains are put in jeopardy, there is a negative impact on access to and quality of SRH services, such as maternal and newborn health assistance, emergency contraception and safe abortion services as well as menstrual hygiene products (Women Deliver, 2021<sup>[92]</sup>). For example, a study in Bangladesh showed that increasing incidences of flooding have led to low stocks of contraceptives at health facilities in rural and remote areas (Asian-Pacific Resource & Research Centre for Women, 2014<sup>[93]</sup>). Climate change also has a strong and direct impact on maternal mortality. Rising temperatures, more frequent heat waves and droughts, and heavy rainfall affect food and water security and impede women's access to safe and clean drinking water (Harville, Xiong and Buekens, 2010<sup>[94]</sup>). This is particularly problematic for pregnant women, as water requirements increase with gestational age (Zhang et al., 2020<sup>[95]</sup>). Similarly, nutrient deficiencies caused by food insecurity and undernutrition among pregnant women can affect pregnancy, nursing and newborn outcomes and lead to low-weight births, miscarriages and perinatal mortality (UNICEF, 2022<sup>[96]</sup>).

## ***Many barriers fuel gender inequality before and after disasters***

Differences in access to resources and decision-making power between men and women have a significant impact on how they prepare for and respond to disasters (Ciampi et al., 2011<sup>[97]</sup>). Poverty plays a critical role in determining a person's capacity to cope with disasters (UNDRR, 2023<sup>[98]</sup>). Factors such as poor housing, farms and settlements in unsafe and remote locations, limited resources, less robust coping strategies, and inadequate access to information mean that both women and men living in poverty are disproportionately affected by the impacts of natural disasters and experience slower recovery (UNDRR, 2023<sup>[98]</sup>). However, structural discrimination that affects women's lives, such as lower salaries and pensions, unequal access to resources, discriminatory legal frameworks, and limited decision-making power, results in higher rates of poverty among women compared to men (UN Women, 2000<sup>[99]</sup>). This feminisation of poverty not only increases women's risks of transmitting intergenerational poverty but also renders them even more vulnerable to the impacts of natural disasters (McLanahan and Kelly, 2006<sup>[100]</sup>).

Different hierarchies at the household level strongly impact women's capacity to cope with disasters. Unequal access to inheritance and household finances, limited decision-making power and restricted mobility for women and girls all affect their access to post-disaster assistance and compensation for losses and damages. For instance, in the aftermath of the 2010 flooding in Pakistan, discriminatory familial restrictions required women to be accompanied by a male guardian, severely limiting their access to conventionally delivered aid, such as food assistance, medical services (including SRH services), and sometimes even their access to toilets (GFDRR et al., 2020<sup>[86]</sup>). Additionally, many women also lacked proof of identity, which further hindered their eligibility to receive assistance from relief schemes (UNDRR and CRED, 2020<sup>[76]</sup>).

These hierarchical gender roles observed at the household level are reflected at the national and political levels. Women face significant barriers to direct participation and effective influence in politics, spanning from the household to community, national, regional and international levels (Nelleman, Verma and Hislop, 2011<sup>[6]</sup>). For instance, in many countries, women are obliged by law to obey their husbands and do not have the same rights to be head of the household (OECD Development Centre/OECD, 2023<sup>[45]</sup>). The traditional roles assigned to women as mothers and housewives further reinforce these inequalities and hinder their engagement in public and political spheres. Consequently, women's involvement in DRR management, policy development and their recognition as essential stakeholders in disaster response and recovery stages are significantly impacted.

The ability to save money and access a bank account is also crucial for building resilience to climate-related disasters and serves as a key element in households' coping and recovery mechanisms during and after such events. A study conducted in Ghana shows that, following the 2015 flood, 43% of affected households relied on their savings as the primary way of coping (Erman et al., 2020<sup>[101]</sup>). While legal discrimination regarding women's rights to open a bank account has been eliminated (only three out of 178 countries still impose such restrictions), gender gaps persist. Globally, only 67% of women own an account at a financial institution, compared to 72% of men (OECD Development Centre/OECD, 2023<sup>[45]</sup>). Bank loans and insurance also serve as means for households to recover economically from the impact of disasters. However, due to prevalent discriminatory legal frameworks in many countries, women do not enjoy the same rights as men to inherit or own land and non-land assets (OECD Development Centre/OECD, 2023<sup>[45]</sup>). This impedes women's ability to recover, as they often lack the assets and collateral required to access formal sources of finance and obtain loans.

The lack of access to information further perpetuates gender inequality and hampers the effectiveness of DRR and mitigation efforts. In some countries, warning information is primarily disseminated through mass media channels that may not be accessible to all individuals or designed with women in mind. Additionally, vulnerable individuals, particularly women and marginalised groups in rural or isolated areas, may lack access to technology, communication and services or possess lower levels of literacy, resulting in potential gaps in accessing critical information (Pudmenzky et al., 2022<sup>[102]</sup>). A study carried out in Nepal revealed



that 71% of men received early warning information through formal sources such as government or non-governmental organisations, whereas 51% of women obtained information through informal social sources such as word of mouth from community or family members (Pudmenzky et al., 2022<sup>[102]</sup>). These vulnerabilities are further exacerbated in countries with diverse language-speaking or indigenous groups, as the lack of information in local languages creates barriers in accessing and comprehending essential information (UNDRR and UN Women, 2022<sup>[103]</sup>). Moreover, women are often discouraged from learning crucial coping strategies and lifesaving skills, such as climbing trees or swimming (Nelleman, Verma and Hislop, 2011<sup>[6]</sup>). A study conducted in the Philippines shows that 87% of men know how to swim, while only 51% of women possessed this skill (Hunter et al., 2015<sup>[104]</sup>). This disparity may stem from cultural norms that steer girls towards engaging in different cultural and recreational activities that may not include sports, which is often perceived as more masculine.

### ***Building women’s resilience to climate-related disasters is essential***

Post-disaster contexts bring forth diverse challenges for women, but it is important to recognise that they are not just victims. Substantial evidence demonstrates that women are powerful agents of change during and after disasters. For instance, in the aftermath of Hurricane Mitch that devastated Honduras and Nicaragua in 1998, women took the initiative in organising disaster recovery efforts, actively participating in tasks such as hauling cement, constructing temporary shelters and latrines, and engaging in governance initiatives and working to restore livelihoods (GFDRR et al., 2020<sup>[86]</sup>). Indigenous women also play a crucial role in developing, applying, transmitting, and preserving traditional knowledge that enhances community resilience in extreme weather events (UNDRR, 2023<sup>[105]</sup>).

To promote more effective and inclusive disaster preparedness, response, and recovery, governments and international organisations need to understand and address social norms that impact DRR. This entails working with communities to challenge harmful norms and foster positive behaviours that reduce risks and enhance resilience. Empowering women and girls can support gender-equitable disaster risk reduction, while promoting social inclusion can ensure that vulnerable groups are better equipped to cope with and recover from disasters. DRR efforts can be strengthened to create more resilient and inclusive societies by recognising women as agents of change and addressing social norms.

## **Policy recommendations: Towards building resilience to climate-related disasters**

Women and girls are disproportionately impacted by climate change-induced disasters. Due to discriminatory social institutions, women experience higher losses of lives and livelihoods during and in the aftermath of disasters. In every aspect of their lives, from life expectancy to education, housing, health, safety, job security and nutrition, women and girls are impacted more severely than men. Yet, women are excluded from shaping disaster risk reduction and resilient policies, strategies and programmes. Therefore, it is crucial to include women in policy- and decision-making institutions, in the dialogue on adaptation to climate change, and in the governance of natural resources.

Policy makers and stakeholders should commit to implementing the following measures to reduce the gendered impacts of climate-related disasters.

### **Create national and international mechanisms of communication and consultation to engage with the women and men affected by climate-related disasters**

- Governments should consult with civil society organisations and local communities to include women and men equally in identifying and prioritising areas of intervention in disaster risk

reduction strategies (such as roundtables, focus groups and participatory discussions) in line with Point 5 of the UNDP 10-Point Action Agenda (UNDP, 2022<sup>[106]</sup>).

- Governments should ensure women's and men's equal access to climate-related disasters early warning systems based on better use of more varied means of communication that do not isolate the more vulnerable parts of the population.

*Oxfam in Pakistan ("Sustainable livelihoods and disaster risk reduction" program) created a women's relief committee, supported by men, to select criteria for targeting beneficiaries, identifying vulnerable households, and allocating food rations in the event of a climate-related disaster. It also distributed wireless telephone sets to the most vulnerable women in the community to include them in early warning information systems (Ciampi et al., 2011<sup>[97]</sup>).*

### **Remove legal barriers and address discriminatory social norms leading to gender inequality in climate-related disasters**

- Governments should set 18 as the minimum age for marriage without any exceptions as recommended by the CRC and CEDAW to protect girls in the aftermath of disasters from forced marriage.
- Governments should amend laws that establish men as head of the household and collaborate with civil society organisations and traditional/community leaders to produce edutainment programmes to challenge discriminatory social norms that confine women to the household.

*In Bangladesh, a community awareness programme was launched in 2017 through girls' radio clubs by the Coastal Association for Social Transformation Trust. 40 radio clubs now provide information to over 500,000 listeners in the Bay of Bengal about women's and girls' rights, reproductive health, domestic violence and child marriage, as well as ways to adapt and prepare for the effects of climate change (COAST Foundation, 2023<sup>[107]</sup>).*

### **Protect women and children from physical and psychological harm in the aftermath of disasters**

- Governments should close legal loopholes and enact laws to protect women and girls from SGBV, child marriage, FGM/C, and economic and psychosocial harm.
- Governments should invest in social support structures and support women's organisations and CSOs that protect women from SGBV.
- Governments, in the aftermath of disasters, should work rapidly on the strengthening and restoring of SGBV and protection services, implementing shock-responsive safety net projects for women and children.

*In the aftermath of Cyclones Yasa and Ana in Fiji, twelve Women-Friendly Spaces were established by UNFPA to provide a safe space for women and girls to access psychosocial support and related services for survivors of GBV. These spaces also offer women and girls access to SRH services, information and commodities. In addition, "Dignity Kits" were distributed to women and girls, containing hygiene and sanitary items (UNFPA, 2023<sup>[108]</sup>).*

### **Establish a strategy for managing the financial impacts of disasters, comprising a gender perspective**

- Governments, along with the Ministry of Finance and of the Environment, should allocate the necessary resources to ensure sufficient institutional capacity and expertise for the assessment of disaster risks and the relative costs and benefits and address special financial support for female farmers impacted by climate disasters.
- Governments, along with the Minister of Finance, should foresee public compensation and financial insurance to provide timely, targeted, and inclusive assistance for the losses stemming

from climate-related disasters for the most vulnerable parts of the population (e.g. women farmers, indigenous women).

### Develop gender-transformative recovery plans and policies

- Governments should institutionalise quota systems to enhance gender parity in DRR decision-making processes, policies, and interventions.

*In Uganda, the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) are supporting the government to strengthen the financial resilience of the most vulnerable parts of the population through a social protection project that provides employment through public works projects and direct cash transfers to households without able-bodied members. This project requires that at least 40% of the public works projects' participants are women and implements gender-responsive measures to ensure that the selected activities are located close to villages and appropriately meet the needs of women (GFDRR et al., 2020<sup>[86]</sup>).*

- Governments should develop and prioritise recovery plans and policies that include the diverse needs and capacities of all women, men, girls and boys in the context of climate-related disasters.

*Following the increase in climate-related disasters, the Government of the Philippines in 2009 passed two laws that establish a legal basis for gender mainstreaming in climate change and DRR policies. The 2009 Climate Change Act recognises women as a vulnerable group and requires the application of a gender lens for climate change plans and programmes (Government of the Philippines, 2009<sup>[109]</sup>). In addition, the 2010 Philippines Disaster Reduction and Management Act states that the government must “ensure that disaster risk reduction and climate change measures are gender-responsive.” The law also institutionalises gender analysis in early recovery and requires the inclusion of the Gender Development Office on newly formed Local Disaster Risk Reduction Management Committees (Government of the Philippines, 2010<sup>[110]</sup>).*

- Governments should work with grassroots, civil society and women’s organisations which have the insights, information, experiences, networks, and resources crucial to increasing disaster resilience.

## Empowering women as agents of change in the renewable energy sector

Evidence shows that fossil fuels, such as coal, oil and gas, are responsible for 75% of global greenhouse gas emissions, and almost 90% of all carbon dioxide emissions, and they are not infinite resources (SEI et al., 2019<sup>[111]</sup>). In developing countries, cooking is still largely based on traditional modes that are detrimental to climate change. Overuse of wood fuel for cooking also contributes to deforestation, land degradation and desertification, all of which increase the risk of climate change (OECD, 2021<sup>[112]</sup>; Boskovic et al., 2018<sup>[112]</sup>). Globally, greenhouse gas emissions from forest degradation, that come from wood fuel harvest, amount to about 30% (Clean Cooking Alliance, 2022<sup>[113]</sup>). As a result of burning biomass and residential solid fuel combustion, Africa, Asia and Latin America contribute to about 88% of global black carbon emissions,<sup>3</sup> which directly contribute to global warming (Climate & Clean Air Coalition, 2023<sup>[114]</sup>).

The gendered dimension of energy is dual. On the one hand, because of traditional gender roles, women are the primary users of energy within the household and are often the primary providers in developing or low-income contexts where households continue to rely on biomass sources for their cooking needs. This disproportionate exposure to unclean sources of energy has deep implications on their unpaid care and domestic work burden as well as on their health. Moreover, climate change tends to heighten these adverse effects. Overall, although many women are affected by the energy poverty phenomenon both in developing and developed countries, the challenges they face differ. In more advanced economies, the issue of affordability of energy is the main preoccupation, whereas in less advanced economies issues

revolve around energy availability, access and reliability (OECD, 2021<sup>[12]</sup>). On the other hand, women remain largely disempowered in the renewable energy sector, which constitutes one of the main pathways to reduce global emissions and mitigate the effects of climate change. Women face a number of barriers that prevent them from being involved in the sector and from fully participating in decisions related to the development and deployment of innovative projects.

### ***The widespread use of unclean energy and lack of access to electricity has disproportionate impacts on women***

The use of unclean sources of energy substantially impacts women's unpaid care and domestic workload. Globally, more than 2.5 billion people still do not have access to clean cooking, and 770 million people lack access to electricity – mainly in Africa and Asia (IEA, 2022<sup>[115]</sup>). In developing countries and low socio-economic contexts, this lack of access to electricity translates into the need to collect energy sources such as firewood, animal dung, crop waste and charcoal (The Global Initiative for Economic, Social and Cultural Rights, 2020<sup>[116]</sup>). Because traditional gender roles and practices in the household confine women to domestic roles (see Chapter 2), women and girls bear the brunt of this additional unpaid care and domestic workload. These activities are both time consuming and physically demanding (The Global Initiative for Economic, Social and Cultural Rights, 2021<sup>[117]</sup>). Moreover, intersecting characteristics such as living in rural, remote or conflict-affected areas can further exacerbate the energy poverty phenomenon. For example, in West Africa, while the average electrification rate is nearly 76% in urban areas, it drops to 29% in rural areas (Gafa and Egbendewe, 2021<sup>[118]</sup>).

Climate change further exacerbates women's burden of unpaid care and domestic work that result from collecting water or biomass for energy purposes. Drought and land degradation induced by climate change often means that women have to walk longer distances to collect water or firewood. The increase of their burden of unpaid care and domestic work further reduces women's and girls' participation in income-generating activities, as well as their educational opportunities (UNCCD, 2022<sup>[119]</sup>).

Moreover, women's use of unclean sources of energy in the household, notably for cooking purposes, exposes them to severe negative health effects. Collecting biomass for energy purposes or water are physically demanding tasks which can put women at risk of injury, for example while collecting heavy loads of fuel (Haddad et al., 2021<sup>[120]</sup>). Furthermore, the long and sometimes arduous journeys to gather these resources can expose women to various forms of violence, including physical assault, sexual harassment, and rape (Haddad et al., 2021<sup>[120]</sup>; WHO, 2016<sup>[121]</sup>). Using open fires or inefficient stoves fuelled by kerosene, biomass and coal also lead to high concentrations of polluted fumes in the household, which disproportionately impacts women. In 2012, women and girls accounted for six out of every ten premature deaths due to household air pollution (UN Women, 2018<sup>[122]</sup>). Unclean fuels and inefficient technologies also affect other family members. Estimates suggest that half of all premature deaths caused by household air pollution are children under the age of five (WHO, 2022<sup>[123]</sup>).

Lack of access to electricity can also have significant implications for women's ability to adapt to and mitigate the adverse effects of climate change. For instance, in regions highly susceptible to high temperatures, data from 54 countries and 22 sub-national regions in 2022 indicate that approximately 719 million women and 448 million men were at high risk of lacking access to cooling services (SEforALL, 2023<sup>[124]</sup>; SEforALL, 2022<sup>[125]</sup>).

In this context, the adoption and utilisation of renewable energy systems at the household level can play a crucial role in reducing greenhouse gas emissions, improving the health and well-being of women and their families, and alleviating their unpaid domestic workload (IEA, 2022<sup>[115]</sup>). However, despite the numerous benefits and the fact that transitioning to renewable energies is vital for mitigating climate change and empowering women economically, women face significant systemic and structural barriers that hinder their participation in the renewable energy sector.

The renewable energy sector is critical for achieving a 90% reduction in global carbon dioxide emissions by 2050 and creating new employment opportunities. The sector is expected to generate 42 million jobs by 2050 – four times its 2020 level (IRENA, 2020<sup>[126]</sup>; IRENA, 2017<sup>[127]</sup>). Women's active involvement in the renewable energy value chain can significantly contribute to sustainable consumption behaviours and improved energy efficiency (ASEAN and OECD, 2021<sup>[128]</sup>; OECD, 2021<sup>[12]</sup>). In addition, analysis across selected OECD countries has shown that women tend to show more environmental concern than men and are more responsive to behavioural nudging (OECD, 2022<sup>[58]</sup>). Nonetheless, women remain largely excluded from the energy sector, accounting for only 32% of employees of the renewable energy sector, compared to 22% in the oil and gas sector (IRENA, 2019<sup>[129]</sup>). Within the renewable energy sector, in 2021, women accounted for 40% of those employed in solar photovoltaics, compared to only 21% in the wind industry (IRENA, 2022<sup>[130]</sup>). Discriminatory norms and implicit biases continue to limit women's entry into the energy sector and their professional advancement (EmPower and UNEP, 2020<sup>[131]</sup>).

### ***Women's exclusion from the renewable energy sector stems from several systemic and structural barriers***

Among others, the main barriers that prevent women from being involved in the energy sector include: (i) traditional gender roles within the household; (ii) discriminatory social norms limiting women's decision-making power in the household; (iii) women's lack of decision-making power in the public sphere; (iv) women's limited access to land ownership and management as well as financing ; and (v) biases on women's and men's ability to work in the energy sector at large.

Due to traditional gender roles which lead to women shouldering the bulk of unpaid care and domestic work, women have less time and autonomy than men to engage in paid activities, including renewable energy businesses. Globally, more than half of the population (56%) thinks that when a mother works for pay, her children suffer. These attitudes reflect the belief that a woman's place is at home, while men should be the primary economic providers of the household (OECD, 2021<sup>[132]</sup>). The share is even higher in some parts of the world, reaching 76% in North Africa and 81% in South Asia (OECD Development Centre/OECD, 2023<sup>[45]</sup>). Such beliefs translate into women doing most of the unpaid care and domestic work at the household level. For example, in Africa and Asia, women can spend between three and nearly six hours a day on activities only related to cooking and collecting fuel (Haddad et al., 2021<sup>[120]</sup>). In comparison, women spend on average about four hours a day on all unpaid care and domestic work tasks in OECD countries (OECD Development Centre/OECD, 2023<sup>[45]</sup>). This unpaid work burden severely limits women's opportunity to pursue educational opportunities, to engage into income-generating activities, including business opportunities related to the renewable energy sector, or even to simply access information about renewable energy (ENERGIA, World Bank and UN Women, 2018<sup>[133]</sup>).

In many countries, discriminatory social norms continue to limit women's decision-making power, particularly in terms of household spending decisions. Despite being the primary users of energy at the household level, women often lack influence over the types of energy that is purchased, which constrains their use of cleaner energy sources. Generally, men tend to be the main decision makers regarding energy and the acquisition of electrical appliances (IRENA, 2017<sup>[127]</sup>). However, research suggests that involving women in household energy decisions not only benefits their daily work but also contributes to creating an energy-efficient environment (Shrestha et al., 2021<sup>[134]</sup>). For example, a study in urban households in Kathmandu revealed gender differences regarding the decision to purchase energy-saving electrical appliances. It also showed that women had higher environmental awareness than men, demonstrated, for example, by checking their energy bills or switching off lights when not in use (Shrestha et al., 2021<sup>[134]</sup>). Although the decision to adopt cleaner sources of energy largely depends on their availability, reliability and affordability, as well as on the choice of appliances, women who are independent income earners have more decision-making power when it comes to switching to clean cooking (ENERGIA, 2019<sup>[135]</sup>).

Women's lack of decision-making power in the household often extends to the public sphere, further constraining their ability to contribute meaningfully to energy decision making. For example, due to cultural norms around how women should behave in public, women from ethnic minority groups in Viet Nam were marginalised during the construction of the Truong Son hydropower project (Yi-Chen Han et al., 2022<sup>[136]</sup>). This type of marginalisation is also true in local renewable projects in more developed countries, as described in the case studies of the islands of El Hierro in Spain and Tilos in Greece. While women were able to express their views in the design phase of the projects, they were excluded from the project assessment phase, which meant that their specific experiences were not taken into account, and therefore they perceived fewer positive returns than men (Tsagkari, 2022<sup>[137]</sup>). To ensure that renewable energy projects translate into gender justice and that the benefits of the project are fairly distributed between women and men, women need to be included in the decision-making process throughout the whole project cycle, from design to evaluation (Tsagkari, 2022<sup>[137]</sup>). Women and men must have equal opportunities to engage in the energy value chain as designers, workers and users, which would guarantee that renewable energy interventions meet the needs of all households and community members (Nelson and Kuriakose, 2017<sup>[138]</sup>). Conversely, excluding women from decision-making process related to renewable energy projects means that their knowledge, needs and preferences are not being considered. Beyond being detrimental to them and their communities, it constitutes a missed opportunity to leverage their expertise acquired as primary energy users that could strengthen climate mitigation strategies.

Women's limited ownership and use of land pose significant obstacles to their involvement in renewable energy businesses and their ability to participate in negotiation or consultation processes related to large-scale projects. On the one hand, lack of land ownership prevents women from having the necessary capital to access financing for renewable energy technologies, to start a business, or to improve their productivity, which would ultimately benefit their families' well-being (Nelson and Kuriakose, 2017<sup>[138]</sup>). On the other hand, in the context of large-scale renewable energy projects, such as solar arrays or wind turbines, which demand big plots of land – often controlled by men – discriminatory social norms that limit women's ownership and access to land, or inequitable inheritance practices, may cause conflicting interests (Nelson and Kuriakose, 2017<sup>[138]</sup>). Indeed, such inequality in terms of ownership and security of land tenure can lead to excluding women from negotiation or consultation processes between project operators (be it governments or private sector companies) and local communities, as the latter generally consult directly with landowners – who are usually men (The Global Initiative for Economic, Social and Cultural Rights, 2020<sup>[116]</sup>).

Gender perceptions and biases limit women's opportunities worldwide to engage in the energy sector. A 2018 survey covering both individuals and companies from the renewable energy sector across 144 countries revealed that 75% of women believe that women working in this sector or seeking to join it face gender-related barriers, such as perception of gender roles, cultural and social norms, prevailing hiring practices, lack of flexibility in the workplace and lack of mentorship opportunities (IRENA, 2019<sup>[129]</sup>). Such gender biases and general societal views about girls' and women's potential start early within the education system, with the belief that girls' abilities are more limited than boys' in scientific topics. This is the case, for example, in Côte d'Ivoire, where 32% of the population thinks that boys have higher innate abilities than girls in mathematics (OECD, 2022<sup>[139]</sup>). These views continue to be reflected at upper levels of education, as can be seen in the share of women in science, technology, engineering and mathematics (STEM) subjects. Globally, women represent only 35% of all students in higher education enrolled in STEM-related fields of study (UNESCO, 2017<sup>[140]</sup>). Discriminatory norms and lack of information, training and professional guidance mean that girls and women have limited opportunities to engage in the renewable energy sector and that they miss out on the vast potential benefits that the sector brings.

## ***What are the ways forward to address structural impediments to women as agents of change in the renewable energy sector?***

The United Nations, at the High-Level Dialogue on Energy in 2021, recognised that access to an effective supply of sustainable energy can be improved and accelerated by gender equality and women’s empowerment. It states that women should be empowered in the “design, production and distribution of modern energy services, including for productive uses” and that equal representation of women in decision-making processes in the area of energy should be prioritised (United Nations, 2021<sup>[141]</sup>). More than USD 400 billion in new finance and investments to increase renewables and access to electricity and clean cooking technologies were announced. Indeed, it is estimated that by 2030 renewable energy is likely to power over 60% of new access to electricity. Investing in new energy sources through off-grid and mini-grid systems is the way forward to democratise access to electricity and reduce the time women spend on unpaid care and domestic work, thus empowering them and their communities economically (UNEP, 2020<sup>[142]</sup>). A Gender and Energy Compact – a global, multi-stakeholder coalition – was also created so that women have equal opportunity to lead, participate in and benefit from a just energy transition and so they can have equal access to and control over sustainable energy products and services (UNIDO, ENERGIA and GWNET, 2023<sup>[143]</sup>; United Nations, 2021<sup>[144]</sup>).

Being driven by SDG 7 on ensuring “access to affordable, reliable, sustainable and modern energy for all” (United Nations, 2015<sup>[145]</sup>), almost all countries, as of 2019, have had renewable energy support policies in place to varying degrees (REN21, 2022<sup>[146]</sup>). Yet, SDG 7 has no gender-specific indicators, and despite increasing efforts in recent years to close gender gaps, more efforts are needed to mainstream gender in policies and programmes and address the underlying drivers of gender inequality, which are rooted in discriminatory social institutions. Gender equality considerations are not consistently being integrated into policies, plans or commitments related to renewable energy. For example, a review of renewable energy policies in 33 countries found that only 6 policies (18%) included gender keywords and considerations, and when they were, it was referring to women as recipients or beneficiaries, rather than as active agents in programme implementation (IRENA, 2019<sup>[129]</sup>). In addition, gender equality in the renewable energy sector is insufficiently financed: out of the 44% of official development assistance with gender equality as a policy objective in 2020-21, the energy sector has among the lowest financial flows (OECD, 2023<sup>[147]</sup>).

Finally, to ensure women are adequately represented in the renewable energy sector, a gender-transformative approach is necessary. It notably requires governments to work collaboratively with other partners to address deeply rooted obstacles that girls and women face in their societies and empower them to become agents of change.

## **Policy recommendations: Towards a gender-transformative approach in the renewable energy sector**

Accelerating the transition to renewable energies and sustainable development for all requires the integration of a gender lens in renewable energy policies, legislation, action plans, strategic frameworks and programmes, including gender-transformative budgeting, at all levels. Only by recognising the differentiated impacts of climate change on women and men and their needs, and by giving women more autonomy and decision-making power as the primary energy users and producers will women be able to adapt to, mitigate and become more resilient to negative impacts of climate change. The uptake of renewable energy can be scaled up by empowering women. At the heart of this lies the need to shift power relations at the household level, and in societies more generally, and acknowledge the capacities of women as agents of change.



### Reform discriminatory legislation paired with sensitisation campaigns to change norms

- Governments need to amend laws that establish men as the sole decision maker in the household and run sensitisation campaigns with development partners and civil society on the role that women play as energy users and suppliers and the importance of equal decision-making in the household, especially when it comes to spending decisions.
- All actors should leverage existing women's networks and run awareness-raising campaigns to expand women's access to key information so that they are well informed about the existence of renewable energy, its benefits, and the possibilities that it can bring to their livelihoods, including in agricultural practices.
- Governments, in collaboration with education providers, the private sector and civil society, should run awareness-raising campaigns to spark more girls' interest in opting for science and innovation subjects in school, along with mentoring programmes to enrol women in STEM higher education and guide them in their career choices. Children should be targeted from an early age to avoid perpetuating biases and stereotypes about their innate abilities.

*In Ghana, UNESCO in partnership with the Girls' Education Unit of the Ghana Education Service has organised quarterly STEM clinics across various districts where secondary girls' participation in STEM subjects is low. Through the STEM clinics, which are one-day STEM events during which girls build their skills through practical sessions and interact with female scientists, girls have gained confidence and increased their interest in the subjects (UNESCO, 2019<sup>[148]</sup>).*

### Increase women's access to credit, land tenure and key energy resources

- Governments, together with foundations, the private sector and development partners, should boost financing and grants that are specifically directed at women-led businesses or women-led cooperatives aiming to shift to renewable energy. This could be done for example by imposing that a minimum percentage of large corporations' budget is spent on women-owned businesses in the renewable industry. Changing procurement procedures, as well as setting lower tariffs so that smaller, women-led companies can participate in auctions for renewable energy, would help foster women's entrepreneurship in this sector (OECD, 2021<sup>[12]</sup>).

*In Senegal, Energy for Impact's women's economic empowerment programme, "The Energy Opportunities for Women in Senegal (EOWS), aims to develop women-led enterprises. Government organisations and the private sector have established a credit programme and provide concessionary finance on a leasehold basis for initial capital for equipment purchases, and Energy for Impact guarantees the value of energy products through a loan guarantee fund (ENERGIA, 2017<sup>[149]</sup>).*

*In 2021, the Economic Community of West African States (ECOWAS) adopted a gender mainstreaming policy to address barriers hindering women's participation in energy access (ECOWAS Centre for Renewable Energy and Energy Efficiency, 2020<sup>[150]</sup>).*

- Governments should eliminate legal barriers that restrict women from accessing finance, including barriers to women's financial literacy, to facilitate their access to bank loans and credit.
- Governments, together with the public and private sectors, should invest further in sustainable infrastructure development and demand-driven innovation systems where it is most needed, including for agriculture, and with the participation of women. For example, sufficient deployment of electricity to remote households could free up time for women who rely on traditional methods of cooking. Infrastructure development that takes into account gender considerations is essential to ensure that women are not left out and equally benefit from opportunities that arise (OECD, 2021<sup>[151]</sup>).



## Build the capacity of women to be active actors in the renewable energy sector

- All actors need to implement adequate and accessible gender-transformative training programmes to expand the use of renewable energy while challenging discriminatory social norms. Indeed, training women in renewable energy use has a positive multiplier effect on communities.

*The Wonder Women programme in Indonesia trained women to sell clean energy (solar lighting) solutions in remote villages, reaching over 250 000 people, while boosting women's income and their decision-making power in the household (IRENA, 2019<sub>[129]</sub>).*

*Social enterprise Solar Sisters, whereby women entrepreneurs sell and deliver clean energy to their communities, has proven to increase women's income generation opportunities and led them to have greater autonomy and decision making in the household (International Center for Research on Women, 2015<sub>[152]</sub>).*

- All actors need to put in place and support networking and mentorship programmes to encourage more women to pursue STEM careers or enter the renewable energy sector, including by leveraging on the power of successful female role models and by engaging with men and women who could act as mentors for women who wish to start a business or have a career in renewable energies.

*The "Women TechEU" initiative supports women-led tech start-ups through coaching and mentoring and targeted funding for female founders to grow their businesses (European Commission, 2023<sub>[153]</sub>).*

*In Uganda, ENVenture organises entrepreneur training bootcamps covering many different topics, including finance, marketing, sales, accounting, and business management (ENVenture, 2023<sub>[154]</sub>).*

## Conclusion and ways forward

The gendered dimensions of climate change highlight the differentiated impacts on women and men, as well as the barriers that hinder women's participation in climate change response mechanisms and policies. Women, in their roles as primary caregivers and due to societal expectations, bear the responsibility of sustaining livelihoods, whether through agricultural work or as energy users and producers, often combining both paid activities with unpaid care and domestic work. However, women are among the most vulnerable populations and marginalised groups, experiencing the impacts of weather changes and climate shocks more than men. At the same time, women are key agents of change and drivers of solutions regarding climate change mitigation and adaptation strategies due to their invaluable knowledge.

The well-established "gender-environment nexus" shows the importance of applying a gender lens to policies, legislations and strategic frameworks and programmes at all levels (OECD, 2021<sub>[12]</sub>). Governments and development partners should not only acknowledge the gender-differentiated impacts of climate change and take into account girls' and women's specific needs, but also include them to contribute and strengthen climate adaptation and mitigation strategies, from the local to the national levels. Only by adopting a full gender equality spectrum and by allocating sufficient funds for gender-transformative climate financing, will progress be made towards achieving SDG 5 and all other related SDGs upon which our future depends.

The following policy recommendations should be applied across the three sectors of climate-resilient agriculture, disaster risk reduction and renewable energies.

- Governments should adopt gender mainstreaming policies, action plans or strategies, which include gender-transformative budgeting. Governments should appoint national gender focal

points across ministries (such as Energy, Industry, Trade, Environment and Labour) and provide capacity-building on gender equality issues across sectors.

*The Government of Ecuador passed in 2021 the National Agenda for Gender Equality 2021-2025 which puts forward 39 lines of action to mitigate the effects of climate change on gender equality. They include the integration of a gender perspective among all policies, plans and projects related to climate change, the reinforcement of the capacities of the public entities working on climate change and the promotion of women's resilience to climate-related disasters and their participation in decision-making (Government of Ecuador, 2021<sup>[155]</sup>).*

*Burkina Faso has adopted a gender action plan developed under the auspices of the ECOWAS Centre for Renewable Energy and Energy Efficiency, which includes a gender-sensitive budget (ECOWAS Centre for Renewable Energy and Energy Efficiency, 2020<sup>[150]</sup>).*

- All stakeholders should integrate a gender approach throughout the lifecycle of climate programming, that considers the gender-differentiated impacts of interventions, but also maximises opportunities to involve women in every stage of a project or programme.

*The Climate Investment Funds provides a checklist for project designers and implementers to mainstream gender into the renewable energy project cycle (Nelson and Kuriakose, 2017<sup>[138]</sup>).*

- Governments need to collaborate with international and regional organisations, philanthropies, the private sector, and civil society organisations to raise awareness of the intersection between discriminatory social institutions and climate change through sensitisation campaigns and gender-transformative programmes.
- Engaging all stakeholders, including men and boys, as well as community leaders, is crucial in shifting negative norms and expectations that affect girls and women. This includes putting in place programmes that promote gender-equitable masculinities, for example when it comes to household decision-making.

*Adopting an “Engaging Men and Boys” approach in climate justice programming has proven to bring positive results. For example, activities of the “Where the Rain Falls” project in India and the Samarthya project in Nepal used awareness-raising and gender dialogues with men and local households and community power holders to challenge the established social norm that “women are not farmers”. As a result, the local government increasingly recognised the needs and priorities of women (CARE International, 2022<sup>[156]</sup>).*

- All stakeholders should apply as an overarching framework the 3Rs – recognise, reduce and redistribute – to unpaid care and domestic work throughout their policies, programmes and interventions, given women’s disproportionate time spent on such tasks, which significantly affects their ability to engage in climate change mitigation and adaptation strategies and cope with its effects.
- Governments and the private sector need to put in place quotas or regulatory frameworks to strengthen women’s representation and participation in decision-making bodies at all levels, so as to ensure that they participate on an equal footing with men in the climate change agenda.
- Governments, together with national statistical offices and international and regional organisations, need to prioritise and invest in high-quality gender-disaggregated, gender-relevant and intersectional data collection and analysis, to better understand gender-differentiated impacts and needs and to further improve monitoring and evaluation of gender-disaggregated data and indicators over time, with a focus on the most impacted groups.

*Canada has pledged USD 134 million for increasing the representativeness of data collected through the Statistics Canada’s Disaggregated Data Action Plan with the aim of enhancing statistical analysis of sex-disaggregated data and supporting efforts to make decision-making in the country fairer and more inclusive. UNFCCC highlights how such measures help improve the fairness and inclusivity of planned climate policies (UNFCCC Secretariat, 2022<sup>[44]</sup>).*

## Notes

<sup>1</sup> Cameroon, Chad, Chile, Congo, the Democratic Republic of the Congo, Guinea-Bissau, Mauritania, Niger, Philippines, Sri Lanka and Sudan.

<sup>2</sup> Algeria, Bahrain, Bangladesh, Botswana, Brunei Darussalam, Burundi, Cameroon, Comoros, Djibouti, Egypt, Gambia, Iran, Iraq, Jordan, Kuwait, Lebanon, Lesotho, Libya, Malaysia, Maldives, Mauritania, Morocco, Niger, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Sudan, Syria, Tanzania, Tunisia, United Arab Emirates, West Bank and Gaza Strip, and Yemen.

<sup>3</sup> Black carbon is part of fine particulate air pollution. It is formed by the incomplete combustion of fossil fuels, wood and other fuels. Complete combustion would turn all carbon from the fuel into carbon dioxide (CO<sub>2</sub>), but combustion is never complete and CO<sub>2</sub>, carbon monoxide, volatile organic compounds, and organic carbon and black carbon particles are all formed in the process (Climate & Clean Air Coalition, 2023<sup>[114]</sup>).

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**From:**  
**SIGI 2023 Global Report**  
Gender Equality in Times of Crisis

**Access the complete publication at:**  
<https://doi.org/10.1787/4607b7c7-en>

**Please cite this chapter as:**

OECD (2023), “Empowering women to become agents of change for a climate-resilient world”, in *SIGI 2023 Global Report: Gender Equality in Times of Crisis*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/0975e138-en>

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