

Mainstreaming gender in health adaptation to climate change programmes



User's Guide

DISCUSSION DRAFT



World Health
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About this guide

This User's Guide builds on the WHO training manual *Gender mainstreaming for health managers: a practical approach*, which was developed by the WHO Department of Gender, Women and Health (GWH), and on the discussion paper *Gender, climate change and health*, jointly developed by the WHO Climate Change and Health Unit and GWH. This publication constitutes the adaptation of those two resources to the needs of climate change and health programme managers.

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Mainstreaming gender in health adaptation to climate change programmes

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Introduction

Over the past few decades, global research has shown that gender inequalities can give rise to health inequities between men and women *and* between boys and girls. A growing body of evidence also indicates that climate change is already causing negative health impacts, mainly felt by the most vulnerable populations, usually living in countries where the health system is less resilient to climate variability and change. Consequently, when climate change interacts with gender inequalities, it results in more pronounced negative health impacts in one sex over the other.

Indeed, the available literature shows that climate-related impacts on health are excessively affecting women, influencing and exacerbating existing social determinants of health such as poverty and illiteracy. In many communities, women tend to have less access to the resources that could help them overcome existing vulnerabilities; are more likely to be reliant on climate-sensitive resources and livelihoods; and tend to have lower levels of meaningful participation in climate change adaptation processes. This premise is supported by data showing that natural disasters continue to kill more women than men, and kill women at a younger age. These gender differences appear to be greater in more severe disasters, and where women have relatively lower socioeconomic status than that of men (1, 2). On the other hand, there is evidence that men are more affected in some situations. In Australia and India, for example, male rural farmers suffered mental illness in the aftermath of droughts, and subsequent increases in the rates of suicides were seen (1–7).

To effectively mitigate the different adverse health effects of climate change on women and men, it is imperative to employ scaled adaptation approaches that mainstream gender in all climate change and health programmes. These approaches must tackle gender inequality directly, moving towards empowering vulnerable groups as active agents of change instead of regarding them as passive in relation to climate change challenges (2, 8–12).

This guide is targeted towards programme managers who work in climate change and health adaptation, and provides them with practical information and concrete guidance to mainstream gender throughout all four phases of the project cycle: identification, formulation and design, implementation, and monitoring and evaluation. In order to effectively mainstream gender within their health adaptation to climate change programmes, managers will learn to conduct a gender analysis of health vulnerability and adverse health impacts of climate change, and to design gender-responsive adaptation programmes and actions, thanks to the practical and programmatic recommendations included in Section 3.

The guide is divided into three sections:

1. What is gender and why does it matter?
2. Understanding gender dimensions of climate change and health.
3. Mainstreaming gender in health adaptation to climate change programmes.

The first section draws on the World Health Organization (WHO) *Gender mainstreaming manual for health managers* (13) and explains key terms and concepts important for understanding how gender and other social determinants influence health outcomes. It introduces principles of gender mainstreaming and the rationale for integrating gender considerations within health adaptation strategies.

The second section explores how biological and sociocultural factors (gender norms, roles and relations) and access to and control over resources influence vulnerability to health risks associated with climate change, and the adaptive capacity of groups and individuals to adjust to changing environments and their social and economic impacts.

The third section is also adapted from the *Gender mainstreaming manual for health managers* (13), and provides practical guidance and best practices for mainstreaming gender in health adaptation to climate change programmes. This section presents a set of tools and recommendations to support programme managers conduct a gender analysis and adequately mainstream gender within all phases of the project cycle.

Section 1: What is gender and why does it matter?

i. What is gender? What is sex?

Box 1: Defining sex and gender(13)

Sex is not gender!

Sex refers to the biological and physiological characteristics that define a person as male or female, such as both internal and external reproductive organs as well as hormones and chromosomes, among others.

Gender refers to characteristics that are socially constructed for women and men. Norms, roles and relationships of and between groups of women and men are all examples of these characteristics. Most people are born with a defined sex, but they learn respective appropriate norms and behaviours from their societies, including proper interactions with individuals of the same or opposite sex, within households, workplaces and their communities. Gender tends to vary across societies and can change over time.

There is widespread confusion about what is meant by the term 'gender' and how it differs from the term 'sex', partly because they are closely related. However, sex and gender are not the same. Categories related to sex include 'male' and 'female' and are used to describe differences in the biology and physiology of men and women. While categories related to gender include 'Masculine' and 'feminine' and are used to describe roles, behaviours, activities, and attributes that are socially constructed and that have been traditionally associated with men and women in a given society (14).

Beliefs about women and men, boys and girls are passed down through generations through the socialization process (13). These beliefs, or 'gender norms', determine what is considered appropriate behaviour for men and women in a given society. They are not always explicitly prescribed in laws or regulations, but may be upheld by cultural or religious traditions and reinforced by society. For example, in many countries gender norms may pressure men and boys to smoke, as an acceptable transition to manhood, where smoking is socially entrenched in all aspects of male relations (15).

Gender norms also determine what activities, tasks, and responsibilities are defined as male and female. In turn, 'gender roles' assigned to boys and girls, and men and women influence the gender-based division of labour within the household, community and workplace. These include employment in the formal sector as well as household tasks and caretaking responsibilities (13, 16). Generally, these roles can be divided into productive, reproductive and community work (16–18):

- **Productive work** refers to production of goods and/or services for either consumption or trade. Examples include farming, fishing, working in a factory or working in a construction site, and can be in the form of employment or self-employment. When asked what they do, people respond in terms of productive work, especially work that is compensated (16).
- **Reproductive work** refers to family caregiving and household maintenance, and includes bearing and caring for children and taking responsibility for the health care of the family. It also includes providing nutrition to family members by preparing food, collecting water and fuel, subsistence agriculture, and other housekeeping work (2, 16, 19).
- **Community work** refers to the collective organization of social events, services and activities that aim at improving the community, as well as celebrations, ceremonies and participation in political activities and other community organizations (16).

Traditionally, in many societies, men do the majority of remunerated productive work, and women primarily perform activities related to the care of family members and the maintenance of the household (16). These activities women perform are referred to as 'reproductive work'. It is important to note that this term refers to activities performed for the sustenance of the household and its members, such as food preparation, subsistence agriculture and family health care, and not simply to the reproductive functions – such as giving birth and breastfeeding – or the role traditionally assigned to women as mothers and wives in many societies (16, 20).

These activities are critical for the survival and well-being of the household, and are generally time-consuming and labour-intensive. Yet, this work does not generally receive financial compensation and is traditionally undervalued, resulting in high opportunity costs¹, instead it is undertaken as a social role, usually based on family relationships (16, 20–22).

Greenhouse gas emissions increase as a result of several drivers, the most significant of which is the consumption patterns for richer countries and populations. Another factor that can contribute to greenhouse gas emissions is overpopulation, which is mainly present in developing countries. In this sense, the reproductive role of women can play an important role in climate change mitigation and adaptation, highlighting family planning and improved access to reproductive health services as key aspects. Overpopulation is shown to increase the vulnerability of populations, particularly in the least developed countries, as increased demand can worsen food insecurity, and the depletion of national resources decreases supply, in addition to increased risk of transmission of infectious diseases that can be exacerbated by overcrowding. Facilitating rights-based access to reproductive health services can reduce overpopulation, and thereby the population's vulnerability – and ability to adapt – to climate changes (23, 24).

On the other hand, community work includes work related to the provision of social services, improvement of infrastructure, and other tasks for the collective benefit of the community. It also includes community political work, in both the informal and formal spheres. In many communities, men undertake community political roles – which

¹ Opportunity costs refer to the benefits foregone by making one choice over another, and can relate to the earnings that the person could have earned in paid work if they had not been occupied with unpaid labour instead (21).

are usually compensated either financially or through an increase in status and power – while women assume community managing roles as an extension to their reproductive work during their ‘extra’ or ‘free’ time. This work is typically voluntary. These roles include running and maintaining community resources, and the provision of social support through volunteerism, participation in community councils, and social and religious networks (16).

It is important to note that the dynamics of gender changes from one society to another, even among neighbouring communities. However, on the whole, women are more likely to be disadvantaged, have less access to resources and face tougher workloads than men (2). The next section introduces how the different roles played by women and men can determine various patterns of exposure, and therefore vulnerability, to environmental health risks.

Box 2: Defining unpaid care work (21, 22)

The term ‘unpaid care work’ is defined based upon three essential attributes:

- ‘Unpaid’ highlights the fact that the work has no financial compensation.
- ‘Care’ indicates that the work focuses on service provision to promote the well-being of others.
- ‘Work’ signifies that the activity costs time and energy and shows it is an obligation arising out of societal or familial relationships, and is accepted as such.

Men and women perform a variety of roles within the household and community. Sometimes this work is paid; often it is not. The term ‘unpaid care work’ has been used to describe work that contributes to the well-being of the household and the community but does not receive financial remuneration (Box 2). This work contributes substantially to the health and welfare of society. Yet, since most of these activities are unpaid, and thus outside of market transactions, they have typically been excluded from measures of gross domestic production (GDP) (21). Recent efforts to quantify the amount of unpaid care work performed by women and men, both in the household and in the community, suggest that this work may contribute to over half of many different countries’ GDP.

Gender norms and roles also influence the type of work men and women perform within paid labour markets. In many countries, women tend to be concentrated in occupations and sectors that mirror the type of activities that have traditionally been considered the domain of women within the household, such as the provision of care, housekeeping and clothing industries. Since these activities have not typically been paid when performed by women within their own households, society tends to undervalue these tasks. Additionally, since men are often considered to be the primary wage earners for the household in many societies, women’s earnings may be seen as supplemental to men’s wages. These beliefs about roles of women and men within the household, community and workplace, and the value of these roles, has resulted in women being concentrated

in economic activities with low, irregular and insecure earnings, where there is little social or legal protection (20).

Together, gender norms and roles influence 'gender relations', the social relations between and among women and men (13). This refers to interactions at the personal level between individual women and men, as well as to relations between and among groups of women and men at the societal level. These relations may be supported by customary practices, religious beliefs and value systems; they may also be upheld formally through institutions and legislation (23). For example, in some societies, cultural and related factors determine that some fathers face barriers to participating in maternal, newborn, and child health, often from the child's mother herself, or a member of her family, while sometimes peers discourage involvement. Educators and service providers may perceive fathers as unable or unwilling to care for their child. Therefore, to build an environment that supports fathers to be actively involved in the parenting of their children, it is important to understand these relationships and engage not only fathers but also their wider network of family and friends. This can have important health benefits; research has shown that male involvement in the prenatal, newborn, and early childhood periods can be a positive influence on the health and development of the child (24).

ii. Gender and inequality

Gender is a concept used to describe characteristics associated with what is considered masculine or feminine in a given society. Gender itself is neither good nor bad. Gender norms can give rise to differences in the roles and relations of and among men and women.

Rather, it is the importance and value society places on certain characteristics and roles that can lead to unequal power relations, which in turn disadvantages one group over the other. Gender norms that result in the mistreatment of one group or sex over the other, or that result in differences in power and opportunities, lead to gender inequality (13). This, in turn, may also result in unequal access to and control over household and societal resources, including (16, 21):

- **Economic resources**, both formal and informal, such as credit, money, microcredit, land, health insurance and housing;
- **Political resources**, such as positions of leaderships and opportunities for communication and negotiations, as well as civil, economic, social, political and cultural rights;
- **Social resources**, including community resources, social support networks, transport systems and other social services. It also includes information, education and skills resources in the form of both formal and informal education, availability of information to be able to make decisions, and opportunities to exchange information and opinions;
- **Time resources**, refer to the amount of flexible work hours, and the amount of hours in a day that a person can use as wanted;
- **Internal resources**, which include the ability to express one's own interests, as well as self-esteem and self-confidence.

Indeed, vulnerability to illness and various diseases increases because of differences in access to and control over resources. These differences might also affect health outcomes and the social impact of disease (13, 25). For example, in many societies, women are denied the right to own land, water or livestock, even though they may perform most of the household work. This in turn limits their access to credit, inputs and technology (19).

In some contexts, men have better access to nutritious food than women due to household food hierarchies that ensure the dietary needs of men and boys are met first in times of food scarcity. Indeed, women become more vulnerable to infectious diseases as well as childbirth complications when having less access to nutritious food (13). In particular, inadequate intake of iron-rich foods increases the risk of anaemia, especially among pregnant women. This, in turn, increases the risk of poor pregnancy outcomes. Globally, it is estimated that anaemia contributes to one out of every five maternal deaths (16, 26).

Box 3: Statistics on gender inequality and social determinants of health

- Globally, women constitute less than 18% of parliament members (27);
- In the informal sector, women account for 58% of unpaid employment (28);
- Two thirds of the world's illiterate adult population are women (29);
- Globally, women hold only 10–20 per cent of land titles, and women's plots are generally smaller and of lower quality than men's (28, 30);
- Women receive between 10% and 30% lower wages than men for the same or comparable work (31);
- Globally, 60% to 80% of all house and care work is the responsibility of women (28).

iii. Gender, sex and other determinants of health

Adapted from (13)

Sex and gender are important determinants of health (16). Both influence the exposure of men and women to the risk factors for ill-health, access to health information and services, health-seeking behaviour, treatment options, and experience in health-care settings. These factors in turn can lead to differences in health outcomes for women and men (13).

Broadly speaking, sex determinants of health relate to biological differences that put women or men at increased health risks. Gender determinants of health refer to socio-cultural factors that also determine variable vulnerability and health impacts on women and men. Both sex and gender considerations determine the access and control over resources (see Section 2).

In addition to sex and gender, other social and environmental determinants of health need to be considered. Social determinants of health are those related to socioeconomic

and demographic factors that include education, employment status and income, culture age and factors associated with the physical and social environment among others (13). In relation to the environmental determinants of health, it is critical to consider that climate change is already affecting the main environmental determinants of health i.e. safe water, clean air, adequate housing and sufficient food.

Gender, sex and other social and environmental determinants of health determine different patterns of exposure and, therefore, different health vulnerability and impacts on women and men. Many of the determinants of health may be the same for women and men, but when these determinants interact with gender, the outcomes often vary greatly for different groups of women and men (32). Women and men are not homogeneous groups, as age, class, status and social context differences also interact with gender to act as determinants of health.

In particular, it is important to understand how gender norms, roles and relations interact with other determinants of health to increase the burden of gender inequality faced by many women and girls – and in some cases boys and men (32, 33). When other structural conditions such as poverty are considered, decisions to use household or community resources are often made in ways that uphold existing gender norms, roles and relations. This often disadvantages certain groups of women and men (13, 16).

The case study (Box 4) below examines the interaction between gender and land rights, and how this impacts food and nutrition security in southern Africa.

Box 4: Case study

Gender, land rights, and food and nutrition security in southern Africa

Rural women in some parts of the world may be particularly vulnerable to the loss of land and assets upon the death of their spouse. The practice of ‘property grabbing’, in which the relatives of the deceased husband seize control of livestock, land and other assets, has been documented in several communities in southern Africa (30). A study by the Food and Agriculture Organization of the United Nations (FAO) in the Ohangwena Region of Namibia found that 44% of widows lost cattle, 28% lost livestock, and 41% lost farm equipment in disputes with their in-laws after the death of their husband (34). Another study, in Zambia, found that nearly one in three widows experienced more than a 50% reduction in land size after their husband died (35). This practice is often upheld by customary laws and discriminatory practices that consider property as belonging solely to the husband and, upon his death, to his relatives and heirs (30).

The loss of land often means the loss of livelihood and a source of food and shelter for rural households (36). This exacerbates poverty and increases vulnerability to hunger and malnutrition. Changing climatic conditions are expected to further aggravate this situation. Rising temperatures and changing rainfall patterns are projected to decrease crop yields. In some countries, rain-fed agriculture production could be reduced by up to 50% by 2020, and many African countries are predicted to be severely affected (37). Widows who have experienced reductions in their land size are expected to face dual problems of less land to grow crops and lower yields. Reductions in domestic food production can also >>

lead to reliance on imported food and increased price volatility (26, 37, 38). The loss of income and dispossession of assets means widows will have less money to purchase food in the market, leading to decreased diversity in their diet and inadequate food intake.

Article 14 of the *Convention on eliminating all forms of discrimination against women* (CEDAW) calls for women's right to: "have access to agricultural credit and loans, marketing facilities, appropriate technology and equal treatment in land and agrarian reform as well as in land resettlement schemes" (Article 14g), and "enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications" (Article 14h) (39). The impact of inadequate access to sufficient, safe and nutritious food has severe implications for human health. The inadequate intake of calories, protein, vitamins and minerals can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity (40). Poor nutrition in females is associated with an increase in the prevalence of anaemia, pregnancy and delivery problems, as well as increased intrauterine growth retardation rates, low birth weight and perinatal mortality (1). According to FAO, increased prevalence of iron deficiency is linked to an increased risk of women dying during childbirth by as much as 20% (41).

a) Gender responsiveness

Generally, policies and programmes address gender norms, roles and relations in particular ways, and for a policy or programme to be gender-responsive, it must fulfil two basic criteria (13):

- It must consider gender norms, roles and relations;
- It must include measures that actively reduce the harmful effects of gender norms, roles and relations – including gender inequality.

Gender responsiveness assessment scale

The WHO Gender responsive assessment scale (GRAS) (Table 1) categorizes programmes and policies into five levels: The first two Levels (Gender unequal and Gender-blind) are thought to hinder the achievement of gender equality and health equity. The third level, Gender sensitive, represents a turning-point because it indicates that a programme or policy recognizes the important health effects of gender norms, roles and relations. Only when a programme or policy becomes gender-sensitive can it be either gender-specific (level four) or gender-transformative (level five) (13).

The information generated from gender analysis is needed to develop gender-responsive actions (13).

Table 1: Gender responsive assessment scale criteria for assessing programmes and policies

	Gender unequal Gender transformative				
	LEVEL 1 Gender unequal	LEVEL 2 Gender blind	LEVEL 3 Gender sensitive	LEVEL 4 Gender specific	LEVEL 5 Gender transformative
Gender norms, roles and relations	Perpetuates gender inequality by reinforcing unbalanced norms, roles and relations	Ignores gender norms, roles and relations	Considers gender norms, roles and relations	Considers gender norms, roles and relations for women and men and how they affect access to and control over resources	Considers gender norms, roles and relations for women and men and how these affect access to and control over resources Includes ways to transform harmful gender norms, roles and relations
Gender equality	Privileges either men or women Often leads to one sex enjoying more rights or opportunities than the other	Very often reinforces gender-based discrimination Ignores differences in opportunities and resource allocation for women and men	Does not address inequality generated by unequal norms, roles and relations	Intentionally targets and benefits a specific group of women or men in order to achieve certain policy or programme goals or to meet certain needs	The objective is often to promote gender equality
Gender equity		Often constructed based on the principle of being 'fair' by treating everyone the same		Makes it easier for women and men to fulfil duties that are ascribed to them based on their gender roles	Addresses the causes of gender-based health inequities
Gender-specific needs consideration				Considers women's and men's specific needs	Considers women's and men's specific needs
Gender Awareness			Indicates gender awareness, although often no remedial action is developed	Indicates gender awareness	High level of gender awareness

iv. Mainstreaming gender to promote gender equality and equity in health

Box 5: Defining 'equality' and 'equity' (13)

Gender equality refers to equal chances or opportunities for groups of women and men to access and control social, economic and political resources, including protection under the law (such as health services, education and voting rights). It is also known as formal equality.

Gender equity refers to the different needs, preferences and interests of women and men. This may mean that different treatment is needed to ensure equality of opportunity. This is often referred to as substantive equality and requires considering the realities of women's and men's lives.

Health equity refers to the absence of unfair, avoidable or preventable differences in health among populations or groups defined socially, economically, demographically or geographically.

Differentials in morbidity and mortality between men and women arising from sex and gender have been established across diseases and health conditions (42). It is important to note, however, that there are some inevitable differences in the health needs and status of men and women. Unfortunately, many health systems and interventions have failed to respond to those different needs, typically disadvantaging women over men. Indeed, research shows that all aspects of the health of men and women – including determinants of health, experiences in health care and health outcomes – are influenced by gender inequality. Gender inequality intersects with other social determinants of health, such as race, ethnicity and socioeconomic status, to produce health disparities between men and women that are similar to social divisions within society (16). These health disparities tend to reflect the underlying distribution of roles and power between men and women in society, rather than individual choices, resulting in constraints on the ability of men and women to influence their own health outcomes, and thus are considered unfair and unjust.

Therefore, promoting gender equality has become a global concern, prompting the emergence of a globally accepted strategy referred to as '**gender mainstreaming**', which acts as a means to achieving gender equality (16). Gender mainstreaming considers the concerns and experiences of men and women as an integral dimension of all phases of programme and policy development. It additionally assesses implications of any planned action for women and men. The end purpose for gender mainstreaming is that both men and women benefit equally, and to ensure that these programmes and policies do not perpetuate existing inequalities (13). In the context of health, gender mainstreaming can be summarized as reducing inequities in health status and access to health care between men and women. In order to achieve health equity, gender equality and gender equity should be promoted (Box 5).

Both men and women must have the same chances and opportunities from health policies and programmes. This is referred to as **gender equality**, and acts as a prerequisite for health equity (11), and aims to ensure equal conditions for both men and women to realize their full rights and potentials to be healthy, contribute to their community health development, and be able to benefit from the results (13). One example of gender inequality can be seen in research and drug trials, which have tended to preclude women in the past. The reason for this underrepresentation is attributed to the guidelines established by the American Food and Drug Administration (FDA) and similar international agencies in the 1970s specifically calling for the exclusion of women of childbearing age from the early phases of clinical trials because the effects of medication was not fully understood, especially on female fertility, possible pregnancy compromises and adverse effects on foetuses (13, 43). This underrepresentation has led to medication of proven effectiveness on men only while also prescribed for use by women (13, 44, 45). Thus, ensuring equal and meaningful participation in research and drug trials is an example of how greater gender equality within health research can increase the effectiveness of treatments for women. Another illustration of gender inequality is the presentation of a disease as exclusively relevant to one sex and not the other, making these diseases more likely to go untreated or undiagnosed in the excluded sex. An example is coronary heart disease, which is primarily recognized as a male condition, as women tend to present different symptoms than men (13, 46). As such, gender equality considers health conditions for women and men equally, taking into account the different symptoms and/or outcomes the same disease might present in each sex.

However, it is important to go beyond promoting equal opportunities, to taking specific actions to diminish existing inequalities between women and men, in order to ensure that they benefit equally from health policies and programmes. This can be tackled with an approach based on '**gender equity**' that recognizes the underlying historical and institutional factors that contribute to and perpetuate gender inequalities. This approach seeks to understand and then respond to different and unequal needs between men and women, as well as understanding barriers that affect women and men in accessing and benefiting from health care programmes (10a). For example, distributing free information and condoms to men and women may be insufficient to promote behaviours to prevent infection with human immunodeficiency virus (HIV) and other sexually-transmitted infections (STI), because women might not have the option to negotiate the use of condoms within their relationships (16). By promoting both gender equality and gender equity within health programmes and policies, gender mainstreaming can reduce unjust and avoidable differences in the health status of men and women and transform the organizational structures, behaviours, attitudes and practices that are harmful to the health of women and men (13).

Box 6: Summary of key messages

- Gender and sex are not the same. 'Sex' refers to the different biological and physiological characteristics of males and females. 'Gender' refers to characteristics associated with women and men that vary from society to society and are constructed according to sociocultural and historical contexts.
- The distinct roles and relations of men and women in a given culture, dictated by that culture's gender norms and values, give rise to gender differences. Gender differences are not the cause of inequality. However, the importance society places on certain gender roles and attributes considered 'masculine' or 'feminine' can lead to differences between men and women that systematically value one group, often to the detriment of the other.
- Sex and gender are important determinants of health. Both biological and sociocultural factors, including gender norms, roles and relations, can lead to differences in vulnerability to certain health conditions as well as differences in health outcomes and social impact. Access to, and control over, resources can also influence the health of both women and men.
- Equity is different to equality. In health, gender equality refers to men and women having the same chances and opportunities to benefit from health programmes and policies. Gender equity moves beyond equal opportunities to consider the different and unequal needs and barriers affecting men's and women's health status and access to health care.
- Achieving greater equity in health requires specific strategies. Gender mainstreaming is a strategy that considers the concerns and experiences of women and men as an integral dimension of the design, implementation, monitoring and evaluation of all policies and programmes.

Section 2: Understanding gender dimensions of health and climate change

i. Health impacts of climate change

Climate change will adversely impact the lives and health of billions of people over the next decades (1, 38). It affects human health through several mechanisms, some of which are relatively direct effects of hazards – such as floods, storms and heatwaves – while others have a more complex pathway that results in altered patterns of infectious diseases, disruption of agricultural systems and other supportive ecosystems, possible population displacement, as well as conflict that is caused by over-depleted resources, such as fertile land, water and fisheries (1, 47).

The different health impacts of climate change on the population depends on several factors such as the vulnerability and adaptive capacity of groups of men and women to changing meteorological conditions and the associated human and social consequences as well as capacities, resources, behaviours and attitudes (Box 7 and Figure 1).

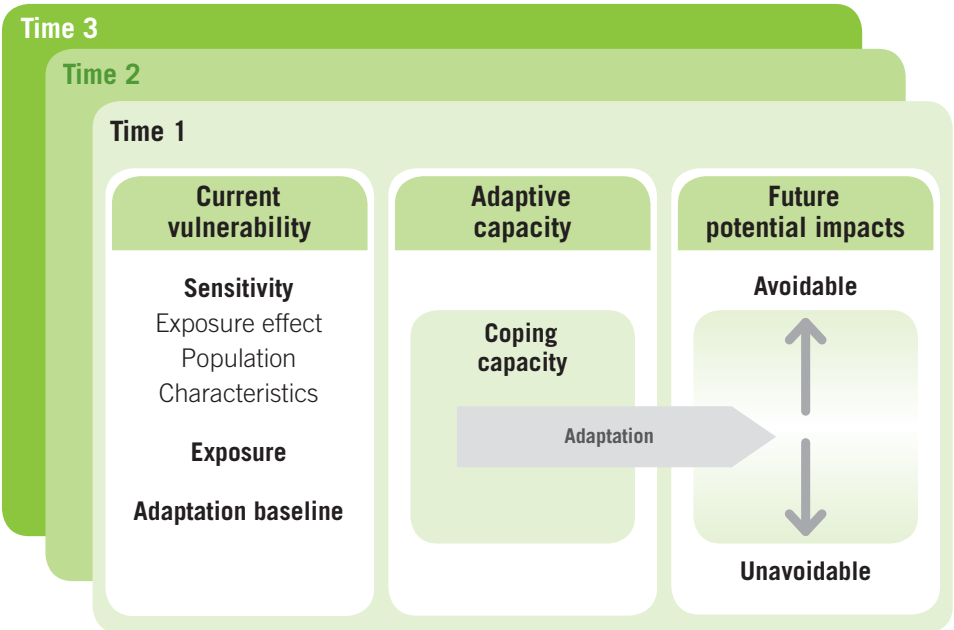
Women are more likely than men to live in poverty (51). In addition to poverty, circumstances such as low education, food insecurity, bad housing conditions and deficient sanitation are major determining factors of inequality and health inequities (52). Climate change exacerbates these circumstances, increasing the risks posed by many health hazards among already vulnerable populations. Meanwhile, these same factors constrain the ability of populations to adapt. Without effective mitigation and adaptation measures, climate change is expected to increase health inequity, in particular through its negative effect on these social determinants of health (38). An example of disproportionate vulnerability among men and women is in the coastal villages of South Gujarat, in India, where women suffer the impacts of climate change more than men because of the inequality in access to information and communications, particularly early warnings during floods, as men tend to use media, such as TV, radio and mobile phones more than women (53).

Box 7: Understanding adaptation, mitigation, vulnerability, adaptive capacity, and health impact of climate change (2, 37, 48)

- **Adaptation** is defined as changes in the processes, practices or structures that aim to moderate or offset potential damages from climate change, or to take advantage of the opportunities that may be associated with changes in climate. It involves certain adjustments that attempt to decrease the vulnerability to the impacts of climate variability and change of communities and regions (2, 49).
- **Mitigation** refers to “technological change and substitution that reduce resource inputs and emissions per unit of output. Mitigation means implementing policies to reduce greenhouse gas emissions and enhance sinks” (37).
- **Vulnerability** is “the degree to which a system is susceptible to and unable to cope with, adverse effects of climate change, including climate variability and extremes” (37). Vulnerability is “a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity”:
 - **Exposure** to the weather or climate-related hazard;
 - **Sensitivity**, which “includes the extent to which health, or the natural or social systems on which health outcomes depend, are sensitive to changes in weather and climate (the exposure–response relationship) and the characteristics of the population, such as the level of development and its demographic structure” (48)
 - **Adaptation baseline** is “the adaptation measures and actions in place to reduce the burden of a specific adverse health outcome”, “the effectiveness of which determines in part the exposure–response relationship” (48).
 - **Adaptive capacity** describes “the ability of a system to adjust to climate change, to moderate potential damages, to take advantage of opportunities, or to cope with the consequences” (37). The primary goal of building adaptive capacity is to reduce future vulnerability to climate variability and change. Adaptive capacity encompasses the strategies, policies and measures that have the potential to expand future coping capacity (48).
- The **impact**, or effect of climate change on human health depends on both the vulnerability of a population and its adaptive capacity (38). The following diagram introduces the relationship between these important concepts.

Figure 1: Schematic of relationships between vulnerability, adaptive capacity and potential health impact

Source: (50)



ii. Gender, climate change and health

Evidence suggests that the health impacts of climate change will be different for women and men. As highlighted, these differences arise from a combination of factors, including biological and sociocultural factors (e.g. gender norms, roles and relations), and differences in access to and control over resources. Differences exist in health impacts caused directly by meteorological hazards and those arising from the indirect and/or longer-term effects of climate change (1).

a) Direct effects of meteorological hazards

Differences between men and women are seen in the health impact of meteorological hazards, such as heatwaves, windstorms, floods and drought. These differences reflect a combined effect of physiological, behavioural and socially constructed influences. This has been illustrated in the majority of European heatwave studies, as women were found to be at a greater risk of dying, in both relative and absolute terms, than men. (1, 54). Conversely, other studies show that social isolation is a risk factor for heatwave mortality, and these studies show that single men, particularly the elderly, are at greater risk than single women (1, 55, 56).

Moreover, men and women are shown to suffer negative health consequences of extreme weather events differently. Census information on the effects of natural disasters from 141 countries revealed that while everyone suffers in the aftermath of natural disasters, more women than men are killed, and women are killed at younger age than men (1). At the same time, other studies show that during floods, drowning risk is much higher among men than women. This is probably because in many cultural contexts, men are expected to take more risky or 'heroic' behaviour (1, 57).

b) Indirect and long-term effects of climate change

Men and women also differ in their vulnerability to the indirect and long-term effects of climate-related hazards. For example, droughts imply reduced water availability for drinking, cooking, hygiene, and also food insecurity, especially in developing countries, which in turn results in health hazards. Health consequences resulting from food insecurity and nutritional deficiencies disproportionately affect women and girls compared to men and boys. Additionally, women and girls often have the responsibility of water collection for the family, and droughts increase their burden as they would need to travel further to collect water as the following case study discusses (1) (Box 8). A study in southern Africa showed that the workload of women increases in response to climate change variation, such as droughts or low rainfalls, not only because of the increased burden of collecting water, but also collecting firewood, in addition to having to work casual jobs to make ends meet (2, 58).

Box 8: Case study: Health impacts of drought on men and women (1)

Women are inherently linked to water supplies in many developing countries; they often undertake the majority of work related to water collection, storage, protection and distribution. As a result, in periods of drought, it is often women and girls who are most impacted by the health and social consequences of water shortages.

During drought, the distance travelled to water sources is greatly increased, and the family's physiological need for water also increases. Moreover, walking 30 minutes or longer to a water source causes the quantity of collected water per capita to drastically decrease (59). As a result, the quantity of water collected often does not meet the basic human physiological needs. Because society has commonly assigned women the responsibility for providing water to their families, droughts cause a significant added burden on them. Indeed, a study conducted in Ghana concluded that water scarcity renders women particularly vulnerable because they typically prioritize their husbands' needs. This meant that women would ensure that their husbands were provided their water needs before tending to their own (60).

Additionally, water collection can cause exhaustion because of the need for long walking trips to wells, and carrying heavy pots of water. It can also cause early ageing of vertebral column as a result of cumulative damages to the spine, neck muscles and lower back. During dry seasons in rural India and Africa, fetching water accounted for 30% or more of women's daily energy intake (61–66).

Finally, water collection is also accompanied by extremely high opportunity costs, since women who are involved do not have the opportunity to invest their time in other activities, like school or work that would yield greater benefits in the medium and longer term.

Changing weather patterns may also increase the geographical range and seasonality of certain vector-borne diseases, with some groups more vulnerable than others (67). For example, compared to non-pregnant women, women who are pregnant are twice as vulnerable to malaria infection. Maternal malaria increases the risk of spontaneous abortion, premature delivery, stillbirths and low birth-weight (1, 68).

Furthermore, the social and human consequences of climate change are likely to impact women and men in different ways. Changing rainfall patterns, an increase in extreme weather events, sea-level rises, and the warming or drying of certain regions will change the patterns of land use, impact livelihoods, and may lead to the migration or displacement of certain populations (1). During the aftermath of natural disasters people are often displaced and forced to find temporary shelters. In many countries, such as Tanzania and Viet Nam, male out-migration far outweighs that of female, adding pressure on female-headed households and women farmers (2, 10, 69).

In addition, temporary shelters usually lack privacy, are overcrowded and are disruptive of regular routines. All of which increase stress, anger and violence, with women and children being the most vulnerable to domestic and sexual violence (1, 70–72).

Overall, the evidence indicates that men and women are likely to be affected differently by climate change and its impact on human health. Understanding the reasons why these differences exist is critical for designing effective health adaptation strategies, which need to consider the different vulnerabilities and adaptive capacities of women and men as determined by biological and sociocultural factors, as well as access to and control over resources. The following table (Table 2) illustrates a gender perspective on the health impacts of climate change that includes meteorological conditions and human exposures, as well as the human and social consequences of climate change.

Table 2: A gender perspective on the health impacts of climate change

Meteorological conditions and human exposure		
Conditions	Examples of health impacts	Gender perspective
Heatwaves and increased hot weather	<ul style="list-style-type: none"> • Heat-related fatalities and heat exhaustion • Vector-borne diseases such as malaria, dengue, leishmaniasis, Lyme disease, tick-borne encephalitis due to altered range and seasonality • Increased or decreased risk of pre-eclampsia and hypertension due to changes in temperature and humidity 	<ul style="list-style-type: none"> • Studies have found that women may be more at risk of dying in heatwaves in some situations; at the same time, elderly men may be at increased risk due to social isolation • Men and women may have different levels of exposure to extreme heat and certain vectors due to gender differences in occupation and the division of household chores • Due to physiological changes, pregnant women have higher risk of malaria infection • In many societies, gender roles attribute the task of caring for the sick to women • Because of biological differences, only women are at risk of pre-eclampsia or pregnancy-related hypertension
Windstorms and tropical cyclones	<ul style="list-style-type: none"> • Loss of life and injury during disasters • Psychological stress 	<ul style="list-style-type: none"> • Globally, natural disasters kill more women than men, and tend to kill women at a younger age • Gender norms promoting risk-taking behaviour by males may increase risk of fatality or injury during disasters • Men may be less likely to seek help for psychological conditions in the aftermath of disasters • In some situations, women may face barriers in accessing disaster relief services
Sea level rise, heavy rain and flooding	<ul style="list-style-type: none"> • Waterborne diseases caused by contamination of drinking water (e.g. cholera, diarrhoeal diseases) • Arsenicosis caused by exposure to arsenic-contaminated groundwater • Gynaecological problems, complications during pregnancy, and birth defects due to exposure to saline-contaminated water and environmental toxins 	<ul style="list-style-type: none"> • Women and men may suffer different social repercussions due to the physical effects of arsenicosis • Due to anatomical differences, only women are at risk of gynaecological or pregnancy-related conditions • In some situations, women may face barriers in accessing health services • In many societies, gender roles attribute the task of caring for the sick to women • Men and women may have different levels of exposure to risk factors due to gender differences in occupation and the division of household chores
Drought	<ul style="list-style-type: none"> • Waterborne and water-washed diseases caused by reduction in availability of clean drinking-water and water supplies for personal hygiene and sanitation (e.g. trachoma and scabies) • Physical exhaustion and spinal injuries caused by longer distances carrying heavy loads of water 	<ul style="list-style-type: none"> • In many societies, gender roles attribute the task of caring for the sick to women • In many developing countries, the responsibility for collection, management and distribution of water, as well as household sanitation and hygiene, is ascribed to women

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Human and social consequences of climate change		
Conditions	Examples of health impacts	Gender perspective
Migration and displacement	<ul style="list-style-type: none"> Sexual and physical violence among populations displaced due to rising sea levels and natural disasters 	<ul style="list-style-type: none"> Women and girls are more vulnerable to sexual harassment, violence and trafficking among displaced populations Women and girls are more likely to suffer sexual harassment in shelters and relief queues
Shift in farming and land use	<ul style="list-style-type: none"> Malnutrition caused by disruptions or decreases in food supply Depression, suicide, or psychological stress caused by loss of livelihood Loss of plants and herbs used for income, traditional medicinal use, and nutritional supplements 	<ul style="list-style-type: none"> Breastfeeding and pregnant women have unique nutritional needs Women may be more vulnerable in times of food scarcity due to gendered food hierarchies Men may be less likely to seek help for psychological conditions Social expectations and attitudes concerning rural masculinity may contribute to high suicide rates among male farmers in some situations Many rural women in different parts of the world depend on plants and herbs for income, traditional medicinal use, and nutritional supplements
Increased livelihood, household and caring burdens	<ul style="list-style-type: none"> Decline in food security and livelihood opportunities Stress and mental health issues Family illness resulting in increased medical expenses, heightening poverty levels Elderly being additionally disadvantaged because of lower education status, increased poverty and less access to health services 	<ul style="list-style-type: none"> Decline in food security and livelihood contribute to added stress and possible mental illness for men and boys, who bear the economical responsibilities of the household in many societies Women and girls in many societies bear the burden of caring for the sick in times of environmental disasters, limiting time they might have for self-development such as education, or income-generating work Increased time and energy spent on water collection in times of drought contribute to stress-related and exhaustion among women Elderly women might be saddled with caring responsibilities that contribute to stress and fatigue and prevent participation in social and economic activities Older men who tend to be less socially connected are further disadvantaged and unable to seek assistance from the community when needed
Urban health	<ul style="list-style-type: none"> More people living in marginal, urban and peri-urban areas and slums that are particular environmental hazards 	<ul style="list-style-type: none"> Female-headed households are increasing in urban/peri-urban areas and marked with poverty, exposure of dwelling and decreased ability to manage daily burdens.

Sources: (1, 73)

iii. Gender and vulnerability to climate change

Vulnerability to climate change is not uniform across regions or subpopulations and differs based on geographic, demographic and socioeconomic factors. Effectively targeting adaptation strategies requires understanding what demographic or geographical subpopulations may be most at risk and when that risk is likely to increase (48). The framework below (Figure 2) illustrates how differences in biology, sociocultural norms, roles, and relations, as well as access to and control over resources can each influence vulnerability to the health risks, and to the long-term health outcomes and social impact of climate variability and change.

Figure 2: Framework describing the effect of different factors on vulnerability to health risks of climate change



Source: Framework adapted from (16), information from (1)

a) Biological factors

Sex-related factors stemming from biological and physiological differences between men and women can influence exposure and susceptibility to certain health risks. For example, reproductive health issues particularly increase women's vulnerability when coping with climate variability. These issues include special sanitation needs during menstruation and after giving birth, constrained mobility during pregnancy, and higher nutritional needs during pregnancy and lactation (73). The ability to cope with the effect of natural disasters is partly determined by nutritional status (74). Some cultures have feeding hierarchies in place rendering women and girls nutritionally deficient, which in turn results in anaemia as well as pregnancy and delivery problems, such as increased rates of intrauterine growth retardation, low birth weight and perinatal mortality. Women's vulnerability is exacerbated by poor nutrition when considering the unique nutritional needs when pregnant or breastfeeding. Thus, these biological factors may lead to different health risks for women and men in the face of food shortages caused by drought, displacement and other disruptions arising from climate change (1).

Another example of the influence of biological differences on the health impacts of climate change is the potential effect of saline contamination on the incidence of pregnancy-related complications. Climate change is expected to result in sea-level rises and consequently saline contamination (75). In coastal areas of Bangladesh, for example, local doctors and community representatives have attributed the large increase in cases of pre-eclampsia, eclampsia and hypertension among pregnant women to the increased salinity of drinking-water (76).

b) Sociocultural factors

Social norms and values can influence vulnerability to the health risks of climate change. For example, declines in livelihood opportunities and consequent food insecurity, can cause significant stress for men and boys in many societies that ascribe their role in providing economically for the household. Losing the ability to provide for the family has been shown to cause men a series of mental health issues (1). In Australia, for example, loss of income and indebtedness among rural male farmers have been associated with mental health problems, despair, and even suicide (1, 3), which is linked to poor health-seeking behaviour among men due to the societal perception of masculinity and stoicism in rural Australia (4, 5). Similarly, in India following periods of drought, suicide among poor male farmers has been consistently increased, especially in the contiguous semi-arid regions (1, 6, 7).

Gender-based division of labour determines different patterns of exposure and therefore different vulnerability for women and men. For example, in some communities, women fish near the shore while men fish in deeper waters, but because climate change will have a greater impact on near shore areas, women are disproportionately affected (2, 77). On the other hand, in Arctic communities, men shoulder much of the social impact of climate change. Because men's self-esteem is associated with their skill and strength of hunters, the thinning of the ice affects the length of hunting season and makes hunting more dangerous, rendering their hunting skills – once a pinnacle in the society – useless (2, 78, 79). In Cameroon, gender-based division of labour puts men in more danger relative to women of contracting river blindness as a result of working as fishermen (2).

In many societies, gender norms burden women with greater responsibilities for subsistence agriculture compared to men, which can be particularly challenging when facing climate change (2, 12).

In addition, gender norms may dictate that women and girls have less access to important survival skills, such as swimming. This is the case in some countries of Latin America and Asia, where women are discouraged from learning to swim due to socially constructed 'appropriate' behaviours for women, which in effect severely reduces their survival chances during floods (1, 80, 81). Differences in the socially-constructed roles and responsibilities of men and women can also lead to differences in the social impact of climate change. For example, women and girls are generally expected to care for the sick, especially in times of disasters (1, 82), which in turn limits their time to pursue education or work. Poor education adds more constraints to women to access health information or early warnings that may be provided during disasters. Poor education also reduces access and opportunities to engage in the labour market, reduces women's control over their personal lives, and increases their health risks (1).

Gender relations further influence men and women's vulnerability to, and the impact of, climate change. Lack of decision-making power among women in some societies increases their risk of morbidity and mortality during and after natural disasters (1). Studies from Bangladesh and Honduras indicate that during floods, women may have been constrained from fleeing their homes in spite of rising water levels because they waited for a family male authority to give them permission to leave the home or assist them in leaving (1, 80, 83, 84). Additionally, in the aftermath of natural disasters, women tend to avoid shelters for their loss of privacy as well as fear of being abused, as they are more likely to become victims of domestic and sexual violence (1, 71, 75). Adolescent girls, in particular, report especially high levels of sexual harassment and abuse in these settings (1, 70). A thorough assessment study was conducted in the aftermath of the flood in Pakistan in 2010, which found that the different forms of violence that women and girls face are not confined to shelters or from strangers, but increased violence within their own families and communities, in the form of forced marriages, deprivation and domestic violence. Gender-based violence risks increase in acute and extreme distress situations, and forms of sexual, physical and emotional abuse manifest as people attempt to find coping mechanisms (85).

The following case study (Box 9) explores the relationship between gender norms, roles and relations, and the health impacts of cyclones and floods in Bangladesh.

Box 9: Case study

Gender and the health impact of cyclones and floods in Bangladesh

In 1991, there was a cyclone disaster that killed 140 000 people in Bangladesh and 90% of the victims were women and girls (80). Death rates among people 20–44 years of age were 71 per 1000 women, compared to 15 per 1000 men (84). This might be due to women being more homebound than men, and were bearing the responsibility of looking after the household. Additionally, early warning information was often communicated in public places, passing from man-to-man, but rarely reaching women directly. Even if warnings did reach them, women may have been reluctant to leave home by themselves, as they waited for their relatives to accompany them to a safe location. Other possible reasons for the difference in fatalities include that the sari, a long strip of cloth traditionally worn by many women in Bangladesh, may have restricted their movement and placed them at increased risk at the time of the tidal surge (84, 86).

In addition to the health risks associated with the immediate impact of cyclones and floods, it has been observed that women also suffer more in the aftermath of extreme weather events, as they tend to receive less assistance than men, which has been hypothesized to be because they are often pushed out of the way when receiving assistance or supplies. Furthermore, if women lost clothing as a result of natural disasters, and were unable to adequately cover themselves as per their societal expectations, they might not dare to enter public areas, particularly those designed for assistance (87).

Furthermore, the loss of livelihoods and lack of employment opportunities following the floods resulted in increased levels of poverty and food insecurity among many poor households. Alternative income-generating activities were particularly limited for women, forcing many women to sell their assets in order to survive (88, 89).

In disaster settings, loss of income and financial distress is found to create a state of helplessness that in turn increases household tensions and aggravates levels of gender-based violence among vulnerable populations (89). It has been recognized that women who are subjected to violence before a disaster are more likely to experience increased violence after the disaster (71). This was evident after the Bangladesh floods, when an increase in domestic violence was reported, particularly among urban households (88, 89). Additionally, after the floods of 1998, qualitative research found that many young women reported sexual harassment (88).

Source: Adapted from (1).

c) Access to and control over resources

Inequalities in access to and control over resources are another reason for gender differences in vulnerability. This includes access to economic, political, community and internal resources, as well as time and information. Compared to men, women tend to have fewer resources to cope with climate shocks and stresses. For example, gender differences in access to vital information about climate patterns or extreme weather events can increase vulnerability to the health risks of natural disasters and famines. According to a survey on the strategies used by men and women to cope with climate shifts in India, it was reported that only 21% of women had access to information on weather alerts or cropping patterns compared to 47% of men (2, 90, 91). Additionally, men and women possess different sets of skills based on their societal role. For instance, women tend to be more reliant on climate sensitive resources, such as water gathering and subsistence agriculture (92).

The relationship between access to land and vulnerability to environmental risks illustrates how access to, and control over resources differ by gender because of gendered nature of resource entitlement (2, 69). In some countries, limited employment opportunities and lack of secure land tenure for women in rural areas – combined with conflict and divorce – have led to increased number of women living in dwellings, slums or marginalized urban and peri-urban areas, which have increased environmental risks (1). These living situations make these women-led households particularly vulnerable to natural disasters, and due to their lack of proper infrastructure, pose further burden on women to manage fuel, water and sanitation on their own (93, 94).

Although more women than men generally die in heatwaves as reported by many studies in the developed world (1, 58), social isolation that characterized men in some countries increased their heatwave-related risk more than that of women. This was illustrated during the Chicago heatwave of 1995 during which elderly men were more vulnerable than women (95, 96), and during the Paris heatwave of 2003, unmarried men (but not unmarried women) were at increased risk of heatstroke (55). Men might be at more risk of heatstroke mortality due to a hypothesized increased activity in hot weather (97).

iv. Gender and adaptive capacity to climate change

Adaptation has now become an imperative necessity, particularly in developing countries (1, 98). The concept of adaptation has also expanded from that of intervention – and infrastructure focused (or symptom-based) – to a more development-oriented approach aiming at tackling the determinants of vulnerability in addition to its impacts (1, 99).

This development-oriented approach in essence helps build resilience, or what is referred to as adaptive capacity, to all stressors that impact health and well-being, including those related to climate change. These stressors range from health care services, education, social safety nets, to gender equity (99). Building adaptive capacity to climate change is closely related to the concept of empowerment.

Empowerment is defined as a multidimensional social process that enables individuals and communities to gain more control over their lives and to shape systems around them. Strategies for empowerment seek to balance unequal power relations between and among groups of men and women, and to transform systems that perpetuate gender inequalities and inequities (13). In the context of climate change, this means addressing harmful gender norms and discriminatory practices that place certain groups at increased risk of climate-related health hazards, and constrain the ability of women and men to adapt to the long-term health and social consequences of climate change. It involves building the adaptive capacity of individual women and men, communities and institutions, in order to reduce the adverse impacts of climate change on human health.

Both women and men can be powerful contributors of change in adapting to changing climate conditions. Women are integral to the management of natural resources in many communities. In many developing country regions, women play an important role in agriculture production, contributing to the nutritional status of their families as well as income generation (100–103). Yet women often do not participate equally in decision-making processes related to food security and other areas critical to health (1, 104–106).

The involvement of both women and men in mitigation strategies is also critical to reduce greenhouse gas emissions and promote a healthier environment. Research suggests that women and men differ in their roles, behaviours and attitudes regarding actions that could help to mitigate climate change (1). Surveys studying single men and single women in developed countries showed that men consume more energy than women, particularly for private transport, while women are often responsible for most of the household consumer decisions, including in relation to food, water and household energy (107, 108). Incorporating the experiences and concerns of both women and men is, therefore, crucial to bring about more healthy and environmentally-friendly policies.

Ensuring that women have an equal voice in decision-making processes and the same opportunity for meaningful participation in the planning, design, and implementation of health adaptation and mitigation processes is an essential part of the gender mainstreaming strategy.

Reducing gender-based vulnerabilities and building the adaptive capacity of women and men to the impacts of climate change is critical to reducing the adverse impacts of climate change on human health. Additionally, ensuring that both women and men have equal opportunities to participate in, and benefit from, adaptation and mitigation policies and programmes is crucial to increasing the effectiveness of strategies and enhancing equity. An example of benefits of equal gender meaningful participation is the contribution of women in the remote Pacific islands of Yap, where their knowledge in island hydrology helped find potable water and build shallow wells during a drought season (2, 77)

Box 10: Summary of key messages

- Climate change will adversely impact the health of most populations over the next decades, but different populations will be impacted in different ways. Many of the health risks that are likely to be affected by ongoing climate change show differences in their impact on women and men.
- Vulnerability is the degree to which individuals and systems are susceptible to or unable to cope with adverse effects of climate change including climate variability and extremes. The vulnerability and coping capacity of particular populations to changing meteorological conditions and its human and social consequences is influenced by a variety of factors. These include biological factors, sociocultural factor, and access to and control over resources.
- Adaptive capacity describes the general ability of institutions, systems and individuals to adjust to potential damages, to take advantage of opportunities and to cope with the consequences of climate variability and change. Building adaptive capacity to climate change is closely related to the concept of empowerment. Empowerment enables individuals and communities to gain more control over their lives and to shape systems around them.
- Reducing vulnerability and building adaptive capacity are essential strategies to reducing the negative impact of climate change on health.
- Gender mainstreaming is a strategy needed to reduce the adverse health effects of climate change and gender inequality. Mainstreaming gender within health adaptation programmes can increase the effectiveness of strategies to protect the health of both women and men.

Section 3: Mainstreaming gender in health adaptation to climate change programmes

As introduced in Section 1, gender mainstreaming refers to the process used to ensure that the different experiences, needs and capabilities of women and men are considered when designing any policy or programme. Gender mainstreaming also relates to analysing the potential implications of any planned intervention for women and men.

It is important that health adaptation to climate change programmes ensure the meaningful participation and contribution of both women and men throughout all phases of the project cycle. Men and women possess different sets of skills and knowledge-bases, which can be uniquely employed to the benefit of the society (2, 92). In doing so, programmes should aim at engaging women as active partners for change, rather than as vulnerable, passive victims. This would require a strong commitment of community resources that would tackle gender inequality at its roots, such as developing equitable access to, distribution of, and control of benefits from resources for women and men, boys and girls (2, 12, 109).²

This section introduces information and tools needed in the process of mainstreaming gender within the health adaptation to climate change programme cycle. It comprises two main subsections that have been adapted to the climate change needs from the WHO *Gender Mainstreaming Manual for Health Managers* (13):

- **Gender analysis** and the proposed tools to perform it, which are the gender analysis matrix and some guiding questions to complete the matrix.
- **Checklist for gender mainstreaming in health adaptation to climate change programmes.** The checklist includes practical recommendations on how to mainstream gender for each of the phases of the programme cycle, namely identification, formulation and design, implementation and monitoring and evaluation.

i. Gender analysis

a) Overview

Gender analysis is the process used to ensure that gender considerations are taken into account within programmes and policies. While many methods and tools are used to perform a gender analysis (110), in relation to climate change and health, two main tools are proposed (a matrix and a group of guiding questions). The matrix and guiding questions for gender mainstreaming on health adaptation to climate change have been adapted from those included in the *Gender Mainstreaming Manual for Health Managers: A Practical Approach* (13). Within the context of this guide, gender analysis refers to

² For the sake of readability, routine reference is made to “women and men” rather than “women, men, boys and girls”, although it is important to note that considering age (and other social and environmental stratifiers) is a key component of gender mainstreaming.

a variety of methods used to understand the relationships between men and women and between groups of women and men, their differences in access to and control over resources, their roles in the community, society and within the household, and the different abilities and constraints they face in adapting to climate change. (111, 112). These differences determine the varied patterns of exposure to health hazards, different vulnerabilities, and lastly the distinct health impacts on women and men, boys and girls.

It is imperative to identify and understand differences in capabilities and vulnerabilities among women and men, or among groups of women and men, and address any existing gender inequality that may originate from one or more of the following causes (13, 23, 111, 113, 114):

- Gender norms, roles and relations;
- Unequal power relations between and among men and women; and
- Interaction between sex, gender and socioeconomic factors.

Gender analysis also helps to identify the impact of gender inequality on health and explain the influence of biological and sociocultural factors on health behaviour, outcomes and services (13). In the context of climate change, the impact of gender inequality is evident throughout the varying health impacts on women, girls, men and boys, which cannot be explained by biological differences, but rather as a result of gender norms, roles and relations.

Box 11: Guiding principles of gender analysis in health

- Gender analysis must consider both sex (biological) and gender (social); only considering sex differences is not enough.
- Gender analysis must consider social differences such as culture, age, geographical settings (e.g. disaster-prone area, rural versus urban), poverty and employment status, which are important determinants of health.
- Gender analysis must consider that policies and programmes do not affect men and women in the same way, especially those developed without taking into account sex and gender differences by ignoring the diverse needs, realities and capabilities of men and women.
- Gender analysis must obtain a variety of evidence gathered from multiple sources in order to understand how gender operates as a social determinant of health. This might include consultations with diverse groups of women and men and analysis of different sources of data.
- Both quantitative and qualitative methods should be used in surveillance, monitoring, evaluation and health research, and the data obtained need to be sex-disaggregated as a starting point for undertaking gender analysis. It is also recommended to disaggregate data by other social stratifiers such as age, ethnicity and employment status.
- Continuous commitment to undertake gender analysis is crucial to get results in the short-, medium- and long-term.

In addition, gender analysis can highlight any existing differences in access to and control over essential resources that prevent diseases and support adaptation to climate change, such as safe water, energy, health services, education, transportation and information or skills required to survive in cases of extreme weather events, such as swimming in response to floods. It can also call attention to differences in decision-making processes related to health and the organization of health systems (13, 23, 114, 115).

The information gathered from initial gender analysis conducted during the identification of a project will be needed to design gender-sensitive and gender responsive actions (13). In addition to informing the identification and formulation phases, gender analysis is an iterative process that should be conducted throughout the implementation and monitoring phases, to ensure that corrective actions can be taken in case the activities designed originally are not adequate to ensure that the project contributes to gender equality and health equity.

Box 12: Sources of information for gender analysis (13)

In order to obtain the data necessary for gender analysis, several sources need to be consulted, including:

- Data from secondary and published sources;
- Policies, programmes and legal framework in the geographical region of interest related to health, adaptation and mitigation strategies and actions and gender equality; these include the National Adaptation Plans and National Communications to the United Framework Convention on Climate Change (UNFCCC);
- Rapid appraisals using both quantitative and qualitative methods such as gathering health service-based data or interviewing major stakeholders working on climate change and health, including from health determinant sectors such as energy, water, agriculture and disaster risk-reduction (DRR);
- Condition-specific expertise, in relation to epidemiology and ways of acquiring, preventing and treating given conditions;
- Studies of knowledge, attitudes and practices (KAP);
- Consultations with local women and men, including health care providers;
- Reports from nongovernmental organizations; and
- Data from regions or countries with similar demographic, cultural, climatic, political and economic contexts.

b) Proposed tools to conduct gender analysis

The Gender Analysis Matrix for health vulnerability and impacts due to climate variability and change

The gender analysis matrix is a framework that can be used for conducting gender analysis in health-related focus areas. To help explain the different factors influencing health outcomes, it is illustrated in the form of a table with two axes: the vertical axis includes *health-related considerations*, while the horizontal axis includes *gender-related considerations*. The intersection of these two axes provides the gender analysis information, which helps to highlight issues such as: who is getting ill; where they are getting ill; why they are getting ill; and what is the health sector doing about it (13).

Table 3: Matrix for gender analysis of health vulnerability and impacts due to climate variability and change

Factors that influence health impacts of climate variability and change	Health-related considerations for current and projected health risks	Gender-related considerations		
		Biological factors	Sociocultural factors	Access to and control over resources
Risk factors and vulnerabilities				
Access to and use of current health protection programmes, including health emergency and disaster risk management actions				
Treatment options				
Health-seeking behaviours				
Experiences in health care settings				
Health and social outcomes and consequences				

(Source: Adapted from 13).

To explain the matrix, each of these considerations and their factors are described in detail:

Gender-related considerations

These considerations include both biological and sociocultural factors as well as access to and control over resources, which will determine the magnitude of health impacts arising from climate variability and change (13). These were discussed in the first two sections of the guide.

Health-related considerations

As reflected in the matrix, the interaction among gender-related considerations (i.e. sex, gender, and access to and control over resources) and health-related considerations has to be analysed to effectively understand the health impacts of climate variability and change. Health-related considerations include the following (13):

Risk factors and vulnerability

Risk factors refer to aspects associated with increased probability of developing a disease or an illness, or the underlying causes of disease and illness (13, 116, 117). Examples of risk factors include:

- Physiological and biological factors
- Socioeconomic status
- Psychosocial factors
- Geographic location
- Environmental factors.

Some risk factors, such as tobacco consumption or asbestos exposure, are associated with several diseases; whereas some diseases, such as cardiovascular disease, are related to several risk factors. Understanding the association between exposure to risk factors and disease can help identify and adequately implement interventions that mitigate the harmful effects of these exposures or eliminate them altogether (13, 116).

Risk factors are often related to gender norms, roles and relations. This is particularly evident in factors pertaining to personal habits that are affected by cultural norms, such as smoking or alcohol consumption among men in certain societies. It is also manifested in environmental exposures as women and men are often in different occupations, and perform different tasks within and outside the household (23, 118, 119), exposing them to various environmental pollutants that range from dust and chemicals, to indoor air pollution resulting from household solid fuel use, which in turn puts them at variable risks for work-related illnesses or accidents. For example, pregnant women who attend to domestic tasks such as cooking – and in doing so are exposed to harmful pollutants – are at higher risk of having low-birth-weight infants or even stillbirth (13).

Populations with existing disabilities or illnesses, such as heart disease, stroke, diabetes and chronic respiratory disorders, are more vulnerable than healthy people to disasters (120–123). Indeed, an estimated 80% of older adults have at least one chronic illness (124). Several studies following disasters, such as the 2005 Hurricane Charley and 2005 Hurricane Katrina in the United States and the 1998 Canadian ice storm, consistently show that people with pre-existing health conditions suffer disproportionately from disasters (120–122). Additionally, disaster impact, that might include food and water shortages and exposure to weather elements and infections, tend to worsen these existing disabilities (122).

Access to and use of current health protection programmes including health emergency and disaster risk management actions

Climate variability and change will unlikely create new health hazards but rather intensify existing ones in most contexts. Health systems need to be resilient to climate change and ensure that proper services and responses – including health emergency and disaster risk management – are provided and are accessed by all groups of the population. Early warning surveillance and response systems should ensure a timely response from the health sector as well as facilitate adaptation and access to health services by both women and men. It is important to examine the effect of gender norms, roles and relations on access to and use of current health protection programmes, including emergency risk

management, keeping in mind that access includes availability, affordability, accessibility, accommodation and acceptability (13, 125).

There are many gender components that need to be addressed to ensure proper access to, and use of, quality health services. These include restrictions, such as those to women's physical mobility and autonomy (126), the lack of decision-making power (127), and cultural requirements for sex-matching between female patients and health providers, which all create obstacles for women with respect to accommodation, accessibility and acceptability.

Furthermore, because men and women carry out daily tasks, whether paid or not, their ability to effectively access and use health services may be restricted (1, 13) particularly in the case of women, increased time spent in domestic chores implies less available time to access health-related resources such as education. Ultimately, a lower education status results in more constraints for women to access information on health or early warning systems as they are developed (1). This also means that they would have increased health risks associated with pregnancy and childbirth, as well as less control over their personal lives.

Treatment options

Different health conditions require specific prevention, treatment and rehabilitation approaches. Often people have many options that range from self-care to alternative (such as local healers), to allopathic treatment, which can be delivered at home, to community or health facilities. Health care providers should take both sex and gender into consideration when suggesting treatment options, so as to adequately address society's health needs and realities (13).

Treatment options may not be available for either men or women, or may be only available for women in certain communities. Treatment options may also be available but not always obvious to men and women who have little or no knowledge about their condition and the resources to address them. Awareness of treatment options is influenced by education levels, health literacy and distance from health facilities, among other factors (127–129). Gender norms, roles and relations collectively contribute to the manifestation of these factors (13, 125).

Health-seeking behaviours

Health-seeking behaviours refer to actions a person with a perceived need for health care carries out to address his/her health problems (13). There are many factors that influence health-seeking behaviour, among those are sex and gender (129–134); socioeconomic status, such as household poverty and education level (135, 136); type, duration and perceived severity of illness (128, 137–140); proximity to health facilities; unsatisfactory or negative health providers' attitudes; long waiting times (141); as well as inadequate health education. Restrictions in accessing and using health services often overlap with health-seeking behaviour (13).

Gender differences are manifested in disparate health-seeking behaviours. For example in many cultural settings, men often delay addressing their perceived health needs, and when they finally do, they tend to use trained allopathic services, whereas women are

likely to use traditional medicine or practice self-care before seeking trained allopathic care (13, 130, 137). Poor health-seeking behaviour among male farmers in Australia and India, which is considered an intrinsic element of masculinity in some rural contexts, have even been linked to increased suicide rates among these farmers during droughts (3–7, 12, 13).

Experiences in health care settings

Previous experiences in health care settings, whether positive or negative, influence future health-seeking behaviours. Experiences may be personal, or of others in the household or community. If someone in the household experienced poor service at the health clinic, he or she may discourage – even forbid if they possessed the decision-making power – other household members from attending the clinic. In such a situation, household members who have limited decision-making power in the household and who may have never experienced the poor-quality services first-hand, still cite this as a reason for not using health services (13, 32).

Thus, the context in which health care is provided can influence treatment adherence and health-seeking behaviour. Health care settings also need to address gender norms, roles and relations in culturally sensitive and appropriate ways or else they may perpetuate existing inequalities and fail to reach those in greatest need (13, 115).

Health and social outcomes and consequences

Disease or illness manifestation and associated recovery, disability or death can all be influenced by gender. Different consequences of health problems exist, and they range from economic and social, to attitudinal. These consequences place increased burden on some people more than others because it can reach everyone in the social network (13, 17, 23, 32, 115).

There are several factors that affect health and social outcomes and consequences, and they include monetary costs, duration and severity of a health problem, type of care needed, its availability and accessibility, available social networks and stigma (13).

Gender analysis guiding questions

The second proposed tool to conduct a gender analysis of the health vulnerability and impacts due to climate variability and change is a set of guiding questions that assist in the completion of the matrix by addressing the health outcomes of climate change from various perspectives.³

³ For a sample gender analysis matrix on malaria, please refer to the *Gender Mainstreaming Manual for Health Managers: A Practical Approach*, pp. 89–95 (http://whqlibdoc.who.int/publications/2011/9789241501071_eng_Module-2-Annexes.pdf)

Table 4: Guiding questions to complete the matrix

Questions	Where the information could fit in the matrix:
What is the health risk or outcome of climate variability or change?	
Is it an acute or chronic condition?	Introductory information on the health impact of climate change Risk factors and vulnerability
Is it a climate-sensitive disease?	
It is felt already or it is a projected health outcome of climate change? How is the risk of climate-sensitive health outcomes expected to change over coming decades?	
Has it been caused by an extreme weather event?	
Is it a communicable or a noncommunicable condition?	
What are the risk factors for this condition? Are they different for women and men, boys and girls?	
Who gets ill?	
Is a specific group more vulnerable to this health outcome? Can biological (e.g. sex, age) or sociocultural factors (e.g. socioeconomic or ethnic group, level of education, employment status) explain why women, men, girls or boys are affected differently by this condition?	Risk factors and vulnerability Health and social outcomes and consequences
What are the specific gender norms, roles or relations of the community in question that may increase the vulnerability to this health outcome and reduce the adaptive capacity of women and men? Do these norms affect men and women similarly or differently? Which are the different patterns of exposure to the climate-sensitive health risks? Consider the daily activities performed by women, men, girls and boys in the community, workplace and household.	
Do access to and control over resources (e.g. roles tied to water and energy provision) affect the risk of and vulnerability to this condition? Consider the individual and group level of empowerment.	
When does this condition occur?	
Is vulnerability increased at any specific time of the year? Analyse if there is a causal link between the season and the health outcome, and which are the occupational roles played by women and men during the season determining different patterns of exposure and therefore vulnerability.	Risk factors and vulnerability Health and social outcomes and consequences
Where does this condition occur?	
Is it seen in rural or urban contexts? Is it in specific human settlements (e.g., flood, drought, or cyclone-prone areas)?	Risk factors and vulnerability
Is it linked to any particular risk factor in the environment (e.g. workplace, school settings, home)?	
Adaptation: What are the people affected by the condition doing about it?	
Are both women and men seeking services appropriately for this health outcome? Analyse who is accessing health services for treatment and the reasons why some individuals or groups are not doing it. Consider who is consulting traditional healers or alternative therapists instead and why they do so	Access and use of health services
Do women and men, or groups of women or men, have the same willingness, ability and control over resources to recognize that they are ill and/or to seek treatment?	Health-seeking behaviour
How do access to and control over resources affect the provision of care?	

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Questions	Where the information could fit in the matrix:
Are health services facility-based or provided in the community?	<p>Access and use of health services</p> <p>Health-seeking behaviour</p>
Do women and men have equal access to vital information on weather forecasts and alerts? Is the literacy level of women and men, boys and girls enough to ensure proper access to information?	
Does access to and control over resources (e.g. time, level of education, economic resources, health insurance schemes etc.) affect the type of health services received for this condition? Is the access and control over resources different for women and men or for groups of women and men?	
If the affected population does not have the resources necessary, what networks or facilities are available to them for support?	
How do health services meet the needs of the men and women affected by this condition?	
Do women and men, or groups of women and men, have similar uptake or adherence to different treatment options?	<p>Treatment options</p> <p>Experiences in health care settings</p>
Are health workers generally aware of the different ways men and women of different ages can express their symptoms when suffering from this condition?	
Do women and men have different experiences (e.g. stigma, discrimination) with health services for this condition? What kinds? For what reasons? If the health outcome is the result of an extreme weather event, special attention should be provided to gender-based violence.	
What are the predominant health and social outcomes of this condition?	
As a result of this condition, are there any differences (between women, men, girls and boys or groups of women and men), in recovery, disability or mortality?	<p>Health and social outcomes and consequences</p>
Are there differences in the broader socioeconomic effects of these outcomes (e.g. opportunity costs such as time that could be used for education or income generating activities)?	
Who (other than the immediate patient) is also affected? Consider who is going to take care of the ill and who is going to play the roles usually played by the ill. Analyse also how this is going to affect him or her.	
How are men and women coping with the effects of this condition?	

Source: Adapted from (13).

Below are some general tips relevant to application of the two tools described above.

Box 13: Gender analysis tips

- To complete the matrix, start with a process of questioning with the help of the guiding questions.
- The information provided by some of the questions, such as those dealing with sociocultural factors and access to and control over resources, can overlap or duplicate one another. This is acceptable, as long as the information is reflected somewhere in the matrix and therefore taken into consideration to inform and design health adaptation to climate change programmes.
- Not all of the boxes in the matrix must be completed to make the analysis complete. For example when attempting to complete the biological differences column, this can reflect the following:
 - This particular health condition can be better explained according to sociocultural factors than by biological factors;
 - Evidence is lacking to answer the question at the time;
 - Other experts and stakeholders need to be consulted;
 - That particular factor does not influence the health condition that is being examined. However, before reaching a conclusion that there is no influence, available evidence from various sources needs to be thoroughly checked; and/or
 - More research and evidence is needed.

Because the guiding questions are not exhaustive, more questions will arise before plausible, evidence-based answers are identified.

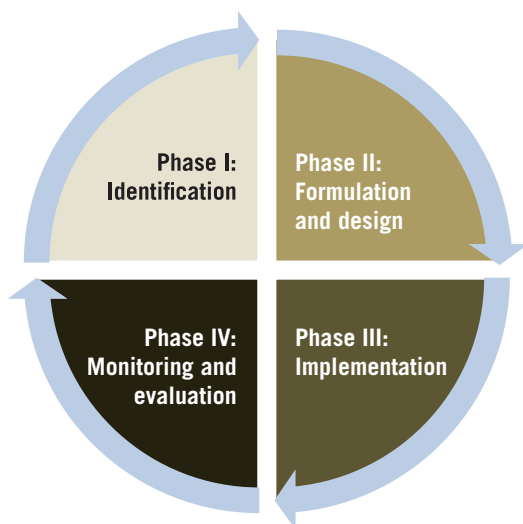
Source: Adapted from (13).

ii. Practical guidance to mainstreaming gender within the climate change and health adaptation programme cycle

a) Checklist to mainstream gender within the health adaptation to climate change programme

In addition to the information and tools provided to help conduct a gender analysis, this section includes concrete recommendations on how to mainstream gender within each of the phases of the health adaptation to climate change project cycle.

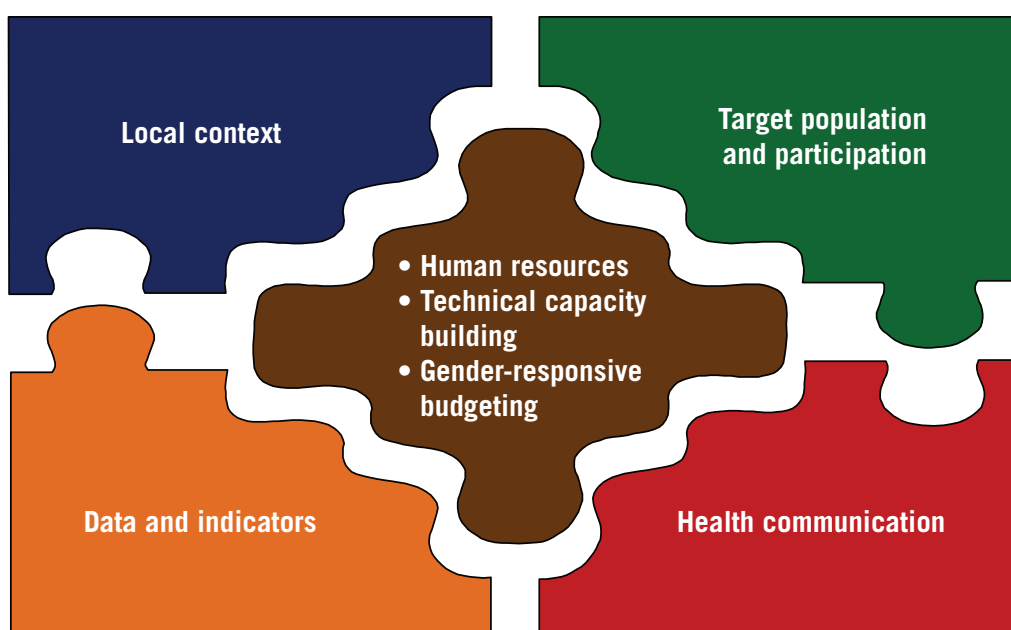
Figure 3: Phases of the health adaptation to climate change project cycle



Both vulnerability and adaptation assessment are iterative processes, and each have to be considered within all phases of the project management cycle. In order to guide the inclusion of gender considerations within health adaptation to climate change programmes and projects, a checklist has been developed that includes specific recommendations for each of the phases of the project cycle and it has a twofold use: It can be used as a guide during each of the phases of the project, and it also can be used retrospectively to assess if gender considerations were taken into account adequately in each phase of the project.

Although many of the recommendations are required to be repeated throughout different phases they are only included on initial mention in order to avoid duplication.

Figure 4: Gender mainstreaming recommendations categories (colour-coded to match checklist)



The checklist for mainstreaming gender in health adaptation to climate change programmes

This section introduces the checklist for gender mainstreaming in climate change and health adaptation planning and programming.

The recommendations represented in Figure 4 have been included in the form of a checklist (Table 5, below). The recommendations and tips highlighted in the checklist are key to guiding and/or determining how effectively the health adaptation programme is integrating gender, and to address any identified gaps.

If used as an assessment tool, the checklist facilitates a programmatic and institutional analysis that determines if the assessed programme has been designed to realize the goals of gender equality and health equity (142), whereas using it as a guide to inform gender mainstreaming throughout the project cycle determines the realization of those goals.

Table 5: Checklist for gender mainstreaming in health adaptation to climate change programmes

PHASE I: Identification		<input checked="" type="checkbox"/>
Local context		
Identify any and all legal and policy framework(s) the country has on gender equality, health equity and climate change and any potential interlinkages between them		
Review international commitments and obligations that promote gender equality (e.g. CEDAW) in general, and specifically within health and environment/climate change policies (e.g. Decision 5/CP.17 on National Adaptation Plan)		
Assess national and/or district health sector policies for their attention to gender equality in general, and specifically within health and environment/ climate change policies		
Compile (and update) an inventory of programmes and policies on gender, climate change and health – and identify any potential gaps		
Check if gender equality and health have been included in the National Climate Change and Health Adaptation Plan (if applicable)		
Compile (and update) a list of stakeholders working on gender and health and/or climate change in order to identify potential partners that will enhance programme outcomes		
Identify current mechanisms on gender equality in national and health sector processes, such as a desk or unit on gender in the health ministry or elsewhere in the government sector, a focal point system or network of nongovernmental organizations		
Data and indicators		
Use the knowledge and information that exist on gender, climate change and health from sources other than health indicators and/or reports as part of the evidence base		
Conduct a baseline study, using sex-disaggregated data, to serve as benchmarks against which progress can be measured		
Use existing knowledge on gender norms, roles and relations to inform data analysis		
Use a mix of indicators from various sources to analyse the social, economic, political and cultural influences on potential differences on health vulnerability and impacts from climate variability and change		
Ensure that collected and analyzed data on health impacts of climate variability and change are at least disaggregated by sex and preferably by age and other social stratifiers. If sex-disaggregated data are not available, the programme design should ensure collection and reporting mechanisms in a disaggregated manner		
Recommendations for conducting the gender analysis		
Ensure that the gender analysis methods are used when describing vulnerability to current risks of climate-sensitive health outcomes and how these outcomes may change over coming decades with and without regard to climate change		

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Ensure that core gender issues in climate change and health are reflected in the scope of the vulnerability and adaptation assessment	
Explore how the health impacts of climate variability and change are determined by sex and/or gender differences	
In addition to gender, consider other social determinants of health to understand vulnerability and health impacts of climate variability and change	
Identify gender structures and dynamics within the society, which includes authority positions, and the roles of women and men	
Conduct both gender analysis as well as vulnerability and adaptation assessment as iterative processes. Consider the context of women's and/ or men's lives, their different health needs, adaptation capacities and the different impacts or implications the adaptation options will have on different groups within the target population of the project	
Consider family or household dynamics, including different effects and opportunities for individual members, such as the allocation of resources, roles or decision-making power within the household and whether this affects the patterns of exposure to health risks	
Ensure the inclusion of gender considerations when prioritizing health adaptation options	
Consider gender when identifying and describing current capacity of health and other sectors to address the risks of climate-sensitive health outcomes	
Pay attention to diversity among women and among men in terms of access when mapping available health system resources and identifying the need for additional ones	
Target population and participation	
Use the health vulnerability and adaptation assessment guidance alongside the gender analysis methods and tools (i.e. matrix and guiding questions) to identify key target population groups that may require specific attention within the project	
Ensure that the target population purposely includes women and men, boys and girls throughout all phases of the programme cycle. Try to use sex as a selection criterion for the target population	
Ensure that vulnerability and adaptation assessment and the gender analysis does not exclude one sex and assume conclusions apply to both sexes	
As feasible, address both individual groups and broader communities in moving towards sustainable interventions	
Consult target population about their perceived health needs and adaptation options	
Include, as far as possible, women's nongovernmental organizations, women's affairs ministries and community leaders in the assessment phase but also throughout other phases of the programme cycle	
Ensure that stakeholders have the opportunity to provide meaningful input on the feasibility and appropriateness of the proposed health adaptation options	

PHASE II: Formulation and design	<input checked="" type="checkbox"/>
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General tips to consider when formulating and designing the programme	
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Identify at least one objective for the programme that explicitly addresses gender equality or gender as a determinant of health. If this is not possible, make sure that activities related to vulnerability and adaptation assessment properly reflect gender and other social determinants of health.	
Include women, men, girls and boys when determining the feasibility and appropriateness of the activities selected. Accordingly define specific activities for women, men, boys and girls based on their needs, in order to address gender inequality and health inequity	
Ensure that the programme will not interfere with respective daily tasks – and thereby affect participation and benefits – of either men or women	
Ensure that the team have an established mechanism for reporting and sharing information on gender equality	
Consider the different effects or implications the activities may have on different groups of women and men in the target population and take this into account when prioritizing adaptation options	
Establish clear lines of accountability for the gender aspects of the programme	
Ensure ongoing development of the programme's gender mainstreaming strategy	

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Target population and participation	
Ensure the equal and meaningful participation of men and women when designing the different activities of the health adaptation to climate change project or programme	
Be innovative when determining methods of consultation to ensure diverse input from women and men, girls and boys on relevant activities	
Include a range of stakeholders with gender expertise as partners throughout all phases of the programme, such as government-affiliated bodies, national or international nongovernmental organizations or community organizations, health professionals, environmental and climate professionals	
Consider how or if sociocultural norms may impede the participation or the access to benefits from the project of women or men – and address them appropriately through the designed activities	
Human resources	
Make sex parity an explicit recruitment criterion	
Strive for balance between men and women working in the programme at all decision-making levels. Avoid involving women just as volunteers. If positions are created by the project, the same possibilities should be given to men and women	
Include social determinants or gender expertise and/or experience – preferably in the area of climate change and health – as a core competency in the team	
Ensure that the programme's male and female team members do not differ in terms of pay scales or other benefits. Establish equal pay rates, as well as incentives, between women and men performing the same responsibilities	
Ensure that the terms and conditions for staff members and contractors are not more difficult for one sex to meet than the other because of structural or familial constraints	
Ensure that work-life balance is respected for women and men by the human resource policies that are in place	
Ensure the existence of policies against harassment at the work place (including sexual harassment)	
Develop gender-sensitive codes of conduct for working within the programme and in-field activities	
Gender-responsive budgeting	
Allocate specific funds towards objectives and/or activities addressing gender inequality in climate change and health programmes. Ensure that budget lines exist for work on gender	
Ensure that programme activities do not reinforce or uphold existing inequalities among different groups of men and women through unequal incentives or benefits paid	
Consult both women and men – from communities and partner organizations – to identify planned costs on gender within the health adaptation to climate change programme	
Include budget allocations for stakeholder consultation and involvement. This includes financial support to compensate for staff time, transport costs, child care, among others	
Apply explicit strategies to mobilize resources for gender and health adaptation to climate change activities	
Data and indicators	
Indicators should provide more data than number of bodies or diseases, they should address broader public health issues such as social (including gender) and environmental determinants of health	
Promote the selection of indicators that facilitate gender analysis of health data related to climate variability and change. Using both quantitative and qualitative types of indicators in combination is the best strategy to capture gender-related changes in a society over time	
When designing indicators aiming to measure changes in vulnerability, select gender-sensitive indicators, which will identify changes in the status and roles of women and men, and as such would be able to highlight progress (or regress) towards gender equity	
Gender-sensitive indicators should be included to capture key gender and health issues for specific groups of men and women, and should be designed using internationally accepted definitions to allow for international comparison of data produced	
In order to allow the correlation of health and climate data of the same resolution it is needed to specify time period, geographical coverage and source	
Proxy indicators such as greater choice of women in accessing health care (a component of women's empowerment) should be used in place of less precise and more difficult to measure concepts such as women's empowerment	

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Identify similar and different needs and capacities to adapt for men, women, girls and boys, and target activities towards the particular needs of the group that may have a higher burden of illness or whose health may be more vulnerable due to different patterns of exposure to climate change risks	
Adopt either a gender-specific or gender-transformative approach based on the defined objectives and activities as well as on the target audience(s)	

PHASE III: Implementation	<input checked="" type="checkbox"/>
General recommendations for implementation	
Ensure that the delivery of programme interventions is equally accessible to women and men. These include preparedness for public health consequences of extreme weather events, epidemics and population displacement, as well as the preventive and curative interventions for the effective management of identified climate-sensitive public health concerns	
Consider constraints women or men may face in accessing selected sites of programme delivery. Choose sites that are accessible to all – even if this means multiple programme delivery sites	
Consider times where both women and men are available to access the sites of programme delivery	
Determine mechanisms that are put in place to ensure that programme implementation will uphold the principles of gender equality and health equity	
Technical capacity building	
Ensure that all technical capacity building and awareness raising activities (e.g. on health impacts of climate variability and change) promote the participation of women and men as target populations	
Identify and address technical capacity-building needs within the team on gender. Provide training to all staff that would build skills and address staff beliefs and attitudes around gender towards common understandings and approaches	
Health communication	
Ensure that communication and awareness raising materials or publications are gender-responsive	
Ensure that methods or strategies for delivering programmes, including communication, do not reinforce or uphold existing stereotypes about different groups of men and women, but rather challenge them	
Promote participatory techniques to define the health impacts and health adaptation options of climate change messages	
Ensure that the language of any communication material does not exclude or privilege one sex over the other	
Ensure that communication does not assume target audiences have similar education, literacy or accessibility to information or messages to avoid promoting a gender-blind or gender-unequal programme	
Analyse patterns of access to information including places and roles that women and men play to determine when, where and how each of them will be exposed and have access to the messages	
Upon identifying access patterns, select communication channels that best reach each of the target audiences	
Encourage positive social change. When depicting men and women:	
<ul style="list-style-type: none"> • Promote ways that value them equally and promote the use of positive role models of the different sexes/genders • Represent them in their various roles (i.e. reproductive, productive and community) and across a range of professions • Include men and women from different ages and socioeconomic statuses 	
Pre-test communication and advocacy materials with different groups of women and men	
Post-test communication and advocacy materials with different groups of women and men	
Adopt a gender-responsive language in official communications. Avoid the use of male pronouns or titles regardless the actual sex of the official	

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PHASE IV: Monitoring and evaluation		<input checked="" type="checkbox"/>
General recommendations for monitoring and evaluation		
Ensure that data on demographics, mortality, morbidity and health impacts of climate change are routinely collected and reported at least disaggregated by age and sex and preferably by other social and environmental stratifiers such as socioeconomic status, education level, rural or urban settlement, regional or ethnic origin, access to safe water, housing and employment conditions, among others		
Ensure that the programme monitors progress on gender equality and health equity		
Ensure that sex-disaggregated data are collected and reported when conducting integrated environment, climate and health surveillance		
Indicators		
Use both quantitative and qualitative indicators together for cross-validation		
Use the information collected from monitoring and evaluation activities to inform gender-related amendments, corrective action or subsequent cycles of programmes		
Assess the programme activities in terms of their impact on gender equality and monitor changes over time		
Embed follow up, evaluation and result dissemination as an integral aspect of the programme's gender mainstreaming. Determine whether the programme has achieved its goal and is able to assess the quality of its work. Identify lessons learned, and how to make positive results last. Ensure that the entire programme staff is privy to information on the results of the gender mainstreaming work, including involvement in success celebration and sustainability efforts.		

Source: Adapted from (13, 111, 143–153)

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Notes



PUBLIC HEALTH AND ENVIRONMENT

This guide is targeted towards programme managers who work in climate change and health adaptation, and provides them with practical information and concrete guidance to mainstream gender throughout all four phases of the project cycle: identification, formulation and design, implementation, and monitoring and evaluation.

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