The intersections between climate change and gender equality and sexual and reproductive health and rights

Mapping and analysis of the evidence base (desk study)

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Annexes

Acronyms and abbreviations

ARROW	Asian Pacific Research and Resource Centre for Women
CC	Climate Change
CC-EDU	Climate Change and Education Intersection
CC-GE	Climate Change and Gender Equality Intersection
CC-SRHR	Climate Change and Sexual and Reproductive Health and Rights Intersection
CEDAW	Convention on the elimination of all forms of discrimination against women
CSW	Commission on the status of women
COP	Conference of the Parties
CSO	Civil Society Organisation
Danida	Denmark's development cooperation
DFPA	Danish Family Planning Association
DHS	Demographic Health Survey
DRRS	Disaster Risk Reduction Strategies
FAO	Food and Agriculture Organisation of the United Nations
FGM	Female Genital Mutilation
GBV	Gender-Based Violence
GCF	Green Climate Fund
GEF	Global Environment Facility
HRBA	Human Rights-Based Approach
ILO	International Labour Organisation
IPCC	Intergovernmental Panel on Climate Change
IPPF	International Planned Parenthood Federation
IPV	Intimate partner violence
IRENA	International Renewable Energy Agency
ITUC	International Trade Union Confederation
IUCN	International Union for Conservation of Nature
LMICs	low- and middle-income countries
MFA	Ministry of Foreign Affairs
MNS	Migration and Stabilisation Department
NAP	National Adaptation Plan
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organisation
Norad	Norwegian Agency for Development Cooperation
OECD	Organisation for Economic Co-operation and Development
OHCHR	Office of the United Nations High Commissioner for Human Rights
PTSD	Post-Traumatic Stress Disorder
QMUL	Queen Mary University of London
RJ	Reproductive Justice
SCF	Standing Committee on Finance
SDG	Sustainable Development Goals
SGBV	Sexual and Gender-Based Violence
Sida	Swedish International Development Cooperation Agency
SRHR	Sexual and Reproductive Health and Rights
STEM	Science, Technology, Engineering and Mathematics Education
STI	Sexually Transmitted Infections
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change

UNFPA	United Nations Population Fund
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
WaSH	Water, Sanitation and Health Services
WEDO	Women's Environment and Development Organisation
WGC	Women and Gender Constituency
WHO	World Health Organisation

Terminology

Unless indicated otherwise, the terminology and concepts used refer to the global glossaries of the Intergovernmental Panel on Climate Change (IPCC) and the Inter-agency Network for Education in Emergencies (INEE). See the full list in Annex 2.

Box 1 – Key concepts and definitions

Vulnerability in the context of climate change	This refers to "The propensity or predisposition to be adversely affected" by the impacts of climate change. Vulnerability is determined by sensitivity and susceptibility to harm and by adaptive capacity, among other factors. Source: IPCC, 2018.
Gender equality	Gender equality refers to the equal rights, responsibilities and opportunities of women, men, girls and boys. Equality does not imply sameness but that the rights of women and men will not depend on the gender they were born with. Gender equality implies that the interests, needs and priorities of all genders are taken into consideration, recognizing the diversity of different groups. Gender equality is not a women's issue but should concern and fully engage all genders while recognizing that neither all men nor all women are a homogenous group. Source: UN Women Training Center glossary on definitions.
Climate Resilience	In this context climate resilience refers to the capacity of social, economic, and environmental systems to cope with a hazardous event, or trend, or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation. Source: IPCC, 2018.
Intersectionality	Intersectionality looks at the ways in which various social categories such as gender, class, race, sexuality, disability, religion and other identity axes are interwoven on multiple and simultaneous levels. The discrimination resulting from these mutually reinforcing identities leads to systemic injustice and social inequality. Source: European Network Against Racism, 2021.
Sexual and Reproductive Health and Rights (SRHR)	The state of physical, emotional, mental, and social well-being in relation to sexuality and reproduction, not merely the absence of disease, dysfunction, or infirmity. Source: Guttmacher-Lancet Commission
Disaster	A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts. Source: UNGA/IPCC.
Extreme weather events	Short-term localised phenomena that deviate from the normal weather conditions, such as heat waves, floods, droughts, storms and wildfire. Source: OECD 2024.
Hazard	The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. Source: IPCC.
Slow-onset disaster	A disaster that evolves gradually from incremental changes occurring over many years or from an increased frequency or intensity of recurring events. Slow-onset disasters relate to environmental degradation processes such as droughts and desertification, increased salinization, rising sea levels or thawing of permafrost. Source: INEE.
Robust evaluations	As working definition evaluations are considered robust if they use experimental methods like randomised control trials and quasi-experimental methods that estimate the impact and cost-effectiveness of government and NGO programs. Source: World Bank.

Executive Summary

This report presents a desk study and analysis of relevant literature specific to prioritised themes in the climate change and gender equality and climate change and Sexual and Reproductive Health and Rights (SRHR) intersection (CC-GE-SRHR). The purpose of the desk study is to establish the evidence base, identify knowledge gaps, trends and promising practices, with the view to inform policy and programming in the intersection.

This desk study is one of two studies commissioned by the Danish Ministry of Foreign Affairs. A similar study on the intersection of climate change and education was prepared under a separate cover. The common conceptual framework developed for the studies is founded on the principles of a human rights-based approach, which is at the core of Denmark's official development assistance. Both reports are based on peer-reviewed academic evidence, 'grey' policy-relevant literature produced by organisations and practitioners, and triangulation through stakeholder interviews.

Overall trends and implications

The findings in this desk study underscore the grave impacts of climate change on gender equality goals and on the protection and realisation of human rights. Achieving development goals, upholding human rights and reaching gender equality are all threatened by climate impacts. A committed, ambitious and sustained response is needed that recognises the pervasive impacts of the crisis across sectors and thematic areas.

Further, the findings highlight the evidence and facts of the intersections and intertwined nature between climate change, achieving gender equality and realising SRHR. They also point to the gaps in knowledge, action and implementation. As climate change related disasters increase in severity and number in the future, the trends emerging from the reviewed literature reveal considerable shared urgency in making donor and domestic responses more highly focused on addressing the root causes of inequality, more participatory and intentionally inclusive of those groups that are most vulnerable to climate change and more integrated.

Gender equality and SRHR are critical in responding to the climate crisis. What becomes apparent across the analysis is the inexorably intersected nature of climate impacts, health and gender inequality. Climate change will set development agendas for the foreseeable future and the SDGs will not be achievable without addressing the crisis head on in a committed and ambitious fashion. This includes meeting stated climate finance commitments and allocating that finance to the needs and priorities of women in all their diversity enabling them to realise their full potential as actors in achieving climate action goals.

There are opportunities for innovative leadership in climate change, gender and SRHR. This includes taking a feminist, intersectional and human rights-based approach (HRBA) which includes the analysis of the differentiated impacts of gender inequality and climate change on particular groups. Such an approach would prioritise approaches that consider access, infrastructures and multiple and intersecting vulnerabilities and challenge false and maladaptive solutions.

The evidence of unlocking the agency of women in achieving climate change goals through climate action that is locally appropriate and benefits communities and families alike is compelling. Locally led, designed and owned strategies and programmes, capacity building of grassroots women organisations and financial and technical support for civil society organisation and coalitions, as suggested in recent evaluations and in the DANIDA 'The World We Share' strategy would facilitate such unlocking of agency.

The literature reviewed and the interviews conducted indicated the critical need to close the data and knowledge gap on gender-disaggregated and gender specific data on how climate change impacts women in all their diversity and how women contribute to climate action. The intersection is in general under-researched and greater efforts are needed to build the evidence base of impacts, solutions and best practices. To do this it is also key to integrate gender disaggregated data collection in monitoring and evaluation through specific indicators designed in collaboration with the affected groups.

Key messages

Climate adaptation and mitigation and gender equality

- Women are particularly vulnerable and at higher risk of experiencing negative impacts of climate change.
- Climate change perpetuates gender inequality if root causes remain unaddressed.
- Women are agents of change and central for achieving greater climate resilience in communities.

Loss and Damage, disaster risk reduction and gender equality

- Losses and damages resulting from climate change induced disasters and extreme weather events are also gendered and further exacerbate the vulnerabilities of women and girls.
- Women's ability to cope with climate change induced disasters and related loss and damage is highly contextualised and driven by context specific inequalities, culture and socio-economic factors.

- Women and gender minorities are not sufficiently involved in the decision-making processes that address climate related losses and damages and disaster risk reduction strategies.

The just transition and gender equality

- The transition to a low-carbon society impacts men and women differently. These differences have not been sufficiently addressed in current just transition plans.
- Just transition strategies and plans should consider informal jobs, often held by women, related to the energy and mining sector.
- Women are key agents in communicating, promoting and disseminating affordable, clean energy solutions.
- Gender stereotypes, bias and cultural norms are a barrier to women's participation in the just transition. Barriers and how these could be addressed need to be studied further to support women's participation and active engagement in the just transition.

Climate finance and gender equality

- Limited access to finance is a barrier for women to fully engage in climate mitigation and/or adaptation action, which hinders achieving climate change goals.
- Current climate finance does not sufficiently address the gendered impacts of climate change and does not reach women and girls at the local levels. There is an urgent need to provide climate finance that is specifically targeted at addressing the climate change and gender inequality intersections in a transformative manner for example by:
    - funding direct participation of feminist and women's rights activists in climate finance policy fora.
    - providing finance that reaches women grassroot organisations, community groups, non-profit organisations and social enterprises.
    - funding initiatives and projects that are designed to respond to women's needs including by lowering the barriers for women to access and control resources essential for increasing climate resilience and climate action, and;
    - supporting more integrated, gender-transformative and just climate action.
- Gender-responsive climate finance is key for accelerating climate action. It is essential to close the current financing gap of existing intersectional programmes such as the UNFCCC Gender Action Plan and the Lima Work programme which

would ensure greater coherence in the efforts to include, mobilise and empower women as key agents of change in climate adaptation and mitigation.

Climate decision-making and gender equality

- Women are underrepresented in climate related decision-making on all levels.
- The meaningful participation of women is a prerequisite for the effective formulation, design and implementation of climate action.
- Women are bearers of unique knowledge and solutions that can meaningfully inform climate policies and decision-making.

The impact of climate change on perinatal health

- Climate change is having a negative impact on maternal and newborn health.
- Direct and indirect climate change impacts, such as heat, extreme weather events such as droughts and floods, disease transmission, food insecurity, air pollution and the degradation of social and health services and protections contribute to poor perinatal health outcomes.
- The impacts of climate change on maternal and newborn health are exacerbated by existing inequalities leading to poorer health outcomes for groups facing multiple and intersecting forms of oppression.

The impact of climate change on HIV

- Climate impacts such as increases in heat, drought and flood increase HIV prevalence. These increases are a result of food insecurity, migration and alterations in health seeking and sexual behaviours. This results in increases in condomless sex, transactional sex and concurrent sexual relationships which impact the transmission of HIV.
- People living with HIV can be negatively impacted by climate change, for example via food insecurity and malnutrition, lack of access to consistent HIV treatment through impacts of health services and supplies, and via stigma and discrimination in disaster relief and emergency response.

The impact of climate change on GBV

- Gender-based violence increases as a result of multiple climate related impacts including increases in heat and other extreme weather events, livelihood disruption, stress and scarcity and disasters and displacement.
- Climate change exacerbates the drivers of harmful practices such as child marriage. This is due to increases in extreme weather events, food insecurity and disruption to livelihoods as well as migration and displacement. Child marriage can be linked to related harmful practices such as female genital cutting.

The impact of climate change on aspects of reproductive health

- Climate change impacts disrupt essential health systems and services with implications for sexual and reproductive health and rights. This includes access to contraception, safe abortion, and menstruation products.
- Reproductive health issues across the lifecourse such as menstruation and menopause are impacted by climate change but more research is needed to understand in what ways and how people are managing these impacts.

The impact of climate change on fertility intentions

- Climate change is impacting fertility intentions. In some settings people desire more children to help them cope, in other settings people desire fewer children as life becomes more difficult.

The disproportionate impact of climate change on the SRHR of people facing multiple and intersecting forms of discrimination

- Climate change is an intersectional crisis that exacerbates existing inequalities. People with diverse sexual orientations, gender identities, expressions and sexual characteristics face multiple and intersecting forms of discrimination which can be exacerbated by climate impacts.
- More research is needed to understand how groups facing multiple and intersecting forms of discrimination, particularly along axes of identity related to SRHR, are being impacted by climate change.

Policy implications

- Support the integration of women as agents of change in policy review processes related to the NDCs and NAPs.
- Just transition policies should reflect the social implications of transitioning, including how women and men are affected differently both in formal and informal sectors as well as in the care economy.
- New and additional financing should be directed towards more integrated gender-just climate action led by women's organisations, community groups, non-profit organisations and social enterprises.
- Climate action, policy and research needs to explicitly address the impacts on sexual and reproductive health, rights and justice. Action on gender equality is essential but not sufficient for addressing SRHR needs.
- Longitudinal, participatory and locally lead research is required to build the evidence base on the impacts of climate change on SRHR.

Programming implications

- Support more and improved collection of gender-disaggregated data on all levels. This includes explicit data collection and indicators for SRHR.

- SRHR needs to be recognised and costed within climate and health related funding, action intervention and within health system responses.
- Women have specific support needs that should be clearly identified and integrated into climate change programmes.
- There is sufficient evidence to act on the intersections between SRHR and climate change. However, research and evaluation of programmatic strategies and interventions is needed to understand what works in local contexts and may be scalable to other settings.
- There are opportunities to learn with and from the reproductive and climate justice movements to ensure just, effective and appropriate responses and strategies for integrating SRHR within climate action that account for intersectional impacts and inequalities.

1 Introduction

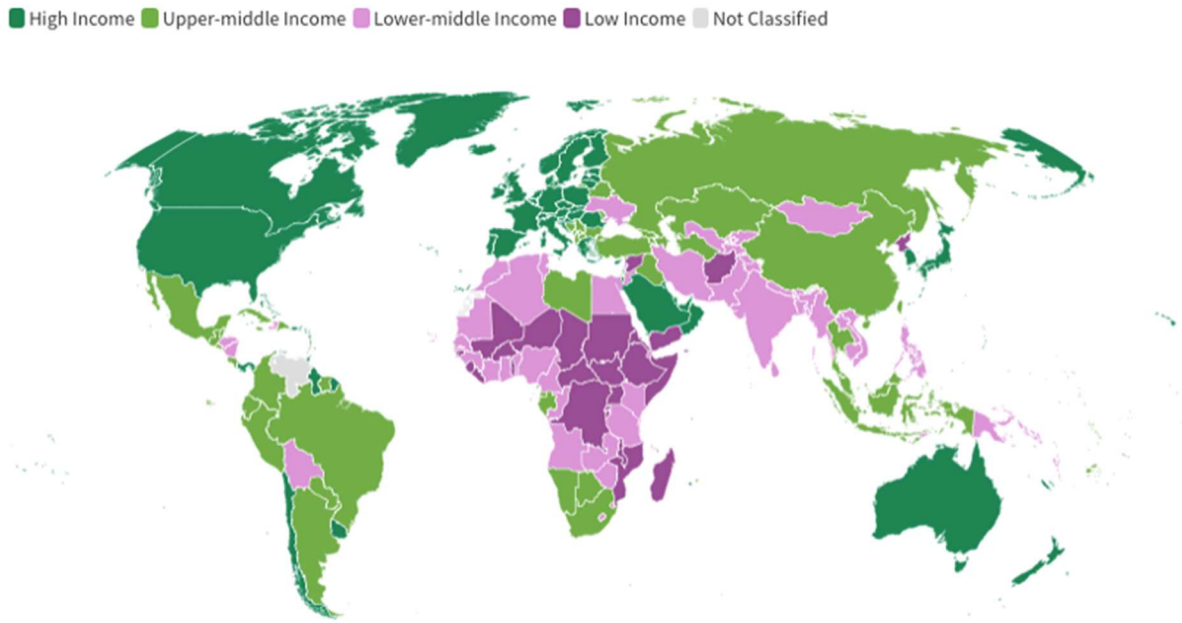
Purpose

The Danish Ministry of Foreign Affairs commissioned two desk studies to identify the most relevant literature and knowledge about the intersections of climate change, gender equality, sexual reproductive health and rights (CC-GE-SRHR) and climate change and education (CC-EDU). The purpose of the deep dives into these intersections of climate change and social development is to stay abreast of the evidence and facts, identify knowledge gaps and promising practices and be informed on the policy and programming-related trends to inform future prioritisation and financing considerations.

The CC-GE-SRHR and CC-EDU are presented separately but are informed by a common analytical lens and systematic review methodologies (Annex 2). The common conceptual framework developed for the studies is founded on the principles of a human rights-based approach (HRBA), which is at the core of Denmark's official development assistance (ODA) (see below and Figure 1). As such, both reports are based on peer-reviewed academic evidence, 'grey' policy-relevant literature produced by organisations and practitioners, and triangulation through stakeholder interviews. Geographically, the analysis has aimed to prioritise low-income countries that are concentrated in Africa as illustrated below (Figure 1).[1]

[1] The report was prepared in accordance with the Terms of Reference of November 2023 and details agreed in the Inception Note of 16 January. The report was prepared by Marianne Jacobsen Toftgaard of Nordic Consulting Group Denmark (NCG Denmark) and Heather McMullen with support from the full consultant team consisting of Anton Baaré and Isak Orry Ahlmann.

Figure 1 – World Bank Group country classifications by income level (2024)



Source: World Bank (accessed April 2024)

Structure of the report

Chapter 1 of the report presents the purpose of the mapping and review (see above) and the structure of the report. **Chapter 2** presents the human rights based conceptual framework and the specific analytical framework used for the CC-GE-SRHR intersection. **Chapter 3** presents the review findings for the CC-GE section and **Chapter 4** presents the review findings for the CC-SRHR section. **Chapter 5** presents trends and implications emerging from the review finding. Sources consulted are presented in Annex 1a and 1b; concepts and definitions in Annex 2, with details of the methodology presented in Annex 3. Annexes 4 present toolboxes and best practices.

Focus of the report

This report analyses prioritised themes in the CC-GE-SRHR intersection focussing on (a) how climate change affects gender equality and SRHR; and (b) how climate change solutions and policies are affected by gender equality and SRHR. The review was scoped to explore evidence and trends for the CC-GE section as follows[2]:

1. Climate change adaptation and mitigation and gender equality.

[2] Reference is made to the final Inception Note of 16 January 2024. These thematic priorities were identified based on a preliminary assessment of the literature and strategic reflection with the MFA team.

2. Loss and damage and disaster risk reduction and gender equality.
3. The just transition and gender equality.
4. Climate finance and gender equality.
5. Climate decision-making and gender equality.

Whereas the CC-SRHR section explored the following thematic areas:

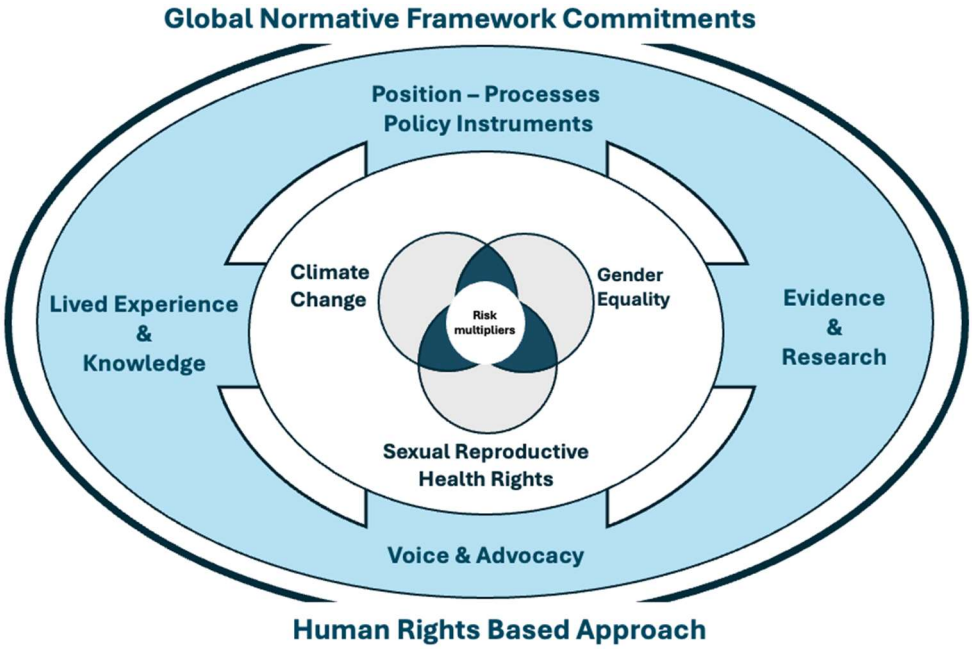
1. The impacts of climate change on perinatal health.
2. The impacts of climate change on HIV.
3. The impacts of climate change on sexual and gender based violence.
4. The impacts of climate change on aspects of reproductive health including services and supplies.
5. The impacts of climate change on fertility intentions.

2 Conceptual and analytical frameworks

A human rights based conceptual framework

Applied to the task of assessing information, evidence and knowledge the HRBA serves as a reminder and counterbalance to the structural dilemma that systems of power and privilege reproduce in terms of which knowledge and information is invested in, is available and made to count and considered in evidence-based decision-making.

Figure 2 – Conceptual framework human rights based lens on climate change intersections and social development applicable to CC-GE-SRHR and CC-EDU.



Source: NCG Denmark

The framing of the analysis postulates that evidence-based policy and programmatic actions in the CC-GE-SRHR and CC-EDU intersections occur in a 'contested space'. The HRBA foundation of the conceptual framework values civil societies' 'voice and advocacy' as shaped by 'lived experience and knowledge' of the individuals and communities affected and living with the front-line effects of climate change. At the global level, and with significant variance across countries, power and empowerment dynamics characterise a contested space in which advocacy, often through voices of civil society and think tanks, seek to influence 'positions-processes and policy instruments' agreed on by decision-makers within a global normative framework such as the Paris Agreement 2015 and other United Nations' normative frameworks.

Evidence-based decision-making is based on the available social and natural scientific evidence which reflects social and political systems that (re) produce the current state of rights deficiencies in the CC-GE-SRHR and CC-EDU intersections. There is an underlying risk that objectively and factually correct scientific evidence is not necessarily neutral where climate change and human rights intersect, often because research and robust evaluations[3] are more difficult, less prioritised and carried out in poorer countries.

Therefore, the authors acknowledge with humility that reviewing the state of the literature presented reflects that there is more academic literature and practice reports where funding has enabled scientists, practitioners, and organisations[4]. Where related gaps were identified, this has been pointed out in the report.

The analytical lense of the CC-GE-SRHR intersection

The framing of the analysis postulates that evidence-based policy and programmatic actions in the CC-GE-SRHR and CC-EDU intersections occur in a 'contested space'. The HRBA foundation of the analytical lens values civil societies' 'voice and advocacy' as shaped by 'lived experience and knowledge' of the individuals and communities affected and living with the front-line effects of climate change. The presentation of findings and suggested priorities have been considered within these dynamics of needs and rights.

[3]As working definition evaluations are considered robust if they use experimental methods like randomised control trials and quasi-experimental methods that estimate the impact and cost-effectiveness of government and NGO programs.

[4] See, for example (Garcia A., 2022)

3 Situational Analysis Gender and SRHR and Climate Change

3.1 Global context of the Gender and SRHR and Climate Change Intersection

Climate change causes widespread impacts on the livelihoods and wellbeing of people. Women and girls are among the groups hardest hit by the impacts of climate change due to significant inequalities in societies that limit women's and girls' opportunities to access and control resources[5] essential for building resilience and the ability to bounce back from for example disasters attributed to climate change (IPCC, 2022). The impacts of climate change increase the vulnerabilities of women and girls that are already bearing an uneven burden of developmental and humanitarian challenges. Sustainable development and gender equality are intrinsically linked and intertwined with climate change. Climate change impacts are predicted to increase in frequency, severity and geographic scope making already worrying situations worse.

The polycrisis of conflict, climate change, COVID 19, global decline in democracy and rise of authoritarian regimes threaten to unravel some of the progress that has been made on achieving the Sustainable Development Goals (SDGs) (UN, 2023). It is thus pertinent and timely to dive deeper into understanding how especially women and girls in developing countries are increasingly suffering from the impacts of climate change. The knowledge and evidence base on the intersection of climate change, gender equality And SRHR is constantly growing and provides insights into how the vulnerabilities and resilience of women and girls is affected by climate change. The scientific evidence is increasingly mapping new interlinkages between climate change, gender equality and SRHR for example in areas of sexual and gender-based violence (SGBV) and child marriage. The recent reports of the Intergovernmental Panel on Climate Change (IPCC) are very clear on the impacts, causes and drivers of climate change on societies, people and planet and on those in the most vulnerable situations. For governments and civil society to respond effectively to these impacts, causes and drivers, the needs of those with least capacity, opportunity, and voice to respond effectively to climate impacts need to be integrated into the design of both climate change programmes and development programmes. Despite the complexity of intersectional analysis, it is important to note that the solutions to tackling vulnerabilities intertwined with climate change impacts are not necessarily novel or different from successful solutions applied in for example gender programmes that address the root causes of inequality and promote more just societies.

[5] Resources mainly refers to: education, ownership of land and other natural resources, financial resources, human resources, time, technology and access to and influence on political decision-making,

3.2 Climate change adaptation and mitigation and gender equality

Key messages

- Women are particularly vulnerable and at higher risk of experiencing negative impacts of climate change[6].
- Climate change perpetuates gender inequality if root causes remain unaddressed[7].
- Women are agents of change and central for achieving greater climate resilience in communities[8].

Key facts

- By 2030 there will be 13 - 32 million additional women and girls in poverty based on current worst case climate change scenarios[9].
- Gender inequality and the violation of women's rights are barriers to women's effective, meaningful, and comprehensive participation in decision-making and climate action[10].
- In 2019, 55% of the improvement of food security in developing countries came from women's empowerment[11].

Rising global average temperatures and CO_2 emissions increase the risks of human induced direct climate change impacts such as more frequent and more extreme weather and slow-onset events. Climate change thus increases the risk of negative impacts on people's livelihoods, inequalities, and societal stability. People in vulnerable and marginalised situations and/or people that experience for example gender inequality experience climate change risks to a higher degree as they have few coping resources and/or little control over their resources. Achieving the long-term goals of the Paris Agreement and reducing the risk posed by climate change on people, societies and planet is key for the progress in achieving the Sustainable Development Goals (SDGs).

[6] For example UNOHCHR, 2019; IPCC, 2022; UNDP, 2016; Huyer et al, 2021; IPCC, 2018
[7] For example GIZ, 2021; Huyer et al, 2020; Cairney et al, 2023; FAO, 2023; UNFPA & QMUL, 2023.
[8] For example UNFCCC, 2022b; Walk et al, 2021; OECD, 2022.
[9] UN Women, 2023
[10] UNOHCHR, 2019; UN Women 2023; IPCC, 2018
[11] UNOHCHR, 2019

Ambitious global mitigation actions, expressed through the level of ambition in existing and forthcoming nationally determined contributions (NDCs), and the level of implementation of existing NDCs - climate action - is essential for keeping global temperature levels below the 1.5 degrees' goal. The first global stocktake held at COP28 in 2023, showed that although progress has been made in the implementation of NDCs, it is not sufficient to keep global temperatures below 1.5 degrees. This implies that those most vulnerable to climate change will experience climate change impacts and that there is a risk of unravelling the progress that has been made in achieving the SDGs[12].

Limiting climate change impacts through ambitious climate mitigation, adaptation and resilience building actions, thereby reducing the impacts experienced by women is a prerequisite for achieving gender equality and protecting the human rights of women[13]. The following section will explore how climate change and gender inequality intersect and are intertwined. It will pay attention to how the violation of women's rights is a barrier to women's effective, meaningful, and comprehensive participation in climate related decision-making and climate action as well as it will investigate how women contribute to greater climate action.

Climate adaptation and gender equality - Literature Analysis

Climate adaptation is a key strategy for reducing climate related vulnerabilities especially in rural areas in developing countries, where the agricultural sector is central for livelihoods, food security and income. The agricultural sector is highly dependent on climatic conditions and one of the main sectors impacted by climate change[14]. It is also the sector where women make up most of the workforce[15] and it is a sector where gender inequality plays into patterns of gendered climate change impacts and gender specific resilience and coping strategies. Several recent international reports by UN agencies and peer reviewed articles show that women have less access to and control over productive land and natural resources[16] and experience more food insecurity[17]. The disproportionate vulnerability of rural women to climate change was also confirmed through interviews with key stakeholders that all highlighted experiences and evidence on how rural women are disproportionally affected by climate change (see for example IPAS for case evidence). Reports by FAO (2023) discuss the difficulty in collecting and producing country level statistics on land ownership disaggregated by gender and it furthermore shows that globally, only 46 countries have reported on SDG

In 2019, women made up more than 36% (66% in Sub Saharan Africa) of the overall agricultural labour force though they only earn 82 cents for every 1 USD earned by men.

The current gap between women's and men's food insecurity has grown to 4.3% since the COVID pandemic.

Source: FAO, 2023

[12] UNOHCHR, 2019; UN Women 2023; IPCC, 2018
[13] UNOHCHR, 2019; USAID, 2016; IPCC, 2022; UNDP, 2016; UN Women, 2023
[14] IPCC, 2018
[15] FAO, 2023
[16] UNDP, 2016; Huyer et al, 2021; FAO, 2023
[17] FAO, 2023; GIZ, 2021; UNOHCHR, 2019, UN Women 2023

Indicator 5.a.1[18]. However, in 30% of the countries that report on indicator 5.a.1 the number of men who have ownership over land is twice as high as for women.

Studies reviewed for this report provide data showing that women have less access to agricultural extension services, finances and technological inputs[19]. Huyer et al (2021) furthermore found that climate induced rural-urban migration leads to rural women managing both farms and households, further increasing their vulnerability through heavy work burdens. The literature thus shows that women have little ownership and control over resources key for building climate resilience and for climate adaptation - women are thus generally in a more vulnerable situation with less opportunities for developing coping mechanisms responding to climate change risks and impacts.

Despite the above-described vulnerabilities women are also essential actors of change. The Food and Agriculture Organisation of the United Nations[20] argues that there is a high level of scientific evidence of the positive correlation between women's empowerment and the improvement of food security in developing countries. The IPCC Special Report on Climate Change and Land (2019) confirms with high confidence that food security and climate change have a strong gender dimension and that the empowerment of women and rights-based approaches can create synergies with household food security and adaptation[21].

This is further substantiated by studies which provide evidence that women take leadership in addressing and improving agricultural systems and food security[22] and that women have developed a range of coping mechanisms addressing non-economic losses and damages from climate change impacts. Peer-reviewed articles and grey literature referenced in IPCC and OECD reports show that the assets women hold, their knowledge and social networks are key to achieving greater resilience in communities as they apply locally appropriate and socially acceptable solutions[23]. Similarly, several of the reports reviewed found that the promotion of women's rights is critical for increasing the food security and resilience of communities that depend on small-scale agricultural production for food and livelihoods[24].

At policy level, climate change adaptation, especially in the agricultural sector, is guided by the National Adaptation Plans (NAPs) and it is also in the NAPs that the gender-differentiated impacts and gender transformative solutions to climate change would ideally be described. Studies by the Global National Adaptation Network have found that current NAPs to some extent consider gender and to date more countries refer to gender equality and gender-responsive approaches in their NAPs than previously[25]. The same study also concludes that women are *primarily* mentioned as a particularly vulnerable

[18] SDG indicator 5.a.1 measures women's and men's land rights.
[19] UNOHCHR, 2019; FAO, 2023, IPCC, 2018
[20] FAO, 2023
[21] See section 5.6.4, IPCC, 2019
[22] FAO, 2023; Huyer et al, 2021; GIZ, 2021; IPAS; UNFCCC 2022b; IPCC, 2018
[23] For example Huyer et al, 2021; OECD, 2022; IPCC, 2023
[24] FAO, 2023; UNOHCHR, 2019; Huyer et al, 2021; Bryan et al, 2024
[25] Daze & Cameron, 2023

group (ibid) and only few NAPs recognise women as change agents[26]. A range of the articles reviewed, including the IPCC Special report on Climate Change and Land (2019) point out that women are underrepresented or excluded from climate-policy making at all levels, thus also from NAP related policy processes[27]. In a stakeholder interview IUCN highlighted the need to work with both women-led community groups and governments on identifying and reflecting the needs and priorities of women in government policies and plans such as the NAPs. Other stakeholders placed emphasis on the need to bring out the feminist voices from the global south and strengthen the recognition of gender justice in all climate policies.

Huyer et al (2020) furthermore point out that new and central elements of climate adaptation can be found in the introduction of climate smart agriculture. However, for these to be effective, they need to be developed and designed in a gender-transformative manner to not exacerbate existing inequalities and exacerbate the double work burden women often hold in rural households[28]. The analysis of the NAPs conducted by Daze & Cameron (2023) also shows that women are often described as a homogenous group with little focus on for example socio-economic differences and granularity in terms of women as change agents in different sectors.

Climate mitigation and gender equality - Literature Analysis

Similar to the findings highlighted in the previous section, a range of studies show that women are largely excluded from decision-making processes that identify and implement mitigation solutions[29]**.** The United Nations Framework Convention on Climate Change (UNFCCC) NDC Synthesis report (2023) found that 59% of the Parties had held gender-sensitive consultations as part of their public NDC review process, thereby reducing the risk of applying gender-neutral approaches in mitigation or adaptation programmes that could worsen existing inequalities[30].

However, consulting women in policy processes does not necessarily ensure that their particular role, needs or priorities are subsequently reflected in the policy instrument or in implementation strategies. In terms of the NDCs, an analysis by IUCN (2021) of 89 updated NDCs, found that only 43% of the NDCs referred to women as 'stakeholders', even fewer referred to women as 'vulnerable', 'beneficiaries' and only a few identified women as 'agents of change'. In 2023, 64 of the NDCs mentioned women's participation and decision-making in climate action and policies[31] and more 2023 NDCs (compared to 2021) recognised gender integration as a means for achieving effective climate action than previously submitted NDCs[32]. Similarly, by 2023 92% of NDCs reference gender most often in the context of gender mainstreaming understood as considering gender

[26] Huyer et al, 2021; Daze & Cameron, 2023
[27] For example FAO, 2023; Huyer et al, 2021; Huyer et al, 2020; IPCC, 2018
[28] Huyer et al, 2021; Bryan et al, 2021; IPCC, 2018
[29] USAID, 2016; UNDP, 2016; UN OHCHR, 2019
[30] Huyer et al, 2021
[31] UNFPA & QMUL, 2023
[32] OECD, 2022; UNFCCC, 2023

issues across adaptation and mitigation measures[33]. However, as also referenced above, there seems to be a gap between mentioning women and gender mainstreaming and including women and gender transformative action in climate related policy implementation. In 2023, only 27 NDCs mentioned women in relation to the energy sector and 59 NDCs mentioned women under agriculture[34]. There is limited consideration of women in key climate policy related sectors and a gap in engaging women as agents of change.

Solely mentioning gender and women as change agents in NDCs is also not sufficient for addressing structural gender inequalities. The analysis by UNFPA & QMUL on the 2023 NDCs, thus also concludes that the NDCs are weak in identifying and addressing the root causes of inequalities and that climate policies overall risk exacerbating gender inequalities[35]. Huyer et al (2021) have additionally found that failure of establishing the root causes for women's greater vulnerability further prevents women from taking on a position of agency, as they are mainly perceived as victims, which undermines their potential as change agents.

Gaps

A key gap identified in the reviewed literature is a lack of evidence on how the interlinkages between the root cause of vulnerabilities and gender inequality and climate change manifest themselves in both climate adaptation and climate mitigation action. As Huyer et al (2021) point out - how can underlying power relations be addressed in climate policy and what are the specific and practical key elements of climate mitigation or adaptation policies that address root causes of gender equality, and are these then manifested as part of climate adaptation and/or mitigation actions on the ground? The literature reviewed for this report has not provided generalised evidence for what approaches successfully address the root causes of gender inequality in adaptation and mitigation to climate change and Huyer et al (2021) point out that these interlinkages are less explored and more research is needed to better understand all the power relations underlying gender inequality. This also includes power imbalances in judicial, economic, social and political structures[36] as well as issues related to masculinity and the gendered impacts of climate change on men[37].

Convergence of evidence

The literature reviewed as part of this report clearly converges towards strong linkages between climate change mitigation and adaptation and gender (in)equality. Women are impacted disproportionately by climate change. The review also provided strong evidence on the fact that women are key agents of change in achieving greater climate resilience and adaptation to climate change, as well as in achieving mitigation goals.

[33] ibid
[34] UNFCCC, 2023
[35] UNFPA & QMUL, 2023; IPCC, 2023; Achampong, 2023
[36] Huyer et al, 2021; CARE, 2021
[37] Bryan et al, 2021

There is also convincing evidence that the significant contribution by women to achieving such goals is less tested as most national level climate change policy instruments, such as the NAPs and NDCs, do not consider women specifically as key agents of change. Despite the robust evidence that women play a key role in advancing climate action and in designing solutions that benefit communities and societies.

3.3 Loss and damage, disaster risk reduction and gender equality

Key messages

- Losses and damages resulting from climate change induced disasters and extreme weather events are also gendered and further exacerbate the vulnerabilities of women and girls[38].
- Women's ability to cope with climate change induced disasters and related loss and damage is highly contextualised and driven by context specific inequalities, culture and socio-economic factors[39].
- Women and gender minorities are not sufficiently involved in the decision-making processes that address climate related losses and damages and disaster risk reduction strategies[40].

Key facts

- 71 countries have developed gender integrated risk reduction/risk management frameworks under the Sendai Framework and 14 countries highlight that women and/or women's organisations have meaningfully participated in the development of these frameworks[41].
- There are significant data gaps in gender disaggregated data making it difficult to map the specific gendered impacts of loss and damage related to climate induced disasters[42].

Literature Analysis

As established previously, women have less access to and control over natural resources, financial assets, and services such as education, health care services which

[38] For example GIZ, 2021; CEDAW, 2018; Lecoutere, 2023.
[39] For example: GIZ, 2021; UNOHCHR, 2019; Bryan et al, 2024
[40] For example: CEDAW 2018; Gaillard et al 2017; Malapit & Brown, 2023
[41] UN Women's Policy Tracker, 2023
[42] For example: CARE Denmark & the Danish Red Cross, 2023.

in turn impede their adaptive and coping capacities responding to climate change impacts[43]. A substantial amount of the reports reviewed concur that climate disasters are experienced differently due to structural and cultural factors such as gender, age, ethnicity, wealth, class and/or disability[44]. Various socio-economic and cultural factors limit women's ability to cope with, and adapt to, climate related disasters[45]. Social norms and gender bias further deepen the vulnerabilities of women and girls to climate change impacts, and recommendation 37 by CEDAW (2018) highlights the need to address structural barriers faced by women to address the intersection between gender equality and climate disasters.

There is some evidence that women and girls have higher mortality and morbidity rates following climate induced disasters due to physiological reasons (such as pregnancy or inability to swim) and/or socio-cultural reasons (such as waiting for male family members to be allowed to evacuate from homes)[46]. A case study from Mozambique highlights the gendered impacts and non-economic losses related to climate disasters by referring to differences in capacities and behaviour during disasters as "women hold on to their children, while men hold on to a tree"[47]. A research report by UNICEF and UN Women (2019) examines the gendered impacts of specific climate induced disasters showing that women died at significantly higher rates than men. The Committee on the Elimination of Discrimination against Women (CEDAW), for example, adopted recommendation 37 which identifies a range of obligations for countries to address the "gender-related dimensions of disaster risk reduction in the context of climate change" based on the argument that the mortality and morbidity levels in disasters are higher amongst women and girls, and that climate change will result in more frequent, more intense and more widespread disasters such as flooding, heatwaves, hurricanes and typhoons (CEDAW, 2018). A study by Malapit and Brown (2023) concludes that a country's fragility and gender inequality are interlinked. 15 out of 21 conflict-affected contexts face high levels of gender inequality and 72% of the bottom ranked countries in the global gender gap report are considered fragile[48]. This interlinkage underscores the gendered consequences of climate induced disaster and conflicts compounded by climate change. Other reports furthermore provide data on how climate disasters: lower the life expectancy of women more than men; increase the risk of GBV and child marriage; as well as worsen the lack of access to health and sanitation services and lead to an increase in workload for women and girls[49]. Key stakeholders also shared field level data, evidence and experiences on how climate disasters particularly impact women. For example, through an increase in sex trafficking in the wake of climate disasters

[43] For example: Huyer et al, 2021; Lecoutere, 2023; GIZ, 2021, CEDAW, 2018, UNOHCHR, 2019, UNFPA & QMUL, 2023; Bryan et al, 2024
[44] GIZ, 2021
[45] Lecoutere et al, 2023
[46] GIZ, 2021; Huyer et al, 2020 and 2021
[47] CARE & the Danish Red Cross, 2023
[48] Malapit and Brown, 2023
[49] Lecoutere et al, 2023; UNFCCC 2022b; Gaillard et al, 2017; CARE Denmark & Danish Red Cross, 2023

and/or through increased insecurity during disasters as disaster risk reduction strategies do not take gender differences into account (for case examples see for example here).

Climate disaster impacts on gender equality:

- 90 percent of victims in the 1991 cyclone in Bangladesh were women.
- 61 percent of people reported missing, or dead were women in cyclone Nargis in Myanmar.
- Following Hurricane Eta and Iota (2020) the income gap between men and women rose from 14 percent to 36 percent.
- 62 percent of affected women did not have access to maternal health services following Hurricane Eta and Iota.
- In Vanuatu a 300 percent increase in new case of gender based violence was recorded following two cyclones.
- In Asia Pacific women dedicate 4 times more time to unpaid domestic and care work. This number increases during climate-related shocks.

Various sources including: GIZ, 2021; CARE Denmark & Danish Red Cross, 2023; UNFCCC 2022b; Lecoutere et al, 2023

However, due to data gaps (discussed below) there is less strong data evidence to further substantiate the higher mortality rates among women because of climate induced disasters.

A study on climate hotspots and gender equality found that climate related hazards and gender related impacts overlap in complex ways and are specific to local circumstances and context [50]. Displacement following sudden onset climate disasters such as typhoons or hurricanes, often create conditions conducive to GBV, sexual harassment and abuse[51]. The study by GIZ (2021) for example collates a range of data from different climate induced disasters and documents an increase in GBV and violence against women and girls in the aftermath of these (see more on this topic under section 3.8).

[50] CARE & the Danish Red Cross, 2023

[51] Malapit & Brown, 2023; Lecoutere, 2023; GIZ, 2021; CARE & Danish Red Cross, 2023; CEDAW, 2018.

In general, the literature reviewed points to that women in post-disaster situations face additional challenges, as they further lose control over natural resources, assets, and land ownership and lack support from public social safety systems.[52] This further increases their dependency on men, puts them at risk of abuse and impedes their ability to return and rebuild after relocation. Studies also show that women and female-headed, single households are less able to access relief and other services due to pre-existing patriarchal structures that for example limit their access to shelters[53] and data shows that women suffer greater losses during and after climate disasters, for example in situations of displacement or forced migration. This also includes additional burdens as women face higher workloads post-disaster in terms of care work[54].

Women's Resilience to Disaster Programme:

In 2020 UN Women together with UNDRR, the IFRC and the Solomon Island Red Cross Society ran a training to for the Solomon National Disasters Operations Committee in applying Gender-responsive post disaster processes and tools. This included training on gender-responsive Initial Damage Assessment (IDA), Detailed Sectorial Assessments (DSA), and Humanitarian Programming. The assessment tools have played a major part in disaster response since, including in the development of humanitarian strategic plans and in the inclusion of women in decision-making processes.

Read more about the initiatives of the Women's Resilience to Disaster Programme here

The literature reviewed highlights that women and sexual and gender minorities are seldom heard in disaster management and are less involved in the design of projects.[55] The study by GIZ (2021) specifically cites women's exclusion from decision-making processes and political participation as a factor that increases the vulnerability of women to climate change disasters and related losses and damages. Further, other studies have shown that disaster risk reduction strategies in countries with high climate risks and sexual and gender minorities, do not integrate the needs and/or contributions of these minorities[56]. Overlooking gender inequalities in disaster risk reduction strategies risks ill-adapted support and policy and further deepening existing inequalities and vulnerabilities[57].

Gender norms place women at a disadvantage in terms of their ability to cope and adapt to climate change in agri-food systems and climate risk hotspots[58]. Despite this disadvantage women are "leaders in community-based natural hazard response, risk reduction and contribute greatly to the recovery process by addressing the immediate needs of their families and strengthening community resilience" and make important contributions to disaster risk reduction and post-disaster management[59]. There is however a need to understand local circumstances, context, and complexities to be able

[52] For example, CARE Denmark & Danish Red Cross, 2023; Lecoutere, 2023; CEDAW, 2018
[53] GIZ, 2021; CEDAW, 2018
[54] CARE & Danish Red Cross, 2023; Lecoutere, 2023; GIZ, 2021
[55] Malapit & Brown, 2023; GIZ, 2021; Gaillard et al, 2017; UN Women and Unicef, 2019
[56] Gaillard et al, 2017
[57] Lecoutere et al, 2023; UNFCCC 2022b; Gaillard et al, 2017
[58] Lecoutere et al, 2023
[59] GIZ, 2021; CEDAW, 2018

to unlock women's agency and role in advancing climate outcomes that promote community level climate resilience[60].

Gaps

As already highlighted at the beginning of this section a key gap in this thematic area is the lack of gender disaggregated quantitative data in global and national databases. It is key to address this gap for disaster responses to become more gender responsive. However, work by the Women's Resilience to Disasters Knowledge Hub highlights that there are alternatives to understanding gendered impacts of climate disasters beyond the collection and analysis of quantitative data. This would for example include considering existing data and information on gender inequality in a particular context; identifying gender stereotypes that further exacerbate vulnerable situations of marginalised groups and critically identifying which societal groups voices are missing from analysis, reports, and plans.

Convergence of evidence

There is strong evidence that climate change induced disasters impact women and girls differently and exacerbates already existing inequalities. The evidence also points to that extreme weather events cause higher mortality rates for women and girls, although this is more difficult to substantiate due to the lack of data. A range of climate disaster specific case studies and examples show a higher mortality rate for women and girls, but this is not generalised global data. However, as gender disaggregated data is not collected systematically and captured in for example the EMDAT database, the amount of evidence remains at a medium level. However as argued above, context specific gender inequalities will likely result in gendered impacts of climate change induced disasters and there is evidence that more gender-just disaster risk reduction strategies would reduce the impacts on women post-disasters.

[60] Dutta et al, 2017; Lecoutere et al, 2023

3.4 The just transition and gender equality

Key messages

- The transition to a low-carbon society impacts men and women differently. These differences have not been sufficiently addressed in current just transition plans[61].
- Just transition strategies and plans should consider informal jobs, often held by women, related to the energy and mining sector[62].
- Women are key agents in communicating, promoting and disseminating affordable, clean energy solutions[63].
- Gender stereotypes, bias and cultural norms are a barrier to women's participation in the just transition. Barriers and how these could be addressed need to be studied further to support women's participation and active engagement in the just transition[64].

Key facts

- In 2021, women took up 22% of the full-time jobs in the global oil and gas sector and 40% in the photovoltaic solar sector, however these were mostly in administrative and marketing positions[65].
- Jobs in the renewable energy sector are predicted to increase from 10.3 million in 2017 to app 29 million in 2050[66].
- Female representation in the leadership of national social dialogue institutions ranged from 20 to 35 percent in 2018[67].

[61] For example: Dalabajan et al, 2022; ILO, 2024; UNFCCC, 2023a
[62] For example; ILO, 2024; Walk et al 2021; WEDO, 2016
[63] For example: ILO, 2024; Dutta, 2017
[64] For example: WEDO 2016; IRENA & ILO, 2023; and see deliberations at the UNFCCC COP28 Mandated in-session workshop by the ILO and UNFCCC: Delivering a gender-responsive just transition for all, including the background note.
[65] IRENA, 2023
[66] Ibid.
[67] ILO, 2024

Literature Analysis

The literature analysis for this topic found that the transition to a low-carbon society impacts men and women differently[68]. The decarbonisation process will affect all dimensions of societies in a gendered manner and affects the possibilities for women to reap the potential positive effects such as social justice and decent work[69]. It also found that achieving a just transition does not automatically reduce already existing inequalities in societies. The pursuit of just transition, poses the risk of further deepening existing gender inequalities and can have negative as well as positive gender-based impacts.

POTENTIAL NEGATIVE IMPACTS OF JUST TRANSITION ON GENDER EQUALITY

- a participation gap (fewer new jobs are occupied by women),
- a skills gap (women are less skilled for new, decent, green jobs),
- the double burden of job, household and care work,
- uncompensated job losses due to structural change, e.g. closure of coal power plants and,
- a potential deepening of existing inequalities if the just transition is carried out without gender-specific policies, plans and frameworks that specifically address existing gender inequalities and the needs of women.

From multiple sources: ILO, 2023; IRENA&ILO, 2023; UNFCCC 2023a

There is ample evidence on the potential negative gender-impacts of climate change and just transition policies. A range of studies and reports by the International Labour Organisation (ILO) as well as peer reviewed articles highlight the negative impacts shown in the fact box.

The potential negative impacts are further manifested through country level cases from India, South Africa and Spain. These cases provide data on the gendered impacts coal transitions have on both community, household and individual level. Phase out of coal mining is accompanied by deep social changes from outmigration to increases in domestic violence, changes in the gendered division of labour, changes in female identity and increase in paid and unpaid workload for women[70].

That being said, the review also found evidence of the potential positive gender-impacts of the just transition, including: i) economic empowerment, ii) increased labour market participation and decent jobs, iii) greater access to clean, affordable and safe energy, iv) greater availability of safe and affordable public transport, v) greater control over resources, vi) decrease of time spent on household chores[71].

The literature reviewed highlighted that the impact of the just transition on women is evident in all economic sectors (e.g. agriculture, energy, industry, transport) albeit to different degrees. In the energy sector, women primarily work in the informal economy. They provide essential services for workers at coal fired power station such as meals,

[68] ILO, 2023; Dutta, 2017; Dalabajan, D. & Mayne, R. et al, 2017; ILO, 2017a; ILO, 2015a; IRENA & ILO 2023; Presidential Climate Commission, 2022; Analistas, 2023; IPCC, 2023; UNFCCC 2023a; Walk et al 2021

[69] ILO, 2017

[70] Walk et al, 2021; Dutta, 2017; Dalabajan & Mayne et al, 2017, UNFCCC, 2023

[71] ILO, 2023

cleaning and care services[72]. In the agricultural sector on the other hand women make up the majority of the workforce and are thus directly affected by just transition measures[73].

Data presented in the reports show that women take on most of the work in the informal, unpaid care economy[74] and although women are increasingly also employed in the renewable energy sector, similar data sets show that they take up significantly fewer jobs than men and these are mostly administrative[75]. The literature describes a range of significant barriers for women to access jobs in the renewable energy industry including: the perception of gender roles, cultural and social norms, and prevailing hiring practices[76].

As seen in other climate policy related studies, the reviewed literature highlights that women are often not considered in the design and implementation of just transition plans. This is explained by that they are working in the informal economy, hold unpaid care jobs, or are unorganised and thus not part of the formal social dialogue structures and are hence neglected in Just Energy Transition Plans (JET-Ps) [77]. This can be "*due to the lack of access to institutions and therefore structural power, women have mostly organised themselves informally in grassroots movements and community work"*[78]. In South Africa's Mpumalanga region for example the closing of the Komati coal fired power plant and transitioning of coal workers to Renewable Energy Power Plants, has had severe consequences for the unorganised women working in the informal economy surrounding the power plant[79]. Amongst other negative effects, an increase in GBV was reported as women lost the opportunity to support the household income and could not access any social protection schemes[80].

The literature also points out that women hold a key role in advancing the just transition[81]. Walk et al (2021) found that women in mining communities either support or actively prevent for example the closure of mines trying to protect male miners' jobs. In other studies, such as Dutta (2017) and International Renewable Energy Agency (IRENA) & International Labour Organisation (ILO) (2023) it was found that women hold a key role in scaling clean, safe, an affordable energy access solutions such as solar and/or small-scale hydro power[82]. It was further established that an increase in the installation of solar

[72] Analistas, 2023
[73] UNDP, 2016
[74] ILO, 2023
[75] IRENA & ILO, 2023
[76] IRENA, 2019
[77] Walk et al, 2021; Presidential Climate Commission, 2022; Dutta, 2017
[78] Walk et al, 2021
[79] Hallowes & Munik, 2022
[80] South Africa, Presidential Climate Commission, 2023
[81] Dutta, 2017; Walk et al, 2021
[82] Dutta, 2017; IRENA & ILO, 2023; UNFCCC, 2023; IRENA, 2019

energy technologies has resulted in an increase in employment amongst women as more electric appliances free up time for formal, paid jobs[83].

Other studies show that women are agents in educating communities on the benefits of renewable energy technologies and in advancing access to affordable, reliable and safe energy[84]. Empowering women entrepreneurs in promoting for example small scale solar solutions has been found to result in both large outreach within communities and hard-to-reach communities, as well as it has resulted in increased income, decreased fuel expenses for households (up to 30%), and less time spent on cooking, collecting fuel wood, being sick/unpaid care work, and improved children's education as they have light at night[85].

The Solar Sisters/Kopernik programme in Indonesia has trained 2.000 female small-scale entrepreneurs in selling, installing and disseminating small scale solar energy. So far, the women reached over 500.000 people with solar photo voltaic installations, and the Solar Sisters earn a regular monthly income and save 30% of fuel expenses. They use less time cooking, collecting fuel wood and being sick; and have light at night, which further improves their livelihoods.

The programme is implemented jointly with ENERGIA Women's Economic Empowerment (WEE) programme that aims at economic empowerment of women through energy enterprises targeted at last mile communities. Read more about the Solar Sister and Kopernik programme here: https://solarsister.org/lastmilelearning-1/

Persistent gender stereotypes, bias and cultural norms are a barrier to women's participation in the just transition, especially in rural areas[86]. However, on the other hand women's involvement in the delivery of energy access solutions slowly changes social and cultural norms towards greater inclusion of women as change agents and should be further supported[87].

Gaps

The reviewed literature and stakeholders interviewed for this report have pointed to the need for more rigorously collecting data on the informal economy and informal jobs that are performed by women but that are not formally part of for example a coal mine or a coal fired power station. As there is a lack of data, there is also a lack of evidence in terms of how women are affected by for example the closure of coal mines and what measures could be taken to reduce these negative impacts.

Whereas there is data on the relative negative and positive gendered impacts of the just transition in various sectors, there is a lack of evidence and granular analyses of the various barriers women face to participate in just transition processes fully and equally and how these barriers could most effectively be overcome. Such analysis would usefully also provide pointers on which social support systems and policies best support women in engaging in the just transition and harvesting its benefits.

[83] Dutta, 2017; UNFCCC, 2023; IRENA, 2019
[84] Dutta, 2017; IRENA, 2019; IPCC, 2022
[85] Dutta, 2017; ILO, 2023, UNFCCC, 2023; IRENA, 2019; IPCC, 2018
[86] UNFCCC, 2023; IRENA, 2019
[87] Dutta, 2017; IRENA, 2019

Convergence of evidence

The literature reviewed for this report clearly provides examples and evidence that just transition efforts have a strong gender dimension that currently is insufficiently integrated into just transition plans and policies. There is also evidence that if these gender dimensions are not integrated into just transition policies and plans, they risk further worsening gender inequalities and loosening out on harvesting the benefits of engaging women in the societal change processes. Particularly in relation to the roll out of socially acceptable, clean and affordable energy solutions.

3.5 Climate finance and gender equality

Key messages

- Limited access to finance is a barrier for women to fully engage in climate mitigation and/or adaptation action, which hinders achieving climate change goals[88].
- Current climate finance does not sufficiently address the gendered impacts of climate change and does not reach women and girls at the local levels. There is an urgent need to provide climate finance that is specifically targeted at addressing the climate change and gender inequality intersections in a transformative manner for example by: i) funding direct participation of feminist and women's rights activists in climate finance policy fora; ii) providing finance that reaches women grassroot organisations, community groups, non-profit organisations and social enterprises; iii) funding initiatives and projects that are designed to respond to women's needs including by lowering the barriers for women to access and control resources essential for increasing climate resilience and climate action; and iv) supporting more integrated, gender-transformative and just climate action[89].
- Gender-responsive climate finance is key for accelerating climate action. It is essential to close the current financing gap of existing intersectional programmes such as the UNFCCC Gender Action Plan and the Lima Work programme which would ensure greater coherence in the efforts to include, mobilise and empower women as key agents of change in climate adaptation and mitigation[90].

[88] Achampong, 2023
[89] For example: Achampong, 2023; Huyer et al 2020; Schalatek, 2023; WEDO, 2016; OECD, 2022
[90] Schalatek, 2023; OECD, 2022; WEDO, 2016.

Key facts

- Only 4% of bilateral ODA climate finance from OECD countries has gender equality as the principal objective[91].
- There is a lack of generalised global evidence on how improved and targeted climate finance flows improves the livelihoods of women and girls[92].

Literature Analysis

Generally, data from the OECD shows that climate finance has increased over the past years, however, climate finance, which has gender equality as a principal objective, accounted for only 4% of all climate-related official development assistance in 2021-2022 (ODA)[93]. Of this, climate adaptation finance held the highest share of integrating gender equality objectives, whereas climate mitigation and humanitarian aid held the lowest shares. This data further supports the notion that women are not fully participating in the implementation and design of climate mitigation projects and programmes and are not sufficiently targeted in humanitarian aid for example post climate induced disasters.

Overall, the literature analysis found a considerable number of reports concluding that climate finance flows do not reach women and girls adequately in the rural areas of the global south, despite the potential women hold to promote climate solutions[94].

For example, in a recent expert note for CSW, Achampong (2023) has collated evidence on the barriers women face in accessing both public and private climate finance. These barriers include a lack of accounting for the specific circumstances of women; discriminatory, gendered lending practices, lack of public sector social protection; lack of engaging in decision-making and policy development processes on climate finance; a lack of owned assets for collateral for loans; differences in power in households, and families and gender bias in societies that result in women using informal and expensive financing mechanisms. Additional inequalities along structural intersections such as ethnic, racial, and indigenous discrimination further hinder women to access climate finance through for example micro-credit schemes[95]. The literature review thus finds that there is evidence of that the lack of access to finance is a barrier for women to fully engage in climate mitigation and/or adaptation action which has a detrimental effect on achieving climate change goals[96].

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[91] OECD, 2022
[92] For example Dutta, 2017
[93] (OECD, 2022)
[94] (see for example Dutta, 2017; ILO, 2023; UNFCCC 2022)
[95] (Dutta, 2017)
[96] (WEDO, 2016; Huyer, 2019; Dutta, 2017; Achampong, 2023).

A substantial part of climate finance is channelled through multilateral climate funds that serve the UNFCCC convention, the Green Climate Fund (GCF) and the Global Environment Facility (GEF) and the much smaller Climate Adaptation Fund (AF). The Standing Committee on Finance (SCF), a constituted body of the UNFCCC, has made efforts to include the gender-dimension in their finance reporting. Today the GCF, the GEF and the Adaptation Fund have project-specific gender requirements as well as gender policies and require a gender action plan as a prerequisite for project approval (UNOHCHR, 2019). The GEF has also laid out that projects should include a gender analysis and a social assessment during the design of the project, including consulting with women as project stakeholders. They are furthermore obliged to develop gender targets, collect sex-disaggregated data as well as specify a budget for gender related activities. As a result, international development programmes are increasingly gender-responsive which improves the effectiveness, efficiency, and sustainability of investments[97]. However, the literature reviewed agrees that there is a gap in financial support to implement the UNFCCC Lima Work programme and that funding for other gender focused climate programmes has been difficult to secure[98]. Stakeholder interviews furthermore highlighted the gap in financing the UNFCCC Gender Action Plan.

The IPCC (2022) concludes that structural vulnerabilities to climate change can be reduced through, inter alia, rights-based approaches that focus on capacity-building, meaningful participation of the most vulnerable groups, and their access to key resources, including financing, to reduce risk and adapt. Achampong (2023) - amongst others – argues that such vulnerabilities could be addressed by ensuring greater access to gender-responsive climate finance, greater transparency of climate finance flows, greater engagement of women in decision-making and greater consideration of debt sustainability.

Gaps

There is a gap in systematic reviews and literature that examine to what extent climate finance has targeted women and/or gender inequality. This could potentially be explained by the often referred to lack of disaggregated data in climate change projects and related financing. There is a need for further analysis and evaluations of ODA that integrates gender equality and climate action objectives so that these allocations become transparent, and evidence and data can be used to strengthen the integration of policies, programmes and projects[99].

Convergence of evidence

The literature reviewed and also the interviews with stakeholders confirm that there is evidence that climate finance does not yet forefront gender equality and that there is a missed opportunity in ensuring greater direct access of women's organisations to climate finance. There are furthermore indications that direct access to climate finance

[97] (Schalatek, 2023)
[98] (Achampong, 2023)
[99] (OECD, 2022)

could accelerate the implementation of climate solutions in rural and hard to reach communities[100].

3.6 Climate decision-making and gender equality

Key messages

- Women are underrepresented in climate related decision-making on all levels[101].
- The meaningful participation of women is a prerequisite for the effective formulation, design and implementation of climate action[102].
- Women are bearers of unique knowledge and solutions that can meaningfully inform climate policies and decision-making[103].

Key facts

- In 2020, women held 15% of top jobs in the environmental sector[104].
- There is a lack of systematically collected national level data on the participation and representation of women in climate related decision-making at all levels[105].

Literature Analysis

As previously substantiated, women play a key role in climate decision-making and in advancing climate action across all sectors and policy areas. The analysis thus finds convincing evidence that the full and effective participation by women in decision-making processes is part of protecting women's rights and is a core element of rights-based approaches[106]. There is some evidence that countries with high female representation in parliaments are more likely to make environmentally sustainable decisions[107]. However, women are in general underrepresented in decision-making

[100] (Dutta, 2017)
[101] (For example: UNFCCC, 2022b; IUCN, Strumskyte et al, 2022)
[102] (For example: Dutta, 2017; Huyer et al 2020; OECD, 2022.)
[103] (For example Dutta, 2017; IPCC, 2022.)
[104] (IUCN, 2021)
[105] For example UNFCCC, 2021; Schalatek, 2022; OECD, 2022)
[106] (UNDP, 2016)
[107] (Strumskyte et al, 2022; UNDP, 2016; UNFCCC, 2021)

processes and in labour markets at all levels and are thus not able to effectively contribute or shape climate policy making, climate programmes, plans and/or implementation[108]. As previously indicated, the literature finds that there is a tendency to primarily categorise women as vulnerable victims to climate change and passive aid recipients[109].

Several UN-produced documents, including the IPCC, state that gender inequalities are further exacerbated if women are not included in decision-making[110], simply because the voices and views of women are not heard and their priorities and needs not included. There is also evidence that, for effective climate action, the meaningful and effective participation of women must be prioritised as they bring unique perspectives, expertise and problem-solving capabilities[111].

IRENA for example has found that establishing gender as a pillar in energy strategies at national level will result in a more efficient, faster, and inclusive energy transition[112]. Peer reviewed academic articles have found that when women are involved in climate action and decision-making it benefits not only themselves but typically also their families, children, and communities[113].

Gaps

Whereas there is evidence that women are not sufficiently included in policy making and that when included they bring in a greater focus on sustainability, there is less evidence on whether the full integration of women, also in the long-term, ensures more and better climate policy and decision-making. Additionally, there is also a gap in evidence that monitors progress in addressing the root causes of gender inequality and how this in turn is reflected in climate policy including in budget allocations financing the implementation of such policies.

A glaring gap in the evidence base is more granular data on the influence women have on policy-making, the allocation of budgets and setting priorities for climate action. The simple explanation is that women are underrepresented in climate decision-making in general and this evidence is therefore difficult to collate. However, a few civil society organisations such as IPAS and IUCN are making efforts to bring together the data and turn anecdotal, field-based evidence to academic data collection and analysis useful for more universal guidance on the relationship between gender equality and climate change policy making.

There is also not sufficient evidence or studies that examine whether addressing gender equality in climate change policy would result in inequities for other marginalised groups.

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[108] (see for example, Strumskyte et al, 2022; OECD 2022; Huyer et al, 2020, Schalatek, 2023)
[109] (Huyer et al, 2020)
[110] (IPCC, 2022; UNOHCHR, 2019; UNFCCC, 2022a; UNFCCC, 2022b)
[111] (OECD, 2022; Huyer et al, 2021, FAO, 2023; Bryan et al, 2024; Strumskyte et al, 2022; IPCC, 2022, UNDP, 2016)
[112] (IRENA, 2019)
[113] (Dutta et al, 2017; UNOHCHR, 2019; FAO, 2023)

Convergence of evidence

The literature reviewed, the overall narrative and tone of voice in climate policy discussions, iterates that gender equality is not sufficiently integrated into climate policy, climate finance and climate action and thus does not address structural root causes of gender inequality in a deep manner. There are examples of how female representation in national and international decision-making bodies strengthens climate action and gender equality efforts. However, there is not a large body of analysis of data on the long-term effects of gender equality in climate decision-making on a national and/or international level and the narrative, while justified on an overall level, is difficult to support with analytical datasets.

4 Situational Analysis Climate Change and SRHR

The following sections specifically examine evidence found in the reviewed literature on the intersection of climate change and key SRHR topics. Similar to the previous situational analysis, this section has also been structured according to key climate change related topics that were identified through a preliminary literature review and interviews with key stakeholders. As the following sections will show, climate change impacts health in different ways.

4.1 The impacts of climate change on perinatal health

Key Messages

- Climate change is having a negative impact on maternal and newborn health.
- Direct and indirect climate change impacts, such as heat, extreme weather events such as droughts and floods, disease transmission, food insecurity, air pollution and the degradation of social and health services and protections contribute to poor perinatal health outcomes[114].
- The impacts of climate change on maternal and newborn health are exacerbated by existing inequalities leading to poorer health outcomes for groups facing multiple and intersecting forms of oppression[115].

[114] (For example: McElroy et al., 2022; Chersich et al., 2022; Batiz et al, 2022; He et al., 2024.)
[115] (For example: Batiz et al, 2022; WHO, UNFPA, UNICEF, 2023; Bekkar, Bruce, Susan Pacheco, Rupa Basu et al., 2020)

Key Facts

- In a global analysis of the impacts of extreme heat on preterm and stillbirth in 14 low and middle income countries McElroy et al. found that there is an increased risk of preterm birth among women who were exposed to extreme heat within the seven days before giving birth[116].
- A 2020 meta-analysis by Chersich et al, reviewed birth outcomes in 27 countries and across 70 studies and found that there is a 5% higher rate of preterm and stillbirth for each 1 degree Celsius increase in temperature and a 16% increase in preterm births during heat waves. These outcomes were notably worse for mothers of lower socioeconomic status[117].
- A review of over 90,000 pregnancy loss records across 33 developing countries found that flood exposure during pregnancy is linked with increased pregnancy loss with an odds ratio of 1.08 percent. The authors note that floods are becoming more prominent and anticipate a growing number of pregnancy losses as a result of climate impacts[118].

Literature Analysis and Gaps

The impact of heat on perinatal health

Climate induced heat and extreme heat impact on pregnancy and newborn health[119]. There is a wide range of adverse outcomes facilitated by the direct and indirect impacts of heat exposure on pregnancy. The acute and chronic effects of heat directly impact pregnant women and can result in endocrine system dysfunction, dehydration, compromised placenta, development and function, raised maternal temperature and 'energy failure' in the foetus[120]. This combined with the indirect impacts of heat on infections, both reproductive tract and vector borne, and further combined with the impacts on the health system including performance of health personnel, compromised cold chains, and shifts in healthcare seeking behaviours, all increase the negative outcomes. Similarly, according to Chersich et al., (2023) and their exploration of the impacts of heat on pregnancy in Africa, increases in heat lead to a significant range of pregnancies and newborn related adverse outcomes.

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[116] (McElroy et al., 2022)
[117] (Chersich et al., 2022: Batiz et al, 2022)
[118] (He et al., 2024)
[119] (Batiz et al., 2022; Chersich et al., 2023; McElroy et al., 2022; Desai et al., 2021; Scorgie et al., 2023; Lusambili et al., 2023; Spencer et al., 2022; Bekker et al., 2020; Syed et al., 2022)
[120] (Chersich et al, 2022)

Extreme heat increases a range of risks for pregnant women and their foetuses. The risk of preterm birth when women were exposed to extreme heat increases within the seven days before giving birth[121] and smaller temperature ranges throughout the day and the heat staying above 20 degrees Celsius have been found to be predictors of poor outcomes[122]. Studies from Ethiopia and Uganda suggest that the impacts of heat on the foetus can have effects throughout the life course[123]. Heat stress can also impact the immunity of pregnant women increasing their susceptibility to infectious diseases, including those expected to increase during climate change, such as vector-borne diseases like Malaria[124]. There is also evidence that high heat can influence male reproductive health, by impeding spermatogenesis[125].

Regardless of the effect high heat has on, in particular pregnant women, women need to continue performing household duties also during periods with extreme heat. This is a challenge especially for pregnant women in manual labour and agricultural roles[126]. Many pregnant women do not see a reduction in their workloads and responsibilities despite experiencing complications from heat. Further, many working environments facilitate exposure to negative environmental determinants, for example working outside in full sunlight, or inside structures without appropriate cooling mechanisms[127]. There can also be little support from family members to take on greater responsibility during pregnancy due to gender norms[128].

Hot temperatures and behaviour changes

Exposure to hot temperatures can also cause behaviour changes in pregnant people and new mothers with negative impacts on pregnancies and newborns. This may include a reduction in health seeking behaviour, changes in nutrition, changes in sleep, physical activity, exposure to the outdoors, including vector-borne disease, and impacts on mental health[129]. There is an interplay of gender inequality, having few resources, context specific local climate impacts and the impacts of health and wellbeing. Although the impacts of heat on pregnant women is context specific the experiences described by communities in Uganda and Kenya, such as being delayed in receiving antenatal and postnatal care due to fear of walking in the heat and needing to walk longer distances to fetch water and firewood are likely to apply to other local contexts as well[130]. Preterm births and an increased need for C-sections have also been linked to hot temperatures as well as pregnant women and mothers describe feeling more dehydrated and that working and walking in the heat increases their likelihood of hemmorhage in postpartum

[121] (McElroy et al., 2022)
[122] Ibid.
[123] (Chersich et al., 2023)
[124] (Desai et al., 2021)
[125] (Lao, Harnisch and Honig 2018: 183)
[126] (Desai, 2021)
[127] (Chersich et al., 2023)
[128] (Scorgie et al., 2023; Lusambili et al., 2023
[129] (Batiz et al. 2022, Chersich et al., 2023)
[130] (Scorgie et al., 2023; Lusambili et al., 2023)

periods with impacts on hygiene[131]. Participants in a Gambian study described feeling headaches, dizziness, nausea, chills, vomiting[132]. Some women in this cohort also described a willingness to have less or no more children due to the difficulty of the pregnancy, citing the difficulty of working and living in such hot conditions[133].

There is some evidence pointing to a link between heat and increased injuries to the skin of babies, and difficulties interacting with the newborn due to heat-related discomfort including reductions in the exclusivity and frequency of breastfeeding[134]. Various impacts are described on community levels including impacts on the home and the health facilities that provide little protection from heat, including during labour, delivery and the postpartum period. At the community level linkages between hot temperatures and health are also found in the decreased availability of water resources and increases in workload, lack of shade and cooling and a lack of community knowledge in making the link between these impacts and changing climate[135].

Additional intersectional factors

The risks for preterm and stillbirth are higher for less educated women in rural areas[136]. This risk is demonstrated in a global analysis of the impacts of heat in 14 LMIC's found. Further demonstrating the intersectionality of climate and gender impacts it is also important to note that GBV can increase during pregnancy, as well as during climate change, presumably making pregnant women exposed to climate impacts at greater risk of GBV, which also increases in high temperatures, this is due to greater socialisation, frustration, discomfort and aggression during hot weather[137]. Research work in the United States, clearly demonstrated that the impacts of heat on pregnant women is facilitated by factors such as environmental racism, and that those facing multiple and interesting forms of discrimination will suffer more as a result of reduced access to resources, services and supports as well as the experience of minority stress across the lifecourse[138]. Human Rights Watch, Birth Equity and other

Advancing the Leadership of Women and Girls Towards Better Health and Climate Change Resilience

This programme aims to build the leadership and resilience of women and girls to climate impacts with focus on health systems and meeting the primary care needs of low resource communities. The programme equips the target group to withstand climate shocks and emergencies through training, sensitisation and capacity building. The programme places emphasis on gender-based violence interventions and supports the development of women and girls agency through identifying and engaging community champions, providing gender transformative trainings and implementing innovative digital health technologies.

Evidence generation and learning is gathered using participatory approaches, partnership development and working towards an enabling environment through advocacy with local duty bearers and stakeholders.

Read more on the Pathfinder website

[137] (Logie et al, 2024)
[138] (Bekker et al., 2020)

organisations have pointed to how climate change is rapidly increasing reproductive injustices, in part due to these disproportionate impacts[139].

The impacts of droughts and floods on perinatal health

Droughts and floods from extreme weather have negative pregnancy outcomes[140]. Climate disasters impact key infrastructures for health and wellbeing, including transport, sanitation, housing, health systems and onwards. These events also disrupt the food system with knock on effects of maternal and child nutrition. Mental distress is another concurrent effect as well as possible changes to vector disease due, for example to drainage.

Floods are correlated to low birth weight and hypertension[141]. A review of 33 countries evaluating the risk of pregnancy loss related to floods between 2010 and 2020[142] has found that floods are becoming more common with adverse outcomes leading to increases in pregnancy loss. Floods can induce or exacerbate accidental injuries, stress and the transmission of disease which may directly cause pregnancy loss[143]. The research also described how the impact of floods on health services meant that pregnant women experienced inconsistencies or lack of access to care, including those services related to safe motherhood, such as emergency obstetric care. Communities, social structures and homes are also affected as floods increase exposure to risk while eroding support. The He et al. study further notes the specific risks to access to clean and safe water resources and the short- and long-term impacts, and this is linked to competition over resources, damaged crops, impacts on livelihood and functioning of systems reliant on clean water such as health facilities (2024). For example, extreme rainfall in Amazonia was linked with pre-term birth, intrauterine growth restriction and low birth weight[144].

The reproductive health of post-partum women is impacted by floods in multiple ways. Research in one Iranian province found that post-partum women were struggling with breastfeeding continuity and lactation supply, recovering from caesarean sections and struggling to maintain adequate nutrition[145]. They also struggled to feed their newborns and children adequately, to access contraceptive services and to manage mental distress and increases in violence[146]. This lived experience suggests the likelihood of similar impacts in other similar settings.

The intersection between these weather events and the social and economic determinants of health is also visible, with those living in low resource areas with the least robust infrastructure being the least resilient to these impacts. Individuals without

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[139] (Human Rights Watch, 2020)
[140] (He et al., 2024; Partash et al., 2022; Desai et al, 2021; Safajou et al., 2024)
[141] (Partash et al., 2022)
[142] (He et al., 2024)
[143] (ibid)
[144] (Chacon-Montalvan et al., 2021)
[145] (Safajou et al., 2024)
[146] (ibid)

economic, social, and structural support are also hard hit, including in the process of needing to relocate[147]. One example that does not have the same negative outcome findings was a study in the city of Calgary, Canada, where there is socialised medicine, universal prenatal care and a robust health system which is likely to have offset the effects.[148]

Further impacts of perinatal health

Instability in access to water and food can cause nutritional deficiencies, illness due to contamination, increased stress and increased exposure to violence. Access to drinking water, and water salinity have an impact on health and pregnancy outcomes[149]. Water salinity is impacted by climate change due to sea level rise, environmental shifts and impacts of potable water tables and this is linked to cases of hypertension in pregnancy, difficulties with menstruation management, reproductive infections and skin conditions.

Due to changes in weather patterns, vector-borne disease dynamics are shifting with negative impacts on maternal and newborn health[150]. Changing weather patterns can increase the prevalence of diseases carried by mosquitoes, such as Malaria, Zika, Dengue, West Nile, Chikungunya, Yellow Fever, and Japanese Encephalitis[151]. A mix of environmental and social factors, including changes to rainfall patterns, temperatures and humidity, migration, urbanisation and the impacts of extreme weather on infrastructures are shifting the breeding behaviours, season length, geography and developmental dynamics of vector-borne diseases. This means that areas that were not previously affected and where there may be low immunity are facing greater exposure. Pregnant women are especially vulnerable to vector-borne diseases such as Malaria which increase preterm birth and lower birthweight, while Dengue can increase the likelihood of miscarriage or preterm birth[152].

Convergence of Evidence

There is growing, high quality evidence elucidating the impacts of climate change on perinatal health. Much of this evidence has been published in the past two to three years and systematic reviews demonstrate that many of the findings hold across various contexts. Many studies use a robust methodology and evidence is published in high quality peer-reviewed journals. This is one of the most evidence-based linkages between climate change and SRHR with clear evidence of direct and indirect pathways of impact. Further, it appears as an issue of concern in national climate policies such as national adaptation plans and nationally determined contributions documents[153].

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[147] (Batiz et al., 2022; He et al., 2022; Desai et al., 2021)
[148] Batiz et al, 2022).
[149] (Khan, Ireson, Kovats et al., 2011)
[150] (Batiz et al., 2022; Desai et al., 2021; Oberlin et al., WHO, UNICEF and UNFPA, 2023)
[151] (Ibid.)
[152] (Oberlin et al., 2023; Batiz et al., 2022; Bekkar et al., 2023)
[153] (Women Deliver, 2021; UNFPA&QMUL, 2021&2023)

4.2 The impacts of climate change on HIV

Key Messages

- Climate impacts such as increases in heat, drought and flood increase HIV prevalence. These increases are a result of food insecurity, migration and alterations in health seeking and sexual behaviours. This results in increases in condomless sex, transactional sex and concurrent sexual relationships which impact the transmission of HIV[154].
- People living with HIV can be negatively impacted by climate change, for example via food insecurity and malnutrition, lack of access to consistent HIV treatment through impacts of health services and supplies, and via stigma and discrimination in disaster relief and emergency response[155].

Key Facts

- A study by Baker suggests that warmer periods are associated with increases in HIV infection in Sub-Saharan Africa and with modelling transmission and temperature estimates predicts climate change will lead to between 11.6 and 16 million new cases of HIV by 2050, an increase in prevalence of 1.4-2.1 percentage points[156].
- Exposure to drought is correlated with reduced HIV testing and increased condomless sex especially for men and adolescents[157].
- A study in Malawi suggests that each drought increases HIV prevalence by 15% among men and women due to impacts on livelihood and food security and increases in transaction sex, migration and changes in risk behaviours[158].

Literature Analysis and Gaps

Hot weather events are also seen to impact HIV transmission and care. An analysis of over 400,000 people in 25 Sub Saharan African countries revealed a link between warmer temperatures and increases in HIV prevalence, particularly in younger age groups[159]. This is driven by economic and social behaviour such as increases in male migration and in

[154] (For example: Baker, 2020; Treibich, 2020; Epstein, Nagata and Ganson, 2022)
[155] (For example: Logie et al, 2024; Safajou et al, 2024)
[156] (Baker, 2020).
[157] (Epstein, Nagata and Ganson, 2022)
[158] (Treibich et al., 2022)
[159] (Baker, 2020)

transactional sex[160]. Through modelling it is anticipated that if these trends continue there may be an increase of 11.6 and 16 million cases of HIV by 2050 in these regions, marking an increase in prevalence of 1.4-2.1 percentage points[161]. The author points out that important context for the findings is considering areas where livelihood is closely tied to the environment, and that increases depend on the existing HIV prevalence. One study from Miami found a correlation between HIV clinic attendance and extreme heat with attendance dropping 14% on hot days[162] as reported by Logie et al. (2024). Other studies on heat and health describe health system impacts, such as reduced hours, attendance, staffing and storage adequacy which would presumably have implications for HIV treatment and supplies[163].

Drought is linked with numerous health and gender impacts such as malnutrition and food insecurity, GBV and disruptions in important educational and livelihood activities, interpersonal violence and negative mental health impacts, all of which may have implications for HIV testing, transmission and prevention[164]. In 2022, thirty-nine million people were estimated to be living with HIV (UNAIDS). Lieber et al. describe how warming will result in reductions in food production with impacts of large populations of people living with HIV, including the 25.7 million in the African region (2022).

Exposure to drought is correlated with reduced HIV testing and increased condomless sex especially for men and adolescents[165]. Reductions in testing may be due to numerous factors, including impacts on transportation, working hours, service availability, reduced school attendance, competing priorities, reduction in financial resources, migration, interpersonal violence[166]. Climate related migration is also expected to impact HIV prevalence, as male migration has been seen in some locations to result in new partners or increases in use of sex workers[167]. In Sub-Saharan Africa one study found that HIV rates go up with 11% for every recent drought this is again attributed to increases in transactional sex[168].

Extreme weather events have myriad impacts which are largely due to impact on economic security and livelihoods. In Malawi one study found that a moderate drought can double transactional sex among women relying on agriculture, and amongst men working outside of agriculture, and that this effect is largest amongst uneducated women. The study suggests that each drought increases HIV prevalence in Malawi by

[160] (Ibid)
[161] (Baker, 2020)
[162] (Samano et al, 2021)
[163] (Chersich et al., 2023)
[164] (Epstein, Nagata, Ganson et al., 2022)
[165] (Ibid.)
[166] (Ibid.)
[167] (Baker, 2020)
[168] (Burke et al. 2014 as cited by Baker, 2020)

15% among men and women and extreme weather events increase risk behaviours of women relying on agriculture in Africa further driving HIV transmission[169].

Health services have difficulties supporting vulnerable groups including those at risk of HIV[170]. This can be compounded by societal stigma, as seen in research from Iran where villagers suspected of being HIV positive faced stigma during climate related disaster relocation and service provision[171]. Logie et al. furthermore found that hurricanes impact HIV by disrupting prevention and care activities through disruptions in service, damage to infrastructures, and displacement[172]. Hurricanes affect people living with HIV by impacting mental health and poorer HIV indicators such as CD4 count[173]. In addition, people living with HIV who are also drug users are more likely to share injecting and preparation equipment and reduction in safe practices post climate disasters[174]. At the same time HIV education and awareness is impacted by displacement and disruptions following Hurricanes[175].

Climate induced disasters and extreme weather increases food insecurity which impacts people living with HIV negatively. Adequate nutrition is essential for managing HIV infections and the effectiveness of treatment. Lack of food may also make the side effects of some HIV treatments more severe, prompting reductions in adherence. It may be difficult to prioritise treatment, including transportation or medication costs during times of food insecurity. If food supplies are scarce there may be prioritisation within the household about who receives food, meaning that those with less power, or more caring responsibilities are more likely to suffer malnutrition. A compromised immune system may also make those living with HIV more susceptible to climate related diseases, such as Dengue or Malaria[176]. People who are food insecure are also more likely to engage in risky behaviours such as transactional sex[177].

Convergence of Evidence

There is significant evidence exploring the impact of climate change on HIV including predicted transmission, access to related supplies and the experience of living through climate impacts when HIV positive. However, there remain gaps and opportunities for further understanding how climate impacts HIV transmission and the experience of living with HIV during climate change.

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[169] (Treibich et al., 2022)
[170] (Safajou et al, 2024)
[171] (Ibid)
[172] (Logie et al., 2024)
[173] (Ibid)
[174] (Ibid)
[175] (Ibid)
[176] (Oberlin, 2023)
[177] (Epstein et al., 2022; Treibich et al., 2022; Logie et al., 2024; Baker, 2020)

4.3 The impacts of climate change on GBV

Key Messages

- Gender-based violence increases as a result of multiple climate related impacts including increases in heat and other extreme weather events, livelihood disruption, stress and scarcity and disasters and displacement[178].
- Climate change exacerbates the drivers of harmful practices such as child marriage. This is due to increases in extreme weather events, food insecurity and disruption to livelihoods as well as migration and displacement. Child marriage can be linked to related harmful practices such as female genital cutting[179].

Key Facts

- A 2024 review describes a positive correlation between extreme heat and GBV, with GBV tending to increase in the days following temperature spikes due to greater socialisation, frustration, discomfort and aggression due to hot weather[180].
- In a global review of 41 studies which explored storms, floods, droughts, heatwaves, wildfires and violence the increases in GBV were facilitated by food insecurity, stress and poor emotional health, disrupted infrastructure, increased interaction between men and women (increasing opportunities for harassment and abuse), and gender-based inequalities[181].

Literature Analysis and Gaps

Extreme heat leads to increases in GBV[182]. There is a positive correlation between extreme heat and GBV, with GBV tending to increase in the days following temperature spikes (2024). This can be attributed to greater socialisation, frustration, discomfort and aggression due to hot weather[183]. Intimate partner violence (IPV), femicides, police reports of IPV and seeking support via helplines also increase after extreme hot weather events[184]. Analysis of Demographic Health Survey (DHS) data in Uganda, Mozambique and Zimbabwe by Munala et al. demonstrates correlations between IPV and extreme weather, including heat (2023). Furthermore, there is an increase in early and forced

[178] (For example: Logie et al, 2024; Van Daalen et al, 2022; Raganathan, 2023)
[179] (For example: Pope et al 2023; UNFPA & QMUL, 2023; Doherty et al, 2023)
[180] (Logie et al, 2024).
[181] (van Daalen et al., 2022)
[182] (Logie et al., 2024; van Daalen et al., 2022; Munala et al., 2023)
[183] (van Daalen et al., 2022)
[184] (Ibid)

marriage following heatwaves[185] and research from Bangladesh found that in times where extreme heat lasts longer than 30 days, 11-14 year old girls are 50% more likely, and girls 15-17 are 30% more likely to get married[186].

The negative implications of GBV on SRHR are multiple, including unwanted pregnancies, fertility problems, increased transmission of infections, physical injury but also mental health impacts including anxiety, depression, trauma related disorders and suicide[187]. The increasing frequency and intensity of disasters and extreme weather events are increasing GBV through a number of pathways. This can include increased harassment, reductions in safety and lack of traditional forms of protection that increase the likelihood of experiencing violence by strangers or acquaintances, but also increased stress and pressures within couples and families resulting in increases in IPV[188]. In a global review of 41 studies which explored storms, floods, droughts, heatwaves, wildfires and violence the increases in GBV were facilitated by food insecurity, stress and poor emotional health, disrupted infrastructure, increased interaction between men and women (increasing opportunities for harassment and abuse), and gender-based inequalities[189]. An increase in trafficking and sexual exploitation and abuse follows typhoons according to research in Laos. Research in Vietnam and the Philippines saw increases in adolescent pregnancies after typhoons, which they viewed as an indicator of rape, in settings for internally displaced people[190].

Storms can in some cases increase sexual violence, though not always, and functioning mental health service provision and service promotion can counteract this tendency[191]. Increases in community and household stress including due to food insecurity and poverty and disruptions in law and social order also facilitate increases in GBV[192]. Storms also have an impact on mental health as they are linked to sleeping problems, depression and reduced self-esteem which increases the odds of experiencing GBV following storms[193].

Climate change and sexual and reproductive health and rights: A framework

In partnership with global healthcare company Organon, YLabs created a strategic framework to bring a climate lens to sexual reproductive health investments in low- and middle-income, climate-vulnerable countries. The framework is a guide for SRHR funders on how to assess, anticipate, and respond to the gendered impacts of climate change on their SRHR programs and grant investments practically yet strategically.

Read more here

[185] (Ibid)
[186] (Doherty et al., 2023)
[187] (van Daalen et al., 2022)
[188] (van Daalen et al., 2022; Castaneda Camey et al., 2020; Logie et al., 2024; Raganathan, 2023)
[189] (van Daalen et al., 2022)
[190] (ibid).
[191] (van Daalen, 2022).
[192] (Logie et al., 2024)
[193] (Ibid)

The impacts of climate change on child marriage and harmful practices

Climate change impacts the drivers of child marriage, resulting in increases in early, forced and child marriage[194]. Marriages can be a financial coping mechanism to minimise expenses following climate events which have impacted livelihoods, or a way of gaining increased funds through traditional marriage related exchange customs such as dowry or bride price[195]. Marriages may also be a way to protect the reputation of the family or the daughter as potential for sexual violence increases for example through greater exposure to men in shelter scenarios[196]. In Bangladesh there were spikes in early marriage following floods in 1998 and 2004[197]. Girls exposed to drought in Malawi are much more likely to be married early and describe how marriage following flood or drought can be used as a strategy to reduce household and food costs. In one example from Bangladesh government support was distributed by family, increasing the incentive to begin new linked families where possible[198]. One study from Kenya exploring the impacts of climate change on the Masai linked drought impacts, food and water insecurity and general climatic changes to increases in child marriage, reductions in education and increases in female genital mutilation (FGM)[199]. As female genital mutilation (FGM) can be related to marriageability, periods of instability driving child marriage can results in changes to the prevalence of harmful traditional practices such as FGM[200].

Violence against environmental defenders

Female environmental and human rights defenders are increasingly at risk of violence. As climate impacts worsen and environmental degradation impacts the livelihoods of societies and communities, there will also be an increase in the number of female environmental and human rights defenders who are victims of violence, including murder and gender specific threats including sexualised smear campaigns, SGBV and stigma for going against traditional gender roles[201]. Importantly, violence against women environmental defenders is not confined to the domestic or community realm but "*most cases featured multinational large-scale extractive companies supported by governments violently targeting women defenders with impunity*"[202].

Convergence of Evidence

The linkage between climate change and the drivers of gender-based violence is one of the strongest linkages between climate change and SRHR in the evidence base. This linkage has been reported across multiple contexts and is linked to various climate direct

[194] (Pope et al, 2023; van Daalen et al., 2022; Doherty et al., 2023)
[195] (Ibid)
[196] (Ibid)
[197] (van Daalen et al., 2022)
[198] (Doherty et al., 2023)
[199] (Esho et al., 2021)
[200] (Esho et al, 2021; Pope et al., 2023
[201] (Global Witness, 2021)
[202] (Tran et al 2020: 1)

and indirect impacts including heat, flood, drought, disruptions to livelihoods, mental health impacts and activities related to protecting environmental commons. This interlinkage is being increasingly reported in academic peer reviewed literature, as evidenced by growing publications in this area, but also by civil society and grassroots organisations representing women's voices and experiences related to climate issues. Further, it appears as an issue of concern as reported by countries in climate policies such as national adaptation plans and nationally determined contributions[203].

4.4 The impact of climate change on aspects of reproductive health including services and supplies

Key Messages

- Climate change impacts disrupt essential health systems and services with implications for sexual and reproductive health and rights. This includes access to contraception, safe abortion, and menstruation products[204].
- Reproductive health issues across the lifecourse such as menstruation and menopause are impacted by climate change but more research is needed to understand in what ways and how people are managing these impacts[205].

Key Facts

- There is mixed evidence on the impact of climate change on the menopause[206]. However, menopause symptoms including cognitive symptoms such as hot flushes and sleep disturbance may be exacerbated in extreme heat.
- A survey across 24 rural village households in Bangladesh found that women who had been displaced three times or more were less likely than those from non-displaced households to receive antenatal care visits[207].

Literature Analysis and Gaps

Cucinella et al. conducted a narrative review to consider the impacts of climate change on the menopause transition (2023). There is mixed evidence on the impact of climate change on the menopause[208]. However, menopause symptoms including cognitive

[203] (Women Deliver, 2021; UNFPA&QMUL, 2021&2023).
[204] (For example: IPAS, 2022; Murphy et al, 2023)
[205] (For example: Cucinella et al, 2023; Smith et al, 2020; Thurston, Stockl & Ranganathan, 2021; Moore, 2022)
[206] (Cucinella et al., 2023)
[207] (Haque et al., 2020)
[208] (Cucinella et al., 2023)

symptoms such as hot flushes and sleep disturbance may be exacerbated in extreme heat and mental health impacts of both the menopause and climate change may combine to make things more difficult for menopausal women[209]. Only a few countries pick up on this interlinkage in their climate change policies, one of them is Cote D'Ivoire which mentions the impact of heat on menopause in their NDC[210]. There is an important research gap and possible gender bias in considering the impact of climate change on hot flushes considering 1.1 billion women globally will be perimenopausal in 2025[211].

Displaced women and girls experienced stigma and barriers in accessing menstrual heath supplies post climate disasters[212]. Access to appropriate sanitation, latrines and Water, Sanitation and Hygiene (WASH) facilities following disasters and in relief settings can also present challenges that may lead to further health complications. When resources are scarce women and families are less able to provide menstruation products such as pads. One project in Northern Ghana which is experiencing crop failure and financial strain has seen women and girls resorting to alternatives such as leaves, rags and tissues which may have negative health impacts[213]. Climate change impacts such as avalanches, hurricanes and other extreme weather events can furthermore disrupt menarche due to food insecurity and exposure to toxins and pollutants[214]. These alterations in the timing of menarche may later impact women's health in areas such as mental health, fertility-related conditions, bone health and cardiovascular disease[215]. There are also reports of women using birth control pills to avoid menstruation as they do not have the infrastructure and supplies to manage, for example during floods in Bangladesh. This can mean that women are avoiding menstruation for months, against the guidance on the use of the contraceptive pill, leading to knock-on health effects such as pain and reproductive health issues (unpublished research by Dr Nazneen Khan at the University of Cambridge). Research gaps exist in understanding how women manage menstruation during climate impacts.

More research is needed to better understand how climate change is impacting menstruation and menstrual health[216]. Although best practice regarding menstrual health in disaster settings exists and can be

Population Council and Women Deliver

A participatory, adolescent and young people (12-25) led project was delivered in three countries Bangladesh, Guatemala and Nigeria via focus groups exploring the implications of climate change on health and SRHR. Young people identified risks to their SRHR as child marriage, nutrition and disease, menstrual hygiene, gender-based violence and mental health. Co-devised policy implications included improved comprehensive sexuality education, ensuring shared decision-making, improving WASH facilities and provision. (Pop Council, 2023)
Read more here

[209] (Ibid)
[210] (UNFPA & QMUL, 2023)
[211] (Smith et al, 2020)
[212] (Thurston, Stockl & Ranganathan, 2021)
[213] (Alugnoa, Cousins & Sato, 2022)
[214] (Canelon & Boland, 2020)
[215] (Ibid)
[216] (Moore, 2022)

built on to better support both slow and rapid onset climate impacts, for example the provision of Dignity Kits, vouchers and cash for supplies, private latrines and access to sanitation products[217]. However, climate change is impacting menstruation beyond disaster settings and further research is needed to better understand these impacts.

More research is also needed to analyse to what extent young people's SRHR's needs are represented in climate change responses including national climate policies. Climate anxiety is impacting young people around the world[218] and young people will be disproportionately impacted by climate change. Girls in low- and middle-income settings will suffer disproportionately including due to climate impacts and missing out on opportunities such as education[219]. A review of policies for attention to young people's SRHR in Pacific countries found that these needs were poorly represented[220]. The research found that there was little disaggregated data, and that known issues related to climate impacts in disaster settings such as challenges with menstrual management, early marriage, safety and security from violence were not adequately represented[221]. Further participatory research with young people revealed that disasters are impacting young people's ability to receive comprehensive sexuality education, reducing access to essential information and services and normalising violence[222]. It is likely that this is also the case for other countries' policies.

Convergence of Evidence

While evidence related to the linkages described here is growing it is not well established at present. Greater research is needed to evidence the range of impacts on reproductive health, service and supplies.

4.5 The impacts of climate change fertility intentions

Key Messages

- Climate change is impacting fertility intentions. In some settings people desire more children to help them cope, in other settings people desire fewer children as life becomes more difficult[223].

[217] (Ibid)
[218] (Hurley at al. 2022)
[219] (Malala Fund, 2021)
[220] (Murphy et al., 2023)
[221] (Ibid)
[222] (Ibid)
[223] (For example: IPAS, 2022; Rosen et al, 2021)

Key Facts

- Research by IPAS in Mozambique and Bangladesh described how some women fear having children due to climate impacts and desire fewer children, in other contexts women desire more children to protect them against becoming childless due to climate impacts, or to help ensure future financial security[224].

Literature Analysis and Gaps

There are mixed findings in relation to fertility intentions and climate impacts[225]. Climate disasters can both reduce fertility intentions due to fear of climate change, but it can also lead to a desire of getting more children to ensure the future security of families[226]. Reproductive intentions can change in relation to anomalies in precipitation, with women desiring a reduced number of children. Overall, above average temperatures can reduce the reported ideal family size and probability of desiring a first or additional child[227]. However, the impacts of climate induced disasters such as floods can also lead to greater strain on children that seek to contribute to the food security and livelihoods of their families by entering the workforce, getting married early, reductions in school attendance, and reduced ability to access and afford healthcare[228] which again can lead to a desire to have smaller families to reduce burdens. Despite this intention it can be difficult for women to enact their reproductive desires, as stated by one women: *'My husband will complain about me denying him of sex, but it's really because I am scared to get pregnant, and when my medicine expires, they don't usually have family planning at the clinic for 2 to 3 months* — Woman, FGD, Kalomo."[229] This intersection demonstrates the difficulty in achieving SRHR and reproductive justice in the face of complex impacts on livelihoods, relationships, behaviours and health systems.

Convergence of Evidence

Environmental challenges have been long linked to fertility intentions and concerns. In relation to climate change there is not a robust evidence base on how climate change is altering fertility decisions. The evidence that does exist demonstrates that reproductive decision making can be strongly linked with climate anxiety, though this is largely emanating from Western countries. Other research, such as that undertaken by IPAS in Mozambique and Bangladesh demonstrates that climate change can result in desiring a larger and smaller number of children depending on the specific context, culture and impacts. Caution is necessary when linking fertility intentions to climate change due to antenatal population related narratives which suggest family planning as a solution to

[224] (IPAS, 2022)
[225] (Ibid)
[226] (Ibid)
[227] (Eissler et al., 2019)
[228] (Rosen et al, 2021)
[229] (Rosen et al., 2021; pg 8)

climate change and position the bodies of women in the global south as sites for climate related intervention[230].

4.6 The disproportionate impacts of climate change on the SRHR of people facing multiple and intersecting forms of discrimination

Key Messages

- Climate change is an intersectional crisis that exacerbates existing inequalities. People with diverse sexual orientations, gender identities, expressions and sexual characteristics face multiple and intersecting forms of discrimination which can be exacerbated by climate impacts[231].
- More research is needed to understand how groups facing multiple and intersecting forms of discrimination, particularly along axes of identity related to SRHR, are being impacted by climate change.

Key Facts

- Research by ARROW on Indigenous women living with disabilities describe barriers in accessing SRHR services due to climate change impacts[232].
- Following cyclone Winston in Fiji, people with diverse sexual orientations, identities and expressions faced violence and harassment as well as reduced access to services and support[233].

Literature Analysis and Gaps

The social, economic and environmental determinants of health that create existing health inequalities are exacerbated by the climate crisis. Across the intersections explored the impacts are worse for those who have less access to resources, suffer social discrimination, are not recognised or adequately protected by legal and social services, and have multiple and intersecting identity factors that relate to vulnerability. Numerous academics and organisations have engaged the reproductive justice framework to support their consideration of the intersections between climate and SRHR. This enables a specific focus on access, intersectionality and infrastructures

[230] (Sasser, 2022)
[231] (For example: Brody, 2021; ARROW, 2024; UNFPA, 2023)
[232] (ARROW, 2024)
[233] (van Daalen et al., 2022; Dwyer and Woolf, 2018)

which drive inequalities. Reproductive justice calls into focus the ways that racism, colonialism and structural violence and disadvantage perpetuate reproductive injustices. Taking a reproductive justice and intersectional lens to better understand climate related impacts is critical to ensure and support policy and programmatic responses which do not further disadvantage marginalised groups[234].

The impacts of climate change on SOGIESC

There is little information on diverse sexual orientations, gender identities and expressions and sex characteristics (SOGIESC) and how they are impacted by climate change. However, some studies highlight that people with SOGIESC are disadvantaged in disaster scenarios by a range of factors including social stigma and discrimination, lack of recognition by the state and services, binarized definitions of sex and gender, sex specific interventions, interventions that recognise specific family formations, increased likelihood to experience violence, engaged with informal economies and onwards[235]. In a report on linkages between climate, health and SOGIESC in the Asia Pacific region a senior NGO worker describes how:

> "*prior to a disaster, members of the LGBTQ community may not have access to the same assets, resources, and information as the general population because of potential exclusion, isolation, and restricted social networks…This can affect resilience and how a person might experience a climate shock." For example a smallholder farmer in Nepal who identified with a third gender was excluded from helping build and take cover in shelter houses - which are often sex-segregated - designed to protect the community from extreme weather events*.' (Brody, 2021: pg. 8)

One study found that following cyclone Winston in Fiji these groups faced violence and harassments as well as reduced access to services and support, further this group was blamed by some members of the community for the cyclone, claiming it was punishment for their 'sinful' behaviours[236]. van Daalen et al. also reported on studies showing increases in 'witch' killings following extreme weather events (2022).

SOGIESC communities hold agency in relation to managing and adapting to climate related disasters. SOGIESC communities have been found to have strong informal networks and relationships, experiences of grassroots organising, resilience from living in a marginalised position, and experience with creatively communicating experiences such as through theatre and arts, as community specific strengths which may be called upon in times of crisis[237].

The role of environmental racism

Those most exposed to air pollution are often people facing multiple and intersecting forms of discrimination such as being low income, members of minority groups and with

[234] (Weaver et al., 2023; UNFPA & QMUL 2022; UNFPA & QMUL 2023; Birth Equity, 2020; Sasser 2022)
[235] (Brody, 2021; RENDES, 2021; van Daalen et al., 2022)
[236] (van Daalen et al., 2022; Dwyer and Woolf, 2018)
[237] (RENDES, 2021)

the least access to robust health systems[238]. Researchers and activists have noted how environmental racism facilitates exposure to pollutants and toxins with marginalised groups often living in what are termed 'fenceline' communities or 'sacrifice zones'[239]. 'Sacrifice zones' experience disproportionately high levels of pollution and tend to have cheaper housing and a higher proportion of people living in poverty[240]. While not solely issues related to climate change, Islands such as Martinique have been contending with the legacies of toxins such as the Chlordecone pesticide which was banned in the United States in the 1970s but not in the West Indies until the 1990s. The toxin has pervaded the drinking water and the soil causing poor health outcomes, including on aspects of reproductive health, and 90% of inhabitants have traces of the chemical in their blood[241]. Burning of garbage and plastics in Caribbean nations as a way to manage waste has also been highlighted as negatively impacting health and resulting in schools and other services being closed and people being hospitalised[242]. Exposure to air pollution and toxins, largely resulting from fossil fuels, or from toxins related to adapting to the impacts of climate change, such as pesticides, represent acute issues of reproductive justice with the vast majority of the literature pointing to equity and justice related dimensions of exposure. While evidence is growing to demonstrate this, there is also the need for more research in this area.

The impacts of climate change on the SRHR of people living with disabilities

People living with disabilities face increased risk during disasters, challenges accessing resources, reduced access to public information and health promotion and require more support in adapting and becoming resilient to climate change. It may be more difficult to evacuate and find safety, manage in displacement scenarios and due to compounding vulnerabilities and negative experiences with systems or social stigma, the stress and impact of climate change may be more severe, this may increase when infrastructures are disrupted, leaving for greater isolation and reduced ability to access supportive services[243]. People with disabilities are more likely to experience violence and sexual abuse due to physical vulnerability, marginalisation, reliance on care givers, inability to independently access services and support, lack of social protection and social stigma and discrimination. This may also increase costs for care and support with economic impacts. These relate to the ability of people with disabilities to access SRHR during climate change. These groups also have limited participation in climate policy and decision-making. Some disabilities and health conditions may be worsened by climate impacts, for example those related to respiratory health[244].

[238] (Weaver et al., 2023)
[239] (Bekkar et al,2020; Weaver et al., 2023; Human Rights Watch, 2022)
[240] (UNGA, 2022).
[241] (Boyd and Hadley Burke, 2022)
[242] (Boyd and Hadley Burke, 2022)
[243] (ARROW, 2024; UNHCR, 2021; International Disability Alliance, 2021)
[244] (UNHCR, 2021)

Convergence of Evidence

Throughout the evidence on the intersections between SRHR and climate change there is notable emphasis on how groups facing multiple and intersecting forms of discrimination are hit harder by climate impacts. That climate impacts produce inequalities and undo progress towards a more equal society is widely recognised. Groups who suffer inequalities based on axes related to SRHR, such as people with diverse sexual orientations, gender identities and expressions and sex characteristics, are currently under-considered in climate related research and policy. However, the evidence base is growing and the existing research demonstrates that these groups face compounding forms of discrimination during times of crisis and instability such as those brought on by climate impacts.

4.7 The current state of SRHR in climate policy

Broadly, SRHR is lacking recognition in formal climate policy. There is yet to be a mention of the impacts of climate change on SRHR in UNFCCC formal agreements, even those recognizing the impacts on gender and health.

Analysis of key climate policy documents, including Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), and the Gender Action Plan (GAP), has been undertaken by various actors at the CC and SRHR intersection. The United Nations Population Fund (UNFPA) and Queen Mary University of London (QMUL) have undertaken two analyses of NDCs for references related to SRHR, gender, health, rights and population dynamics. The 2021 review of 50 countries and the first round of

NDC found few references to SRHR and a lack of meaningful references to gender. The intersections which have received the most recognition are the impacts on maternal and newborn health and increases in gender-based violence[245]. The recent review, released in October 2023, of 119 NDCs, and focused on the 2nd submissions, found an increased number of references (36) to SRHR and related thematic areas[246]. Echoing the 2021 analysis, the review found that impacts on maternal and newborn health and to gender-based violence were most frequent, yet other intersections were also mentioned including child marriage, impacts on groups such as transgender people and even references to the impacts of climate change on menopause. While these references were few and not sufficiently backed up with commitments, action or funding, they do demonstrate an increased recognition of the impact of climate change on health, gender and SRHR.

A review of the NAPs undertaken in 2020 by the NAP Global Network and Women Deliver found 10 references to SRHR in 19 NAPS[247]. The report made a number of recommendations on how better include SRHR in NAP processes, many of which extend in relevance beyond the NAPs, such as including SRHR in climate vulnerability assessments, including SRHR in climate related monitoring and evaluation frameworks, aligning national climate policy processes and empowering civil society to more fully engage in national climate policy development and consultation processes.

The Sexual and Reproductive Rights and Health and Climate Justice Coalition

The purpose of the SRHR&CJ coalition is to advocate for SRHR and climate change policies, programmes and funding mechanisms that help advance gender equality, human rights, and climate justice. The coalition includes over 90 global civil society organisations representing over 50 countries. The coalition aims to document the impact of climate change on SRHR, develop collective policy recommendations for climate and gender just action, design campaigns and advocacy strategies and promote collaborative exchange and learning opportunities. The coalition has a strong advocacy presence in international fora such as the Commision on the Status of Women, the annual climate summits and other relevant policy making spaces.

Core members: Women's Environment and Development Organisation (WEDO), Women Deliver, Asian Pacific Research and Resource Centre for Women (ARROW), IPAS.

Opportunities for the greater inclusion of SRHR in climate policy and action are steadily presenting themselves. One opportunity, growing in recognition, is the intersection between climate and health. Reviews and updates on the Gender Action Plan also present opportunities for the greater inclusion of SRHR in formal climate policy.

At COP 28 health was on the climate change agenda like never before. COP 28 recognized the first dedicated Health Day and the United Arab Emirates COP 28 Health Declaration put forward a set of objectives to recognize and begin to act on the climate

[245] (McMullen et al., 2021)
[246] (UNFPA & QMUL, 2023)
[247] (NAP Global Network and Women Deliver, 2021)

impact on health. This declaration was signed by 123 countries. While not binding, this marks a direction of travel within climate policy.

5 Emerging trends and implications for policy and programming

The following chapter discusses the emerging trends and implications for policy and programming based on the previous literature analysis and the interviews with stakeholders. The section also provides recommendations for future areas of work.

5.1 Policy level implications

Support the integration of women as agents of change in policy review processes related to the NDCs and NAPs.

Women in all their diversity are key for driving, scaling and disseminating climate change solutions in both adaptation, mitigation and resilience building. Yet, the analysis of literature and the interviews have shown that women and gender considerations are not adequately reflected in policies, plans and implementation strategies related to climate change, and women are not adequately included in decision-making processes at local, national or international levels. There is evidence that the voices of women as change agents are not adequately heard, reflected or included in policy and climate action.

Gender aware forms of participation are fundamental for the elimination of systemic injustices and overcoming existing inequalities. Generally, all of the research and grey literature that had reviewed climate policy instruments mention a failure to include women to an adequate level in the development, design and implementation of climate related policies. The literature review also showed that there is a positive trend towards including gender-transformation to a greater extent than previously, this trend should be further supported and should include addressing the root causes of gender inequality through assessments of structural, institutional and cultural barriers for full, inclusive and meaningful participation of women in climate change policy making and implementation at all levels as agents of change. This is particularly relevant in 2024 as countries are in the process of updating and submitting revised NDCs in time for UNFCCC COP29 and would support a needed narrative shift of seeing women as merely vulnerable victims of climate change, to bearers of knowledge, capacity and agency that are essential for climate mitigation and adaptation actions and solutions.

Just transition policies should reflect the social implications of transitioning, including how women and men are affected differently both in formal and informal sectors as well as in the care economy.

Gender dimensions should run through all aspects of the transition towards resilient and just low carbon economies, including in gender-responsive finance and technologies. This includes analysing and reflecting the social implications of shifting, for example energy sources or promoting energy access through new technologies, in policies, programmes and subsequent implementation plans. For just energy transition plans this

also requires an assessment of power distribution, connectivity of households, and affordability of energy. Likewise, there is a need to ensure that informal jobs in the vicinity of the fossil fuel industry are duly considered when developing just transition plans. Gender focused social protection programmes have proven to increase women's employment and enhance women's resilience. Policies should consider that women often organise in informal grassroots movements and might not automatically be represented in the social dialogue frameworks. Further, policies should address the skills and participation gap in the energy and renewable energy sectors and more training and access to education should be central elements of improving women's engagement in climate programmes especially related to the just transition.

New and additional financing should be directed towards more integrated gender-just climate action led by women's organisations, community groups, non-profit organisations and social enterprises.

New modalities of financing should be promoted at international and national level to ensure women's full and equal participation. Including providing more climate finance directly to smaller-scale, decentralised projects that support small-scale women-led initiatives through providing finance to women's organisations working on the grassroot level. Projects directly benefiting women should be designed, decided and implemented with the full and effective participation of the target group.

Climate action, policy and research needs to explicitly address the impacts on sexual and reproductive health, rights and justice. Action on gender equality is essential but not sufficient for addressing SRHR needs.

SRHR needs specific articulation in climate policy, programming and finance as there is not sufficient evidence to support the notion that gender or health related policy and programming automatically has an adequate impact on SRHR outcomes. As SRHR impacts are facilitated by gender equality, improvements in gender and health equality are positive, however SRHR will be under-represented without specific consideration, reporting, delineation in policy and targeted funding provisions.

There is very little recognition of sexual rights within climate policy, programming and finance. While gender and health are considered, the specific impacts on sexual rights, which can be challenging in many social and political contexts, risk being under acknowledged and acted upon without specific consideration, this includes in relation to the specific needs of SOGIESC communities.

Longitudinal, participatory and locally lead research is required to build the evidence base on the impacts of climate change on SRHR.

Longitudinal studies are required to better understand climate impacts and intervention effects over time for strategies aiming to tackle both gender and SRHR inequalities created by climate change. Participatory, locally led research will better account for the context specific, lived realities of women facing the acute intersectional impacts of the climate crisis (WEDO). Locally led and designed research and programming is essential

for acceptable and context specific programmes which are not maladaptive[248]. As climate impacts are so context specific and totalising it becomes even more critical for research to be led and carried out by local researchers who can adequately consider the nexus of factors driving the issues in local context.

5.2 Programming level implications

As the climate crisis is a totalising crisis that threatens gains in human rights, gender equality and progress towards the SDGs it is essential to mainstream climate change across all gender and SRHR programming and to mainstream gender and SRHR across all climate programming. This type of approach is supported by a recent evaluation of Danish support for gender equality[249], which suggests that a gender transformative approach should be integrated as a cross cutting area with attention to green and climate-related aspects. The report recommends the inclusion of indicators on gender and analysis across projects which could be extended to include indicators and analysis related to the climate, gender, SRHR nexus.

This desk study has brought out a range of research and programming gaps that hinder addressing gender equality and SRHR in a more comprehensive manner in climate related programmes and projects. The below section presents the programmatic findings.

Supporting more and improved collection of gender-disaggregated data on all levels. This includes explicit data collection and indicators for SRHR.

Several interviewed stakeholders pointed out that the causal links between climate change, gender equality and SRHR are complex and intertwined and difficult to grasp. However, stakeholders also pointed out that the solutions to addressing gender equality and SRHR in the context of climate change are similar to the solutions applied in other intersectional development programmes.

There is a need to close the gap on gender disaggregated and gender-specific data for how climate related policies and programmes affect women's lives. Furthermore, the linkages between women as key agents of change and achieving climate goals is a topic that is as such under-researched. Closing the data gap would include producing data that can provide a more granular understanding of women's role in climate action, including:

- data on the informal jobs linked to sectoral economies and workloads in the unpaid care economy; including data on informal jobs in the coal economy.
- data on the impact greater gender inclusion has on achieving goals in climate projects and programmes; as well as data on how integrating climate change issues into gender programmes affects the achievement of gender equality goals.

[248] (YLabs, 2023, UNFPA & QMUL 2023; IPAS, 2022)
[249] (DANIDA, 2023)

- gender-disaggregated data integrated into monitoring and evaluation, through specific indicators.
- data on how women access climate finance, decision-making processes, policy makers and related institutions.

Such data, including compiling them into global generalised data, is key for better integrating women's interests into policy processes and climate action programmes.

SRHR needs to be recognised and costed within climate and health related funding, action intervention and within health system responses.

The situational analysis has also identified a gap in relation to analysis and transparency of climate finance towards gender equality, this gap needs to be closed to design solutions and approaches that ensure climate finance for gender equality is channelled in the most impactful way. Meeting climate finance commitments, particularly for adaptation, better supports gender equality and SRHR outcomes. Specific funding needs to be made available for SRHR, as gender financing does not automatically mean that SRHR issues will be adequately covered. This should include a greater prevalence of costed SRHR interventions and greater representation of SRHR within gender and health related interventions. Funding should be made accessible to grassroots women organisations through for example small grants programmes that support women in becoming at least 50% of the leadership on climate action in their communities (IPAS).

SRHR indicators need to be integrated across policy and programmes related to climate, health and gender[250]. While data disaggregated by sex, gender and multiple and intersecting vulnerabilities is needed, specific indicators on SRHR are also required, for example including SRHR indicators in climate related health assessments, vulnerability indexes, monitoring and evaluation outcome measures.

Women have specific support needs that should be clearly identified and integrated into climate change programmes.

Integrating women's specific needs. Programmes and projects should take into account gender differences in terms of needs and support mechanisms. Conducting gender analyses and reviews of climate change policies, programmes and initiatives to identify gaps and ensure equal benefits is a useful approach. Such analyses serve as tools to identify and analyse factors that hinder efforts to mainstream gender in climate and energy policies and programmes. Interventions alleviating women's workloads and improving their productivity have been particularly successful when they address care and unpaid domestic work burdens, strengthen women's capacities through education and training, improve access to technology and resources, and strengthen land-tenure security. Access to childcare has a large positive effect on mothers' employment in and returns to agri-food-system activities, while the recognition of women as key agents in achieving universal energy access could be further supported by targeting support to women entrepreneurs. In addition, group-based approaches have shown to be effective

[250] (UNFPA & QMUL, 2023; UNFPA & QMUL, 2021).

in increasing women's participation in climate policy making and for increased uptake of technology and increased adaptive capacity.

There is sufficient evidence to act on the intersections between SRHR and climate change. However, research and evaluation of programmatic strategies and interventions is needed to understand what works in local contexts and may be scalable to other settings.

There is enough evidence of the intersectional issues between SRHR and Climate Change. What is needed now is action and building the evidence base of what is working (IPAS). However, this does not mean that there are no remaining gaps in understanding the impacts of climate change on SRHR. While the evidence base is steadily growing, as demonstrated by the number of references from the past three years, many researchers identify important gaps in knowledge. Moreover, as the evidence grows the impetus to act also grows and greater understanding of what are effective interventions and programmatic responses required.

Implementing partners need to strengthen partnership with research organisations to evaluate gender-related outcomes. Large, complex, integrated programs that are adapted to different local contexts may be more effective but also more difficult to evaluate. Building the evidence base to guide the design of interventions to maximise benefits for women and other marginalised groups will require close coordination with researchers at the design stage to determine appropriate assessment approaches.

There are opportunities to learn with and from the reproductive and climate justice movements to ensure just, effective and appropriate responses and strategies for integrating SRHR within climate action that account for intersectional impacts and inequalities.

There are opportunities for innovating and strengthening environment and health integrated programming, including for SRHR components beyond family planning*:* There is a long programmatic history of interventions that combine expertise and interventions on aspects of climate, health and gender (Blue Ventures, Pathfinder). While these programmes have traditionally been rolled out in areas of high biodiversity with unmet needs for family planning, there are opportunities for community-led co-design to determine intervention components and best respond to locally determined priorities.

Taking a reproductive justice and intersectional lens to better understand climate related impacts is critical to ensure and support policy and programmatic responses which do not further disadvantage marginalised groups. This includes ensuring a human rights-based approach, which does not support population growth reduction rationales or an instrumental focus on family planning as a climate change mitigation or adaptation solution, which has been widely discouraged by reproductive justice actors due to human rights abuses and reproductive injustices made with related rationales[251].

[251] (Weaver et al., 2023; UNFPA & QMUL 2022; UNFPA & QMUL 2023; Birth Equity, 2020; Sasser 2022)

Annexes

Annex 1a - Bibliography Climate Change and Gender Equality

Achampong, L. (2023) “Gender-responsive climate finance: The key to just climate action and tackling inequalities” Eurodad Expert Note.

Amoak, D., Najjar, D., and Kyle, J. (2022). Gender and Climate-relevant Agri-Food Systems Governance: A Strategic Evidence Review. Beirut, Lebanon: International Center for Agricultural Research in the Dry Areas (ICARDA). https://hdl.handle.net/10568/126990

Assan, N. (2015) “Gender differentiated climate change discourse in rural communities in developing countries” in Scientific Journal of Pure and Applied Sciences (2015) 4(2) 34-38

Bharadwaj, R. (2022) “Social protection to enhance climate resilience: what works where?” IIED Briefing.

Bradshaw, S. & Fordham, M. (2015) “Double Disaster: Disaster through a Gender Lens” In Collins, A. et al Hazards, Risk and Disasters in Society. Elsevier, p. 233-251.

Bryan, E., Alvi, M., Huyer S., Ringler, C. (2024), ”Addressing gender inequalities and strengthening women’s agency to create more climate-resilient and sustainable food systems”. In Global Food Security, vol.40, 2024. https://doi.org/10.1016/j.gfs.2023.100731.

CARE & CANSA (2021) “Report Card: Where is gender in the National Climate Plans? June 2021 Update” CARE & CANSA, available here: https://careclimatechange.org/wp-content/uploads/2021/06/CARE-Gender-Quality-and-NDCs-v1.4.pdf

CARE Denmark & Danish Red Cross (2023) “Policy Paper: Loss & Damage”

CEDAW (2018) General Recommendation no 37 on Gender Related dimension of disaster risk reduction in the context of climate change.

CSW (2024) Report of the Secretary General, “Accelerating the achievement of gender equality and the empowerment of all women and girls by addressing poverty and strengthening institutions and financing with a gender perspective” New York. https://documents.un.org/doc/undoc/gen/n24/011/64/pdf/n2401164.pdf?token=2O1EErqz1Bo0GXX2DO&fe=true

Dalabajan, D. & Mayne, R. et al, (2022) for Oxfam, “Towards a Just Energy Transition – Implications for communities in lower- and middle-income countries.” https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621455/rr-just-energy-transition-071222-en.pdf?sequence=11&isAllowed=y

Dazé, Angie; Hunter; Cameron (2022) “Gender-Responsive National Adaptation Plan (NAP) Processes: Progress and promising examples” International Institute for Sustainable Development.

Dutta, S. et al (2017) (IBRD World Bank) ”Energy Access and Gender – Getting the Balance Right”. https://documents1.worldbank.org/curated/en/463071494925985630/pdf/115066-BRI-P148200-PUBLIC-FINALSEARSFGenderweb.pdf

European Commission (2023) “How can policy and policymaking foster climate justice? A qualitative systematic review”, How can policy and policymaking foster ... | Open Research Europe (europa.eu)

Turquet, L., Tabbush, C., Staab, S., Williams, L., Howell, B., (2023) Feminist Climate Justice: A Framework for Action”. Progress of the World’s Women Series. New York: UN-Women.

FAO (2023) “The status of women in agri-food systems”, FAO, Rome.

Gaillard, J.C.; Gorman-Murray, Andrew; Fordham, Maureen (2017) “Sexual and gender minorities in disaster”, in Gender, Place & Culture: A Journal of Feminist Geography vol. 24

GCF (2019) Updated Gender Policy and Action Plan 2020-2023.

GCF & UNWOMEN (2019) Mainstreaming Gender in Green Climate Fund Projects.

GIZ (2021) "Diving into the gap: Gender Dimensions of Climate Risk Management". Global Programme on Risk Assessment and Management for Adaptation for Climate Change (Loss and Damage).

Gloor, J. et al (2022) We Can't Fight Climate Change Without Fighting for Gender Equity, Opinion in Harvard Business Review, July 26 2022.

Hallows, D. & Munnik, V. (2022) "The ground Work Report 2022 Contested Transition: State and Capital against Community", GroundWork, South Africa.

Huyer, S. et al (2021) "From vulnerability to agency in climate adaptation and mitigation", In Advancing gender equality through agricultural and environmental research: Past, present, and future, eds. Rhiannon Pyburn, and Anouka van Eerdewijk. Chapter 7, Pp. 261-294. Washington, DC: International Food Policy Research Institute (IFPRI). https://doi.org/10.2499/9780896293915_07

Huyer, S., Acosta, M., Gumucio, T., & Ilham, J. (2020) Can we turn the tide? Confronting gender inequality in climate policy, Gender & Development, 28:3, 571-591, DOI: 10.1080/13552074.2020.1836817

ILO (2015a). Guidelines for a just transition towards environmentally sustainable economies and societies for all.

ILO (2017a). Gender, Labour and a Just Transition towards Environmentally Sustainable Economies and Societies for All.

ILO (2023) "Gender equality and inclusion for a just transition in climate action: a practical guide".

IPCC (2014), Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.

IPCC (2018), Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-24, doi:10.1017/9781009157940.001.

IPCC (2023) Synthesis report of the IPCC sixth assessment report (ar6) subject to final copy editing and layout.

IPCC Working Group II (2022), Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

IRENA (2019) Renewable Energy: A Gender Perspective, IRENA, Abu Dhabi.

IRENA and ILO (2023). Renewable energy and jobs: Annual review 2023, International Renewable Energy Agency, Abu Dhabi and International Labour Organization, Geneva.

IUCN (2021) Gender and national climate planning: gender: integration in the revised Nationally Determined Contributions.

Lecoutere, E. et al (2023) "Where women in agri-food systems are at highest climate risk: a methodology for mapping climate– agriculture–gender inequality hotspots". Front. Sustain. Food Syst. 7:1197809. doi: 10.3389/fsufs.2023.1197809

Malapit, H. & Brown, L. (2023) Gender: Promoting equality in fragile and conflict-affected settings. In Global Food Policy Report 2023: Rethinking Food Crisis Responses, Chapter 6, pp. 62-71. https://doi.org/10.2499/9780896294417_06

NAP Global Network & Women Deliver. (2020). Sexual and reproductive health and rights in National Adaptation Plan (NAP) Processes: Exploring a pathway for realizing rights and resilience. Dazé, A. (lead author). International Institute for Sustainable Development.

OECD (2022) "Development Finance for gender-responsive climate action" OECD, Development Co-operation Directorate, OECD Publishing, Paris.

OECD (2023) "The gender equality and finance intersections: An overview of development co-operation frameworks and financing" OECD, Development Co-operation Directorate, OECD Publishing, Paris.

Presidential Climate Commission Report (2022) A Framework for a Just Transition in South Africa. https://pccommissionflo.imgix.net/uploads/documents/A-Just-Transition-Framework-for-South-Africa-with-dedication-FSP-002.pdf

Schalatek, L. (2023): Gender and Climate Finance, in Climate Funds Update, Climate Finance Fundamentals - 10, ODI and Heinrich Böll Stiftung.

Shreejaya, S. (na) "A Study on the gender & social impacts of climate migration" Policy Paper. Rosa Luxemburg Stiftung.

Strumskyte, Sigita; Magaña, Sara Ramos; Bendig, Helene (2022), "Women's leadership in environmental action", in OECD Environment Working Papers No. 193

UN (2019) "Analytical study on gender-responsive climate action for the full and effective enjoyment of the rights of women" Annual Report of the UN High Commissioner for Human Rights.

UN (2023) "The Sustainable Development Goals Report: Special Edition", New York, UN DESA.

UN Women (2023) "Feminist Climate Justice: A Framework for Action", UN Women.

UNDP (2016) "Overview of linkages between gender and climate change", New York, UNDP.

UNFCCC (2021), "Overrepresentation of men in UN climate process persists" article, UNFCCC Secretariat, Bonn.

UNFCCC (2022b). Dimensions and examples of the gender-differentiated impacts of climate change, the role of women as agents of change and opportunities for women, https://unfccc.int/documents/494455.

UNFCCC (2023a). Implementation of just transition and economic diversification strategies: a compilation of best practices from different countries.

UNFCCC, (2023) NDC Synthesis Report, UNFCCC Secretariat, Bonn.

UNFPA; Queen Mary University of London (2023) "Taking Stock: Sexual and Reproductive Health and Rights in Climate Commitments: A Global review"

UNRISD (2023) Just Energy Transition Partnerships – Toward a Collective Assessment, Research and Policy Brief. https://cdn.unrisd.org/assets/library/briefs/pdf-files/2023/rpb-41-jetp.pdf

USAID (2016) "Gender in Mitigation Actions", EGI Brief

Walk, P.; Braunger, I.; Semb, J.; Brodtmann, C.; Oei, P.-Y.; Kemfert, C. (2021) Strengthening Gender Justice in a Just Transition: A Research Agenda Based on a Systematic Map of Gender in Coal Transitions. Energies 2021, 14, 5985. https://doi.org/10.3390/ en14185985

WEDO (2016) Discussion Paper "Gender Equality and Just Transition".

Annex 1b - Bibliography Climate Change and SRHR

A266; United Nations, General Assembly, The right to a clean, healthy and sustainable environment: non-toxic environment: Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, 12 January 2022 (A/HRC/49/53).

Aguilera, J., Konvinse, K., Lee, A., Maecker, H., Prunicki, M., Mahalingaiah, S., Sampath, V., Utz, P. J., Yang, E., & Nadeau, K. C. (2023). Air pollution and pregnancy. SEMINARS IN PERINATOLOGY, 47(8), 151838. https://doi.org/https://doi.org/10.1016/j.semperi.2023.151838

Alison Brody. (2021). MAPPING THE LINKAGES BETWEEN CLIMATE CHANGE, HEALTH, GENDER AND SOGIESC FOR THE ASIAPACIFIC REGION. https://www.sparkblue.org/system/files/2021-02/Desk%20review_climate%20change_gender_health_Feb2021.pdf

Alugnoa, D. N., Cousins, T., & Sato, M. (2022). Period poverty and menstrual belonging: a matter of climate justice. The Lancet Planetary Health, 6(7), e551-e552. https://doi.org/doi:10.1016/S2542-5196(22)00141-3

ARROW. Amplifying Voices of Indigenous Women and Girls with Disabilities on the Nexus of Climate Change and Sexual and Reproductive Health and Rights (SRHR). (2024).https://arrow.org.my/wp-content/uploads/2024/01/Scoping-Studies-Nepal.pdf

Baker, R. (2020). Climate change drives increase in modeled HIV prevalence. CLIMATIC CHANGE, 163(1), 237-252. https://doi.org/doi:10.1007/s10584-020-02753-y

Bátiz, L. F., Illanes, S. E., Romero, R., Barrera, M. D. V., Mattar, C. N. Z., Choolani, M. A., & Kemp, M. W. (2022). Climate change and preterm birth: A narrative review. *Environmental Advances*, *10*. https://doi.org/doi:10.1016/j.envadv.2022.100316

Bekkar, B., DeNicola, N., Girma, B., Potarazu, S., & Sheffield, P. (2023). Pregnancy and newborn health - heat impacts and emerging solutions. *SEMINARS IN PERINATOLOGY*, *47*(8). https://doi.org/doi:10.1016/j.semperi.2023.151837

Bekkar, Bruce, Susan Pacheco, Rupa Basu et al. 2020. 'Association of Air Pollution and Heat Exposure With Preterm Birth, Low Birth Weight, and Stillbirth in the US: A Systematic Review'. *JAMA Netw Open* 3(6):e208243

Borges, E., Setti, A.S., Braga, D.P., Figueira, R.C., & Iaconelli, A. 2015. Decline in semen quality among infertile men in Brazil during the past 10 years. International Brazilian Journal of Urology : official journal of the Brazilian Society of Urology, 41: 757 - 763.

Boyd, David R., Hadley-Burke, Mckenna. United Nations Special Rapporteur on Human Rights and Environment. 2022. Sacrifice Zones: 50 of the most polluted places on earth. https://www.docdroid.net/1ACWCt1/un-special-sacrifice-zones-50-of-the-most-polluted-places-on-earth-pdf#page=4

Canelón, S. P., & Boland, M. R. (2020). A systematic literature review of factors affecting the timing of Menarche: The potential for climate change to impact women's health. INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH, 17(5). https://doi.org/doi:10.3390/ijerph17051703

Castañeda Camey, I., Sabater, L., Owren, C. and Boyer, A.E. (2020). Gender-based violence and environment linkages: The violence of inequality. Wen, J. (ed.). Gland, Switzerland: IUCN. 272pp.

Chacón-Montalván, E., Taylor, B., Cunha, G. M., Davies, G., Orellana, J., & Parry, L. (2021). Rainfall variability and adverse birth outcomes in Amazonia. NATURE SUSTAINABILITY, 4, 1-12. https://doi.org/10.1038/s41893-021-00684-9

Chersich, M., Scorgie, F., Filippi, V., Luchters, S., & He, C. C. (2023). Increasing global temperatures threaten gains in maternal and newborn health in Africa: A review of impacts and an adaptation

framework. *INTERNATIONAL JOURNAL OF GYNECOLOGY & OBSTETRICS*, *160*(2), 421-429. https://doi.org/doi:10.1002/ijgo.14381

Cucinella, L., Tiranini, L., & Nappi, R. (2023). Impact of climate and environmental change on the menopause. MATURITAS, 178. https://doi.org/doi:10.1016/j.maturitas.2023.107825

Dahl, Kristina et al. 2019a. 'Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days'. Union of Concerned Scientists. www.ucsusa.org /killer-heat.

Desai, Z., & Zhang, Y. (2021). Climate Change and Women's Health: A Scoping Review. GEOHEALTH, 5(9). https://doi.org/doi:10.1029/2021GH000386

Di Renzo, Gian Carlo, Jeanne A. Conry, Jennifer Blake, Mark S. DeFrancesco, Nathaniel DeNicola, James N Martin Jr., Kelly A. McCue, David Richmond, Abid Shah, Patrice Sutton, Tracey J. Woodruff, Sheryl Ziemin van der Poel, Linda C. Giudice. 2015. 'International Federation of Gynecology and Obstetrics (FIGO) Opinion on Reproductive Health Impacts of Exposure to Toxic Environmental Chemicals'. *Int J Gynaecol Obstet*. 131(3): 219–225

Doherty, F. C., Rao, S., & Radney, A. R. (2023). Association between child, early, and forced marriage and extreme weather events: A mixed-methods systematic review. International Social Work. https://doi.org/doi:10.1177/00208728231186006

Dwyer E, Woolf L. Down by the river; addressing the rights, needs and strengths of Fijian sexual and gender minorities in disaster risk reduction and humanitarian response. 2018. https://www.edgeeffect.org/wp-content/uploads/2018/02/Down-By-The-River_ Web.pdf

Ebi KL, Capon A, Berry P, Broderick C, de Dear R, Havenith G, Honda Y, Kovats RS, Ma W, Malik A, Morris NB, Nybo L, Seneviratne SI, Vanos J, Jay O. Hot weather and heat extremes: health risks. Lancet. 2021 Aug 21;398(10301):698-708. doi: 10.1016/S0140-6736(21)01208-3. PMID: 34419205.

Eissler, S., Thiede, B., & Strube, J. (2019). Climatic variability and changing reproductive goals in Sub-Saharan Africa. GLOBAL ENVIRONMENTAL CHANGE-HUMAN AND POLICY DIMENSIONS, 57. https://doi.org/doi:10.1016/j.gloenvcha.2019.03.011

Epstein, A., Nagata, J. M., Ganson, K. T., Nash, D., Saberi, P., Tsai, A. C., Charlebois, E. D., & Weiser, S. D. (2023). Drought, HIV Testing, and HIV Transmission Risk Behaviors: A Population-Based Study in 10 High HIV Prevalence Countries in Sub-Saharan Africa. AIDS and Behavior, 27(3), 855-863. https://doi.org/doi:10.1007/s10461-022-03820-4

Esho, T., Komba, E., Richard, F., & Shell-Duncan, B. (2021). Intersections between climate change and female genital mutilation among the Maasai of Kajiado County, Kenya. JOURNAL OF GLOBAL HEALTH, 11. https://doi.org/doi:10.7189/jogh.11.04033

Ghirelli-Fihlo, Milton and Sidney Glina. 2018. 'Reproductive Health Issues in Latin America: Role of Environment'. In Sikka, Suresh C. and Wayne J.G. Hellstrom (eds.), *Bioenvironmental Issues Affecting Men's Reproductive and Sexual Health*. Academic Press, pp. 209-220

Global Witness. 2021. Last Line of Defence: The industries causing the climate crisis and attacks against land and environmental defenders. https://www.globalwitness.org/documents/20190/Last_line_of_defence_-_low_res_-_September_2021.pdf

Hallak, J., Veras, M.M., & Saldiva, P.H. 2018. 'How Environmental and Air Pollution Disrupt Spermatogenesis and Male Reproductive Health: A Mechanistic Approach'. In Sikka, Suresh C. and Wayne J.G. Hellstrom (eds.), *Bioenvironmental Issues Affecting Men's Reproductive and Sexual Health*. Academic Press. Pp. 5-32.

Hatcher AM, Page S, Aletta van Eck L, Pearson I, Fielding-Miller R, Mazars C, et al. (2022) Systematic review of food insecurity and violence against women and girls: Mixed methods findings from low- and middle-income settings. PLOS Glob Public Health 2(9): e0000479. https://doi.org/10.1371/journal.pgph.0000479

He, C., Zhu, Y., Zhou, L., Bachwenkizi, J., Schneider, A., Chen, R., & Kan, H. (2024). Flood exposure and pregnancy loss in 33 developing countries. *Nature Communications*, *15*(1). https://doi.org/doi:10.1038/s41467-023-44508-0

Henkel, Ralf. 2018. 'Environmental Contamination and Testicular Function'. In Sikka, Suresh C. and Wayne J.G. Hellstrom (eds.), *Bioenvironmental Issues Affecting Men's Reproductive and Sexual Health*. Academic Press. Pp. 191-208,

Hollis, Adrienne. 2019. 'African Americans Are Disproportionately Exposed to Extreme Heat'. The Equation, Union of Concerned Scientists, 22nd July 2019.

Ipas. (2022). New research is in: Climate change impacts women's sexual and reproductive health. Ipas.org. http://www.ipas.org/our-work/climate-justice/climate-change-impacts-womens-sexual-and-reproductive-health" \t "_blank

Lieber, M., Chin-Hong, P., Whittle, H. J., Hogg, R., & Weiser, S. D. (2021). The Synergistic Relationship Between Climate Change and the HIV/AIDS Epidemic: A Conceptual Framework. AIDS and Behavior, 25(7), 2266-2277. https://doi.org/doi:10.1007/s10461-020-03155-y

Logie, C. H., Toccalino, D., MacKenzie, F., Hasham, A., Narasimhan, M., Donkers, H., Lorimer, N., & Malama, K. (2024). Associations between climate change-related factors and sexual health: A scoping review. Global Public Health, 19(1). https://doi.org/doi:10.1080/17441692.2023.2299718

Lusambili, A., Khaemba, P., Agoi, F., Oguna, M., Nakstad, B., Scorgie, F., Filippi, V., Hess, J., Roos, N., Chersich, M., Kovats, S., & Luchters, S. (2023). Process and outputs from a community codesign workshop on reducing impact of heat exposure on pregnant and postpartum women and newborns in Kilifi, Kenya. *Frontiers in Public Health*, *11*. https://doi.org/doi:10.3389/fpubh.2023.1146048

McElroy, S., Ilango, S., Dimitrova, A., Gershunov, A., & Benmarhnia, T. (2022). Extreme heat, preterm birth, and stillbirth: A global analysis across 14 lower-middle income countries. *ENVIRONMENT INTERNATIONAL*, *158*. https://doi.org/doi:10.1016/j.envint.2021.106902

Moore. Emma. (2022) The Effects of Climate Change on the Menstrual Health of Women and Girls in Rural Settings within Low-Income Countries. https://academiccommons.columbia.edu/doi/10.7916/bqyy-vh75

Munala, Leso, Elizabeth M. Allen, Andrew J. Frederick, and Anne Ngũnjiri (2023) "Climate Change, Extreme Weather, and Intimate Partner Violence in East African Agrarian-Based Economies" International Journal of Environmental Research and Public Health 20, no. 23: 7124. https://doi.org/10.3390/ijerph20237124

Murphy, N., Azzopardi, P., & Bohren, M. A. (2023). Safeguarding youth sexual and reproductive health and rights in the context of increasing climate-related disasters in the Pacific: A scoping review of policies and responses. International Journal of Disaster Risk Reduction, 86. https://doi.org/doi:10.1016/j.ijdrr.2023.103561

Murphy, N., Rarama, T., Atama, A., Kauyaca, I., Batibasaga, K., Azzopardi, P., Bowen, K. J., & Bohren, M. A. (2023). Changing climates, compounding challenges: A participatory study on how disasters affect the sexual and reproductive health and rights of young people in Fiji. BMJ Global Health, 8. https://doi.org/doi:10.1136/bmjgh-2023-013299

Oberlin, A. M., & Wylie, B. J. (2023). Vector-borne disease, climate change and perinatal health. *SEMINARS IN PERINATOLOGY*, *47*(8). https://doi.org/doi:10.1016/j.semperi.2023.151841

Partash, N., Naghipour, B., Rahmani, S. H., Pashaei Asl, Y., Arjmand, A., Ashegvatan, A., & Faridaalaee, G. (2022). The impact of flood on pregnancy outcomes: A review article. Taiwanese Journal of Obstetrics and Gynecology, 61(1), 10-14. https://doi.org/https://doi.org/10.1016/j.tjog.2021.11.005

Pizzol, D., Foresta, C., Garolla, A. et al. 2021. 'Pollutants and sperm quality: a systematic review and meta-analysis'. Environ Sci Pollut Res 28: 4095–4103

Pope DH, McMullen H, Baschieri A, Philipose A, Udeh C, Diallo J, McCoy D. What is the current evidence for the relationship between the climate and environmental crises and child marriage? A scoping review. Glob Public Health. 2023 Jan;18(1):2095655. doi: 10.1080/17441692.2022.2095655. Epub 2022 Nov 20. PMID: 36403290.

RENDES. (2021) Policy Brief: Recognising the rights, concerns and strengths of people with diverse SOGIESC for inclusive disaster risk reduction policy and action. https://static1.squarespace.com/static/5d7c627396500531ab3e2634/t/60b463539a460450e26872af/1622434644368/Baumann%26al_PB_SOGIESCpolicyaction.pdf

Safajou F, Nahidi F, Ahmadi F. Reproductive health challenges during a flood: A qualitative study. Nurs Open. 2024 Jan;11(1):e2044. doi: 10.1002/nop2.2044. PMID: 38268287; PMCID: PMC10697115.

Sapkota, A., Chelikowsky, A.P., Nachman, K.E. *et al.* Exposure to particulate matter and adverse birth outcomes: a comprehensive review and meta-analysis. *Air Qual Atmos Health* 5: 369–381

Scorgie, F., Lusambili, A., Luchters, S., Khaemba, P., Filippi, V., Nakstad, B., Hess, J., Birch, C., Kovats, S., & Chersich, M. F. (2023). "Mothers get really exhausted!" The lived experience of pregnancy in extreme heat: Qualitative findings from Kilifi, Kenya. *Social Science and Medicine*, *335*. https://doi.org/doi:10.1016/j.socscimed.2023.116223

Sikka, Suresh C. and Wayne J.G. Hellstrom (eds.). 2018. *Bioenvironmental Issues Affecting Men's Reproductive and Sexual Health*. Academic Press.

Skakkebæk, N.E., Lindahl-Jacobsen, R., Levine, H. et al. 2022. Environmental factors in declining human fertility. Nat Rev Endocrinol 18: 139–157

Smith, J., van Daalen, K., & Venkatraman, R. (2020). Climate change and its potential impact on menopausal hot flashes: a commentary. MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY, 27(7), 816-817. https://doi.org/doi:10.1097/GME.0000000000001521

Spencer, S., Samateh, T., Wabnitz, K., Mayhew, S., Allen, H., & Bonell, A. (2022). The Challenges of Working in the Heat Whilst Pregnant: Insights From Gambian Women Farmers in the Face of Climate Change. *Frontiers in Public Health*, *10*. https://doi.org/doi:10.3389/fpubh.2022.785254

Syed, S., O'Sullivan, T. L., & Phillips, K. P. (2022). Extreme Heat and Pregnancy Outcomes: A Scoping Review of the Epidemiological Evidence. *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH*, *19*(4). https://doi.org/doi:10.3390/ijerph19042412

Treibich, C., Bell, E., Lépine, A., & Blanc, E. (2022). From a drought to HIV: An analysis of the effect of droughts on transactional sex and sexually transmitted infections in Malawi. SSM - Population Health, 19. https://doi.org/doi:10.1016/j.ssmph.2022.101221

UNFPA et al (2023) Maternal Health of Women and Girls of African Descent in the Americas. Analysis. https://www.unfpa.org/sites/default/files/pub-pdf/UNFPA_MM_Analysis-July2023.pdf

UNFPA& QMUL (2021) Child Marriage and Environmental Crises. An Evidence Brief. https://esaro.unfpa.org/sites/default/files/pub-pdf/child_marriage_and_environmental_crises_an_evidence_brief_final.pdf

van Daalen, K. R., Kallesøe, S. S., Davey, F., Dada, S., Jung, L., Singh, L., Issa, R., Emilian, C. A., Kuhn, I., Keygnaert, I., & Nilsson, M. (2022). Extreme events and gender-based violence: a mixed-methods systematic review. The Lancet Planetary Health, 6(6), e504-e523. https://doi.org/10.1016/S2542-5196(22)00088-2

Vandyck, T., Ebi, K. L., Green, D., Cai, W., & Vardoulakis, S. (2022). Climate change, air pollution and human health. ENVIRONMENTAL RESEARCH LETTERS, 17(10), 100402. https://doi.org/10.1088/1748-9326/ac948e

WHO, UNFPA, UNICEF. (2023) Protecting maternal, newborn and child health from the impacts of climate change - A UNFPA-UNICEF-WHO call to action https://www.unfpa.org/resources/protecting-maternal-newborn-and-child-health-impacts-climate-change-unfpa-unicef-who-call

Wu K, Hu H, Ren Z, Benmarhnia T, Ren M, He S and Wang Q 2021 Effects of maternal exposure to fine particulate matter on birth weight in 16 counties across China: a quantile regression analysis Environ. Res. Lett. 16 055014

Annex 2 - Concepts and definitions

Climate Resilience	In this context climate resilience refers to the capacity of social, economic, and environmental systems to cope with a hazardous event, or trend, or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation. Source: IPCC, 2018.
Climate-Induced displacement	Climate-induced displacement refers to the forced movement or relocation of people due to climate change-related crises or disasters, such as extreme weather events, sea-level rise, droughts, and desertification. It can be temporary or permanent and includes both sudden-onset disasters like storms and floods, as well as slow-onset impacts like rising sea levels and increasing droughts. Source: European Union Agency for Asylum
Direct impacts of climate change on the education system	Impacts occur when school facilities and resources are physically damaged, education provision is disrupted and lives, health and wellbeing of students and teachers are adversely and immediately impacted by sudden-onset, climate change-induced hazard events or occurrences such as cyclones, floods, storm surges, torrential rains and extreme temperatures. Source: UNICEF 2022
Disaster	A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts'. Source: IPCC
Extreme weather events	Short-term localised phenomena that deviate from the normal weather conditions, such as heat waves, floods, droughts, storms and wildfire. Source: OECD 2024
Gender equality	Gender equality refers to the equal rights, responsibilities and opportunities of women, men, girls and boys. Equality does not imply sameness but that the rights of women and men will not depend on the gender they were born with. Gender equality implies that the interests, needs and priorities of all genders are taken into consideration, recognizing the diversity of different groups. Gender equality is not a women's issue but should concern and fully engage all genders while recognizing that neither all men nor all women are a homogenous group. Source: UN Women Training Center glossary on definitions.
Hazard	The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. Source: IPCC
Human mobility	The permanent or semi-permanent move by a person for at least 1 year and involving crossing an administrative, but not necessarily a national, border. Source: IPCC
Indirect impacts of climate change on the education system	Impacts where the education system and stakeholders are not immediately affected by the climate system but are influenced by incremental environmental changes and delayed climate change impacts through slow-onset events (e.g., drought, sea level rise, salinity intrusion, erosions) and/or via some intermediary (e.g., changes in ecosystems, migration patterns, agriculture, food and water security, diseases). Source: UNICEF, 2022.
Intersectionality	Intersectionality looks at the ways in which various social categories such as gender, class, race, sexuality, disability, religion and other identity axes are interwoven on multiple and simultaneous levels. The discrimination resulting from these mutually reinforcing identities leads to systemic injustice and social inequality. Source: European Network Against Racism, 2021.
Learning environment	The diverse physical locations, contexts, and cultures in which students learn such as outdoor environments, private homes, childcare centres, pre-schools, temporary structures, and schools. The term also encompasses the culture of a school or class- its presiding ethos and characteristics, including how individuals interact with and treat one another- as well as the ways in which teachers may organize an educational setting to facilitate learning, e.g. by conducting classes in relevant natural ecosystems, grouping desks in specific ways, decorating the walls with learning materials, or utilizing audio, visual, and digital technologies. School policies, governance structures, and other features may also be considered elements of a learning environment. Source: INEE
Robust evaluations	As working definition evaluations are considered robust if they use experimental methods like randomised control trials and quasi-experimental methods that estimate the impact and cost-effectiveness of government and NGO programs. Source: World Bank

Sexual and Reproductive Health and Rights (SRHR)	The state of physical, emotional, mental, and social well-being in relation to sexuality and reproduction, not merely the absence of disease, dysfunction, or infirmity. Source: Guttmacher-Lancet Commission.
Slow-onset disaster	A disaster that evolves gradually from incremental changes occurring over many years or from an increased frequency or intensity of recurring events. Slow-onset disasters relate to environmental degradation processes such as droughts and desertification, increased salinization, rising sea levels or thawing of permafrost. Source: INEE
Sudden-onset disaster	A disaster triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters may be climate-related (e.g., floods, cyclones, landslides, tornadoes, wildfires), geologic-related (earthquakes, tsunamis, or volcanic eruptions) or not (e.g., chemical explosion or critical infrastructure failure). Depending on their severity and the affected community's vulnerabilities and adaptive capacity, they may also result in temporary (or sometimes protracted) displacement. Source: INEE
Vulnerability in the context of climate change	This refers to "The propensity or predisposition to be adversely affected" by the impacts of climate change. Vulnerability is determined by sensitivity and susceptibility to harm and by adaptive capacity, among other factors. Source: IPCC, 2018.

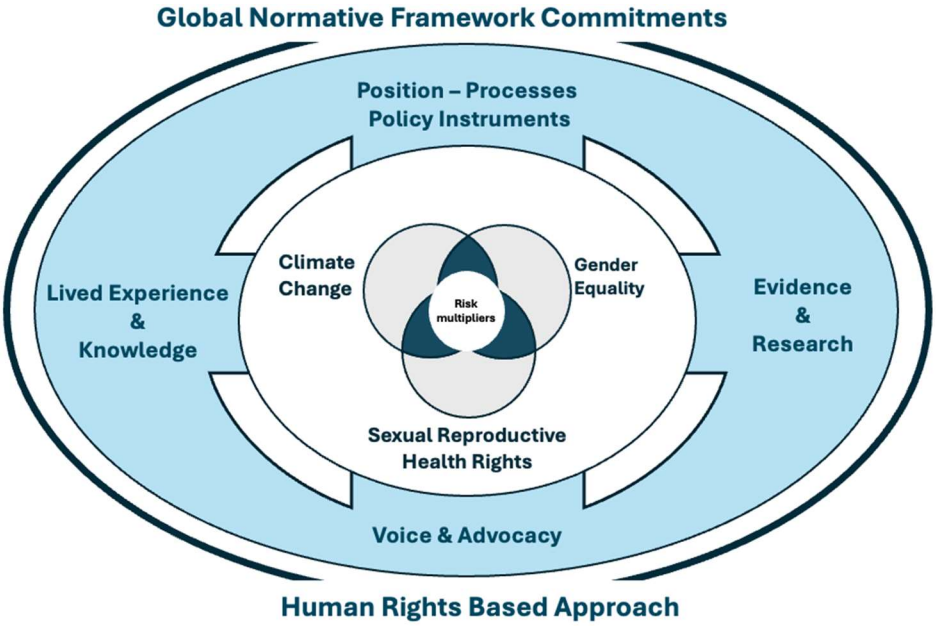
Annex 3 - Methodology

A methodology for reviewing the evidence base was developed to ensure an up-to-date understanding of the impact of climate change on gender equality and SRHR. A comprehensive methodology was developed to review the literature and evidence base.

Gender equality and climate change review of evidence and literature:

Thematic areas related to climate and gender equality were established based on existing knowledge, consultations with key stakeholders, discussions with the MFA team and topics high on the agenda of international climate dialogues. Evidence related to the intersection was organised by thematic area.

The final selected thematic areas include:



Thematic areas in focus

1. Climate Change adaptation and mitigation and gender equality
2. Loss and Damage and DRR and gender equality
3. Just Transition and gender equality
4. Climate Finance and gender equality
5. Climate decision-making and gender equality
6. Climate Change and perinatal health
7. Climate Change and HIV
8. Climate Change and GBV
9. Climate Change and Reproductive Health
10. Climate Change and Fertility Intentions
11. Climate Change and multiple and intersecting forms of discrimination
12. Climate change policy and SRHR

To explore the most recent (after 2015) evidence and literature related to gender equality and climate change, the team decided to not base the search methodology on searches in academic databases as initial searches resulted in an unmanageable number of results. Rather, a selected number of key evidence-based academic articles were identified for each thematic area, cross checking the selection with citations in other key academic literature, such as the latest IPCC reports. Using a snowballing technique, the reference lists were reviewed, and additional key articles identified, giving priority to review articles and recently published articles. In total 14 academic articles were identified for the gender equality and climate change intersection.

Greater emphasis was placed on grey literature for this intersection due to availability and relevance for the task. The grey literature included was located by researching relevant actors and their publications online, along with considering what was signposted in key informant interviews and in snowball sampling. This meant that 40 grey literature reports were reviewed in relation to the gender equality and climate change intersection. The review further included toolboxes and/or position papers for best practice and policy inclusion in development programming.

The short list of academic and grey literature included in this review study was discussed and agreed upon with the MFA prior to initiating the situational analysis.

SRHR and climate change review of evidence and literature

Evidence related to the climate change and SRHR intersection has been organised by thematic focus area. The thematic focus areas were chosen based on existing knowledge and a cursory exploration of the literature (see item 6-12 in Figure above)

Search strings were created for the climate change/SRHR intersection and for the thematic areas (from 2015) and searchers were conducted in the databases Scopus and Web of Science. Following this, results were uploaded into Rayyan systematic review software where search results were reviewed.

After duplicates were removed there were 3.460 articles related to the climate and SRHR intersection. These were then reviewed by title and in some cases abstract resulting in an initial result of 313 ‘maybe’ and 251 ‘included’ articles. Due to feasibility a review of abstracts was undertaken for the included articles, with attention to key orienting questions for exploring the literature. This resulted in a long list of 79 articles which was then reduced to 64 articles, including some discovered and used via snowball sampling methods. The vast majority of articles included have been published within the past three years. This demonstrates a rapidly growing evidence base, increased research funding to explore these intersections, and a burgeoning understanding of the impacts of climate change on gender, health and SRHR.

Grey literature was identified via key informants, web searchers and snowball sampling and 17 reports on climate change and SRHR were considered.

The final short list of academic and grey literature included in this review study was discussed and agreed upon with the MFA prior to initiating the situational analysis.

Search strings for SRHR and climate intersections:

General search.es: (Article, title, abstract, keywords).

Date range: 2015 to present.

Databases: SCOPUS (Article, title, abstract, keywords) Web of Science (Abstract)

climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND ('sexual and reproductive health' OR 'sexual and reproductive health and rights' OR 'reproductive justice') = SCOPUS 7 results / Web of Science 43 results

climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND (gender OR women OR girls OR 'gender diverse' OR transgender) AND health = SCOPUS 118 results / Web of Science 857

climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND ('reproductive AND justice' OR 'reproductive AND rights') = SCOPUS 101 results / Web of Science 202

Thematic area searches

- climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND (pregnancy OR 'reproductive health' OR 'women's health' OR birth) AND human = SCOPUS 618 results / Web of Science 961
- climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND ('sexual AND health' OR 'fertility' OR 'harmful AND practices' OR 'hiv') = SCOPUS 73 results / Web of Science 572 (added human to the search here for Web of Science as yielding thousands of results likely unrelated to human fertility)
- climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND ('gender based violence' OR 'domestic violence' OR violence) = SCOPUS 105 results / Web of Science 635
- Climate AND (change OR crisis OR adaptation OR mitigation OR disaster OR resilience) AND (sexuality OR ‘LGBTQ” OR ‘sexual rights’ OR ‘gender identity” or ‘SOGIESC’ or ‘sexual minority’ OR gay OR transgender OR lesbian OR queer) = SCOPUS 47 / Web of Science 175

Organisations interviewed for the review:

- Climate Action Network International
- IPAS
- IUCN
- USAID
- WEDO
- Multilateral Organisation (non attributed)
- DFPA
- Women Deliver

Annex 4 – Toolboxes and best practices

The desk study has reviewed guidelines, tools and best practices on climate change and gender equality and SRHR. There is a range of different tools and best practices for gender equality and climate change across different economic sectors, policy making processes and programming. In the sections below the most referred to resources on best practices are presented. The review team notes that the majority of the guides and toolboxes focus on how to design climate change programmes that integrate gender equality and SRHR. There is less data on the evidence base of what works post-implementation. This is also a result of the gender disaggregated data gap and the lack of specific gender indicators in project monitoring.

Integrating Gender into climate change action

The **Gender Just Climate Solutions (2023)** compendium is published by the Women & Gender Constituency active within the UNFCCC. The compendium is a collection of projects promoting technical solutions, non-technical solutions, and transformational solutions centering on gender equality and women's rights in climate action. The projects have been submitted as part of the annual Women & Gender Constituency Awards which highlight successful projects based on the following criteria:

- Provides equal access to benefits for women, men and youth
- Aims to alleviate and/or does not add additional burden to women's workload (such as via additional natural resource management or care responsibilities without compensation)
- Empowers women through better mobility/ accessibility, enhanced livelihood security, enhanced food security, improved health, access to safe water, etc. (as many benefits as possible)
- Promotes women's democratic rights and participation by ensuring decision-making by local women, men, women's groups, cooperatives and communities
- Is locally led and/ or locally driven (decentralised and appropriate)
- Ensures self-sufficiency and a low input of resources (safe, affordable and sustainable)
- Contributes to climate change mitigation, emissions reduction and/ or climate adaptation (the project is sustainable)
- Results can be shared, spread & scaled up (replicable elsewhere, not just benefiting one individual)
- Shows interlinkages to cross-cutting issues, such as (including, but not restricted to) peace-building, natural resources management, food security and/or health, water and sanitation.

In 2023 the World Bank Group published a note intended to provide **practical recommendations for integrating gender into climate mitigation and adaptation strategies**. The policy note investigates how gender equality and climate change intersect; explores programmatic experience on the gender-climate nexus; identifies promising entry points and solutions; and offers recommendations for development

practitioners, policymakers, and businesses. **World Bank Group (2023): Gender thematic policy notes series: Issue and practice note: placing gender equality at the center of climate action.**

IUCN Gender and Environment Resource Centre A fifteen-year partnership between IUCN and USAID, AGENT, increases the effectiveness of environment programming through robust gender integration and improves gender equality and women's empowerment across environmental spheres. As part of the resource centre IUCN produces the **ccGAPS reports** which build on a country's national development and climate change policy or strategy and identify gender-specific issues in each priority sector. The participatory, multi-stakeholder methodology includes creating action plans to enhance mitigation and resilience for women and men throughout the country. IUCN furthermore encourages donors that found the ccGAPS report to include the findings in their development programmes for the specific country.

The Sida gender toolbox includes a range of knowledge, tools and inspiration on how to operationalize gender equality in climate change projects funded by Sweden. The toolbox also includes thematic issue briefs on a range of thematics at the intersection of climate change and gender equality.

Just Transition and the Energy Sector

In 2023 and 2024 the **ILO** has been working on a **practical guide** intended to fill a knowledge gap by addressing the gender and equality dimensions of environmental challenges and opportunities in **just transition policies and programmes** that can minimize social, economic, and environmental risks while supporting greater inclusion and equity. **ILO (2024) The Gender equality and inclusion for a just transition in climate action: A practical guide**

ENERGIA: The International Network on Gender and Sustainable Energy, maintains a **knowledge centre** with a vast range of resources, toolkits and analysis on the **intersection between energy, gender and to some extent also SRHR**. Members of the network include leading organisations working on this intersection both governmental, non-governmental and intergovernmental. Amongst others, the knowledge centre includes a joint publication by the **World Bank, ESMAP and the Carbon Initiative for Development**. The report entitled, **Energy Sector Management Assistance Program. 2023. Building Evidence to Unlock Impact Finance: A Field Assessment of Clean Cooking Co-Benefits for Climate, Health, and Gender** examines the findings from a field study that sought to build experience and evidence for quantifying the climate, health, and gender co-benefits from clean cooking interventions.

Nationally Determined Contributions

NDC Partnership Toolbox. The Climate Toolbox draws together tools, guidance, platforms, and advisory support from leading institutions in a searchable database to help countries plan and implement their NDCs. The toolbox website contains a range of tools and practical guides from various organisations on how to integrate gender equality and gender aspects in the development and implementation of NDCs.

NDC report cards: Where is gender equality in national climate plans (NDCs)? CARE & CANSA: A civil society review of the new and updated NDC's with an expectation to promote gender inclusion in climate action. The NDCs were assessed according to six gender-related indicators in the three categories and rated with a traffic-light system containing 56 countries (green, yellow, red). This results in a ranking of countries in five groups, from "role model" as the best to "laggards" at the bottom of the ranking.

National Adaptation Plans

National Adaptation Global Network Toolkit (2019). This toolkit is designed to support country efforts to pursue a gender-responsive NAP process. It will be useful for government actors coordinating the NAP process, as well as for stakeholders. and development partners supporting adaptation planning and implementation. The toolkit offers a flexible approach, recognizing that there are opportunities to integrate gender considerations regardless of where you are in the NAP process (Dazé & Dekens, 2018). It is organized around the key entry points in the NAP process, based on the elements outlined in the UNFCCC Technical Guidelines for the NAP Process produced by the Least Developed Countries Expert Group (LEG) (UNFCCC, 2012). It also provides guidance on addressing gender in the enabling activities that facilitate progress and increase effectiveness in the NAP process, including the establishment of institutional arrangements, capacity development, stakeholder engagement, information sharing and securing finance. The toolkit also provides links to key tools for gender-responsive approaches, as well as other useful resources.

Climate Finance

The Green Climate Fund and UN-Women (2017) jointly produced a publication focusing on **mainstreaming gender in Green Climate Fund projects**. The practical manual supports the integration of gender equality in climate change interventions and climate finance. It provides specific recommendations for project development, monitoring and evaluation. The publication is part of a more comprehensive publication by UN-Women on mainstreaming gender considerations into climate change projects. The full guidebook is available at the **UN Women Training Centre web page** on "Leveraging Co-Benefits between Gender Equality and Climate Action for Sustainable Development".

WEDO and the Climate & Development Knowledge Network (2021) jointly published a guide focused on **strengthening gender integration in climate finance projects.** The guide both includes recommendations for strengthening gender integration in climate finance projects as well as it provides examples and tools on how this could be done with a particular focus on the four primary multilateral climate funds.

The Heinrich Böll Foundation has published a study and a compendium on the GCF funding portfolio's integration of gender equality commitments. The study assesses GCF projects and programmes against a set of criteria and indicators developed by civil society and scrutinises whether these promote gender transformation essential for achieving effective, efficient, and equitable gender-responsive climate actions. The study and the compendium can be downloaded here.

Key Resources for the intersection between Climate Change and Sexual and Reproductive Rights and Health

Resources for Funders and Financing:

Catalyzing impact for women's health and rights in changing climate: YLabs have developed A framework to guide synergistic investments in climate action and sexual and reproductive health and rights entitled: Catalyzing impact for womens health and rights in changing climate. The set out four key principles and five steps for guiding action and supporting investment in SRHR to support climate adaptation and resilience. The principles include: 1) Locally led, 2) Gender- transformative, 3) Sector-minded and cross sectoral, 4) Flexible, interactive and with a long-term view. The framework supports organisations to develop climate strategies by supporting organisations through give steps. 1) Assessing climate risks, 2) Connecting across sectors, 3) Learn and Pivot, 4) Measure and adjust and 5) Refine Strategy.

Climate Change Engagement: A Guide for SRHR Organisations by the Margaret Pyke Trust, MSI, PHE Ethiopia and YADNET Uganda supports SRHR organisations to engage in climate spaces, secure climate finances and develop new collaborative partnerships across sectors.

Resources for SRHR and Climate Justice:

The Sexual and Reproductive Health and Rights and Climate Justice Coalition: The SRHR&CJ coalition was founded in 2020 and is convened by IPAS, Women Deliver, the Women's Environment and Development Organisation (WEDO) and the Asian Research and Resource Organisation for Women (ARROW). The coalition is composed of over 90 civil society organisations from over 50 countries. Key activities of the coalition include documenting the impact of climate change on SRHR, creating policy recommendations, designing campaigns, and promoting collaborative learning. The coalition also plays a role in influencing key advocacy spaces and international conferences, integrating SRHR into climate policies and programs. The coalition has produced advocacy briefs, messaging guides and other resources to support gender and SRHR responsive climate action.

The coalition has developed a SRHR and Climate Justice Messaging Guide, which is a living document that supports better communication about the interlinkages between SRHR and climate crisis for anyone interested, including policymakers, advocates or folks from the media.

The United Nations Population Fund has a value proposition that sets out how the organisation approaches the intersections between SRHR and climate change. In partnership with Queen Mary University of London they have also produced a specific advocacy resource for considering the intersections between climate change and reproductive justice with specific focus on women of African descent.

Resources for Policy

IISD, Women Deliver and the NAP Global Network conducted a review of SRHR within climate national adaptation plans entitled: Sexual and reproductive health and rights in National Adaptation Plan (NAP) Processes: Exploring a pathway for realising rights and resilience to climate change.

UNFPA and Queen Mary University of London (QMUL) conducted reviews of SRHR in nationally determined contributions (NDC), reviewing 50 NDCs in 2021 and 119 NDCs in 2023 in the review: Taking Stock: Sexual and reproductive rights in health in national climate policies.

Resources for Programming

The United Nations Population Fund (UNFPA) and Queen Mary University of London have produced a supplement for comprehensive sexuality education in the Eastern and Southern Africa region on the intersections between gender, rights, youth and sexual and reproductive health and rights and climate change entitled The curriculum adds ten hours that specifically address climate change.

Pathfinder has developed a number of projects related to gender, climate and environmental challenges and health, including some examples which specifically address sexual and reproductive health and rights.

Blue Ventures has developed a guide on Health and Environment partnership working. While this does not address climate change specifically, there is helpful guidance for health and environment partnership working and development.