



CLIMATE BOX

Educational Programme

Incorporating gender aspects into climate change educational programs

Guide for educators



2025

Content

- Introduction** **3**
- Key Terms**..... **4**
- International Documents and Initiatives**..... **5**
- 1. The Nexus Between Gender and Climate Change**..... **7**
 - 1.1. Why Does Climate Change Affect Women and Men Differently? **7**
 - 1.2. The Role of Women in Adapting to and Mitigating Climate Change..... **17**
 - 1.3. Climate Change and Education **19**
- 2. Integrating Gender Aspects into Climate Education** **23**
 - 2.1. Incorporating Gender Perspectives into Educational Programs **23**
 - 2.2. Integrating Gender Perspectives into Climate Education with the ‘Climate Box’ **26**
 - Chapter 2.1** of the Climate Box:
How Climate Change Affects Weather **26**
 - Chapter 2.2** of the Climate Box:
How Climate Change Affects Plants and Animals **29**
 - Chapter 2.3** of the Climate Box:
How Climate Change Affects Forests **31**
 - Chapter 2.4** of the Climate Box:
How Climate Change Affects Water Resources **33**
 - Chapter 2.5** of the Climate Box:
How Climate Change Affects Agriculture..... **34**
 - Chapter 2.6** of the Climate Box:
How Climate Change Affects Coastal Regions **35**
 - Chapter 2.7** of the Climate Box:
How Climate Change Affects Mountain Regions..... **36**
 - Chapter 2.8** of the Climate Box:
How Climate Change Affects Arctic Regions..... **37**
 - Chapter 2.9** of the Climate Box:
How Climate Change Affects Urban Areas **38**
 - Chapter 2.10** of the Climate Box:
How Climate Change Affects Social Issues..... **39**
 - Chapter 3.1** of the Climate Box:
“Green” Energy Sources **40**
 - Chapter 3.2** of the Climate Box:
Energy Efficiency and Energy Saving **42**
 - Chapter 3.3** of the Climate Box:
Carbon footprint and how I can help the planet by reducing my footprint..... **43**
 - Chapter 3.4** of the Climate Box:
Global cooperation on climate change, sustainable development, and all-of-society approach to deal with climate change **43**

Introduction

Climate change is one of the key challenges humanity faces today. Beyond its impact on people and the environment, climate change exacerbates existing social and economic inequalities, particularly affecting vulnerable populations. In this context, integrating gender issues into climate change education becomes a critical task, as women and girls often face greater barriers to accessing resources, education, and adaptation opportunities.

Gender-responsive educational programs help build sustainable skills and knowledge necessary for adapting to these challenges and promote equitable participation of all groups in addressing climate issues, which is essential for building a just and sustainable future.

The aim of this module is to provide teachers with resources and guidelines for integrating gender perspectives and empowering women and girls into climate change educational programs.

This module is specifically designed for schoolteachers to explore the critical connections between climate change and gender equality. It equips educators with knowledge and tools to integrate these essential concepts into the learning process, fostering students' awareness of sustainability and inclusion.

Module Structure:

- 1. Part One** focuses on examining the connections between climate change and gender aspects, explaining how gender inequality affects vulnerability and adaptation to climate change.
- 2. Part Two** offers practical recommendations for incorporating gender issues into climate education using materials from the Climate Box Toolkit.

Learning Objectives

By studying this module, teachers will be able to:

- Understand the gender dimensions of climate change, including its disproportionate impacts on women and men and the reasons behind the heightened vulnerability of girls and women.
- Analyze the causes of gender vulnerability to the effects of climate change in their country or community.
- Explore the relationship between climate change and education, including its impact on access to education and the role of education in enhancing resilience to climate change.
- Utilize materials from the “Climate Box” toolkit to integrate gender aspects into climate education.

- Develop students' critical thinking skills and encourage inclusive, sustainable solutions to environmental problems.

Key Terms

SEX

Refers to physical and biological characteristics. Includes biological and physiological attributes such as chromosomes, hormones, and reproductive system anatomy, which are typically determined at birth. Does not change over time.

GENDER

Refers to social differences between men and women as established by society. Shaped by social factors such as history, culture, traditions, social norms, and religion. Includes the process of socialization of boys and girls, men and women, which defines their roles, responsibilities, opportunities, privileges, limitations, and expectations in different cultures. Gender definitions can change over time.

GENDER ROLES

A set of social norms that define what types of behavior are considered acceptable, appropriate, or desirable for a person based on their gender identity (e.g., women, men, or other genders). Gender roles include behaviors, activities, and expectations that society deems suitable for boys and girls. These roles can vary significantly depending on culture and time. Gender inequality manifests in societies where men and women have different rights, power, and access to resources.

GENDER SEGREGATION

The division of men and women based on sex in various areas of life, such as education, labor markets, or public activities. Gender segregation can be:

Horizontal: differences in professions and sectors, e.g., women are more often employed in education, while men dominate engineering.

Vertical: men occupy higher positions, while women remain in lower ranks within the same industry.

This phenomenon often results from social norms, stereotypes, and structural inequality.

GENDER EQUALITY

The state in which all genders have equal rights, responsibilities, and opportunities to access resources, education, and participate in decision-making. Includes the elimination of discrimination and active creation of equal opportunities for all.

GENDER INEQUALITY

Differences in rights, access to resources, power, and opportunities between men and women. Includes economic, social, and political aspects in which one gender is advantaged over another.

GENDER-BASED VIOLENCE (GBV)

Any harmful act directed at an individual based on their gender. Includes physical, sexual, psychological, and economic violence, which disproportionately affects women and girls.

GENDER STEREOTYPES

Persistent beliefs about the attributes, behaviors, and roles society assigns to men, women, or other genders. Often limit opportunities and reinforce inequality.

GENDER-TRANSFORMATIVE APPROACH

An approach aimed at changing harmful gender norms, roles, and power relations to promote gender equality. Includes strategies that help eliminate structural inequality and support equity.

INTERSECTIONALITY

A concept explaining how different aspects of identity (e.g., gender, race, class, age) intersect to create unique experiences of privilege or discrimination.



International Documents and Initiatives

International organizations recognize the need to consider gender aspects when implementing climate change mitigation measures aimed at reducing women's vulnerability and enhancing their role in ensuring climate resilience. These documents provide frameworks for integrating gender issues into actions and solutions at all levels.

- **UNFCCC Gender Action Plan:** Recognizes women as agents of change and emphasizes the need for their involvement in climate-related processes. <https://unfccc.int/sites/default/files/resource/docs/2017/sbi/rus/l29r.pdf>
- **General Recommendation No. 37 on Gender-Related Dimensions of Disaster Risk Reduction in the Context of Climate Change (CEDAW Convention):** Highlights the priority of protecting women's rights, particularly in the context of gender-related aspects of disasters and climate crises. <https://documents.un.org/doc/undoc/gen/n18/069/00/pdf/n1806900.pdf>
- **Action Plan on Gender Equality to Support the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030:** Confirms the necessity of integrating gender considerations for a better understanding of diverse risks and needs. It outlines actions that promote gender equality and empower all women and girls in disaster risk reduction. <https://www.undrr.org/media/94620/download?startDownload=20241130>
- **2030 Agenda (Sustainable Development Goals - SDGs 5, 13, and 16):** Includes goals aimed at achieving gender equality, advancing climate action, and building peaceful, inclusive societies.



1. The Nexus Between Gender and Climate Change

1.1. Why Does Climate Change Affect Women and Men Differently?

Climate change impacts women and men, girls and boys differently, not only due to physiological differences but also because of social, economic, and cultural factors that shape their roles, access to resources, and ability to adapt. Climate change cannot be considered a “gender-neutral” phenomenon. Women and girls, especially those from poor and marginalized communities, are disproportionately affected by its consequences.

This is due to the unequal distribution of resources and limited access to critical social, economic, and environmental opportunities. Socially imposed gender roles increase women’s vulnerability to climate crises by restricting their adaptive capacities and access to essential resources such as clean water, food, healthcare, and education.

Key factors contributing to the differing impacts of climate change on women and men:

- Economic inequality and limited access to resources,
- Health, safety, and sanitation,
- Cultural and social norms,
- Different working conditions,
- Climate migration.



Economic Inequality and Limited Access to Resources

Climate change creates additional challenges in accessing key resources such as water, land, and agricultural technologies, which particularly affect women. Economic inequality between men and women is exacerbated during climate crises, as women often have less access to economic resources, recovery opportunities, and adaptation measures, which limits their resilience in the face of climate change.

Women and Girls Pay the Price on the Frontlines of the Climate Crisis

Nearly a quarter, or 23%, of displacements occurred in low-income countries, where women and girls have the least access to resources and face significant risks to their health, safety, and livelihoods during natural disasters. Of the 26.4 million cases of displacement, 13.1 million involved women and girls, including those who were displaced multiple times due to disasters.

<https://www.unfpa.org/press/warming-planet-world-unraveling-women-and-girls-pay-price-frontlines-climate-crisis-new-unfpa>



Economic Consequences and Increasing Poverty Amid Climate Change

Climate change intensifies economic pressure and raises the risk of poverty among vulnerable groups. Limited access to financing, land resources, and sustainable income sources deepens economic instability, hindering efforts to escape poverty.

In the agricultural sector, where women make up a significant portion of the workforce, heat stress and natural disasters lead to reduced incomes. For instance, in low-income countries, rural women lose up to 8% of their income due to climate stress (FAO, 2024).

An example of such vulnerability is the case of Hurricane Katrina in the United States: the majority of victims in New Orleans were African American women with children — the poorest demographic group in the region (Gault et al., 2005; Williams et al., 2006).

Each year, in low- and middle-income countries, women heading rural households experience significantly greater financial losses compared to men. On average, female-headed households lose 8% more income than male-headed households due to heat stress and 3% more due to floods. If the average temperature rises by just 1°C, women's total income losses will exceed men's by as much as 34%.

Research findings indicate that, given the substantial disparities in agricultural productivity and wages between women and men, climate change is expected to significantly widen these gaps in the near future unless timely measures are taken.

<https://www.fao.org/documents/card/en/c/cc9680en> (FAO, 2024):

Unpaid Work

Women are more likely to perform unpaid labor, such as caring for family members and managing household tasks. During climate crises, such as droughts or floods, this burden increases as they take on additional responsibilities to mitigate the impacts, including:

- Collecting water or fuel over longer distances,
- Caring for the sick due to deteriorating sanitation conditions,
- Providing for their families amid food shortages.



Unpaid care work limits women's opportunities for paid employment and education, increases economic dependence, and leads to a lack of time necessary for personal development and participation in public life..

Limited Participation in Decision-Making

Despite their significant contributions to community resilience, women are often excluded from decision-making processes in critical areas such as natural resource management, infrastructure planning, and the development of adaptation strategies..

The low level of women's participation in decision-making processes at various levels, particularly in planning and developing farming systems with consideration of climate change, exacerbates inequality. Social and cultural norms, traditionally assigned gender roles, and societal expectations often

limit women's opportunities. Access to education and resources, economic independence, and involvement in decision-making remain restricted due to insufficient representation, a lack of gender quotas, and imperfect legislative mechanisms. These factors reinforce inequality, preventing women from fully participating in the planning, development, and implementation of policies, including those related to climate agendas.

During climate crises, the limited inclusion of women in decision-making processes results in the neglect of their vital perspectives, reducing the effectiveness of implemented measures..

Greta Thunberg, one of the most influential young climate activists, often faces hostile comments and criticism, including remarks targeting her because she is a girl. This highlights how gender stereotypes and biases can hinder women's and girls' access to leadership positions, even when they display exceptional abilities and courage.



Unequal Access to Resources

Women often face restricted access to land and financial tools, which severely limits their ability to increase income levels, ensure food security for their families, adopt sustainable agricultural practices, and adapt to climate change.

According to the International Labour Organization, men earn significantly more than women in several countries: in Tajikistan, men earn nearly 51% more than women, in Armenia, 35.6% more, in Kazakhstan, 34.1% more.

This gap is driven by various factors, including gender-based occupational segregation, limited access for women to high-paying positions, and traditional social norms.

What is Gender Segregation?

Gender segregation manifests in two ways:

- **Horizontal segregation** refers to the division of men and women into different industries. For example, women are more commonly employed in education and healthcare, while men dominate fields like construction and engineering.
- **Vertical segregation** occurs when women face barriers to career advancement and are rarely found in high-paying or leadership positions.

In the context of climate change, access to resources becomes critically important for adaptation and resilience. Women face challenges in utilizing modern agricultural technologies and learning new practices, which reduces their productivity and adaptive capacity. A lack of access to sustainable technologies exacerbates economic instability and undermines the effectiveness of climate initiatives..

Health, Safety, and Sanitation

Health and Nutrition

- **Food Scarcity:** Women and girls are more likely to suffer from malnutrition due to gender norms that dictate food distribution within households. For example, in some rural families, men traditionally eat first, reflecting deeply rooted gender norms, particularly in patriarchal societies. This is tied to historical and social structures where men are seen as the primary providers or heads of households, leading to the prioritization of their needs over those of women and children. During food crises caused by climate change, such practices further increase the vulnerability of women and girls.
- **Specific Needs:** Pregnant and breastfeeding women have unique dietary requirements, making them particularly vulnerable. For instance, 80% of pregnant women in South Asia suffer from iron deficiency, which exacerbates health issues during climate crises.
- **Losses Due to Climate Events:** During the 2003 heatwave in Europe, most of the fatalities in France were elderly women.

Limited Access to Medical Services

Climate disasters often hinder women's access to specialized medical care, which is especially crucial for pregnant and breastfeeding women.

- Women, while caring for children and the elderly, often neglect their own medical needs.
- Refugee camps frequently lack access to reproductive health services, adequate sanitation, and medical personnel trained to address women's needs.
- High temperatures and air pollution increase the risk of premature births, pregnancy complications, and low birth weight in newborns.



Spread of Infectious Diseases

Climate change contributes to the increased spread of infectious diseases such as malaria, cholera, and dengue fever. Women, often responsible for caring for the sick, face a heightened risk of infection.

Access to Sanitation

- **Lack of Safe Sanitation Facilities:** Women and girls face a shortage of safe sanitation facilities during climate disasters, increasing the risk of infections and worsening reproductive health..
- **Specific Needs:** Women and girls require more water for personal hygiene, especially during menstruation. For instance, girls with long hair need more water for grooming, making water scarcity more impactful for them.



Gender-Based Violence and Safety

- **Domestic Violence:** Resource shortages, such as water and food, often act as triggers for family conflicts that can escalate into violence.
- **Child and early marriages:** In some communities, crises, including those driven by climate change, lead to an increase in early marriages, which families perceive as a way to reduce economic pressures.
- **Sexualized violence and risks in camps:** Climate change exacerbates the vulnerability of women and girls, particularly in displacement camps. The shortage of water, firewood, and other resources forces them to travel long distances, increasing the risk of sexual violence. Additionally, temporary shelters often lack proper lighting, privacy, or adequate protection, making women and girls targets for violence, including instances of coercion into sex in exchange for food or other essential resources.



Cultural and Social Norms

Limited Mobility for Women

In some cultures, women are not allowed to move freely on their own due to social and religious norms. This restricts their ability to evacuate, participate in training programs, and access resources.



Caring for Family and Household Responsibilities

Women bear primary responsibility for children, the elderly, and the sick, which reduces their mobility and ability to respond quickly to climate threats.

Limited Access to Education and Information

Gender stereotypes hinder women's participation in training on sustainable farming, resource management, and climate adaptation. In rural areas, a lack of knowledge makes them particularly vulnerable.

Increased Mortality Among Men Due to Social Expectations

Cultural expectations that require men to act as protectors lead to higher male mortality during disasters. For example, men often stay behind to guard property, risking their lives.

Lack of Survival Skills Among Women

In many cultures, girls are not taught skills such as swimming or climbing trees, which can be vital during disasters.

For instance, in Bangladesh, annual floods exacerbated by climate change cause significant loss of life. Studies show that women and girls disproportionately suffer compared to men. This is partly because girls in some cultures are not taught swimming skills, making them more vulnerable during floods. Consequently, the mortality rate among women and girls during such disasters is higher than among men and boys. In response to this issue, in 2015, the Bangladeshi government mandated schools to include swimming lessons in their curriculum to reduce child drowning deaths during floods.



Different Working Conditions

Women in Agriculture

In developing countries, women make up a significant portion of the agricultural workforce. They engage in manual labor on small plots of land and have limited access to technology. This is due to several factors, including a lack of financial resources to purchase equipment, insufficient education or technical training, and social norms that often prevent women from utilizing modern technologies. Climate changes, such as droughts, water scarcity, and soil degradation, greatly reduce their productivity and incomes.



Men in Hazardous Work Sectors

Men are more likely to work in sectors such as construction, open-water fishing, and mining, where climate change increases risks to health and safety.

- High temperatures on construction sites can lead to heat strokes.
- Working at sea during storms and strong winds raises the risk of accidents. For example, fishing has become increasingly dangerous due to extreme weather events like hurricanes.



Vulnerability Due to the Seasonal Nature of Work

Many agricultural and fishing jobs depend on seasonal conditions, which are being disrupted by climate change. This leads to job losses and reduced incomes. Women are particularly affected, as they have fewer opportunities to find alternative income sources due to limited access to education and professional training.

Climate Migration

Climate change contributes to forced migration caused by the loss of traditional livelihoods due to droughts, floods, rising sea levels, and other natural phenomena.

Migration of Men

Men are often the first to leave their families in search of work, leaving women with the additional burden of managing households. This exacerbates economic instability, limits access to resources, and increases social pressure on women.



There are also examples where male migration has led to an increased role for women in society, as they are forced to take on full responsibility for managing the household in the absence of men. For instance, in Tajikistan, women have assumed leadership roles, gained financial independence, and accessed resources that were previously controlled by men.

Women and Girls in Temporary Settlements

In refugee camps, women and girls face limited access to basic resources, deteriorating sanitation conditions, and an increased risk of gender-based violence. The lack of accessible employment, housing, and social protection in new locations further worsens their situation.



Consequences of the Climate Crisis

Rapid-onset disasters, such as floods or hurricanes, and slow-onset phenomena, such as droughts or rising sea levels, significantly alter human settlement patterns

- In 2018, 28 million people became internally displaced, 16.1 million of whom

were forced to leave their homes due to storms, floods, droughts, wildfires, landslides, and extreme temperatures.

- Changes in precipitation levels and temperatures threaten water supplies and agriculture, driving migration from rural areas to cities.
- Women face additional risks due to limited access to services, protection, and land ownership.
- Social roles, relationships, and expectations influence migration decisions and increase women's vulnerability..

The global water crisis, exacerbated by climate change, increasing demand, pollution, and historical mismanagement, poses serious challenges to community development. In 2023, 380 million women and girls experienced high or critical water stress, and this number is projected to rise to 674 million by 2050 across 33 countries.

<https://eca.unwomen.org/ru/stories/press-reliz/2024/06/mezhdunarodnyy-forum-zhenschiny-i-voda-podnimaet-voprosy-gendernogo-ravenstva-v-upravlenii-vodnymi-resursami>

1.2. The Role of Women in Adapting to and Mitigating Climate Change

Women, despite existing barriers and challenges, demonstrate a strong ability to make practical decisions at the household and community levels, significantly contributing to adaptation and resilience to climate change. Their role in resource management, ensuring sustainability, and implementing adaptation measures is critical for mitigating the impacts of climate crises.

The Role of Women in Food Security

- In rural areas, women are often responsible for food production and resource management.
- They possess knowledge of crop cultivation, seed preservation, and efficient water use, which supports the resilience of food systems even during climate crises (FAO).

Women and Energy Conservation

Since women traditionally manage cooking and household responsibilities in most households, they have a deep understanding of ways to reduce energy consumption. For example, they often opt for more efficient kitchen appliances and find ways to minimize resource usage in daily life.

Women actively contribute to energy-saving initiatives, including:

- Using energy-efficient appliances and lighting,
- Insulating homes to reduce heat loss,
- Installing solar water heaters and utilizing renewable energy sources.
- They also educate family members and neighbors on the efficient use of resources, fostering a culture of energy conservation.

Women as Keepers of Traditional Knowledge

In traditional communities, women preserve and pass on knowledge about the sustainable use of fuel, water, and food resources. This knowledge is critical for maintaining the resilience of families and communities.



The Role in Ecosystem Restoration

Women actively participate in projects aimed at restoring ecosystems, such as:

- Planting trees to prevent soil erosion and protect biodiversity,
- Managing water resources for sustainable use,
- Initiating biodiversity conservation programs that promote climate adaptation.

Women as Leaders and Activists

- Women initiate projects aimed at reducing waste, transitioning to renewable energy sources, and raising awareness about climate issues.
- Their actions contribute to sustainable development at the household, community, and national strategy levels.



1.3. Climate Change and Education

Education plays a key role in enhancing community resilience to climate change. However, the relationship between climate and education is bidirectional:

- Climate crises limit access to education, especially for girls.
- A lack of education increases vulnerability to climate challenges.

Achieving gender equality in access to education is an important step towards overcoming inequalities in paid employment and reducing gender disparities in climate adaptation. However, access to education alone is not sufficient to ensure gender equality in other aspects of public life. For example, in Kyrgyzstan, women attain higher levels of education than men and make up half of the workforce, yet they face inequalities in career prospects, wages, and social status. The gender gap is particularly pronounced in STEM skills, where women are underrepresented and face barriers rooted in social norms and systemic limitations. Addressing these issues requires targeted measures, such as scholarships, awareness campaigns, and the creation of conditions that enable girls and women to acquire knowledge and develop skills in areas critical for climate adaptation, including energy, agriculture, and information technology.

How Climate Change Affects Access to Education

Increased Domestic Responsibilities

Due to droughts and water shortages, girls are often required to spend more time collecting water, gathering fuel, and caring for their families, which restricts their ability to attend school.

Example: In Africa, girls may spend up to six hours a day collecting water, significantly reducing their study time.



Destruction of Educational Infrastructure

Extreme weather events such as floods and hurricanes damage schools, rendering them unsuitable for education.

Examples:

- Floods in South Asia frequently lead to school closures, especially in poor rural areas, severely affecting children's access to education. In 2017, heavy monsoon rains caused floods in Bangladesh, India, and Nepal, affecting nearly 40 million people and displacing millions from their homes. Many schools were destroyed or repurposed as shelters for those affected, leading to prolonged interruptions in education.
- In 2022, Pakistan faced devastating floods caused by heavy monsoon rains and glacier melt. Floodwaters submerged a third of the country, affecting 33 million people. Many schools were destroyed or damaged, resulting in long-term disruptions to education for millions of children.
- The 2024 floods in Kazakhstan led to the closure of schools in many regions, requiring special efforts to support children due to the challenging flood situation. Some children were relocated to evacuation centers, while others transitioned to remote learning.



Forced Displacement

Climate disasters often force families to migrate, making it difficult for children to access education.

Example: In refugee camps, girls are often denied access to education due to a lack of infrastructure and cultural norms that prioritize boys' education.

Economic Pressure on Families

During climate crises, families are more likely to prioritize boys' education, leaving girls to help with household responsibilities.

Example: Droughts in India lead to an increase in the number of girls dropping out of school, limiting their opportunities for professional development.



How Education Levels Impact Vulnerability to Climate Change

Lack of Knowledge and Awareness

A lack of education limits girls' and women's access to information on climate risks, sustainable practices, and measures for adaptation and mitigation.

Example: Women without education are less likely to participate in sustainable agriculture or water management programs, reducing their ability to adapt to climate change.

Economic Dependence

Education provides professional skills that diversify income sources and improve economic resilience. Without these skills, girls become economically dependent, increasing their vulnerability.

Example: In rural areas of Asia, women without education are unable to adopt improved agricultural practices, resulting in significant crop losses.

Perpetuation of Gender Inequality

Education helps dismantle gender stereotypes, granting women access to resources, finances, and economic opportunities. Its absence reinforces traditional roles, heightening women's vulnerability.

Example: In societies with low levels of female education, women are less likely to access land or credit, limiting their adaptation strategies to climate change.

Resilience of Education in Climate Crises

- **Infrastructure:** Building schools that can withstand extreme weather and introducing mobile classrooms for displaced families.
- **Distance Learning:** Developing online courses to ensure education remains accessible during crises.
- **Financial Support:** Providing subsidies to families to enable girls to continue their education.

Developing Adaptation and Resilience Skills

- **Educational Programs:** Introducing curricula that teach sustainable practices such as water resource management, adaptive agriculture, and energy-efficient technologies.
- **Specialized Courses:** Organizing training programs for girls aimed at professional development and enhancing their economic independence.

- Engaging girls in STEM (Science, Technology, Engineering, and Mathematics) education enables them to achieve greater success in the labor market, including in high-demand fields such as green technologies.

Promoting Gender Equality

- Awareness Campaigns: Raising awareness about the importance of girls' education through media and community engagement.
- Ensuring Equal Access: Providing women and girls with equal access to resources, finances, and economic opportunities.

These measures will enhance the resilience of girls and women to the impacts of climate change and involve them as active participants in addressing climate challenges.

Example: Women in Nepal have long faced poverty, social exclusion, and marginalization, especially in rural areas. As part of the UNDP project “Renewable Energy for Rural Livelihoods,” several initiatives were implemented, including training women in technical skills (such as electrical wiring and the operation of solar mini-grids), business development, financial literacy, cooperative management, and supporting savings and credit schemes through microfinance organizations. Over 50% of the participants in capacity development programs for solar mini-grids are women. Women lead 29% of the 344 micro-enterprises powered by solar mini-grids, which provide employment to 591 people, 48% of whom are women. Additionally, 60% of microfinance borrowers are women, who primarily invest in agricultural projects, contributing to their economic empowerment. The project also promotes women’s participation in decision-making bodies, achieving 35% female representation in the executive committees of solar and mini-hydro projects..



2. Integrating Gender Aspects into Climate Education

2.1 Incorporating Gender Perspectives into Educational Programs

To reduce gender imbalance and enhance resilience to climate change, it is crucial to integrate gender aspects into educational programs. This approach helps identify and address existing barriers while emphasizing the importance of equal participation of women and men in adapting to climate challenges..

Approaches to Integrating Gender Perspectives

Development of Educational Materials

- Curricula should consider the different impacts of climate change on men and women and suggest ways to overcome gender barriers.
- Using real-life examples and scenarios can enhance understanding of these issues..

Classroom Activities

Interactive exercises, such as discussions, role-playing, and case studies, help students recognize how climate change affects boys and girls differently.

Examples:

- Discussing water scarcity to illustrate how collecting water limits girls' access to education.
- Highlighting the importance of swimming skills for survival during floods..

Community Involvement

- **Engaging with Parents:** parent meetings can be organized to discuss gender and climate challenges, highlighting how girls' participation in education strengthens family resilience.
- **Collaborative Projects:** boys and girls can work together on climate solutions, such as efficient water use or tree planting, fostering teamwork and resilience skills.

Discussing Real-Life Situations

Using real examples helps make the topic of gender aspects of climate change more relatable and practical.

- **Local Examples:** Highlight cases from local communities where climate change has significantly impacted women and girls.
- **Global Scenarios:** If local examples are unavailable, discuss global situations and explore how similar events could affect the students' region..

Questions for Discussion:

- How has climate change impacted your community?
- Are there examples where women or girls faced unique challenges (e.g., water scarcity or flooding)?
- Who suffers more from climate change and why?
- Why are women or girls often in more vulnerable positions?
- What factors exacerbate this vulnerability (e.g., social roles, economic dependence, lack of resources)?

Organizing Discussions and Debates

Discussions and debates encourage critical thinking and engage students in exploring the gender aspects of climate change.

Ideas for Debates:

1. Topic: “Who suffers more from climate change — men or women?”

Pro Group: Emphasizes women’s greater vulnerability.

Con Group: Discusses contextual factors, such as economic and geographical conditions.

2. Topic: “Do traditional gender roles hinder climate change mitigation efforts?”

Pro Group: Argues that social stereotypes limit women’s participation in climate initiatives.

Con Group: Claims gender roles do not significantly influence climate policies.

Practical Assignments

Assignment: “Plan to Support Women in the Context of Climate Change”

1. Select a specific climate change-related issue (e.g., drought, flooding, loss of agricultural land).
2. Identify key vulnerabilities of different population groups (women, men, children, elderly) in this context.
3. Propose specific measures (e.g., training, access to resources, technology adoption) to enhance women’s resilience.

4. Present an action plan, including priorities, required resources, and expected outcomes.

Improved access to safe water in rural areas of Tajikistan means more time for education and better health outcomes

Only half of rural schools in Tajikistan have access to running water, and nearly 60% rely on pit latrines with slab covers for sanitation. Additionally, only 2% of schools provide water in girls' restrooms for maintaining personal (menstrual) hygiene.

Global data indicates that inadequate WASH (Water, Sanitation, and Hygiene) facilities in schools likely affect girls' attendance, particularly in higher grades, leading to poorer academic performance and increased dropout rates.

Key Initiative: *With support from the World Bank-funded Rural Water Supply and Sanitation Project (RWSSP), approximately 130 rural schools and health centers will gain access to centralized water supply systems and improved sanitation facilities..*

<https://www.vsemirnyjbank.org/ru/news/feature/2023/03/22/expanding-access-to-safe-water-in-rural-tajikistan>



2.2 Integrating Gender Perspectives into Climate Education with the ‘Climate Box’

The “**Climate Box**” provides numerous opportunities to explore the gender dimensions of climate change through thematic chapters and interactive activities. This approach not only raises awareness among students but also develops their problem-solving skills to promote a sustainable and equitable future.

When studying the materials in the “Climate Box,” it is essential to discuss how climate change affects different groups and help students understand the connection between gender equality and resilience.

Studying relevant chapters of the “Climate Box” offers a framework for exploring how climate change impacts women and men differently. Gender issues can be integrated into nearly all topics in Part 2 and many in Part 3 of the manual.

For example, discussing “The Impact of Climate Change on Water Resources,” highlight how droughts disproportionately burden women, especially in rural areas.

Women often bear primary responsibility for securing water for their families. In times of drought, this task demands significantly more time and effort, reducing their access to education and professional opportunities.

Below are recommendations for incorporating gender-related topics into the relevant Chapters of Parts 2 and 3 of the Climate Box textbook.

Chapter 2.1 of the Climate Box: How Climate Change Affects Weather

Climate change leads to more frequent and severe extreme weather events, such as floods, droughts, and heat waves. These events impact different groups in unique ways, with women often being the most vulnerable due to social and economic barriers.

Women are disproportionately affected by climate change, with **80% of people displaced by climate-related disasters** being women and children..

Floods

Floods have become increasingly frequent and destructive, with severe consequences for vulnerable populations. Women often stay home to care for children or elderly relatives, which limits their ability to evacuate quickly.

Moreover, cultural and religious norms that define “acceptable” roles for women

sometimes limit their ability to make immediate decisions about relocating to safer places during emergencies. In some cases, their clothing can hinder mobility in such situations. Additionally, in some societies, girls are not encouraged to learn skills such as swimming or climbing trees, which can be crucial during floods. Men are more likely than women to have swimming skills. In low-income countries, only 15% of women report knowing how to swim, compared to 39% of men (for countries of the Organisation for Economic Co-operation and Development)..



Examples:

- **Libya Floods (2023):** Storm Daniel caused catastrophic flooding, resulting in over 11,000 fatalities. Women and children were among the most affected, struggling with evacuation and access to medical care.
- **Sudan Floods (2022):** Floods affected 97,227 people, 54% of whom were women, due to their limited access to resources and infrastructure for recovery.
- **Typhoon Yagi (2024):** caused widespread devastation across Southeast Asia, affecting nearly six million children by disrupting access to clean water, education, healthcare, food, and shelter. For example, in Myanmar, nearly 400,000 people were displaced by floods. .

Topics for Discussion

- How might floods impact women and men differently?
- Why are women often more vulnerable to floods? Could this be related to caregiving responsibilities or limited resource access?
- What challenges might women face during evacuation?
- In what situations might men be more vulnerable to the effects of floods?

Droughts

Droughts are becoming more frequent and prolonged, placing significant strain on rural communities and increasing vulnerabilities..

Examples:

- **Drought in Viet Nam (2024):** In Tien Giang province, prolonged drought and salinization severely affected water supplies and crops, prompting a state of emergency. Women faced challenges accessing fresh water, as salinization disrupted traditional farming and household water sources.
- **Drought in Africa (2021–2023):** Eastern Africa endured record-breaking drought for several years. Women, often responsible for water collection, had to travel long distances, facing physical exhaustion and safety risks.
- **Drought in India (2023):** Severe drought impacted rural areas, reducing family incomes. Women struggled to ensure adequate food for their families amidst dwindling resources.



Topics for Discussion:

- How does drought affect women's roles and responsibilities in rural communities?
- Collaborate with the class to devise strategies for ensuring women's access to water and essential resources during droughts.

Heatwaves

Heatwaves are becoming more frequent and intense, leading to critical health impacts and exacerbating social inequalities.

Examples:

- **Heatwaves in Europe (2023):** Temperatures soared to 47°C in some regions, leading to increased mortality, particularly among elderly individuals and women.
- **Heatwaves in South Asia (2023):** Record-breaking heat in India and Bangladesh led to a rise in domestic violence and early marriages, as families struggled with economic hardship.
- **Heatwaves in Serbia:** Abnormally high temperatures in recent years posed severe health risks, especially for women managing households and caring for children..

Topics for Discussion:

- Why are heatwaves particularly hazardous for pregnant women and elderly individuals?
- What measures can communities implement to protect vulnerable populations during heatwaves?

Chapter 2.2 of the Climate Box: How Climate Change Affects Plants and Animals

Climate change has a significant impact on nature: ecosystems are disrupted, habitats of plants change, and animal behaviors shift. This particularly affects women, who rely on natural resources for food, income, and family support. Women play a crucial role in managing and protecting natural resources daily. However, gender inequality often limits their rights, knowledge, and priorities, reducing their influence in decision-making processes.

Gender inequality and environmental degradation are interconnected and can reinforce one another, creating a vicious cycle. Addressing these issues through gender-responsive biodiversity policies and programs can make a significant difference. For example, such approaches contribute to improved food security, better living conditions, and the strengthening of women's rights to land and resources.

At the same time, gender equality benefits nature as well. Research shows that environmental initiatives incorporating gender perspectives become more effective, equitable, and sustainable, and they also lead to better biodiversity conservation outcomes. (*Nature for Development, UNDP*).

Gender Impacts of Biodiversity Loss

Climate change and biodiversity loss exacerbate existing gender inequalities, increasing the burden on women.

Loss of Plant Habitats: Rising temperatures, changes in precipitation, and extreme weather threaten plants crucial to local communities.

Example: In India, women who gather forest resources spend twice as much time searching for medicinal plants due to habitat loss.

Decline in Income Sources: Women who rely on collecting berries, mushrooms, and medicinal plants face resource shortages due to environmental degradation.

Example: In the Himalayas, women lose access to traditional plants, increasing their household expenses on food and medicine.

Increased Workload: Women must spend more time gathering firewood, water, and other natural resources. According to UN statistics, women in developing countries spend up to 40% of their time collecting resources, and biodiversity loss further exacerbates this burden.

Topics for Discussion

- How does biodiversity loss affect women in your region?
- Develop projects aimed at restoring nature and reducing the burden on women.

The Role of Women in Biodiversity Conservation

Women play a key role in preserving nature through their knowledge and traditions.

- **Knowledge Keepers:** Women pass down knowledge about gathering natural resources and teach sustainable harvesting practices to protect ecosystems.
- **Example:** In East Africa, women educate youth on sustainable methods of collecting medicinal plants to ensure their availability for future generations.
- **Nature Restoration Initiatives:** Women in many countries lead projects to protect nature and restore biodiversity.

Examples:

- In Kenya, the Green Belt Movement, founded by women, has planted over 50 million trees to restore forests, prevent soil erosion, and improve access to natural resources.
- In Kazakhstan, within the framework of the UNDP BIOFIN program, notable initiatives involve rural women in biodiversity conservation through activities such as beekeeping, eco-tourism, poultry farming, rabbit breeding, vegetable growing, horticulture, and more.

Topics for Discussion

- Discuss examples of women-led initiatives to protect nature.
- Develop a biodiversity restoration project involving women.



Chapter 2.3 of the Climate Box: How Climate Change Affects Forests

Forests play a vital role in maintaining ecosystems and regulating the climate. However, climate change leads to wildfires, droughts, and forest ecosystem degradation, which not only threatens nature but also disproportionately impacts women, who often rely on forest resources to support their families.

Women play a central role in conserving and restoring forests by passing down environmental knowledge and implementing sustainable resource management practices. However, they also bear the brunt of forest ecosystem loss, facing reduced incomes, increased workloads, and worsening food security.

Between 2010 and 2015, approximately 3.3 million hectares of forest land were lost globally. This loss significantly affected the livelihoods of rural women, particularly in regions where forests serve as a critical source of firewood, food, medicinal plants, and income. The depletion of these resources forced women to travel greater distances in search of alternatives, increasing their physical burden and reducing the time available for education, employment, and family responsibilities.

Increase in Wildfires

Causes: Rising temperatures and droughts have increased the frequency and intensity of wildfires.

Example: In 2021, over 18 million hectares of forest burned in Siberia. Women who depended on collecting berries, mushrooms, and medicinal plants lost both their income and access to vital resources.

Gender Aspect: Women, often responsible for gathering resources like firewood, face significantly increased workloads after wildfires. A shortage of fuelwood can exacerbate the gender imbalance in workload, leaving women with less time to care for children, reduced opportunities to engage in productive activities, and increasing risks to their health.

Deforestation

Causes: Growing demand for agricultural land, exacerbated by climate change, accelerates deforestation.

Example: According to FAO, women in South Asian countries spend up to five hours daily collecting firewood and water. After forest loss, this time often doubles.

Gender Aspect: Forest loss reduces women's access to essential resources for daily life, increasing their burden.

Topics for Discussion

- How do wildfires and deforestation impact local communities?
- Encourage students to propose forest conservation measures, such as reforestation or promoting alternative energy sources.

The Role of Women in Forest Conservation

Women play a key role in forest management and restoration through their environmental knowledge and sustainable practices.

Example: In Kazakhstan, there are positive examples of women actively participating in various roles in environmental conservation, such as director of a protected area, forest inspector, and head of reserve security. However, such examples remain extremely rare.

Women traditionally use sustainable methods to gather forest resources.

Examples:

- In South Asia, women practice “selective cutting” of trees to minimize forest degradation.
- In Belarus, women actively participate in reforestation projects, contributing to carbon footprint reduction, biodiversity protection, and ecosystem resilience.

Reforestation Initiatives:

- Women lead environmental movements across the globe.

Example: In India, the Chipko Movement, led by women, saved forests from logging. Participants hugged trees to prevent them from being cut down.



Topics for Discussion

- How does forest loss affect women in your region?
- Discuss examples of women-led forest restoration initiatives.
- Develop a reforestation project that incorporates gender-sensitive needs.

Scientific studies confirm that greater involvement of women in forestry can have a positive impact on the development of this sector of the economy. It has also been noted that women are generally underrepresented in forest user groups, such as forest committees and local forest associations. However, a study by FAO (2013) found that gender-balanced forest communities are more effective in performing their functions (plant protection, forest regeneration, biodiversity conservation, and forest use allocation) compared to communities predominantly composed of men..

<https://www.un.org/esa/forests/wp-content/uploads/2019/03/UNFF14-BkgdStudy-SDG8-March2019.pdf>

Chapter 2.4 of the Climate Box: How Climate Change Affects Water Resources

Climate change significantly exacerbates water scarcity, creating numerous challenges for women, who traditionally play a key role in providing water for their families. Women, especially in rural areas, are disproportionately affected by water shortages caused by climate change. This intensifies social inequality, increases physical burdens, and worsens the quality of life for women and girls.

Increased Physical Burden on Women

During droughts and reduced water availability, women are forced to walk longer distances to collect water. This deprives them of time for education and economic opportunities.

Example: In East Africa, women spend up to 8 hours a day collecting water, significantly reducing their ability to engage in other activities.

Worsening Sanitation Conditions

Floods and water contamination make it difficult for women to access hygiene facilities and safe places for personal hygiene.

Example: During floods in India, women faced a lack of safe sanitation facilities, increasing their risk of diseases.

Social Consequences

Water scarcity particularly affects girls, who often drop out of school to help with water collection.

Data: According to UN data, women and girls worldwide spend over 200 million hours a day collecting water. In rural areas of developing countries, girls may spend 2–4 hours daily on these tasks, depriving them of opportunities to study, work, or engage in other essential activities.

The Role of Women in Water Resource Management

Women, as the primary water users in households, bear the main responsibility for its rational use and conservation. They also play a key role in implementing effective water-saving practices, significantly impacting sustainable water management.

Examples:

- Women in households save water during dishwashing, cooking, or laundry and repair leaks to minimize losses. They also collect rainwater for watering plants or secondary use, such as cleaning floors or other household tasks. Moreover, women play a crucial role in educating children on conserving water in daily life, fostering a culture of water conservation in society.
- In Nepal, women participate in managing irrigation systems, contributing to increased crop yields and local agricultural resilience.
- In India, women organized local groups to build rainwater harvesting reservoirs, providing water security for over 200 villages.

Chapter 2.5 of the Climate Box: How Climate Change Affects Agriculture

Climate change has a destructive impact on agriculture, causing droughts, floods, seasonal shifts, and reduced crop yields. These effects threaten food security, especially in rural areas where women play a key role in food production. Studies indicate that closing the gender gap in agricultural productivity could increase global crop yields by **20–30%**, significantly improving food security. However, women face disproportionate challenges due to limited access to resources, information, and technology. Addressing their needs and ensuring access to essential resources can strengthen agricultural resilience and foster a more equitable future.

Decreased Crop Yields

Rising temperatures and changes in rainfall patterns reduce the yields of key crops like wheat, rice, and maize, worsening food security.

Example: The 2023 drought in India reduced rice harvests by 20%, significantly impacting women working on small farms.

Increased Labor Efforts

Women, who perform the majority of agricultural work, face greater physical demands as conditions deteriorate. For example, they may need to travel further to water crops or manually prepare soil under harsher conditions.

Health Risks

Droughts and heatwaves increase the risk of dehydration and heat-related illnesses for women working in fields.

Example: In Tajikistan, during increasingly frequent and sudden periods of extreme heat and drought, the risk of crop failure rises significantly. At the greenhouses of the Agrarian University in Dushanbe, cutting-edge technologies (the “more crop per drop” approach) are used, encouraging female students to experiment with new methods for efficient and sustainable crop production. Additionally, growing potatoes in bags allows women farmers to better control temperature and humidity, which is particularly important for small-scale plots. <https://www.newscentralasia.net/2023/07/08/in-central-asia-female-leadership-is-key-to-climate-and-drought-resilience-ru/>

Topics for Discussion

Issue: Women often have fewer land rights, less access to credit, and limited availability of agricultural technologies.

Example: In South Asian countries, women own less than 10% of land, even though they make up nearly half of the agricultural workforce.

Issue: Women have less access to educational programs and information about climate adaptation methods.

Chapter 2.6 of the Climate Box: How Climate Change Affects Coastal Regions

Climate change significantly impacts coastal regions, intensifying floods, storms, shoreline erosion, and soil salinization. These events threaten ecosystems and the livelihoods of millions of people, particularly women, who rely on marine resources and coastal ecosystems.

Floods and Storms

Increased storm activity and rising sea levels destroy infrastructure, contaminate water, and result in the loss of housing.

Examples:

- In 2023, Cyclone Mocha devastated coastal villages in Bangladesh, leaving women without access to clean water and livelihoods.
- In Yemen's coastal regions, rising sea levels flooded agricultural land, worsening living conditions for women farmers.
- During the 1991 cyclone in Bangladesh, 90% of fatalities were women, as they stayed home to care for children and the elderly.

Shoreline Erosion

Rising sea levels lead to the loss of land used for housing and agriculture.

Example: In Oman, women involved in fishing reported declining fish populations due to shoreline erosion and ecosystem destruction.

Loss of Mangrove Forests

Mangrove forests, which protect coastlines from storms and erosion, are shrinking due to climate change and human activity.

Example: In Yemen, women in coastal villages initiated mangrove planting projects to protect shorelines from flooding.

Soil and Water Salinization

Salinization degrades water quality and reduces agricultural yields.

Examples:

- In Viet Nam, women actively manage the Mekong Delta, where soil salinization and rising sea levels threaten agriculture. They implement rainwater collection systems and participate in local adaptation initiatives.
- In Egypt, women spend more time collecting water as traditional sources become unusable.

Rising Water Temperatures

Many fish species migrate to cooler waters or decline in numbers due to temperature changes, complicating the work of women involved in small-scale fishing or fish processing.

Example: In Tunisia's coastal areas, women working in seafood production face reduced catches due to declining fish populations..

Chapter 2.7 of the Climate Box: How Climate Change Affects Mountain Regions

Climate change significantly impacts mountain regions, causing glacier melt, shifts in precipitation patterns, and rising temperatures. These changes affect ecosystems and the livelihoods of local communities, particularly women, who play a critical role in managing natural resources and maintaining family households.

Glacier Melt and Decline in Water Resources

Glaciers, which serve as primary freshwater sources for many mountain communities, are rapidly shrinking. This reduces water availability for drinking, irrigation, and household needs.

Example: In the Himalayas, women are forced to travel long distances to fetch water, increasing their physical workload and reducing time available for education or economic activities.

Changes in Agricultural Conditions

Shifts in seasons and unpredictable weather disrupt traditional farming practices relied on by many mountain communities.

Example: In the Andes, women cultivating potatoes face reduced yields due to temperature fluctuations and more frequent droughts.

Increased Frequency of Natural Disasters

Rising temperatures and altered precipitation patterns contribute to more landslides, avalanches, and floods, endangering the safety and livelihoods of mountain communities.

Example: In Nepal, women responsible for managing households face destruction of homes and infrastructure due to landslides, complicating daily life and increasing their burdens.

The Role of Women in Adapting to and Mitigating Climate Change in Mountain Regions

Preservation of Traditional Knowledge: Women possess deep knowledge of local ecosystems and sustainable farming methods, helping communities adapt to changing conditions.

Example: In Kyrgyzstan, women implement traditional pasture management techniques, preserving biodiversity and supporting ecosystem resilience.

Participation in Environmental Initiatives: Women actively engage in projects to restore forests, conserve water resources, and develop sustainable tourism, helping mitigate the effects of climate change.

Example: In Peru, women from Andean communities participate in projects to restore high-altitude ecosystems, which enhance water conservation and resilience to climate changes..

Chapter 2.8 of the Climate Box: How Climate Change Affects Arctic Regions

Climate change significantly impacts Arctic regions, causing rising temperatures, melting glaciers, sea ice loss, and ecosystem changes. These processes affect both the natural environment and local communities, including Indigenous peoples. Women play a crucial role in maintaining traditional lifestyles and managing resources.

Melting Sea Ice and Ecosystem Changes

The reduction in sea ice area impacts the migration routes and populations of marine mammals and fish, affecting traditional practices.

Example: In Greenland, Inuit women involved in processing fish and marine mammals face reduced catches due to shifts in the species' habitats.

Shoreline Erosion and Infrastructure Damage

Rising sea levels and melting permafrost lead to coastal erosion, threatening settlements and traditional living areas.

Example: In Alaska, Indigenous women are forced to relocate due to the destruction of homes and infrastructure, disrupting social connections and traditional lifestyles.

Changes in Natural Resource Availability

Melting ice and climate shifts affect the availability of berries, medicinal plants, and other resources traditionally gathered by women.

Example: In northern Russia, Indigenous women report reduced areas for collecting wild plants, impacting their diets and medicinal practices..

The Role of Women in Adapting to Climate Change in the Arctic

Preservation and Transmission of Traditional Knowledge: Women play a key role in passing down knowledge about local ecosystems and sustainable harvesting methods, helping communities adapt to new conditions.

Example: In Canada, Inuit women teach youth traditional hunting and gathering methods, adapted to changing climate conditions.

Participation in Environmental Initiatives: Women actively engage in monitoring environmental changes, restoring ecosystems, and developing adaptation strategies.

Example: In Norway, Sámi women participate in programs to conserve grazing areas for reindeer herding, accounting for changes in snow cover and vegetation.

Topics for Discussion

- How does climate change affect traditional lifestyles in Arctic regions?
- How can women's knowledge and participation contribute to climate adaptation efforts in Arctic communities?
- What initiatives can be developed to support women's roles in preserving Arctic ecosystems?

Chapter 2.9 of the Climate Box: How Climate Change Affects Urban Areas

Climate change significantly impacts cities, causing rising temperatures, shifts in precipitation patterns, and an increase in extreme weather events. These changes affect infrastructure, public health, and urban economies.

Women's Vulnerability to Extreme Weather Conditions

Women, especially from low-income groups, are more likely to live in unsafe areas with poor-quality housing, increasing their risks during floods and storms.

Health and Well-Being

Rising temperatures and air pollution negatively affect the health of pregnant women and children, increasing the risk of illnesses.

Economic Consequences

Women working in informal economies are more vulnerable to climate-related disruptions, leading to income loss and reduced living standards.

Topics for Discussion

- How do rising urban temperatures and air pollution disproportionately affect women?
- What strategies can cities adopt to reduce climate risks for women, especially those in vulnerable communities?
- How can urban planning integrate gender-sensitive approaches to climate adaptation?

Chapter 2.10 of the Climate Box: How Climate Change Affects Social Issues

Climate change exacerbates existing inequalities and creates new societal challenges.

Increased Poverty

Cause: Extreme weather events, such as floods and droughts, destroy livelihoods, particularly in rural areas, leading to higher poverty levels.

Migration and Population Displacement

Cause: Adverse climate conditions force people to leave their homes in search of safer and more stable living conditions, creating pressure on host communities and infrastructure.

Example: In Tajikistan and Uzbekistan, high levels of male migration leave women managing households. This increases their workload and vulnerability to climate challenges. On the other hand, male migration has also enhanced women's roles in society, as they are compelled to take full responsibility for running households in the absence of men.

Health Deterioration

Cause: Rising temperatures and climate shifts contribute to the spread of diseases such as malaria and dengue, especially in vulnerable regions.

Gender Inequality Worsens

Cause: Women and girls often bear disproportionate consequences of climate change, facing increased responsibilities for water, food, and fuel collection.

Gender-Specific Social Challenges Linked to Climate Change

Increased Workload for Women: Climate change forces women to spend more time gathering water and food, limiting their opportunities for education and economic activities.

Rise in Gender-Based Violence: Disasters and displacement increase the risk of gender-based violence, particularly in overcrowded displacement camps.

Limited Access to Resources: Women often have restricted access to land and financial resources, making it harder for them to adapt to changing climate conditions.

Topics for Discussion

- How does climate change impact social issues in your region?
- What measures can be taken to mitigate the social consequences of climate change, particularly from a gender-sensitive perspective?
- Develop project ideas to raise awareness about the social and gender-specific impacts of climate change and ways to adapt to these challenges.

Chapter 3.1 of the Climate Box: “Green” Energy Sources

3.1.1. What is Energy?

Discuss how access to energy impacts various population groups, particularly women in developing countries, where they often bear responsibility for fuel and water collection.

Fact: According to the UN, women and girls spend over 200 million hours daily collecting water, limiting their educational and economic opportunities.

3.1.2. Main Energy Sources

Examine how traditional and alternative energy sources differently affect men and women, considering their societal and economic roles.

Example: Transitioning to renewable energy reduces dependency on biomass, the collection of which often falls on women.

3.1.3. Hydrocarbon Energy Sources

Discuss the impact of fossil fuel extraction and use on women’s health and well-being, particularly in communities near extraction sites.

Example: Women in such regions face increased health risks due to environmental pollution.

3.1.4. Nuclear Energy

Explore women’s employment in the nuclear sector and their participation in decision-making related to nuclear energy.

Fact: According to the International Atomic Energy Agency, women make up about 20% of the workforce in the nuclear industry, highlighting a gender imbalance.

3.1.5. Renewable Energy Sources

Highlight women's role in promoting and using renewable energy sources such as solar panels and biogas systems, particularly in rural areas.

Fact: Globally, women represent only **32% of the renewable energy workforce**, with even lower representation in technical and leadership roles. In comparison, their participation in traditional energy sectors is about **22%**, underscoring the potential for greater gender inclusion in the green economy. Increasing women's participation in renewable energy through targeted training and mentorship programs not only enhances gender equity but also brings diverse perspectives that drive innovation and effectiveness in tackling climate challenges..



Example: Yemen faces significant gender disparities, with women having limited opportunities in economic, social, and political sectors. The Enhanced Rural Resilience UNDP project has trained women and youth as solar technicians, enabling them to establish, manage, and maintain solar micro-grid businesses, including the country's first women-owned private solar grid. Strategies to shift social norms have been integrated into the project. These initiatives have provided women and youth with dignity and new roles in their communities, reducing reliance on humanitarian aid, mitigating risks like underage marriage, and improving security through night lighting in settlements.

3.1.6. Advantages and Disadvantages of Different Energy Sources

Discuss how transitioning to sustainable energy sources can promote gender equality by providing women with new employment and educational opportunities.

Examples:

- Training programs for women in India on installing and maintaining solar panels have contributed to their economic independence.
- In Moldova, a grant program enabled rural women to install solar panels, helping to mitigate the impacts of the energy crisis.

Chapter 3.2 of the Climate Box: Energy Efficiency and Energy Saving

3.2.1. Eco-Friendly Transportation

Explore how improving public transportation and developing eco-friendly transportation can enhance women's mobility, particularly in urban areas.

Example: Safe and affordable transportation increases women's employment opportunities and participation in public life.



3.2.2. Household Appliances and Electric Devices

Discuss how energy-efficient appliances can reduce the burden on women who often handle household responsibilities, while also lowering family energy costs.

Example: In Nigeria, using energy-efficient stoves reduced firewood consumption and improved women's health.

3.2.3. Green Construction: Passive and Active Houses

Explore how eco-friendly homes can improve women's quality of life by providing a healthier environment and reducing energy costs.

Examples:

- In Brazil, energy-efficient housing programs improved living conditions for low-income women.
- In Armenia, in scope of "De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits" UNDP project women represent over 43.1% of labour force involved in design, consulting and public relation works on the Project implementation. This is higher than the average urban female employment rate in Armenia (34.5% in 2018), and higher than the female employment rate in both the construction and the design/consulting/research sectors of economy (8.6% in 2018, as per "Labor Market in Armenia, 2017-2018"). Among project beneficiaries, 68.6% are women. In the two public buildings, they represent more than 2/3 of staff, high share of women employment in public sector in Armenia.

3.2.4. Green Cities

Discuss how gender-sensitive urban planning can create safer and more accessible spaces for all residents.

Example: In Barcelona, implementing such an approach improved safety and accessibility of public spaces for women..

Chapter 3.3 of the Climate Box: Carbon footprint and how I can help the planet by reducing my footprint

Explain how the daily activities of men and women differently affect the carbon footprint and discuss ways to reduce it, considering gender roles.

Example: Studies show that men are more likely to use private transport, while women prefer public transport, affecting the overall carbon footprint.

Encourage students to develop personal plans for reducing their carbon footprint, incorporating gender aspects and social roles.

Example: Discuss how changing energy, transport, and dietary habits can reduce emissions.

Chapter 3.4 of the Climate Box: Global cooperation on climate change, sustainable development, and all-of-society approach to deal with climate change

Discuss the role of women in international climate negotiations and their contributions to developing and implementing sustainable development policies.

Example: Women's participation in UN climate negotiations led to more inclusive and effective solutions.



References

1. World Health Organization (WHO), 2024. *Climate Change and Health*. EB154/CONF./12. https://apps.who.int/gb/ebwha/pdf_files/EB154/B154_CONF12-en.pdf
2. World Health Organization (WHO), 2023. *Climate Change: Key Facts*. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>
3. *Gender Aspects in Disaster Risk Reduction in Europe and Central Asia: A Practical Workshop Guide*. UN Women and UNDP, 2018. <https://eca.unwomen.org/sites/default/files/.../Workshop-guide-English.pdf>
4. United Nations, 2022. *Achieving Gender Equality and Empowering All Women and Girls in the Context of Climate Change*. Report of the Secretary-General, E/CN.6/2022/3. <https://documents.un.org/doc/undoc/gen/n22/223/28/pdf/n2222328e.pdf>
5. UNICEF, 2022. *How to Support Survivors of Gender-Based Violence When No Services Are Available: Step-by-Step Pocket Guide*. <https://www.unicef.org/kyrgyzstan/media/6581/file/Pocket%20Guide.pdf>
6. UNICEF, 2022. *Providing Primary Support to Survivors of Gender-Based Violence*. Online course. <https://agora.unicef.org/course/info.php?id=46345>
7. UNDRR, 2022. *Gender-Responsive Disaster Risk Reduction*. Concept Note No. 3. https://www.undrr.org/.../P2208%20Policy%20Brief_Gender...-EN.pdf
8. OSCE, 2022. *Inclusive Disaster Risk Reduction: Addressing Gender and Disability Needs*. <https://www.osce.org/files/f/documents/7/3/519207.pdf>
9. UNDRR, 2015. *Action Plan on Gender Equality to Support the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030*. <https://www.undrr.org/media/94620/download>
10. UNDP, 2024. *Nature for Development: Gender Equality in the Green Economy*. https://www.undp.org/sites/g/files/zskgke326/files/2024-10/undp_nature_for_gender_equality.pdf
11. Neumayer, Eric, and Thomas Plümpner. "The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002." *Annals of the Association of American Geographers*, vol. 97, No. 3 (2007).
12. Bern, C., et al. "Risk Factors for Mortality in the Bangladesh Cyclone of 1991." *Bulletin of the World Health Organization*, vol. 71, No. 1 (1993).
13. UN Women. "Explainer: How Gender Inequality and Climate Change Are Interconnected." <https://www.unwomen.org/en/news-stories/explainer/2022/02/explainer-how-gender-inequality-and-climate-change-are-interconnected>
14. UNEP. "Gender Equality and Climate Change." <https://www.unep.org/topics/gender/gender-equality-and-climate-change>
15. FAO. "Gender and Climate Change, Agroecology, and Biodiversity." <https://www.fao.org/gender/learning-center/thematic-areas/gender-and-climate-change-agroecology-and-biodiversity>
16. Candice Stevens. *Gender in the Green Economy*. <https://www.unrisd.org/en/library/blog-posts/gender-in-the-green-economy>

Incorporating gender aspects into climate change educational programs

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United Nations Development Programme, 2025

This module complements the UNDP “Climate Box” educational toolkit on climate change. It is intended to raise awareness and strengthen the capacity of educators in integrating gender perspectives into climate education.

The module supports teachers, educators, methodologists, and professionals in both formal and non-formal education settings, as well as NGOs and youth organizations, to better understand the nexus between gender equality and climate change and to implement inclusive, gender-responsive learning.

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CLIMATE BOX

Educational Programme

Incorporating gender aspects into climate change educational programs

Guide for educators

2025