

1

ROOTS FOR A MORE EQUAL AND SUSTAINABLE FUTURE:

An introduction to
climate change – and the value of
a gender-responsive approach to
tackling it



By Manuel J. Oliva (Independent Consultant)
and Cate Owren (IUCN)





CHAPTER CONTENT



	Key messages	16
1.0	Introduction	17
1.1	The impacts of climate change	21
1.2	Gender matters: Advancing equality for global wellbeing	25
1.3	Interlinked roots: The value of a gender-responsive approach to tackling climate change	31
	References	41

ACRONYMS

C	Celsius	REFACOF	African Women's Network for Community Management of Forests
CO₂	Carbon dioxide	UN	United Nations
ECOSOC	United Nations Economic and Social Council	UNESCO	United Nations Educational, Scientific and Cultural Organization
EGI	Environment and Gender Index	UNFCCC	United Nations Framework Convention on Climate Change
FAO	Food and Agriculture Organization	UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
GHG	Greenhouse gas	WHO	World Health Organization
ILO	International Labour Organization		
IPCC	Intergovernmental Panel on Climate Change		
IPU	Inter-Parliamentary Union		
IUCN	International Union for Conservation of Nature		
REDD+	Reducing Emissions from Deforestation and Forest Degradation in developing countries, including the role of conservation, sustainable management of forests and enhancement of forest carbon stocks		



Key messages

- Climate change will have varied impacts across geographical regions, but it will also impact people differently based on socio-cultural norms and structures within those regions. Women and men are likely to experience climate change differently, with some common gender inequalities pervading and persisting around the world.
- The impacts of climate change will derive not only from the regional and global effects of climate change (e.g., sea level rise, stronger storms), but also from the national and local actions taken to combat and adapt to climate change (e.g., conversion to clean energy sources, changes in agricultural or fishing practices). The actions taken are an opportunity to perpetuate patterns of inequity and inequality or to be transformative.
- Climate change does not occur in a vacuum: issues are interlinked across sectors, regions, ecosystems, and sociocultural and economic systems.
- Successful long-term solutions to address climate change must recognise the important contributions of women, along with men, as decision-makers, stakeholders, educators, caretakers, and experts—across the spectrum of sectors, from forests and fisheries to large-scale energy infrastructure and sustainable cities.
- Actions already being taken all over the world point to the important co-benefits for climate change adaptation and mitigation, as well as for progress toward gender equality, social justice and overall wellbeing for the world community.
- In countless examples, women have also proven to be leading the way toward more equitable and sustainable solutions to climate change. Across sectors, women's innovations and expertise have profound impact—and this publication seeks especially to highlight that message and spotlight those examples.



1.0 Introduction

“Climate change is the defining issue of our age. It is defining our present. Our response will define our future. To ride this storm we need all hands on deck.”

– UN Secretary-General Ban Ki-moon, Opening address of UN Climate Summit, 23 September 2014¹

“Women are disproportionately affected by climate change impacts such as droughts, floods and other extreme weather events. They also have a critical role in combatting climate change, but need to be better represented at all levels in the decision-making. Empowering women will be a significant factor in meeting the climate challenge.”

– UNFCCC Executive Secretary Christiana Figueres, 2014²

Climate change is a global issue that will impact all people. However, the impacts of climate change will vary significantly for people depending on their geographical, economic and social conditions. Across societies, women and men will feel the impacts in differentiated ways, with a disproportionate burden on women very likely in some contexts due to structures that marginalise them socially, politically and economically. In parallel, these same structures prevent women from being active participants in addressing climate change. Women represent

approximately half of the world’s population; unleashing their knowledge and abilities together with men’s is necessary to craft successful climate change solutions for the benefit of the global community.

Climate change in its most basic terms refers to changes to regional or global climate patterns that persist for an extended period of time, generally decades or longer. The Earth has many naturally occurring variables that bring about periodic, temporary episodes of climate change, such as volcanic eruptions or episodic warming periods of ocean regions associated with El Niño. However, over the last 200 years the planet has experienced a continuous and drastic level of climate change in the form of rising global temperatures. Since 1800, the measured increase in global average temperatures has been 0.85° Celsius (C),³ and based on current trends is predicted to rise between 1.5° to 4°C by 2100 as compared to the average temperatures between 1850 and 1900.⁴ It should be noted that the temperature changes will not occur uniformly throughout the globe, with possible temperature increases over certain land regions of 4.8°C (8.6° Fahrenheit).⁵ This global warming effect is due to a dramatic surge in the amount of heat-trapping gases in the atmosphere, commonly referred to as greenhouse gases (GHG), which are now at the highest levels in 650,000 years. The current level of carbon dioxide (CO₂), the most abundant GHG in the atmosphere, is shown in comparison to the earth’s historic levels of CO₂ in Figure 1.



Figure 1: Historic levels of global CO₂ concentration⁶

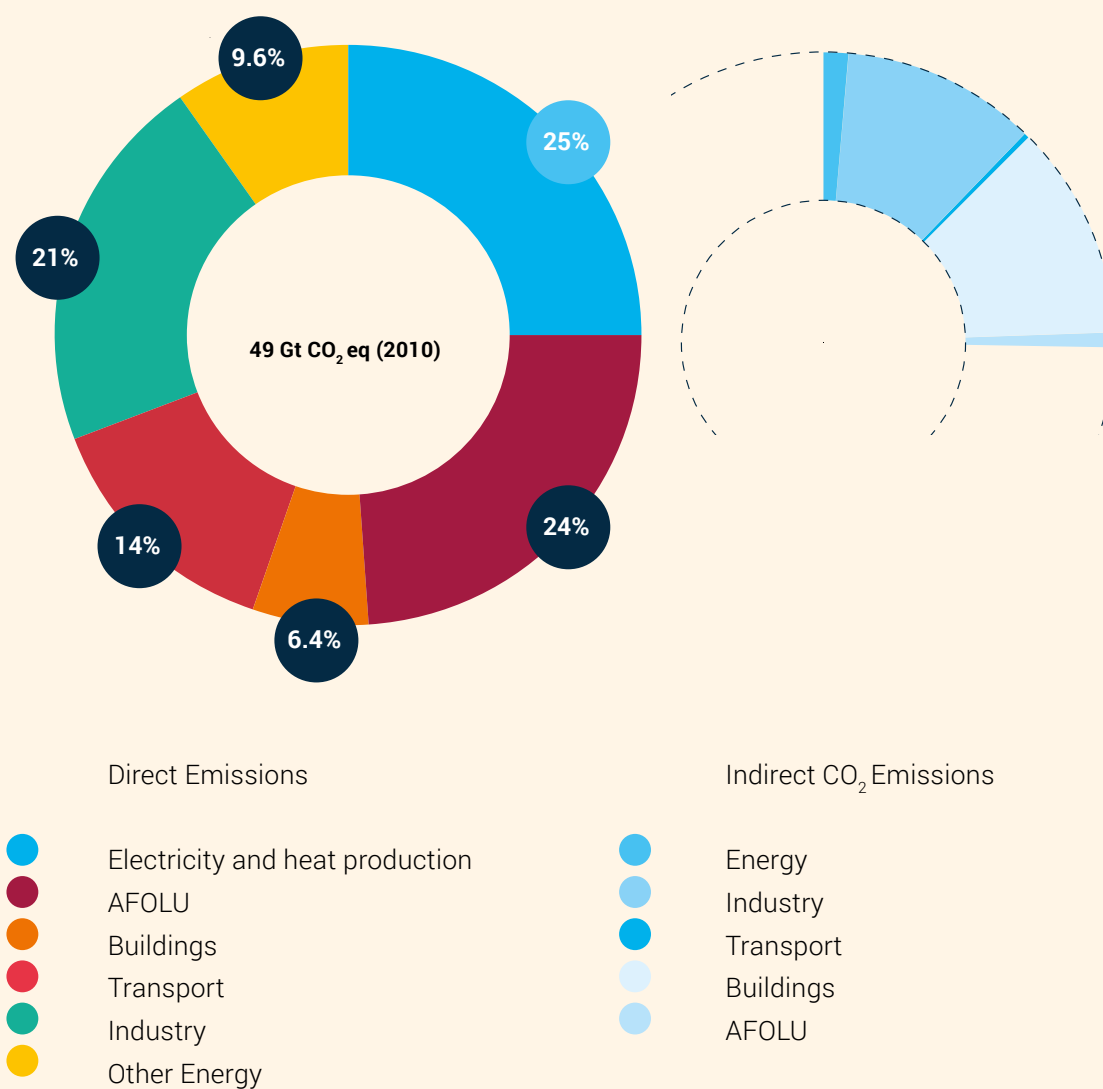


As illustrated in Figure 1, the concentration of GHG in the atmosphere will vary over time based on the earth's natural cycles. However, the significant rise in atmospheric GHG concentrations in modern times is from human activity, primarily the burning of fossil fuels (i.e., fuels formed by the decomposition of organic matter within the earth's crust, such as coal, petroleum and natural gas). Since the beginning of the industrial revolution in approximately 1800, humans have made the burning of fossil fuels the primary basis of energy and industrial production. While before 1800 global fossil fuel usage was almost non-existent, by 2013 the global economy consumed approximately 4 billion tons of coal, 91 billion barrels of fuel oil and 3 trillion cubic meters of natural gas⁷, which resulted in GHG emissions of approximately 36 billion



tons being emitted into the atmosphere by 2013.⁸ Although fossil fuel combustion is the main source of anthropogenic, or human-caused, GHG emissions, other human activities, such as agricultural practices, industrial processes, and the destruction of standing forests and other land use changes contribute significantly to the rise in global GHG emissions. Figure 2 illustrates the contribution of each economic sector to total global GHG emissions for 2010; the emissions from electricity and heat production are further broken down by the sector that is consuming the produced electricity or heat.

Figure 2: Global GHG emissions by economic sector 2010⁹





GHGs vary in their ability to trap heat and the length of time they stay in the atmosphere, and are designated with a global warming potential (GWP) based on these properties. For example, methane (CH_4) over a 100-year time scale is 28 times more potent as a GHG than CO_2 ¹⁰ in its ability to trap other GHGs. Because many of these gases have atmospheric lifespans of decades or centuries they continue to build as more emissions are released to the atmosphere. Therefore, it is the cumulative total of the GHG emissions from human activity that has led to an unbalancing of the earth's natural cycles and is the main cause of the currently observed period of climate change.

Box 1: Climate change and human activity

Based on a review of the world's scientific data, the leading body studying climate change, the Intergovernmental Panel on Climate Change (IPCC), has determined that climate change is occurring and that human activities are the main cause. The most recent assessment report prepared by the IPCC on the observations

and causes of climate change stated: *"Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history...Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia."*



1.1 The impacts of climate change

The increase in GHGs is having, and will continue to have, a dramatic impact on the earth's natural systems, such as droughts from prolonged heat waves, or flooding from more powerful and more frequent storms. It is important to note that climate change—though global in nature—has significantly different regional effects. For example, dry regions already susceptible to drought will likely experience stronger and longer lasting heat waves, and areas already prone to flooding will likely experience increased flooding due to stronger and more frequent storms. These impacts of climate change on the Earth's natural systems directly affect the health and livelihoods of the people in these regions. A recent report issued by the IPCC on the observed and predicted impacts of climate change provides valuable insight into human vulnerability to climate change. Some of the findings of this IPCC report¹¹ include the following:

- The number and intensity of hot days have increased, and in many areas the occurrence of heat waves, defined as multiple hot days in a row, has more than doubled. Heat waves are associated with negative agricultural yields, increased wildfires and drought, as well as higher incidents of severe health and psychological distress, and loss of life. Heat waves are predicted to continue to grow in frequency and strength, and current 20-year high temperature events will occur every 2 years or annually in many regions.
- Although a prediction of how climate change will affect the number of storms each year is difficult to make, the intensity of storms, measured by the maximum wind speed and rainfall rates, for example, is expected to increase with warming temperatures. Currently, approximately 90 tropical storms including typhoons, hurricanes, monsoons, occur each year around the world, with each inflicting significant damage and loss of life. Tropical cyclone Nargis, which hit Myanmar in May of 2008, for example, caused 138,000 fatalities.
- The global sources of fresh water have been put under tremendous stress from a continuing growth in human consumption, as well as the rising needs of agricultural and energy development worldwide. About 80% of the world's populations already suffer serious threats to its water security. As the demand for fresh water continues to increase, the quantity of surface and groundwater resources is expected to decrease due to climate change, especially in the dry subtropical regions of the globe. For each degree of warming, a 20% reduction in freshwater supplies is predicted for various regions.
- Natural ecosystems, which serve as critical habitat and an important resource of food, water and other services for humans, have already been severely degraded in many regions due to climate change. As global temperatures continue to rise, these ecosystems will continue to be degraded and many plant and animal species that are supported by these ecosystems will suffer significant harm and possible extinction. It is estimated that 30% of global plant and animal species will experience an increase in the risk of extinction with a global temperature rise of 2° to 3°C.
- The world's major crops of wheat, rice, and maize are already being impacted by hotter temperatures and reduced availability of fresh water access. Significant reductions in yields are predicted with



a temperature increase of 2°C in the tropical and temperate regions of the globe. Many regions already suffer from severe undernourishment. Over 26% of the population in sub-Saharan Africa is undernourished, and 300 million people in Asia are undernourished. Given current consumption trends it is estimated that present food production will have to be increased by 60% to feed the global population by 2050. However, this increase will be severely threatened by climate change.

- Dramatic shifts in the quantity and composition of fisheries catches has already been observed and is expected to continue as global temperatures rise. For example, coral reefs, which currently account for 25% of fish catch for developing countries, are already suffering significant damage due to climate change, and are expected to yield a 20% reduction in fish catches for many countries by 2050. Globally three billion people depend on fisheries for 20% of their animal protein intake.
- As global temperatures increase, the amount of glacier and ice sheet melting will increase and help drive a significant rise in global sea levels. In fact, the average sea level is expected to rise by approximately one metre by 2100 and subject many low-lying areas and entire small islands to inundation. Approximately 600 million people (10% of the world's population) live along low-lying coastal areas. About 360 million people live in urban areas less than ten metres above sea level.
- Although the production of energy continues to be the largest single source of GHG emissions (while energy production and consumption account for two-thirds of the global GHG emissions),¹² energy demand continues to grow worldwide. However, as the severity and frequency of extreme weather events increase, the risk of disruptions to energy production and distribution systems will increase, particularly in developing countries. In sub-Saharan

Africa as a whole, only 290 million out of 915 million people have access to electricity,¹³ and the ability of countries in this region to increase access to affordable and reliable energy will be challenged by climate change.

The impacts of climate change are not limited to observed effects such as increased drought or flooding, but also include the actions we take to address climate change. For example, measures taken by a national government to address increased episodes of drought or flooding may involve radical changes to regional land use and agricultural practices that can cause hardships for the affected communities. On the other hand, climate change response can serve multiple benefits, including enhancing livelihood options for local communities. The establishment of a system of payment to local communities to protect standing forests and reduce GHG emissions from the destruction of these forests can provide significant opportunities, for example.

Depending on existing local legal, social and cultural structures, the level of hardship or opportunity can vary drastically between countries and communities. Therefore, how climate action decisions are made and applied, such as who participates in the decision-making, where and when these actions occur and how benefits from these actions are distributed, will have a significant impact.



Box 2: Climate change action: Mitigation and adaptation

Actions responding to climate change fall into two distinct but related groups: 1) climate change mitigation actions; and 2) climate change adaptation actions. Climate change mitigation actions are designed to reduce or eliminate GHG emissions (e.g., replacing coal power plants with solar power plants, planting more trees that can absorb CO₂ from the atmosphere). In other words, mitigation tries to stop or slow climate change. Climate change adaptation, on the other hand, aims to deal with its effects. Adaptation actions are measures

to limit or counteract the expected and already occurring effects brought on by climate change (e.g., building sea walls to protect against increased flooding, changing agricultural practices to contend with changes in regional temperatures or precipitation patterns). In many cases, actions to address climate change can have both mitigation and adaptation benefits, for example, protecting tropical forests reduces GHG emissions by absorbing CO₂ from the atmosphere, while simultaneously protecting freshwater supplies and critical biodiversity.

Although climate change actions, both mitigation and adaptation, may be implemented at the local level, there is a concerted effort by the international community to develop unified national actions through various forums and agencies. The United Nations Framework Convention on Climate Change (UNFCCC) is the leading body for international climate change policy development. Since its adoption in 1992, the UNFCCC has been tasked with creating a global forum in which countries cooperate and develop climate change mitigation and adaptation

actions. As part of its duties, the UNFCCC guides important scientific research, the development of financial mechanisms in support of climate change actions, and the creation of international agreements to address climate change. It should be noted that the UNFCCC also supports policy development to protect the rights of all communities and groups that may be impacted by climate change.



Box 3: Climate change decision-making: Harnessing diversity for innovation and resilience

Climate change poses one of the most unique challenges of our time in its extraordinary reach across sectors, regions and populations. Making decisions on such a complicated issue is not easy—as the long negotiation process under the UNFCCC demonstrates and the various ways in which governments have tackled climate change response at the national level further proves. At all levels, however, making sure that diverse populations are represented in key decision-making processes is essential to safeguard against ineffective or even counterproductive actions and to maximise possible outcomes. Equitable and inclusive decision-making means ensuring that women and men are both included at decision-making tables. Representatives from typically marginalised groups such as indigenous and local, rural communities should also be a focus. To ensure this, enabling activities are necessary, including education and capacity building, as well as financial resources to directly support participation.

A wide body of literature now exists to support the importance of diversity. Diversity improves business performance; diverse groups are more effective in completing a given task; and working in diverse settings even makes people smarter and more creative.¹⁴ This is especially important in the context of climate change, for which creative solutions boost resilience and capacity to deal with the unknown.

Heterogeneous groups excel at complex problem solving.

This is true because of two different dynamics at play at the same time: the dynamics of prediction and the dynamics of selection. The more diverse the team, the more likely its prediction in the face of uncertainty and ambiguity will be correct because each person puts things into categories based on his or her background and experience. How someone categorises affects how he or she predicts a certain outcome. Someone's talent and their background have equal weight in terms of their ability to predict.¹⁵

The World Bank's 2015 World Development Report emphasised the difficulty in understanding and coping with the complexity—much of which is the uncertainty—of climate change. As the Report emphasised, people interpret scientific information in light of their cultural worldviews, obtain information through social networks and favored media channels, and rely on trusted messengers to make sense of complex information.”¹⁶ Ensuring diverse perspectives—those of women and men, young and old, wealthy and poorer, contribute to climate change discussions and decision-making—is key to comprehensively tackling the complexity of climate change and preparing for the unknowns it presents.



1.2 Gender matters: Advancing equality for global wellbeing

The term ‘gender’ refers to socially ascribed roles, values, responsibilities and opportunities associated with women and men, as well as the power structures—both hidden and overt, customary and legally prescribed—that govern relationships between them. Gender is

... in essence, a term used to emphasize that sex inequality is not caused by the anatomic and physiological differences that characterise men and women, but rather by the unequal and inequitable treatment socially accorded to them. In this sense, gender alludes to the cultural, social, economic and political conditions that are the basis of certain standards, values and behavioral patterns related to genders and their relationship.¹⁷

Gender implies far more than a binary relationship between individual women and men; it also implies more than a static set of roles and responsibilities permanently fixed for women and men. A gender perspective aims to identify and take into account the multiple, often overlapping and mutually reinforcing, set of structural inequalities, power dynamics, and social and cultural expectations that create the day-to-day lived reality for people in every community around the world—and tries to improve it.

Individual women and men are as unique and diverse as their needs and capacities are. It is important to flag that gender interacts with other social variables or ‘identities’—such as age or ethnicity—which

factor into and define differentiated rights, roles and responsibilities. Women, or men for that matter, are not a homogenous group.

Despite recent advances, it still remains the case that in most societies there are significant differences between the rights realised and opportunities available for women and men. These include, among others, differences in relation to land and resource rights; possibilities for employment, as well as salaries and advancement at work; and spaces to participate in and influence decision-making processes. The reality is that inequality between men and women is ingrained in sociocultural norms and values around the world. Even in those countries demonstrating the highest levels of equality, discriminations and inequities persist, creating obstacles for families and communities to attain their highest levels of wellbeing. The wage gap in Sweden, considered to be the world’s most gender-equal country, for example, means women bring home on average 14% less than they could, comparable to men’s wages.^{18,19} While across Africa, nearly 90% of women’s jobs are in the informal sector—an inequity recently described by the Executive Director of UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women, specifically in the context of agriculture and development:

As a result [women] are not covered by labour relations laws, have no minimum wage and bring no social protection, no maternity benefits, nor old age pension. Agriculture, in which



almost all employment is currently informal, can be a key contributor in Africa to growth and poverty reduction. As a major employer, its transformation into a formal sector would

be influential. [Advancing gender equality] is a priority for creative and innovative action by both governments and business.²⁰

Box 4: Gender gaps

Pervasive gaps persist between women's and men's ability to realize the full spectrum of their rights, including in their access to and control over resources, in unpaid work burden, health and safety, and political voice, among other interconnected issues.

For example:

- *Women and girls experience extreme levels of poverty disproportionately to men and boys:* Of more than 1 billion people living in the deepest levels of poverty, women are widely considered to be the majority.²¹
- *Vast differences exist between women's and men's land tenure:* According to Food and Agriculture Organization (FAO) in 2011, globally less than 20% of all landholders are women.²² The Social Institutions and Gender Index (SIGI) found that women had the same legal rights as men to own and access land in only 28 of the world's countries.²³
- *While the total size of the global illiterate population is shrinking, the female proportion has persisted:* Women make up two-thirds (493 million) of the 774 million illiterate adults (15 years and older) in the world, and among youth, more than half—76 million of a total 123 million—are girls.²⁴
- *When women are paid for a job, they earn on average 10% to 30% less than men for work of equal value:* The International Labour Organization (ILO) estimates that at the current rate of progress it will take 75 years to make the principle of 'equal pay for equal work' a reality for women and men.²⁵
- *Women also have less access to labour markets, especially formal markets:* In 2013, the male employment-to-population ratio stood at 72.2%, while the ratio for females was 47.1%.²⁶
- *Women bear the burden of unpaid care work:* "Women devote one to three hours more a day to housework than men; two to ten times the amount of time a day to care (for children, elderly, and the sick), and one to four hours less a day to market activities."²⁷ In the European Union for example, 25% of women report care and other family and personal responsibilities as the reason for not being in the labour force, versus only 3% of men. This directly and negatively impacts women's participation in the labour force."²⁸



Box 4: Gender gaps (Cont.)

- *Decision-making spheres across all levels remain unbalanced:* As of September 2015, only 22% of all parliamentarians are women, a small increase from 11.3% in 1995.²⁹
- *High-level decision-making on the environment is inequitable, too:* According to Inter-Parliamentary Union (IPU) 2014 data, women hold approximately 17% of the total ministerial positions worldwide, but in 2015, according to the Environment and Gender Index (EGI), women held only 12% of top ministerial positions in environment-related sectors.³⁰

But gender dynamics can be fluid; they do, and must, change. Identifying and overcoming gender discriminations, barriers and gaps and advancing gender equality have been a major focus of the global community for decades. A policy framework supporting equality and women's empowerment, (much of which is discussed ahead in Chapter 2.1), has been developed and strengthened over the years, guiding how countries should implement commitments to human rights and equality. This commitment is implemented mainly via gender mainstreaming.

Gender mainstreaming is a globally agreed strategy—or set of approaches, methods and tools, as well as technical and institutional processes and policies—for the international community to identify gender inequalities and advance proactive actions toward gender equality.

At its most basic level, gender mainstreaming implies simply being aware and attuned to recognise gender concerns and attempting to improve equality. In that way, anyone can, and should, participate in gender mainstreaming. In its more strategic and technical capacity, gender mainstreaming implies a process by which to conduct a gender analysis, prepare gender-responsive actions to comprehensively improve equality, and then monitor and evaluate that process to ensure positive outcomes. This necessitates participatory consultations amongst a wide range of stakeholders, as well as guidance by gender experts, to maximise holistic outcomes.

GENDER MAINSTREAMING

The UN's Economic and Social Council (ECOSOC) officially defined gender mainstreaming in 1997 as:

The process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetrated. The ultimate goal is to achieve gender equality.³¹



Box 5: Definitions for key gender terms: From *do no harm* to *do better—much better*

Gender sensitive: Understanding and taking into consideration socio-cultural factors underlying sex-based discrimination. In application, gender sensitive has come to mean ‘do no harm’.

Gender responsive: Identifying, understanding, and implementing interventions to address gender gaps and overcome historical gender biases in policies and interventions. Gender-responsiveness in application contributes, pro-actively and intentionally, to

the advancement of gender equality. More than ‘doing no harm’, a gender-responsive policy, programme, plan or project aims to ‘do better’.

Some organisations have now started to use the term **gender transformative**, as well—meaning that gender is central to a policy, programme or project, promoting gender equality as a priority and aiming to transform unequal relations, power structures, access to and control of resources, and decision-making spheres.

Gender mainstreaming—or pursuing decision-making, policies, and initiatives at all levels with a gender perspective, as it is often referred—serves the interests of both women and men in its long-term purpose of eradicating inequities, transforming discriminatory laws and practices as well as structural barriers, and achieving a higher level of wellbeing for all. Importantly, women and men are viewed and positioned as equal stakeholders and actors, including for sustainable development, as well as equal beneficiaries.

***“One can walk only so far on one leg.
You need both legs to stand strong.”***

– Lorena Aguilar, IUCN

GENDER MAINSTREAMING RESOURCE HUB

The UN Women website pages on Gender Mainstreaming consolidate practical tools, government and organisational policies, and political mandates for gender mainstreaming. Access valuable information here:

<http://www.unwomen.org/en/how-we-work/un-system-coordination/gender-mainstreaming>



Box 6: Equity and equality: Complementary but not the same

While they are sometimes wrongly used interchangeably, equality and equity in fact mean different, yet complementary things:

Gender equality is the concept that all human beings, both men and women, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles, or prejudices. Gender equality means that the different behaviours, aspirations and needs of women and men are considered, valued and favoured equally. It does not mean that women and men have to become the same, but that their rights, responsibilities and opportunities will not depend on whether they are born male or female.

Gender equity means fairness of treatment for women and men, according to their

respective needs. This may include equal treatment or treatment that is different but considered equivalent in terms of rights, benefits, obligations and opportunities. In the development context, a gender equity goal often requires built-in measures to compensate for the historical and social disadvantages of women.

Hence, both gender *equity* and gender *equality* must be pursued in a complementary manner where **gender equality is the ultimate goal**. In other words, in order to achieve gender equality, it is often necessary to pursue gender equity measures. The achievement of gender equality is not a one-off goal. Because progress can all too easily be eroded, gender equity needs to be constantly promoted and actively sustained.³²

Necessarily, because women still experience disproportionate discrimination; violation of or restrictions on the realization of their rights; and violence, among other things, efforts to identify and rectify gender inequalities often focus on women. Inverting inequities is, however, by no means the purpose of gender-responsive policies, plans or programmes. Rather, eradicating inequities and inefficiencies, which undermine development and hamper the realisation of global human rights, aims to improve the lives and livelihoods of all people on Earth. Where gender inequalities are enshrined

in cultural practice—and/or national or customary law—resistance to change may be strong. This kind of resistance is in no small part exacerbated by fears that gains by women may signify loss by men of power, prestige and benefits. Indeed, gender equality demands a transformation across many levels and interlinked aspects of society but pursuing the co-benefits of gender equality unleashes profound potential to progress the human experience and to ensure a healthy, sustainable environment, as well, especially in light of climate change.



Box 7: Equality is power: Driving economic, social, political and environmental transformation

Realising gender equality means women and men are equally able to access and employ the full spectrum of their human rights—which is imperative for justice, in and of itself, everywhere around the world and a prerequisite for an equitable and sustainable world. But driving economic, social, political and environmental transformation is another key opportunity and outcome of advancing gender equality: from household to corporate levels, women's full and equal participation and empowerment, and their access to and control of spaces and resources, allows for multifold benefits to the global community, including:

- *Raising healthier, more educated families:* Educating girls, often referred to as the single best investment for development, leads to better employment opportunities for those girls in adulthood, and to those adults raising healthier, more educated children. Moreover, "A study using data from 219 countries from 1970 to 2009 found that, for every one additional year of education for women of reproductive age, child mortality decreased by 9.5%".³³
- *Translating equitable land tenure into wellbeing:* Countries where women lack any right to own land have on average 60% more malnourished children and a lower proportion of the population has access to safe drinking water.³⁴
- *Guaranteeing inclusive decision-making benefits the community as a whole:* Ensuring women are involved in community-level decision making processes tends to produce increased focus on public goods, such as education and water and sanitation services.³⁵
- *Dramatically reducing food insecurity:* "Closing the gender gap in agriculture would generate significant gains for the agriculture sector and for society. If women had the same access to productive resources as men, they could increase yields on their farms by 20–30%. This could raise total agricultural output in developing countries by 2.5–4%, which could in turn reduce the number of hungry people in the world by 12–17%".³⁶
- *Growing the global economy:* Over the last decade, the increased employment of women in developed economies has contributed significantly more to global economic growth than China.³⁷
- *And national economies, too:* When women are able to develop their full labour market potential, there can be significant macroeconomic gains. Raising the female labour force participation rate to country-specific male levels would, for instance, raise gross domestic product (GDP) in the United States by 5%, in Japan by 9%, in the United Arab Emirates by 12%, and in Egypt by 34%.³⁸



Box 7: Equality is power: Driving economic, social, political and environmental transformation (Cont.)

Making smart sustainable development decisions: Countries with higher parliamentary representation of women are more likely to ratify environmental agreements and more likely to set aside protected land areas.³⁹

- *Harnessing the potential for environmentally friendly purchasing power:* “Surveys suggest that women make perhaps 80% of consumers’ buying decisions—from healthcare and homes to furniture and food”.⁴⁰

- *Improving the business bottom line:* Having women in leadership positions, such as on boards, councils or governing bodies, has shown to be directly linked to higher business performance. Among a multitude of research leading to similar conclusions, one study revealed that of Fortune-500 companies ranked according to the number of women directors on their boards, those in the highest quartile in 2009 reported a 42% greater return on sales and a 53% higher return on equity than the rest.⁴¹

1.3 Interlinked roots: The value of a gender-responsive approach to tackling climate change

“Women’s dependence on and unequal access to land, water and other resources and productive assets, compounded by limited mobility and decision-making power in many contexts, also mean that they are disproportionately affected by climate change. Natural disasters, including those related to climate change, have greater impacts on poor women.”

– UN Women Summary Report: The Beijing Declaration and Platform for Action Turns 20⁴²



Climate change, and the actions to address climate change, may have similar effects throughout a geographic region, however the realised impact for different people in the region will vary dramatically depending on economic, cultural and social factors. For example, the world's poorest populations, with limited economic resources and a weaker political voice, will have significantly reduced abilities to enact measures to adapt to climate change impacts, such as the threats of increased flooding. In almost every region of the world, certain groups of people face systematic social exclusion as the result of multiple inequalities that restrict their options and opportunities; age, class and ethnic or racial identity—not to mention gender—all factor into a person's privilege or disadvantage, inclusion or exclusion.

“Differences in vulnerability and exposure arise from non-climatic factors and from multidimensional inequalities often produced by uneven development processes. These differences shape differential risks from climate change... People who are socially, economically, culturally, politically, institutionally, or otherwise marginalised are especially vulnerable to climate change and also to some adaptation and mitigation responses... This heightened vulnerability is rarely due to a single cause. Rather, it is the product of intersecting social processes that result in inequalities in socio-economic status and income, as well as in exposure. Such social processes include, for example, discrimination on the basis of gender, class, ethnicity, age, and (dis)ability.”

– IPCC 2014 Summary for Policymakers⁴³

Women who in many parts of the world make up the majority of the poorest populations are therefore likely to experience more severe impacts associated with climate change due to their economic status. However, women are not simply impacted by their economic status, they are also further marginalised by broader societal and cultural structures that limit their rights on account of gender. The latest Global Development Report published by the World Bank concludes that although advances have been made on gender equality initiatives globally, many disparities remain, including: excess deaths of girls and women; disparities in girls' schooling; unequal access to economic opportunities; and differences in voice in households and in society.⁴⁴ These gender disparities exist in some form in both developed and developing countries, and continue to exist because of ingrained government policies (e.g., access to education or health care), economic constraints (e.g., gender earnings gap), and social norms (e.g., restrictive gender roles, limits in the societal and household decision-making process). Therefore, women are among those particularly vulnerable to the impacts of climate change due to long standing gender inequalities.

Based on current trends, the impacts of climate change will continue to grow in magnitude. If actions are not taken to proactively and comprehensively address existing inequities and in particular gender inequality, climate change will serve to intensify the disproportionate vulnerability of women, exacerbating inequities and inequalities across the board.

Over decades, research, policy-making and programming have made concerted links between gender and environmental concerns. From the knowledge base on, for example, gender and forests, gender and agriculture, and gender and water



concerns, assumptions could be drawn early on as to how climate change would likely exacerbate inequalities and intensify feminised cycles of poverty in specific sectors. Recent IPCC data, as included throughout this chapter, unmistakably confirms these trends. As the effects of climate change are becoming more evident, so too is the reality that the impacts are differentiated, not least by gender.

Examples of how climate change affects women and men differently—and how advancing gender equality changes those scenarios—are discussed in this publication. Key issues include the following:

- During tropical storms and other disasters, more women than men lose their lives. This disparity is not due to physical differences but instead primarily to social and traditional constructs that limit the ability of women to protect themselves and survive. Contributing factors include little or no access to rescue and disaster response training; restrictive clothing that hampers movement; or the inability to move freely due to their traditional roles as caregivers or behaviour restrictions (e.g., disproportionate responsibility for dependents such as children and elderly, or inability to relocate without being accompanied by a male relative). A further factor is the inability of many women to relocate without being accompanied by a male relative. Many examples of the outcomes from this discrepancy exist in analyses of the mortality rates associated with disasters, such as the 2004 Indian Ocean tsunami (70% of all fatalities were women) or the 1991 Cyclone Gorky (women died at a 14 to 1 rate higher than men).⁴⁵ By comparison, in a study of the role gender plays in disasters conducted in 2007, during a review of disasters in 141 countries from 1981 to 2002, when economic and social rights are equally distributed the death rates between men and women are similar.⁴⁶ Climate change is expected to significantly increase the severity of future tropical storms and this threatens the health and safety of a greater numbers of people—but taking a gender-responsive approach to preparedness and fostering resilience can dramatically change outcomes.
- Standing water can pose a significant health threat to people via water-borne diseases such as typhoid fever and cholera, or vector-borne diseases, including malaria, dengue, yellow fever and chikungunya. Women are generally exposed to areas of standing water significantly more than men due to their assigned roles to collect drinking water, prepare food, or take care of family members and livestock. In addition, women may sometimes be more susceptible than men to vector-borne diseases due to physiological characteristics. For example, pregnant women are twice as likely to attract mosquitoes, which kill over one million people per year.⁴⁷ The rise of global temperatures is expected to bring about greater instances of standing water, through stronger storms or more frequent inundations, and an increase in the incidents of exposure to the associated water-borne and vector-borne diseases. Water management, including for both rural and urban areas, needs to account for gender-differentiated vulnerabilities and capacities.
- Rising sea levels are already impacting lives and livelihoods all over the world, with 44% of the world population living within 150km of the sea.⁴⁸ Migration, resettlement, loss of livelihoods—not to mention significant cultural heritage and spiritual losses—are serious long-term effects that will have differentiated impacts on women and men. Moreover, even prior to displacement and economic and social infrastructure disruptions, rising sea levels, severe storms and other disturbances of fresh



water sources are increasing salinity in drinking water due to saltwater intrusion in various parts of the world. Drinking saltier water can have severe health impacts—especially for pregnant women, whose rates of hypertension and preeclampsia in some regions have begun to escalate. In coastal Bangladesh, for example, a 2011 study sought to identify “seasonal excess of hypertension in pregnancy”; the conclusions emphasised that climate change-induced sea level rise was having serious health impacts for local populations and especially the target group.⁴⁹ Gender-responsive planning and action across sectors must safeguard the health and safety of future generations.

- Globally, women suffer from pervasive structures that limit their ability to own land, borrow and invest money, or start a business. According to a recent study performed by the World Bank, 155 out of 173 economies have at least one legal difference between men and women that may significantly reduce the economic opportunities of women.⁵⁰ As the need for climate change mitigation and adaptation actions grows, the distribution of related financing will increase—as will the potential gap in access to and control over resources between men and women under the prevailing systems and mechanisms. Due to existing economic structures, financial resources to aid in the mitigation and adaptation of climate change are not as likely to be available to women as to men. Unequal disbursement will intensify inequity. By 2030 climate change related costs are expected to range from USD 249 billion to USD 1,371 billion per year.⁵¹ Some strides have been made in creating climate finance mechanisms that are gender-responsive, and yet ensuring women’s participation in decision making on all aspects of climate-related financing is vital to the efficacy and efficiency, as well as equity, of resources.

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) recently found that among the 775 million adults worldwide without basic literacy skills, approximately 64% were women. This gender disparity in education can vary significantly by country; for example, in India half of all women cannot read or write (187 million people), and in Senegal 61% of women are illiterate compared to 38% of men.⁵² Although global efforts have made progress in closing this gender education gap, even when educated, women worldwide face biases in research and policy development environments that marginalise their abilities to contribute and advance to leadership positions. Many studies have clearly demonstrated that diversity improves the decisions of groups. Therefore, the importance of promoting the participation of women in developing successful climate change research and policies cannot be understated. In addition, improving the education of women worldwide will help broaden societal awareness of climate change and empower a large segment of society to take action to address climate change. As more women have access to college and post-college education, they will help strengthen and diversify climate change related scientific research and policy development.
- Currently, over half the world’s population⁵³ lives in urban areas and, through rapid urbanisation and increasing populations, this figure is projected to grow to over 60% by 2050.⁵⁴ These urban populations will face unique and pressing challenges related to climate change, including sea level rise, waste and water management, resource distribution, and disaster risk reduction, prompting the need for immediate and extensive adaptation action. In addition, cities represent over 70% of global energy-related CO₂ emissions,⁵⁵ meaning there is significant opportunity for mitigation



policies to help curb these emissions in cities. Vulnerabilities are highly variable between social classes, age groups, race demographics, and gender; and poor populations, most of whom are women, are often the most vulnerable in urban areas. This puts women at a significant disadvantage because of their lack of access to resources, rights and services. Furthermore, research concerning women, cities and climate change is fairly limited, inciting the need for extended studies and understanding of the specific vulnerabilities and opportunities of women in urban areas. There is a huge opportunity to address gender gaps in current and future urban policy, planning and development to ensure more sustainable, resilient and gender-responsive cities.

- Well over one billion people around the world still lack access to electricity, and just under three billion people lack access to modern cooking and heating solutions, according to the World Bank.⁵⁶ According to the World Health Organization (WHO), 7 million deaths were attributable to the joint effects of household and ambient air pollution in 2012.⁵⁷ FAO estimates that 25% of the world population—1.6 billion people—rely on forests and forest products for their livelihoods, and many countries in the developing world draw on fuelwood

to meet as much as 90% of energy requirements.⁵⁸ As demands for energy increase, and as progress toward meeting development goals ensures that energy access must indeed increase, environmental and gender impacts will result multi-fold. The global community will need to make concerted and comprehensive choices for sustainable energy to offset—even without the added layer of climate change—environmental burdens, while mitigating exacerbated cycles of poverty and marginalisation of already vulnerable populations.

But the IPCC asserts that up to 80% of the world's energy supply could be met with renewable energy by 2050.⁵⁹ This offers a tremendous opportunity for co-benefits. Women are already energy managers at household level, and women have demonstrated that they are key stakeholders in the value chain of small-scale renewable energy, particularly in advancing energy access for those in the poorest economic tier. Women are part of the solution for climate mitigation—and gender-responsive climate solutions can mean complementary progress in expanding renewable energy labour markets, job creation for both women and men, their livelihood diversification and security, household health and wellbeing—and so much more.



Box 8: Men matter: Gender equality means equality for all

As this chapter has briefly introduced, specific climate change vulnerabilities of women extend from persistent patterns and cycles of gender inequalities. However, by no means does this imply that men around the world do not and will not suffer as a result of climate change, do not have distinct vulnerabilities, or do not have a stake in ensuring gender-responsive climate change solutions and actions. On the contrary, men around the world are more likely to bear the brunt of climate change in certain sectors or with respect to certain issues. For instance, as the effects of climate change threaten livelihoods, men are more likely to migrate away from home in search of additional

income.⁶⁰ In addition, a recent study from Australia indicates that the intense impacts of climate change on rural farms have led to the increased suicide rates of male farmers, due to the psychological distress of failed crops.⁶¹ Another study from Australia found that men are more likely to be involved in and die while fighting bushfires, an increasingly risky activity with increased incidences as a result of warmer, dryer conditions.⁶² The roles and responsibilities socially ascribed to men—just as those ascribed to women—can have profound impacts on wellbeing, lives, and livelihoods in the face of climate change.

Climate change action can thus reinforce or exacerbate inequalities—or intentionally aim to overcome and transform them, for the resilience of all people. As countries and communities take a closer look at their physical and sociocultural structures in response to climate change, long standing gender inequalities can be identified and addressed. However, it is important to recognise that resolving gender inequalities is not only a matter of ‘righting a wrong’ but also an important

opportunity to make use of previously underused (and under-recognized) abilities, knowledge and talents. For example, as global temperatures continue to rise, a re-evaluation of regional agricultural practices will be required. Because women represent 43% of the world’s agricultural labour force,⁶³ and in some regions a much higher percentage, they hold a vast amount of important knowledge that will inform these needed re-evaluations of agricultural practices—as well as be a major part of that labour force to implement solutions.



Box 9: Climate change as opportunity

While climate change presents one of the most complex challenges of our time, the transformation required to deal with it presents one of the most profound opportunities. Not least when it comes to gender, effective climate change policymaking and programing offers the chance to do development better, ensuring more equitable and sustainable outcomes. Many programmes and projects from different corners of the world have already demonstrated how climate change response can offer an invaluable chance to overcome long-standing barriers to women's rights.

In Cameroon, the regional women's network REFACOF—the African Women's Network for Community Management of Forests—has facilitated women's engagement in national REDD+ (reducing emissions from deforestation and forest degradation) processes (read more about REDD+ in Chapter 4.2, ahead) to ensure women's voices were heard and responsive plans were thus developed. Moreover, though, REFACOF saw REDD+ as an opportunity to bring a new focus on a longstanding barrier to gender equality—pushing for and winning sweeping land tenure reforms. “REDD+ let us shine a new light on old issues,” REFACOF founder and president Cecile Ndjebet said⁶⁴ (see Figure 3).



Figure 3: A story of transformation

Tackling climate change and realising gender equality demand societal transformation across interlinked themes, sectors, and levels. Transformation takes time and energy; it takes specific strategies and designated resources—but it is more than merely a vision. Transformation is already happening.

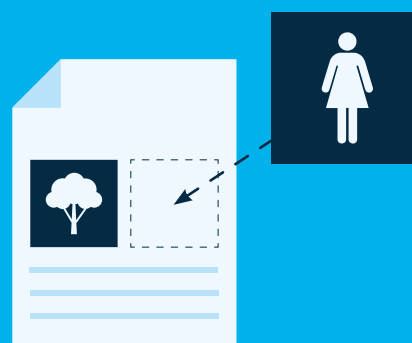
REFACOF's extraordinary achievements in securing opportunities for women's participation and experiences to shape national planning—and in transforming age-old challenges to women's rights—is a shining example.

Sector-specific climate change issue:
Land degradation/forest loss—a significant contributor to GHG emissions and thus climate change.



Women's/gender issue:
While they rely upon land, forests and forest products, and other natural resources, women are typically unable to own or inherit land, and the only way they are able to access it is through marriage, or their children.

Gender and climate change strategy: Employing REDD+ as a window of opportunity and through its advocacy work, REFACOF has proposed legislative articles and forest policies that include women's interests and ultimately will secure women's rights in forestry and natural resource management in the coming years.

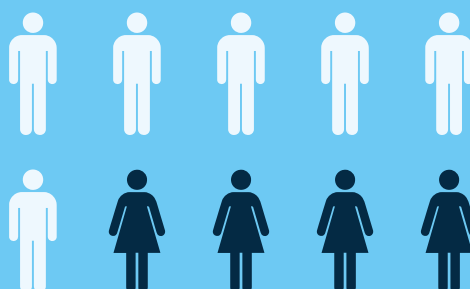


Story continued on next page.



Figure 3: A story of transformation (Cont)

Gender and climate change opportunity or co-benefit: REFACOF has realised impressive results; for example, now in Cameroon, 30-40% of women are included in decision-making positions at the village, district, regional, and national levels—contributing toward integrating gender into REDD+ policies and planning, as well as other processes.



Transformative results: Beyond REDD+ results, REFACOF has contributed to progress on solving a longstanding issue — by presenting women's legislation for land tenure reform, remarkable progress was made in reforming national land tenure laws.

Read more about REFACOF: <http://gender-climate.org/member/african-womens-network-for-community-management-of-forests-refacof/>



The importance of fully including women and a gender perspective into climate change response has been reflected in recent policy making, (as the next chapter, Chapter 2.1, will elaborate). To date, more than fifty decisions of the UNFCCC include mandates on gender issues.⁶⁵ These efforts to ensure participation of women in the decision-making process and the crafting of gender-responsive climate change solutions are critical to the success of addressing the immense challenges posed by climate change, and therefore must be expanded at all levels.

Finally, women around the world have already demonstrated that they are leading the way on mitigating and adapting to climate change—from

cooperative seed banks, to early warning networks; from solar engineers to women politicians carving a path of sustainable policymaking—climate change solutions exist, but it takes the whole of the global population to find them and *act* on them. Highlighting these lessons, strategies, innovations and visions for a better, more equitable and more sustainable world makes up a significant purpose for this publication. Throughout each subsequent chapter, women's innovative approaches and projects are featured, along with specific gender-responsive strategies, policies, and programmes that have taken the understanding of and commitments to advancing gender equality off the written page to reality, improving the lives of people all over the world.

READ MORE IN CHAPTER 7!

Throughout this publication, 'Read More' tags suggest specific initiatives included in the case study chapter ahead – 'Leading the way: Case studies on gender-responsive initiatives' offers 35 examples of projects and programmes happening all over the world and across sectors.





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