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The Care-Climate Nexus - A Conceptual Framework

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THE CLIMATE-CARE NEXUS

A Conceptual Framework









UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

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Contents

Foreword 2

1 SECTION 1
Introduction 4

2 SECTION 2
What is care? 5

2.1 Care work and the care economy 6
2.2 Climate change and care 11

3 SECTION 3
A conceptual framework of the climate-care nexus 13

3.1 Description and discussion of the conceptual framework 16
3.2 Structural determinants 16
3.3 Intermediate determinants 18
3.4 Climate change and consequences 20
3.5 Vulnerability 21
3.6 Care and care inequalities 22
3.7 Systems of privilege and oppression – capitalism, colonialism and patriarchy 23

4 SECTION 4
Linking care and climate policy 24

4.1 Mitigation 26
4.2 Adaptation 26
4.3 Loss and damage 27
4.4 Climate finance 27

5 SECTION 5
Conclusion 30

6 SECTION 6
Potential areas for future research and advocacy 32

References 33

Foreword

Extreme weather changes, such as heat waves, storms, droughts, and melting glaciers, are becoming more frequent. This trend highlights the urgent need to understand the labor demands of the climate crisis. Events like Cyclone Freddy emphasize the crucial role of care work in addressing these challenges and reveal the varied impacts on care demands across affected countries, underscoring the need for robust care systems.

Scientists predict that the frequency of such events will increase if we do not reduce our dependence on fossil fuels. This raises crucial questions about the scale and value of care work needed to adapt to the climate crisis. How can states be mobilized to meet these needs within complex environmental constraints, and what are the repercussions of not doing so?

This conceptual framework is a first step in a larger strategic process to centralize care in the climate agenda, especially from a global South perspective. It explores the need for socialized and accessible care, presenting two causal mechanisms: the impacts of climate change on care and the influence of care organization on climate outcomes. By integrating care into climate policy, this framework offers a comprehensive analysis for academics and policymakers.

The framework moves beyond traditional gender analyses, offering a structural view of the economy and society. By adopting a care lens, we can reframe climate policy to value care in our relationship with the environment, challenging anthropocentric hierarchies and promoting equity.

Effective climate action requires public investment in care infrastructure, reversing austerity measures, and ensuring long-term financing for care and climate initiatives. Such investments will enhance care quality, create jobs, and support indigenous communities.



IDRC's Sustainable Inclusive Economies program supports a feminist just transition, recognizing that addressing the unequal distribution of care work is central to climate justice. Despite progress in integrating gender equality into climate change programs and policies, the link between care work, climate change, and environmental sustainability remains invisible to many policymakers.

Leveraging over a decade of investment in feminist researchers and movements, IDRC and its partners aim to unravel these links and broaden climate action to include the essential contributions of care work in building resilient communities. In addition to this framework, IDRC recently partnered with the Asia Foundation and Fundación Avina to produce a policy brief titled " Integrated Solutions for Intersecting Crises," which explores integrated solutions for a just transition that advances climate and care justice.

As such, this conceptual framework should be read in conjunction with the policy brief. Furthermore, IDRC's action-research Climate and Care Initiative (https://climateandcareinitiative.org) seeks to promote actions that inform researchers, funders, and policymakers on addressing these crises simultaneously for a just transition.

All this work aims to drive gender transformative climate action and reshape policies addressing the unequal social organization of care. Our goal is that the care economy mobilizes action and receives attention and resources it deserves.

We invite researchers and policymakers focused on addressing the climate crisis to explore the insights within this framework. By centralizing care in the climate agenda, we can develop policies that address both mitigation and adaptation, promote social equity, and build a resilient future for all.

Erin Tansey,
Director, Sustainable Inclusive Economies Division
International Development Research Centre



SECTION 1

Introduction

The increasing frequency of climate change induced disasters has reinforced the need to understand the labour demands that the climate crisis will inevitably bring. Recent ecological catastrophes, such as Cyclone Freddy – the longest lasting tropical cyclone ever, which struck five African countries in early 2023 – have highlighted that a significant aspect of addressing the climate crisis will require care work. Cyclone Freddy and its aftermath led to different impacts on care demands across the five most impacted countries, leaving communities vulnerable in different ways. According to UNICEF, one of the most critical needs of children in Madagascar was access to consumable water and adequate sanitation (UNICEF, 2023). In Malawi, more than two million farmers lost their crops, which caused acute malnutrition (Chongwanada and Clayton, 2023). Similarly, for other affected countries such as Zimbabwe and Mozambique, the cyclone caused permanent damage to crucial infrastructure, including schools and hospitals (ActionAid, 2023).

Most scientists predict that the frequency of destructive climatic events such as cyclones will become more extreme if we do not drastically reduce dependence on fossil fuels, the leading cause of climate change. This raises crucial questions about the scale and magnitude of the care work needed to adapt to the climate crisis, for which most countries are significantly unprepared. What will this work entail and who will perform it? How is this work valued? How can states be mobilised to help in meeting the need for care (broadly defined) within the context of increasingly complex environmental constraints, including climate change? How are current changes to everyday life in the context of climate change affecting the gender dimensions of care work? These questions are explored in this paper. The paper outlines a climate/care conceptual framework that underscores the need for more socialised and accessible care in the face of the climate crisis.

The objectives of the conceptual framework are as follows:

- Integrate care across the conceptualisation of the causes of climate change and propose alternative approaches to existing climate change solutions and policies.
- Outline the relationship and pathways between climate change and care to address key research questions, while drawing on existing literature on care and climate change.

The following section delves into the definition of care and outlines the theories of care and its relationship with climate change. Thereafter, the climate/care conceptual framework is described.

SECTION

2 What is care?

Feminist economists have long argued that care work is crucial for the functioning of any society and economy. They distinguish between direct and indirect care work. Direct care work involves personal interaction such as childcare, elderly care and healthcare. Indirect care refers to work that involves specific activities, such as cooking, collecting water and domestic work. In most countries, unpaid care work is treated as unending, taken for granted and often treated as a woman's "natural" role, according to traditional and patriarchal divisions of labour which relegate women to the private sphere and men to the public one (Valiani, 2022). In addition, many countries do not have sufficient systems in place to provide formal care, and it is thus provided informally by family members or the community. Figure 1 below illustrates the stark differences in paid and unpaid care work between women and men in both developing and developed countries.

FIGURE 1: The share of paid and unpaid work in developing and developed countries



Source: ILO, 2016

Unpaid care is not counted in standard economic policymaking and is not incorporated in standard economic measures (such as GDP), despite being indispensable for human existence. Similarly, unpaid care infrastructure – such as that in social services, schools, hospitals – is severely under-resourced in most economies. This undervaluation has consequences for how economies will be able to respond to the deepening ecological and social reproduction crisis (Folbre, 2014). In addition, paid care work is one of the most under-protected and exploited professions globally. Paid domestic work in the global South amounts to 12.3% of total employment, and women domestic workers represent a staggering average of 36% of all women employees (ILO, 2021). Yet, over 90% of domestic workers do not have any social protection benefits and work under exploitative and dangerous working conditions because they are excluded from most labour laws (ILO, 2021).

Within a broader set of economic measures, called the System of National Accounts,[1] unpaid care is defined as "providing unpaid domestic services for own final use within households, providing unpaid caregiving services to household members, [and] providing community services and help to other households" (Charmes, 2019: 8). Activities such as collecting wood, water and producing food for own consumption have not been well categorised and are therefore not well captured in employment data or data on care work (Charmes, 2019).

Research from ecofeminists shows that care work extends beyond domestic work; it includes caring for the land and non-humans. In Africa, the agricultural sector accounts for about 30% of women's employment (ILO, 2021). Many women work on their families' farms, where their agricultural labour is seen as an extension of their domestic care duties. Like domestic care labour, farming work is excluded from most labour laws in countries, which denies many working women labour rights protections (Kappel, 2021).

The next section outlines approaches and understandings of care and argues two things. One is that an expansive view of care that goes beyond person-to-person care to include caring for the environment is critical to building care-centred, climate-resilient economies. Centring care in responding to the climate crisis requires understanding diverse meanings and articulations of care, which include definitions and understandings of care in different contexts from the global South. Second, care is not only a practical concern but also an ethical and political one. It involves recognising that everything we do to maintain, continue and repair our world is significant and crucial for life on Earth.

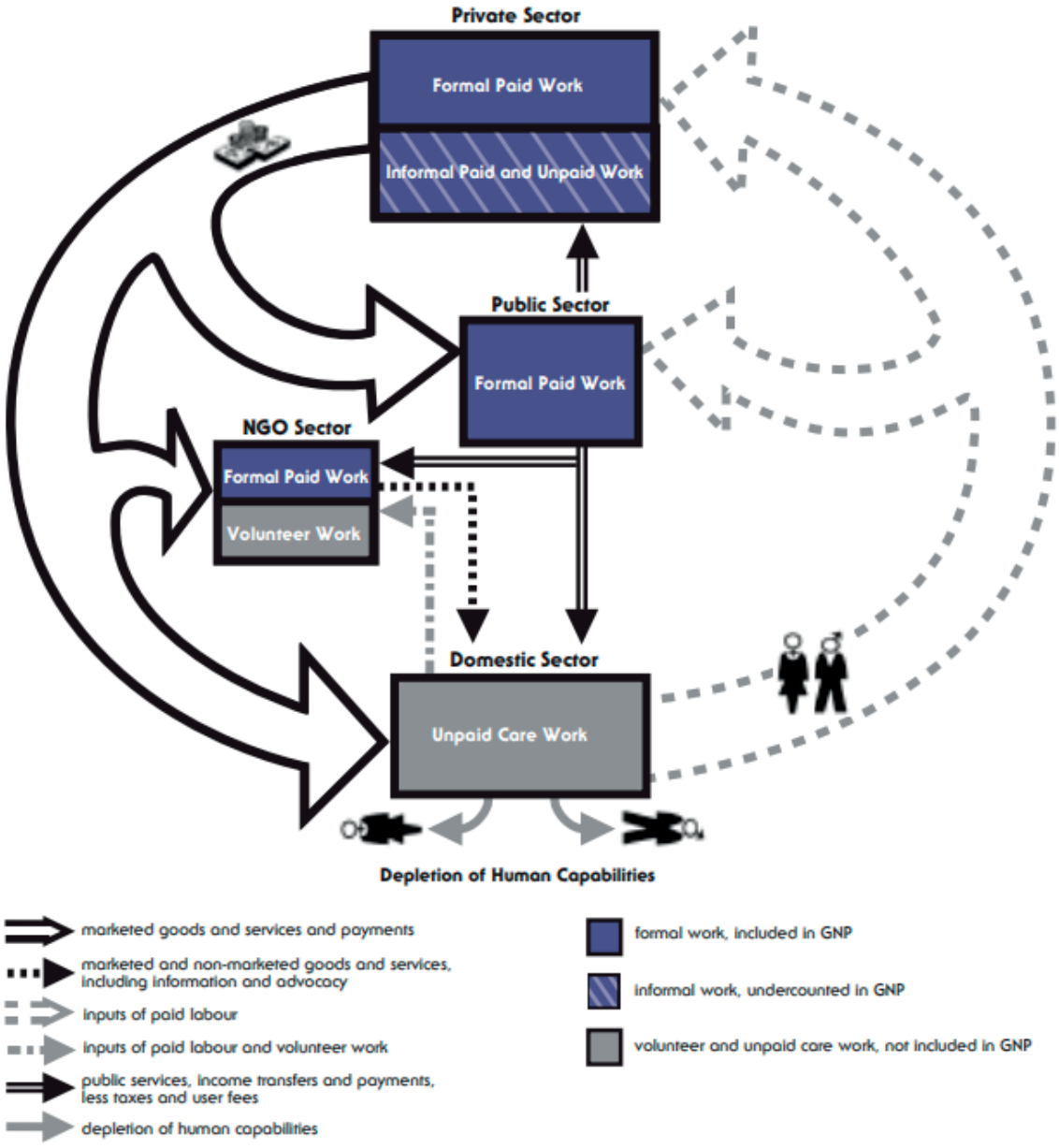
2.1 Care work and the care economy

One of the central themes of feminist economics is the concept of care. Feminist economists argue that care is fundamental to any economy's functioning, the reproduction of society and the sustenance of life on Earth. Despite care being crucial for human well-being and ecological survival, care is structurally undervalued in our societies, particularly in standard economic theory in which care is taken for granted and treated as something that occurs mainly within the realm of the privacy of the household.

1 The Systems of National Accounts is the set of all macroeconomic accounts.

Feminist economists show that one of the central reasons for the undervaluing of care is that it is a relational activity, distinct from the values underpinning standard economic theory. A core normative assumption within the theoretical context of standard economics is that the central driving force or motivation of any "economic agent" (also known as the "economic man") engaging in the economy is doing so exclusively for his self-interest within a competitive free market (Folbre, 2014). In this model, care is invisible and not considered necessary, despite it being integral to the coming into being and daily life of "economic agents". Figure 2 illustrates the flows of unpaid and volunteer work that are vital to the "domestic sector" and labour production. It also highlights how much of the necessary work in the economy is either undercounted (such as informal work) or uncounted (unpaid work) in national systems of accounting. Depletion of human capabilities is shown as a result of the undervaluing of unpaid and informal forms of work that are so vital to human survival.

FIGURE 2: Illustration of the channels of paid and unpaid care



Source: *Elson, 2000*

Feminist economic theory reveals how the undervaluing of care work is crucial to understanding gendered inequalities. Gendered norms and other structural and institutional contexts cannot be removed from how economies are structured because care, both paid and unpaid, is conducted mainly by women, people of colour, immigrants and other marginalised groups. Furthermore, feminist political economists such as Nancy Folbre (2014) demonstrate how the reproduction of any labour force in a capitalist economy would not be possible without the labour conducted by women, also called social reproduction. Social reproduction is the "glue that holds human lives together" (Raghuram, n.d.); it is the essential work of birthing children, childcare, caring for and within communities, housework and all the labour that goes into making life, relationships and human connections possible. Fraser (2021) argues that the capitalist economy "free rides" on social reproduction, which is assumed to be freely given and unending, despite it being necessary for any economic system to continue. Feminist political ecologists, such as Harcourt (2023), illustrate how this assumption applies to nature and natural resources.

How care is organised – both its quantity and quality – is shaped by political, economic, cultural and institutional factors. As Folbre articulates, care – and social reproduction, more broadly – "operate within enforceable rules and internalised obligations to care for others. These rules and norms are important structural features of modes of social reproduction, and they reflect the dynamic articulation of patriarchal capitalist systems" (Folbre, 2014: 3).

An influential paper on care by Razavi (2007) highlights the direct relationship between market-based capital accumulation and the unpaid care economy through the Care Diamond model. The Care Diamond outlines the major care providers as markets, households, non-profit organisations and the government. As care work became increasingly globalised in the 1980s and 1990s, researchers began to reflect on the various processes of economic globalisation through free market economic policies, particularly through austerity and structural adjustment programmes. These policies had a severe impact on women in the global South by underfunding public resources (Harcourt, 2023). As result, many women were forced to migrate to countries in the global North to seek income, which itself was undergoing changes as the increase of two-wage households meant that more households in the global North outsourced care to migrants from the global South (Harcourt, 2023). The intensification of neoliberalism in the early 2000s further underpinned the growing "crisis of care", which structurally undervalued care while increasingly creating the conditions for the need for more privatised care. For example, feminist researchers in Africa and Latin America show how neoliberal austerity policies directly hollowed out public services (particularly in care), which disproportionately affected poorer areas who mostly shoulder the "externalisation of reproductive costs" (Harcourt, 2023).

The diagram in Figure 3 illustrates how care is viewed in standard economic theory. The structure of economics is at the top and ecological processes and caring activities are at the bottom of the triangle. This reflects the underlying hierarchical order within economics. Feminist economists critique this hierarchy, arguing that economic measures such as gross domestic product (GDP) are structurally blind to all unpaid care labour, often performed by women, and to nature.

Feminist political ecologists build upon this criticism by pointing out that economic processes attribute value only to what can be priced. Feminist economists argue that the valuation of

unpaid household care work is necessary to better measure living standards. One way to comprehensively account for this is by extending the existing scope of the System of National Accounts to value the non-market activities performed within and between households without monetary compensation. Without an account of these activities, economic growth rates can be a misleading indicator of progress, blind to any transfers of activity from market production into the unpaid household domain, or even simple changes in the volume or value of the latter. The exclusion of unpaid household service work may directly impact welfare if economic policy biases intervention that favours the paid economy over unpaid household production.

A closer look at the inter-relations between the economy, care activities and ecology in Figure 3 shows that all three variables are closely linked. The model in Figure 3 is drawn from the work of Deleage (1989) and later revised by Dengler and Strunk (2018) and is one of the first models that maps the economic system, ecology (referred to as 'ecological processes' and reproductive labour (referred to as 'caring labour'). First, the relation between the economic system and ecological processes shows that despite industrial production within the economy being dependent on and limited by nature, industrial production tends to destroy and takes importance over nature. Economists often conceptualise nature as "tap and sink, or as first and last phase of economic activity" (Deleage, 1989: 16). Modern economic theory treats the negative effects on nature as "externalities" and thereby fails to acknowledge the fundamental role nature plays in all economic production processes (Mikhati, 2018).

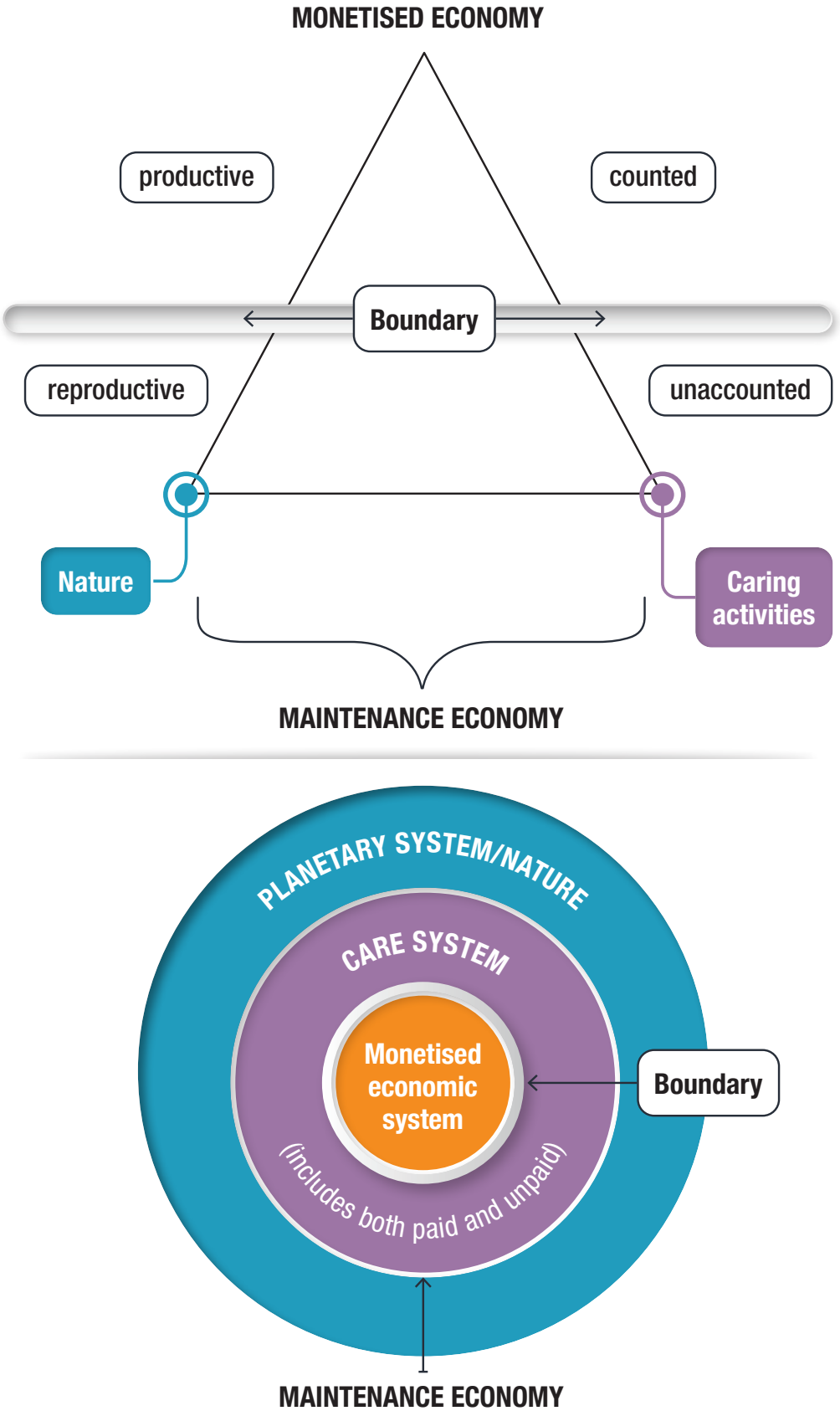
Second, a similar power asymmetry characterises the relationship between the economic system and caring activities. On the one hand, the economy would not exist without care; on the other hand, care activities are structurally devalued (Folbre, 1994).

Third, the relation between care and the economy (the base of the triangle) is an indispensable relationship. Caring activities take place within a larger ecological context and often sustain both nature and the economy.

Regarding the relation of both ecological processes and care with the economic system, it is evident that ecological processes and caring activities are treated similarly. Ecological processes and caring activities resemble each other in being frequently overlooked and devalued by mainstream economic theory (Nelson, 2009). Moreover, as O'Hara (1997: 142) points out, ecological processes and care activities both "contribute countless, essential services to the production processes of the official economy". Thus, despite being socially devalued, both constitute the foundation on which the society rests. Because of this, Jochimsen and Knobloch (1997) summarise the base of the triangle as the "maintenance economy" that is contrasted with the "monetised economy" (or what is currently known as the "formal" economy).

As is shown in Figure 3, the boundary has been attributed different conceptual dualities by various feminist scholars. There is a visible tip of the iceberg from the bigger, invisible part of the hidden economy (also referred to as the "iceberg economy") that lies under the surface. Feminist scholars argue that the boundary between the monetised and the maintenance, the productive and the reproductive, the counted and the unaccounted, and the visible and the invisible needs to be overcome. Transcending the boundary has, however, not been an issue only for feminist economists, but has also been a recurring theme in ecological economics (Dengler and Strunk, 2018).

FIGURE 3: The undervaluation of care in the economy (Adapted from: Dengler and Strunk, 2017)



2.2 Climate change and care

Climate change threatens food security, sovereignty, accessibility and quality of water, health and livelihoods (MacGregor et al., 2023. In situations where women primarily handle tasks such as providing food, collecting water and caring for the young, ill and elderly, climate change disproportionately affects women, which intensifies the difficulties related to their responsibilities (Harcourt, 2023). This pertains to caregiving but also extends broadly to the realm of social reproduction. Consequently, climate change contributes to an ongoing crisis of care and social reproduction that exacerbates the injustices linked to women bearing an unequal amount of unpaid caregiving and household work. This carries substantial economic and social repercussions.

The body of literature exploring the interconnections between care work and climate change overwhelmingly indicates that extreme weather events induced by climate change worsen disparities in care responsibilities (Harcourt, 2023). These effects are gendered as women disproportionately, but not exclusively, perform care in households and communities.

Feminist scholars who have examined the relationship between care and climate (most notably feminist political ecologists) expand the notion of care to include caring for humans, their environment and nature (broadly defined). Joan Tronto's definition of care broadens the scope of care work to encompass environmental care alongside interpersonal (person-to-person) care. Care is a "species activity that includes everything we do to maintain, continue and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, ourselves and our environment, which we seek to interweave in a complex, life-sustaining web" (Fisher and Tronto, 1990: 40).

Tronto's conceptualisation of care articulates care as an ethical and political process. Tronto argues for a definition of care that incorporates the environment as an essential element that should be cared for. She sees care as a series of processes, what she calls caring about, taking care of, caregiving, care receiving and caring with. She argues that understanding care as a process shaped by people's environmental contexts, capacities, relationships and material conditions is central to reimagining economic and social systems that value care. As Harcourt (2023: 5) articulates, "while care is life-giving and nurturing, it can also be violent and oppressive and about disciplining and controlling bodies, often vulnerable, poor, racialised female bodies, reflecting the unequal gender, race and class power relations". This understanding of care as an ethic draws attention to care as a practice and the basis for organising social and economic life.



Within care ethics, Raghuram (n.d.) suggests that care practices must be locally contingent and reflect different "meanings and geohistories of care". This means that placing care at the centre of responding to climate change means understanding the differences in how care is practised and understood in different contexts. For example, Graddy-Lovelace (2020) writes about "agrarian care work" as referring to "cultivating on-farm agricultural biodiversity which has persisted in pockets and margins in the global North and large swathes of the global South". Their definition of pastoral care encompasses the "ancient" work of paying careful attention to and tending to a plant's well-being, particularly in understanding its seeds' capabilities to resist environmental stresses over time and across different environments. They note that while climate change has caused a global funding rush towards "innovations" in agricultural biodiversity conservation, particularly in seed cultivation (now formally termed "pre-breeding"), similar and more natural processes and practices have existed for centuries (Graddy-Lovelace, 2020). Others demonstrate the nuances of rural care labour and how it cannot be easily replaced by newer technologies that treat traditional farmers merely as end-users of commercial seed products and not as holders of crucial knowledge passed down by generations. In other words, care work is not homogenous across geographies and cultures, but it reflects its place and the importance of situated/place-based knowledge.

Feminist conceptualisations and understanding of care show that care and the organisation of care – who provides and how it is provided – is crucial to reproducing economies, ecologies and societies. Focusing on care, particularly within climate change, requires unpacking the conditions of care work and analysing and critiquing the economic systems that reproduce inequalities. These conditions of care work will be different and contingent on other places, cultures and historical contexts, which means that care practices and meanings will likely also differ. For example, conceptions of care in the global South, such as Ubuntu in Africa, which encourages interdependency within communities, is an ethic of care that could both enrich our understanding of care and provide deeper insights into how centring care is critical for building resilient economies. This is not to say that care will be exclusively different across contexts, as there are similarities in how care is provided across contexts. Instead, the point is to enrich our understanding of care relationally, which has implications for how care and policies and practices are understood and conceptualised.



3 A conceptual framework of the climate-care nexus

SECTION

The conceptual framework presented in this paper traces the standard flow of reasoning behind the anthropogenic causes of climate change. It considers both the causes and effects on the organisation of care and those who directly and indirectly affect care and care inequalities. As outlined previously, a care lens on climate change policy goes beyond cause and effect (i.e. the impact of climate change on care work). A care lens on climate change is critical to re-conceptualising the causes and solutions to the climate crisis and, as a result, re-orienting climate action that is anchored in care.

A focus on care also helps to theorise the limits in existing approaches to climate policy. Critical care theorists argue that deeply structured global inequality complicates caring relations and practices. Who cares for whom, who gets care and whose care gains the most recognition and reward in an intensively but unevenly globalising world are important questions – with important implications for responding to the challenges of the climate crisis (Clark and Stevenson, 2003).

The term "conceptual framework" is used in this paper to outline the representation of all the concepts that link care with climate change and policy; it shows how the different elements come together to facilitate an understanding of care as integral to climate policy. Furthermore, the conceptual framework helps organise the various ideas and concepts introduced. In this paper, the conceptual framework aims to situate care within the standard conceptualisation of climate change causes, effects and solutions. It does so because the main target audience for this framework comprises climate scientists and climate policymakers.

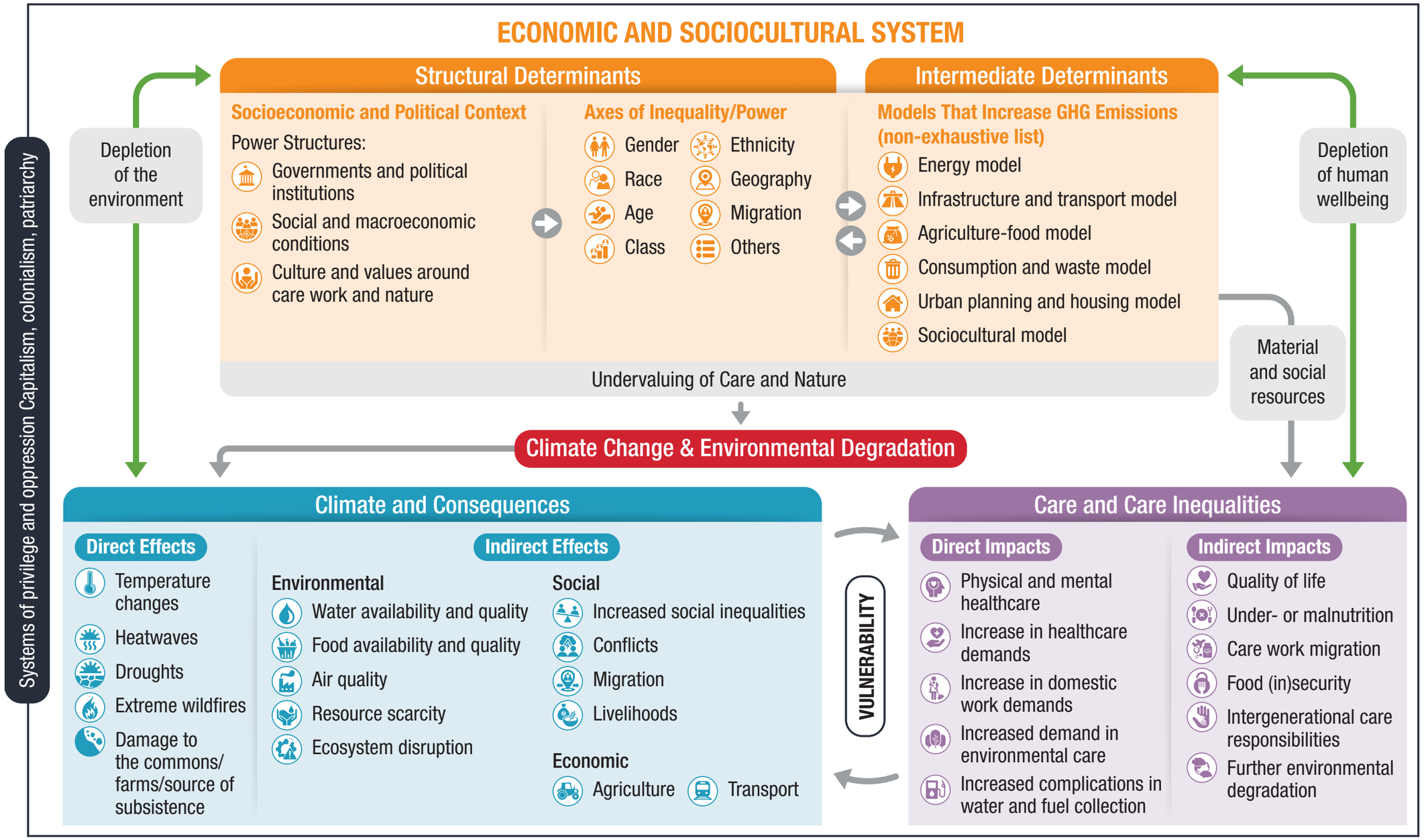
The objective of the conceptual framework is to conceptualise climate change, its proposed solutions and policies with a care lens. This facilitates an understanding of the relationship between climate and care to address key research questions (see below), while drawing on existing literature on care and climate change. It also aims to differentiate between the environment's driving forces, pressures and state to illustrate different policy actions and responses.

The following are the research questions that the conceptual framework addresses:

1. How can climate science and knowledge on climate change be enriched with a care underpinning?
2. In what ways can care be anchored in climate change policy?
3. What are the existing climate policies that can be improved with a care lens, and how?
4. What change in climate, environmental and social policy is required to anchor care effectively?
5. How can states be mobilised to help respond to the need for care (more broadly) within the context of increasingly complex environmental constraints, including climate change?

The rest of this section describes the different elements that integrate the conceptual framework (Figure 4). There are no existing conceptual frameworks that link care work, care inequalities and climate change. This framework is adapted from several different existing conceptual frameworks on climate and healthcare, such as the World Health Organization's Driving force, Pressure, State, Exposure, Effect and Action (DPSEEA) and Boylan et al.'s, (2018) adaptation of this framework. It was adapted to this framework precisely because it is a well-known framework within the climate policy community.

FIGURE 4: Conceptual framework linking care, care inequalities and climate change



3.1 Description and discussion of the conceptual framework

This section describes the elements that integrate the conceptual framework (Figure 4). In short, the framework is divided into four parts: (1) the determinants of climate change, (2) its environmental and social consequences, (3) its direct and indirect impacts on care work, and (4) the role of mitigation, adaptation and loss and damage policies. The framework also emphasises the associated care inequalities through (1) the recognition of the role of systems of privilege and oppression, (2) the distinction between structural and intermediate determinants of climate change and their identification as also being at the root of care inequalities, and (3) the role of individual and collective vulnerability in mediating the effects of climate change, particularly on care and care inequalities.

Figure 4 was initially developed based on an existing framework on climate change and health care and then was workshopped with a number of feminist economists who argued for a more circular system. Figure 4 therefore illustrates how these relationships are not in fact linear, but are rather closely linked and that relationships are multidirectional.

3.2 Structural determinants

Structural determinants describe the interaction between socio-economic factors, political context and axes of inequality. Collectively, these factors are responsible for how models are structured (intermediate determinants) that drive climate change and social inequalities. Existing theories, such as feminist political ecology, show how environmental crises and human-environment relations are determined by power, gender, class and race, among other factors (axes of control) and specific socio-economic, cultural and historical legacies. A focus on care helps analyse the current socio-economic and political crises to form alternative frameworks. These frameworks move away from a reliance on extractive economic growth, which often neglects the importance of care and the environment.

3.2.1 Social, economic and political context

The physical reality of the climate crisis is determined by social and political factors – power, race, ethnicity, gender, historical legacies and socio-economic conditions (Harcourt, 2023). Climate vulnerability is driven by physical changes to climate systems and an economic system that reinforces self-interest and power distribution in specific ways. This crucial context illustrates the fundamental background mechanisms that shape the creation, configuration and perpetuation of the ecological and care crises. This is an often overlooked factor, particularly within climate policymaking. It usually applies a scientific "objective" approach to climate problems by viewing the environmental crises as separate from their economic and social history and contexts.

This part of the framework thus broadly includes the following contexts:

Political and historical context

The political tradition of governments, ranging from local governments to the international level, such as international bodies, have power to devise solutions to climate change, such as the Intergovernmental Panel on Climate Change (IPCC), the World Trade Organization, the World Bank and the International Monetary Fund (IMF). These institutions dominate global economic and environmental governance and historically have also been the global creators and regulators of climate policies.

In late 2018, the IPCC published a landmark report showing that global emissions had to be cut roughly in half in less than twelve years (by 2030). This target cannot be met without the world's largest economies playing a decisive role in redressing past emissions, given that historical responsibility for climate change is primarily attributable to industrialised countries in Europe and the United States. Between 1850 and 1990, the United States and Europe produced nearly 75% of cumulative GHG emissions (Nunn et al., 2020).

On an international scale, multilateral environmental agreements such as the United Nations Framework Convention on Climate Change (UNFCCC) do not contain specific mentions or mandates on care work, including in their gender action plans (Aguilar, 2022).

Some key frameworks and mechanisms that explicitly include gender considerations within the UNFCCC include the Gender Action Plan (GAP) and some decision texts. The GAP, adopted in 2017, is a framework that aims to "enhance the gender responsiveness" of climate policy and climate action. It outlines specific actions and strategies to promote gender equality and women's participation in several aspects of climate change mitigation, adaptation, finance, capacity-building and decision making, some of which acknowledge the importance of gender-responsive approaches to climate change.

While the frameworks within the UNFCCC explicitly incorporate gender considerations, they do not specifically address care work independently. However, elements within these frameworks implicitly touch on aspects related to care work, especially related to the disproportionate care responsibilities often shouldered by women in caregiving roles, both within households and communities, particularly in the context of climate change impacts and adaptation measures.

Economic context

The prevailing global economic model is characterised by resource extractivism and unending consumption by the few, which has facilitated increased levels of inequality and poverty. This economics is based on normative assumptions about how the climate crisis can be solved through technocratic measures. Central to this is an emphasis on export-oriented development in the global South through fossil fuel dependent industries and simultaneous private investments owned and governed by developed countries. Historically, the global South has been a source of primary commodities and natural resources. such as cotton, minerals and sugar. This history of mining and ecological destruction has led to pollution, deforestation and erosion of communities' capacities to guard against the worst effects of climate change.

In addition, the global economic system is characterised by currency and trade hierarchies that put less industrialised countries at a disadvantage due to high levels of debt, unfair trade rules and other factors that prevent them from raising adequate public revenue (Löscher and Kaltenbrunner, 2022). This prevents low-income countries from investing in public care. The Jubilee Debt Campaign illustrated how, in 2022, 64 low-income countries spent more on repaying their foreign creditors than on healthcare (Jubilee Debt Campaign, 2023).

Current approaches to climate change also assume that the market is the most efficient vehicle for adequately solving the climate crisis. Carbon pricing is one of the most prominent proposed solutions to climate change. It is based on an economic theory that suggests that by placing a price on carbon emissions, either through a tax or cap-and-trade scheme, the market will be able to reach an appropriate level of emissions. These market-based policies have been implemented in various contexts but have not resulted in a decline in emissions (Somerville, 2020).

Similarly, current economic models that prioritise economic growth are impossible without unpaid care work. However, this work continues to be largely ignored in mainstream economic analysis and policies. Despite its importance, mainstream economic analysis and most policies do not consider the dynamics of unpaid care and domestic work (Women's Budget Group, 2024). The concept of the care economy, conceptualised by feminist economists, situates care work within its broader social context (Elson 2017; Folbre 2006, 2014). It exposes connections between inequalities and divisions of paid/unpaid labour within households, communities and external factors, including institutions and cultural norms (Esquivel, 2014: 129). Ilkkaracan's (2016) "purple economy" usefully incorporates a vision for a care economy and a green economy, arguing for an economic order that values both care and nature.

Despite the importance of caring for nature, this has received little systematic attention. Notable exceptions include perspectives from ecofeminism, feminist ecological economics, human geography and non-Western environmental philosophies. These perspectives make the point that humans are part of nature rather than separate from it or dominant over it (Harcourt, 2023).

The structural determinants noted below influence both care and climate through inequalities.

3.2.2 Axes of inequality

Inequalities along various axes, such as class, race, gender, age, ethnicity and geographical origin or residence, stratify society and create hierarchies of power among different social groups. These imbalances influence (1) greenhouse gas (GHG) emissions and (2) access to social and material resources. In turn, this affects health and the capacity to adapt to climate change. For instance, wealthier individuals tend to have larger ecological footprints due to higher use of air travel, private transport, greater consumerism and waste generation. Conversely, those with fewer social and economic resources are more exposed to the effects of climate change and face significant difficulties in adapting and recovering. For example, many cities in the global South have outdated housing and low energy efficiency. In South Africa, lower-income individuals live in poorer housing conditions and experience more energy poverty. This increases their vulnerability to rising temperatures and heat waves and reduces their ability to adapt to climate change.

Similarly, care involves and relies on unequal gender, race and class power relations. The provision of care is dependent on axes of inequality. Care work – and social reproduction more broadly – is also work that tends to be displaced on marginalised members of society, such as migrants and racialised and working-class women.

3.3 Intermediate determinants

Both structural and intermediate determinants shape and contribute to climate change. The intermediate determinants refer to the causes of GHG emissions that are comprised of the current models of energy, transport and infrastructure, production, consumption and waste, housing and other models. These models determine how people access various material and social resources. They act as intermediate determinants of care inequalities.

3.3.1 Models that increase GHG emissions

Atmospheric gases that contribute to climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone and halocarbons. The concentrations of these greenhouse gases (GHGs) have significantly increased over the last few decades. The framework outlined here identifies the primary sources of anthropogenic GHG emissions. The main contributors are energy production and transportation. Housing and industry also play significant roles due to CO_2 emissions from fuel combustion, which are heavily influenced by energy efficiency. In addition, the globalised food production model increases emissions through the transportation of products, deforestation for agricultural expansion, and higher meat consumption, particularly from cattle, which produce large amounts of methane. These are significant contributors to climate change. The design of cities and housing obviously varies widely internationally but the preference for private vehicles and the expansion of urban sprawl are significant contributors to greenhouse gas emissions. All of these models contribute to climate change and environmental degradation.

Lifestyle environmentalism suggests that consumers have the power to change the market through their own spending choices. If consumers cared enough about their carbon footprint, the market would accommodate their preferences to capture the price premium consumers were willing to pay for "greener" products. This assumes that everyone has the wealth necessary to afford such a premium and that individual market choices can create systemic change. In critiquing the lifestyle environmentalism approach, Andreas Malm and Jason Moore have also critiqued the term "Anthropocene". The Anthropocene is a new geological period in which human activity tangibly affects the Earth's ecosystems through global warming. Malm and Moore have instead used the term "capitalocene" to put the responsibility on capitalist forms of extraction rather than on all people equally. Moore has also argued that the "Anthropocene" perpetuates a false division between humans and nature, implying that humans can exist outside of nature (Moore, 2017).

Moreover, relying on lifestyle environmentalism neglects systemic issues and structural inequalities that hinder the widespread adoption of more sustainable lifestyles. For example, not all consumers have equal access to sustainable products and economic and social factors limit many. This narrow view fails to address the root causes of environmental damage and does not challenge the structural determinants, such as industrial practices and government policies that drive high emissions. Effective climate action requires collective efforts and structural changes beyond individual consumer choices. An IPCC (2018: 17) report describes the need for "rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems" to limit global warming to 1.5°C.

3.3.2 Material and social resources

As discussed in the energy model example, the prevailing energy model shapes access to who receives and benefits from energy, which directly affects the social organisation of care. This framework section illustrates this relationship, showing how the different high-emitting sectors and models define access to material and social resources. Material and social resources include employment, working conditions, education, essential services, land, water, energy and social support. In the energy model example, an energy partnership that prioritises private finance over public financing of alternative energy sources directly affects who can afford access to it. This has direct implications for how households choose to organise care.

The leading causes of existing health inequalities are unequal access to these material and social resources along different axes of inequality and lack of power. At the same time, this unequal access modulates exposure to the effects of climate change and adaptive capacity, thus exacerbating social inequalities.

3.4 Climate change and consequences

The conceptual framework describes climate change as a result of the carbon-intensive economic system. There are both direct and indirect effects of climate change which will be described in this section. We also want to highlight that the impact of climate change further depletes the environment through losses in biodiversity and ecosystem functioning. Climate change is, therefore, both a consequence of environmental depletion and a cause of further depletion.

3.4.1 Direct effects

Higher levels of GHGs lead to greater heat retention in the atmosphere, which triggers various environmental changes. One of the most critical outcomes is the increase in global surface temperatures (Calvin et al., 2023). If no significant policy interventions are implemented to curb GHG emissions and CO_2 emissions nearly double by 2050, it is likely that the average temperature by 2100 will be around 3.6°C higher than during the period from 1850 to 1900 (Riahi et al., n.d.). Furthermore, there is a high likelihood of a rise in various extreme weather events, which may differ by region. These could include (1) more frequent high temperatures both during the day and night; (2) an increase in the occurrence and duration of heatwaves; (3) a reduction in precipitation; (4) more severe and extended droughts; (5) stronger storms, intense rainfall and flooding; (6) rising sea levels; and (7) more frequent wildfires (Calvin et al., 2023).

The direct effects of climate change will also disproportionately impact countries in the global majority (the global South), despite historically contributing the least to global climate emissions. It was estimated that in 2019, the top 10% of global emitters were responsible for approximately 48% of global CO_2 emissions (Chancel, 2022). Climate change is already shaping the lives of many in the global South.

3.4.2 Indirect effects

The direct effects of climate change will trigger other environmental changes that will lead to indirect impacts. Below is a list of some of the most prominent indirect effects. This list is not exhaustive.

Indirect environmental effects

These include effects such as changes in coastal ecosystems and loss of marine life and biodiversity. According to the IPCC, the ocean globally has absorbed over 91% of the heat generated by increased greenhouse gas emissions to the atmosphere and approximately 30% of carbon emissions (Calvin et al., 2023).

Other effects include increased risks of waterborne and foodborne diseases. The World Health Organization data shows that two billion people lack safe drinking water and 600 million suffer from foodborne illness annually. In 2020, 770 million people faced hunger, predominantly in Africa and Asia (WHO, 2021).

Social and economic effects

There are several interconnected indirect social and economic effects as a result of climate change. These include the following:

- Migration and displacement: climate change will increase displacement because of food and water shortages, sea level rises and economic changes. According to the UN Global Compact on Refugees, environmental degradation drives refugee crises in the global South (Global Compact on Refugees, n.d.).
- Conflict and security risks: climate change causes increased conflict because of increased food insecurity, competition over scarce resources and displacements (Calvin et al., 2023).
- Worsened inequalities: climate change exacerbates existing inequalities.
- Agricultural impacts: climate change will lead to less predictable growing seasons and reduced soil health (IPCC, 2021).
- Economic impacts: climate change will have enormous economic consequences for all countries. Entire local industries such as tourism and agriculture risk collapsing because of climate change (Calvin et al., 2023). Recovering from damaged infrastructure, like in crucial transport infrastructure, because of extreme weather events is also enormously expensive and multiplies the burden of care.

3.5 Vulnerability

Vulnerability refers to the extent to which individuals, populations or systems can manage the adverse effects of climate change. This vulnerability is influenced by exposure, sensitivity and adaptive capacity.

- Exposure refers to how individuals or populations encounter climate change and its impacts, such as outdoor workers being more exposed to extreme heat.
- Sensitivity involves specific characteristics that make individuals more prone to climate-related health issues. For instance, older adults with pre-existing health conditions, children, women (partly due to their longer life expectancy) and individuals with cognitive mobility or behavioural impairments.
- Adaptive capacity encompasses the availability or absence of essential resources and adaptive behaviours at individual and population levels.

Critical natural resources required to live include a reliable water supply, adequate sewage and waste management systems, accessible transportation networks and cool spaces during prolonged heatwaves. These resources also provide for the ability of individuals living in energy poverty to maintain adequate home conditions during extreme temperatures (e.g., air conditioning, cross ventilation and thermal insulation) and, for example, the ability of people from other regions or countries with limited local language or area knowledge to adapt.

Various axes of inequality heavily influence both exposure and adaptive capacity. Strong social cohesion and robust support networks among individuals, communities and institutions are crucial to enhancing the adaptive capacity of vulnerable populations.

3.6 Care and care inequalities

Care is subject to a range of interconnected inequalities. Women's inequalities at work and in the household relate to the unpaid care and domestic responsibilities they disproportionately carry. Globally, women conduct most paid and unpaid care, which, if paid, is generally low-paid and devalued. Care also often falls to women with the least bargaining power who do the most undervalued care. Care is as much about who provides it as it is about its recipients – who receives and has access to care, which involves complex power relations (Williams, 2018).

The literature exploring the interconnections between care work and climate change overwhelmingly indicates that climate-related disasters worsen disparities in care responsibilities. Care inequalities contribute to the depletion of human well-being. These effects are gendered as women disproportionately perform care. However, within discussions on the gendered repercussions of climate change, particularly in the grey literature, there is a common tendency to conflate "care" with "gender", which leads to an unsupported assertion that women are more susceptible than men to climate-related impacts (MacGregor et al., 2023). MacGregor et al. (2023 argue that in many of the studies that conflate gender with care, care inequalities are represented as another aspect of women's vulnerability. This portrayal frequently depicts women, particularly those in the global South and rural areas, as passive and vulnerable recipients of climate change impacts. This framing obscures the local knowledges, adaptive capabilities and strategies of low-income and rural communities and imposes externally conceived "solutions" to alleviate the perceived "burden" of care work. Extensive research into the care-climate relationship becomes crucial for a nuanced, intersectional examination of how climate change influences and reshapes the quantity and distribution of care work within specific contexts.

We categorise the impacts of climate change on care work into two categories: direct and indirect impacts.

3.6.1 Direct impacts

This refers to the direct impacts on care of extreme climate events, such as extreme temperatures, floods and heat waves. Floods, for example, damage infrastructure and housing, which creates greater demand for different types of care. Similarly, extreme temperatures detrimentally impact people's health due to temperature-related illnesses such as heat stress. For example, research by Chersich et al. (2020) shows how exposure to high temperatures in pregnancy leads to increased risk for stillbirths, low birth weights and premature births.

Insights into the conceptualisation and meaning of environmental care raise critical questions about the types of ecological work needed in a drastically changing environment. What skills will be required to adapt to and mitigate against climate change? What does this work look like? Again invoking Tronto's definition of care, Carr (2023: 2) locates the work of planetary repair and maintenance within the context of adaptation and mitigation action, highlighting that "the everyday work of coping with planetary breakdown is in itself a form of climate adaptation, with

localised demand already growing around tasks like repairing failing infrastructure, providing disaster relief, or rebuilding after volatile weather events". They make the distinction between the repair and maintenance of material infrastructures and social infrastructures that support everyday life in the face of climate disaster, the latter referring to the care work that involves actions such as leading collective action in the aftermath of a climate disaster, community organising and caring for the sick. Material infrastructure involves damaged buildings, houses and roads, etc. Understanding the full scope of care work required to adapt to and mitigate against climate change foregrounds what feminist activists have demonstrated for decades: that the boundaries between public-paid-productive and private-unpaid-reproductive are very porous. The definition of work includes a "host of different activities that do not fit neatly the context of the economic and class relations that dominate most of the orthodox scholarly interest in labour and employment" (Carr, 2023: 5).

Another definition of care concerning the environment must include emotional labour and care in response to traumatic climate change events. The mental health impacts of environmental disasters are significant; displacement, loss of home and belongings and the trauma of the event and its aftermath are known causes of anxiety, depression and post-traumatic stress disorder. This relates not only to taking care of the emotional and mental well-being of those who experience devastating natural disasters but also to the growing emotional toll this has on the well-being of those who perform care.

3.6.2 Indirect impacts

The following are the types of indirect impacts on care inequalities:

- Climate change will lead to increased migration of care workers to countries that are likely most able to afford it. This will cause increased care inequalities because the flow of care workers from the global South will lead to a deficit of care there, even though the effects of climate change will be felt more by countries in the global South.
- Water availability and quality shape how care is organised in households and the community. In rural areas, many women collect goods such as water and wood.
- Exposure to worsened climate conditions will increase inequalities in care. For example, housing loss or forced displacement impacts both physical and mental health.
- Infrastructure costs will significantly increase because of mitigation and adaptation efforts. In the context of austerity, this leads to reduced social spending, which affects care.

3.7 Systems of privilege and oppression – capitalism, colonialism and patriarchy

Finally, the framework is set against the encompassing backdrop of systems of privilege and oppression. These interconnected systems of privilege include capitalism, patriarchy and colonialism. They form the dominant systems that rely on binary distinctions such as human/nature, men/women, mitigation/adaptation. There is growing awareness and recognition, albeit slow uptake, of these systems in climate science; for example, the 6th IPCC report acknowledges the role of colonialism in driving the climate crisis (Funes, 2022).

The aim of including systems of privilege and oppression in the conceptual framework is to highlight the structural influences that perpetuate climate change and care inequalities.

SECTION

4 Linking care and climate policy

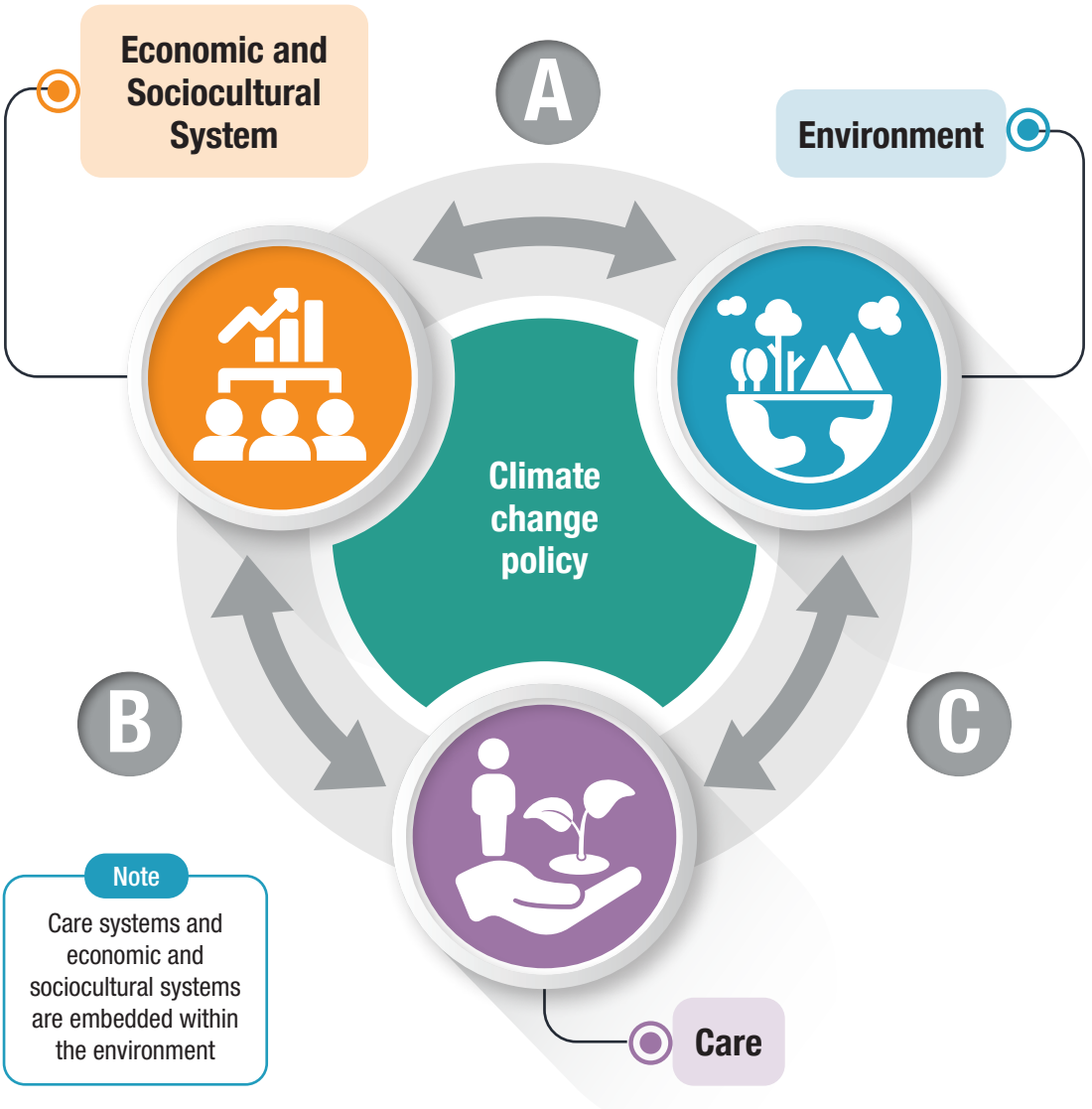
The key climate policies of mitigation, adaptation and loss and damage are often treated separately, but they should all be linked if climate change is to be addressed holistically. The disproportionate focus on mitigation finance leaves adaptation, loss and damage under-funded. Further, it risks increasing care burdens significantly. Responses to climate change that support both mitigation and adaptation should be prioritised in order to support those most affected by climate change. The climate-care nexus highlights the need for holistic approaches that account for inequalities, power dynamics and vulnerability, and challenge the existing market-base solutions to climate change. This section describes some of the challenges in the different climate policy approaches when viewed with a care lens. It highlights the importance of holistic approaches and context-specific responses.

The climate-care conceptual framework illustrates the negative impacts of the current economic and sociocultural systems on the environment, climate change and care systems. However, there is potential for positive links between the economy and sociocultural systems and between the environment and care systems. Figure 5 illustrates these positive relationships and the central role that climate policy can play in promoting care-centred approaches.

The relationship A and B: the economic and sociocultural systems and the consequences for the climate and care have similar co-existing processes. Progressive macroeconomic policies, institutions and policies that prioritise the health of the environment as well as access to care infrastructure improves livelihood outcomes such as reduced vulnerability, food and water security, more sustainable use of natural resources, reduced poverty and increased well-being. The economic and sociocultural system contains inequality and power dynamics, as shown in the climate-care nexus. Thus, effective climate policy interventions need to also take into account power relations between and within communities. In addition to factors that affect local communities and their livelihoods, macro/structural factors also influence how livelihoods are shaped and reproduced.

In Figure 5, C reflects the relationship between care and the environment and climate change. Improved, localised and socialised care provision will lead to the regeneration of the climate as environmental care will be supported. For example, greater support for women who undertake subsistence farming for their livelihoods would have positive impacts on the environment as subsistence livelihoods rely on thriving ecosystems. Socialised and accessible care would also lessen the amount of unpaid care and allow carers to focus on their well-being.

FIGURE 5: Virtuous/positive feedback loops between the economic and sociocultural system, the environment and care, with climate policy



Climate policy that prioritises the provision and resourcing of accessible care enables sustainable livelihoods because it allows communities to cope with and recover from acute environmental changes (or shocks). It also allows for the regeneration of the environment because the focus would be on caring for the environment and each other, rather than taking from the environment. Greater investment in and resourcing for care – including environmental care – promotes the replenishment and regeneration of the environment. This positive feedback loop supports regeneration instead of depletion.

4.1 Mitigation

Climate mitigation involves implementing measures designed to decrease carbon emissions or eliminate greenhouse gases from the atmosphere. Understanding the scope of work necessary for climate mitigation is challenging, primarily due to the prevailing discourse that essentially presents normative frameworks for achieving net-zero emissions by 2050. In the context of the energy transition in South Africa, for example, workers from former coal communities in Komati – an area that economically relies on coal production – are undergoing significant changes as a result of the main coal plant closures in pursuit of a "Just Energy Transition". Some of the community members have been working on the coal plant for decades. These workers are positioned as either requiring upskilling, which the state has yet to provide, or are rendered unemployable, with their skills, capacities and in-depth knowledge of energy systems overlooked, despite having a lot to offer in the transition to renewable energy. Research by Taylor (2023) on the gendered impacts of an energy transition in South Africa illustrates how renewable energy has not improved energy access or affordability, which has detrimental impacts on care in households. Similarly, in their work on coal community transitions in Australia, Carr (2023) reflects on how little is known about how social and economic relations in households shape workers' capacities to cope with industrial change and how coal workers, as relational human beings, negotiate these changes through familial ties and community networks.

As with the energy transition, other interventions advanced for climate mitigation place an overwhelming reliance on technical fixes primarily through "innovative" technologies (Princiotta, 2021). For example, removing carbon dioxide through large and expensive carbon capture and storage equipment is advertised as a tool to be used to repair the atmosphere. Ecofeminists and climate activists have pointed out how, in this framing, not only are workers rendered entirely invisible and replaceable by technology, but its use as a solution for climate change constructs climate systems as thething that needs to be repaired through technological interventions, rather than the actions of society in upholding an extractive, consumption-led global economy (Carr, 2023 and McLaren, 2018).

This externalisation of climate mitigation as a problem to be solved by technology and the market also obscures the negative impacts of eco-technologies on care work. There is a shortage of research on the effects of interventions such as "Improved Cookstoves", which have important implications for household care work. A literature review on climate mitigation, such as MacGregor et al. (2023) highlights how climate mitigation interventions tend to ignore questions of care that underpin the labour of people most affected by them.

4.2 Adaptation

Climate adaptation policies refer to the interventions that prepare for and adjust to the current and projected impact of climate change. Examples of adaptation projects include early warning systems on weather changes, altering plant crop varieties and raising coastal dykes. In other words, climate adaptation is about anticipating change and building resilience. Adaptation at a localised level requires care and attention to community needs. For example, in the wake of Cyclone Freddy, many noted how, despite being the same size as previous cyclones, Mozambique could curtail the number of displaced people and deaths because communities collectively created and implemented an early warning system (African Union, 2023).

In terms of adaptation's direct impact on household care, care-centred adaptation strategies make it easier for carers to anticipate and plan, which minimises the negative effects of climate events on households and communities. However, in the existing literature on adaptation, particularly as it relates to gender, a handful of studies look closely at care. The extent of the studies examining care work and the environment focuses predominantly on water management.

Care must be taken more seriously within climate adaptation and mitigation policies. In addition to the need for more research on the impacts of existing policies on care, it is equally critical that climate policies complement social policies that centre care. Adaptation and mitigation policies are often conceptualised and implemented without in-depth connections from broader social and economic policies. Research by (Westholm and Arora-Jonsson, 2015: 192) shows how in the absence of social policy and climate policies that recognise care and women's roles and contexts, the responsibilities of productive and reproductive care work in the environment, as well as in the community and home, are often "reinscribed in gendered and detrimental ways".

4.3 Loss and damage

Loss and damage refers to the harm caused by climate change, which can result in economic and non-economic losses and damages. Policies for loss and damage acknowledge that climate change has impacted many areas and people to date and that they require support. Extreme weather events and slower onset events, such as sea level rise, can cause loss and damage. Economic loss and damage include infrastructure, resources, property, goods and services. In contrast, non-economic loss and damage include trauma, deaths and loss of sites of cultural significance and ways of life (Bhandari et al., 2024). The term "non-economic" loss may be misleading as it externalises ways of life and culture from the economy and is often done with unpaid work. Loss indicates something that is irreversibly damaged, whereas damage refers to something that can be repaired (Tewari et al., 2023). As we have defined care work as caring for nature and the environment, adaptation, loss and damage require significant care work. The added burdens for those conducting care work when they are hit by extreme weather events and disasters must be carefully monitored and prioritised in climate change response measures.

4.4 Climate finance

Climate finance has been an essential topic within UNFCCC processes but has been a hotspot issue during negotiations (Dovie and Lwasa, 2017). When it was first established in 1992, the UNFCCC established a list of industrialised countries that are historically responsible for GHG emissions, called Annex I countries. This categorisation is part of the "common but differentiated responsibility" for climate change. These countries hold more responsibility for climate change than other "developing" countries. Annex II countries were a subset of Annex I and included most member countries of the Organisation for Economic Cooperation and Development (OECD) that were expected to provide financial support to developing countries to reduce emissions (Pauw et al., 2019). Several funds were set up through the UNFCCC to

facilitate the transfer of climate finance, but the contributions have been voluntary and what has materialised in reality has been insufficient. The goal of US$100 billion in climate finance annually was set in 2009 and has still not been met every year, other than in 2022. This section discusses the difficulties faced in securing climate finance, the implications for social spending and fiscal policy, how finance differs for mitigation, adaptation and loss and damage and what this means for the provision of care.

The failure to reach climate finance targets can be connected to power dynamics. An analysis of power relations is essential for mobilising climate finance because the wealth regained through humanitarian intervention, for instance through livelihood programmes, may be quickly extracted from the participants and misdirected due to deep-seated power imbalances. More attention needs to be paid to practical questions concerning how existing political relations in conflict and violence influence allocations and delivery of results. For this, the political motivations of both donors and recipients need to be dissected. At the same time, it is worth acknowledging that the modus operandi of the humanitarian sector makes carrying out a robust political analysis a rather challenging task. Annually funded project cycles and programmes make it difficult to conduct detailed and long-term studies. As such, the climate crisis makes the case for multi-year humanitarian funding stronger. In addition, the global financial architecture sustains systemic drivers of fossil fuels and ecological extraction (Muchala, 2022). Climate finance has a role in remunerating care work in mitigation and adaptation. A report by CARE International found that 93% of international climate finance reported by global North countries between 2011 and 2020 was taken directly from development aid, despite industrialised countries who are party to the UNFCCC promising to provide US$100 billion worth of additional finance annually (CARE International, 2023). Little is known about how this impacts development projects directly related to care, and further research is required.

The current levels of global climate finance fall significantly short of addressing the climate crisis. There is a clear bias in climate finance flows, which arguably go towards profitable industries, big business and more male-dominated industries. In 2021/2022, energy and transport received more than two-thirds of the total finance for mitigation. By contrast, comparatively less funding (less than 4%) was available in sectors where women tend to be more represented, such as agriculture, despite this sector being one of the largest sources of carbon emissions (CARE International, 2023).

This discrepancy is alarming, especially considering that agriculture ranks among the largest sources of carbon emissions. This neglect not only hampers essential efforts in reducing emissions but also perpetuates systemic inequality by disregarding sectors crucial for adapting to climate change and in which women play a substantial role. This financial bias undermines the potential for inclusive climate action. It reinforces existing disparities and hinders progress towards a just transition. This trend is evident in that mitigation accounts for the majority of climate finance as it is often more profitable than adaptation, loss and damage. The Report of the Independent High-Level Expert Group on Climate Finance (2022) estimated that mitigation accounted for 90% of climate finance (Songwe et al., 2022).

An adaptation gap is commonly used to describe the difference between available climate adaptation finance and the actual societal need. The 2023 Adaptation Gap Report estimated the gap to be between US$194 billion and US$366 billion per year (United Nations Environment Programme, 2023).

Adaptation interventions are under-funded in comparison to mitigation (Venner et al., 2024). As adaptation finance aims to support adaptive capacity and reduce vulnerability to the impacts of climate change, one would assume that vulnerability should be a primary factor in directing adaptation finance. However, a critical review of adaptation finance by Venner et al. (2024) found that the largest multilateral climate funds (Climate Investment Funds and the Green Climate Fund) have not provided adaptation finance to some of the most vulnerable countries. Instead, finance has been determined by perceived institutional capacity, donor country interests and profitability. Profitability is a factor because most climate finance (62% between 2016 and 2020) is provided as loans (Venner et al., 2024). This is indicated in the phrase "finance" instead of "funding" but does not make sense in the context of UNFCCC agreements that highlight the ethical responsibility of industrialised countries to support climate policy implementation. Many countries have called for grants instead of loans to support adaptation and to avoid exacerbating many countries' debt burdens and limited fiscal capacity.

The prime minister of Barbados, Mia Mottley, proposed a set of reforms for the international financial framework to support the availability of finance for climate mitigation and adaptation, known as the Bridgetown Initiative. One of the proposals included the negotiation of debt relief, arguing that even middle-income countries should be able to access it (Reuters, 2023). The question of increased debt to support climate finance also impacts broader social spending on care.

The direct and indirect effects of climate change will cause macroeconomic instability in many developing countries. Macroeconomic stability is influenced by currency volatility and uncertainty. A shift in the balance of payments is expected for many countries affected by climate change due to increased imports to support mitigation and adaptation and instability in the agriculture sector (Löscher and Kaltenbrunner, 2022). This instability reduces currency values, ultimately reducing fiscal space. Therefore, the prevalence of climate finance loans risks further limiting countries' budgetary space and macroeconomic stability. In this context, spending on social policy and services, which are key to a caring economy, is one of the first budget items to be cut. Cuts in social spending on healthcare and education have been found to impact women negatively and lead to increases in inequality (Himmelweit, 2016; Sibeko et al., 2021).

Funds for adaptation and loss and damage can be challenging to differentiate from social development funding as adaptation requires access to essential services, housing and infrastructure. Where basic services and infrastructure are unavailable, vulnerability to climate change is much higher. That is why the withdrawal of social development funding for climate funding is concerning, and the preference for loans that reduce fiscal space and cut social spending is counterproductive for climate adaptation.

SECTION

5 Conclusion

The conceptual framework in this paper presents an analysis that sheds light on the intricate relationship between care and climate change. The framework contains two broad causal mechanisms. The first relates to the impacts that climate change will have on care. The framework shows that climate change will have detrimental impacts on care work and in many cases climate change will exacerbate existing care inequalities. The second relates to the impacts that the organisation of care have on climate change. Care work, especially through caring for the environment and centring care in economic systems, will have far-reaching impacts in addressing climate change. This relationship is crucial because it goes beyond a gender analysis of the impacts (i.e. impacts on men vs. women) and allows for a structural view of the economy and society. A care lens entails a shift from viewing women as individuals but rather points to a system that is a function of power relations. Unpacking climate change from a care lens reveals the different ways of valuing care, not only person-to-person, but also more-than-humans. This means that care and care for the environment force us to decentre what Wendy Harcourt (2023) refers to as "anthropocentric hierarchies": questions about who has the capacity to care, who can receive care and how we care mirror critical questions that need to be addressed within existing climate change discourse. Who decides what climate policy is most relevant or important and who "participates" in climate policy?



Care undergirds both our ecological and economic systems and, as a result, a focus on care means understanding and transforming a number of interconnected issues related to the conditions of care work. For example, the impact that the privatisation of public and social services has on access to care and how the erosion of environmental standards as part of the deregulation of industries impacts both care and the environment. Other considerations include the impact of free trade agreements on labour standards and workers' rights, and the detrimental effects that austerity has on the environment and the provision of care (Harcourt, 2023).

With this in mind, what would a climate change agenda look like if it had care more centrally focused in how we understand the causes and solutions to climate change? Crucially, care needs to be socialised and not individualised as women's work. An example of an intervention that would do this is the provision of public, socialised care infrastructure and the reversal of fiscal austerity that impacts the organisation and provision of care There is an important connection between public investment for public services and climate policy. When loss and damages occur because of weather changes, the most effective support systems are strong care systems. This entails long-term and consistent public investments in accessible care infrastructure. It increases the quantity and quality of care and creates job opportunities in the paid care sector.

As discussed in the paper, financing is also crucial. Both care and climate financing need unconditional long-term, sustained, scaled-up financing. Importantly, this entails long-term core resourcing for indigenous communities that are practising climate adaptation and management of land and resources.

Addressing both care inequalities and climate change will require the support of activities that promote a more systemic and long-term approach to climate change, which should also be done based on context-specific factors and involvement of local communities and traditional/ indigenous knowledges. This requires a focus on climate policies that address both mitigation and adaptation simultaneously.



SECTION 6

Potential areas for future research and advocacy

The conceptual framework in this paper is a first step in a larger strategic process to centralise care in the climate agenda, especially from a global South perspective. Further areas of research as an outcome of this paper include a process to embed the climate-care nexus more in the climate community. This could involve a series of engagements in crucial spaces of engagement such as the G20 process and the COP30 process.

There is also a need to apply the climate-care nexus to a set of different contexts, such as small island states, large coal users, countries with high potential for renewables and countries with different care systems, etc. An analysis of how current climate change policies in these countries concern change if care were to be a central feature of the agenda setting process would be useful in understanding how different types of care systems influence climate policy.

It would also be useful to further explore how care could be better built into two key areas of climate policy: adaptation and loss and damage. Especially in the global South, it could be useful to unpack how countries would better deal with adaptation if care were central in the strategy and how loss and damage could be operationalised as a set of interventions that address care deficits.

In addition, further work on how climate finance could be more care-centred is important. Climate finance is largely focused on mitigation and comes in the form of loans. This has meant less support for adaptation and loss and damage, which are critical for care and human well-being. Further indebtedness of countries vulnerable to climate change reduces climate resilience and the ability to invest in social infrastructure. This is central to care. Care-centred climate finance would support more systemic responses to climate change that support mitigation and adaptation holistically.

Finally, another area of further research could be to develop the macroeconomy care and climate nexus. A “just transition” implies a low carbon transition that involves not only a transformation in the structure of the economy towards “green” sectors, but also policies to redress structural inequalities. For most of the developing countries that missed an industrial transformation via carbon-intensive growth, the challenge is to find a pathway to a low carbon or “green” structural transformation within the constraints of Paris Agreement commitments.

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