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2024-06-19
University of the Witwatersrand, Johannesburg
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Climate Change and Inequality

SCIS Working Paper | Number 68

Towards a gender just transition: Principles and perspectives from the global South

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SOUTHERN CENTRE FOR INEQUALITY STUDIES

Abstract

A 'just transition' broadly refers to the principles, processes and practices used to ensure that transitions to a low-carbon economy are socially just. Gender justice, however, frequently remains marginal to mainstream debates and policies – whether about climate finance, technological solutions, corporate management approaches – or indeed most government transition strategies. This paper argues that ensuring a transition that delivers gender justice is both critical and urgent. Without explicit attention to, and clear prioritisation of gender justice across transition policies, climate change 'solutions' risk replicating or reinforcing structural gender inequalities. Examples of such risk include women's continued limited access to economic opportunities, employment and social protection; their over-representation in precarious work; and women's primary responsibility for social reproduction and care. Communities with few livelihood options and limited access to services rely heavily on natural resources to survive. These resources are vital to the provision of care and may be severely affected by environmental degradation. Care responsibilities expose women disproportionately to climate and environmental impacts. Women are the household members most likely to bear the burden of adapting to climate change. These realities reduce the likelihood that any climate transition can be just without a clear focus on the policies, strategies and implementation processes needed to achieve gender justice.

This paper asks what a gender just transition could and should look like, particularly in the global South. Based on an extensive review of conceptual and empirical literatures from a range of disciplinary perspectives, we examine how different approaches address – or ignore – gender dimensions of (in)justice in thinking about low-carbon transitions. We go on to offer a more expansive view of justice informed by perspectives drawn from feminist theory, and combine this with the pillars of distributive, procedural, recognitive and restorative justice.

Key words

Climate justice, gender justice, just transition, feminist theory

Introduction

A just transition broadly refers to the process, principles and practice of ensuring the transition to a low-carbon economy is socially just. The concept initially arose in the USA in the 1970s. Trade union and worker organisations adopted it due to their concern about the impacts of new environmental legislation on workers in polluting industries. This included concerns about occupational health and safety in those industries as well as how to facilitate a transition to new forms of employment (Just Transition Research Collaborative, 2018a). From its roots in the deindustrialising economies of the global North, a just transition has returned to the policy agenda because of the growing awareness of the climate crisis, and the urgent need globally to transition from fossil fuels towards sustainable production and consumption. The concept of a just transition has gained in popularity among diverse groups including worker, environmental, Indigenous rights and gender advocates who recognise the ways a just transition could articulate their own priorities and concerns for environmental, energy and social justice (Newell and Mulvaney, 2013).

Gender is one key dimension of structural inequality among others, including race that is often neglected or sidelined in transition debates and policies. Gender is present in the framing of the Sustainable Development Goals (SDGs) and other global commitments. However, in practice, gender dimensions of carbon-reducing development strategies remain marginal in dominant approaches. These approaches include climate finance arrangements, technological innovations and corporate management actions in high-level meetings and processes, such as the annual Conference of the Parties (COPs), and in many governments' transition strategies. If explicit attention is not paid to gender inequalities across all sectors involved in a low-carbon transition, climate finance arrangements, new technologies and other 'solutions', there is a serious risk of replicating – and maybe even exacerbating – existing gender inequalities. In an array of different contexts, these include women's limited access to economic opportunities, social protection and essential services; their over-representation in informal work, occupational segregation and gender pay gaps; and disproportionately high responsibility for unpaid care and domestic work – and, in many instances, also responsibility for the care of nature.[1] Gender also intersects with other markers or determinants of inequality or disadvantage. For example, women in poor rural communities may be disproportionately affected by climate impacts. They may depend on those natural resources affected by environmental degradation while having limited alternative livelihood options, or access to public services and infrastructure. We look at this more in the next section. It is not automatic, therefore, that most just transition policies will address these intersecting injustices. Nor is it apparent how a just transition can take place unless existing gendered or other inequalities related to environment, energy and climate are taken into account.

A key question of any just transition discussion must then be: Justice for whom? The economic structures and power dynamics that have contributed to the current environmental crisis – including unsustainable patterns of production and consumption, extractivism, unsustainable wealth accumulation, fossil fuel industries and

[1] We define nature as a term which includes the physical environment and ecosystems as well as humans and all non-human animals. This is in line with a political ecology approach which views humans as part of nature (Alberro, 2019).

militarism – reflect intersecting gender, race and class inequalities, histories of colonisation and continued inequalities between countries, particularly between the global North and global South. As is now widely documented, the global South faces the greatest risks – environmental, economic and social – from climate change. Yet they contributed least to the climate crisis. This double injustice is often claimed to hold even more true for women in the global South (Seager, 2019). Here, the concept of a just transition from a gender perspective thus carries vastly different meanings and significance to those in the global North. Furthermore, in countries where the carbon-intensive industrialisation route to development is closed down by the imperative of reaching net zero, any ideas for a just transition need to engage with debates on alternative low-carbon development pathways. At the same time, the global North's approaches to a just transition will need to grapple with inequalities inherent in the global order. These inequalities within economic and social systems arise from past climate and other injustices – and create demands for reparative justice.

Issues of gender inequality and concerns of populations in the global South remain marginalised in most discussions on climate transitions. This paper elaborates on why incorporating gender justice in any transition strategy is both critical and urgent, and why it is particularly important for global South countries. Women's wellbeing is at stake and so is that of their families and communities who depend on their paid and unpaid labour. Failure to adequately address gender-related inequalities, including the relationship between care, social reproduction and nature, will have implications for the sustainability of the environment and of any transition plan.

In this paper, we draw on a body of feminist scholarship that has long drawn parallels between two crises. The one is a crisis of social reproduction as the outcome of an economic system which has undervalued care work. The other is an ecological crisis caused by the undervaluation of natural resources which has resulted in their over-exploitation and degradation. Feminist analysis also draws attention to the gendered impacts of current global challenges, including the impacts of Covid-19, governments' renewed and expanded austerity policies, rising inflation, and fuel and food insecurity. These challenges put rich countries' commitments to fossil fuel reductions at risk. This may further deepen inequalities and exacerbate climate injustices affecting the global South. Transition to a sustainable and just economy requires addressing these interrelated issues.

In this paper, we ask what a gender just transition could and should look like, particularly in the global South. Based on an extensive review of conceptual and empirical literatures from a range of disciplinary perspectives, we offer a more expansive view of justice informed by both gender and development justice literatures. The next section in this paper, *The gender injustices of climate change and transitions*, summarises some empirical evidence from the global South on gendered injustices associated both with climate change and with transitions. *Just transition: The evolution of a concept* elaborates on the concept of a just transition. It explores some different frameworks and concepts of justice embedded in transition approaches. The section *Justice for whom? Feminist approaches for gender justice* highlights some key perspectives from feminist disciplines that provide a basis for thinking about justice more expansively. It specifically asks what would constitute gender justice in a just transition. Building on these analyses, *Reimagining justice for a gender just transition* provides a set of principles which we suggest should frame and

guide approaches to a gender just transition. In our conclusion, we suggest how this framework could be used as a basis for analysing alternative policy approaches from a gender perspective.

The gender injustices of climate change and transitions

The gendered impacts of climate change in many contexts are by now relatively well documented. Transition policies have been less widely analysed for their gendered impacts – rendering them less visible. This section highlights some of these injustices: first of climate change and then of transition policies. The evidence points clearly to both climate change and the impacts of transition policies replicating – and possibly exacerbating – pre-existing gender inequalities and injustices.

Gender injustices of climate change

Resource access and use

Climate change is widely recognised as a threat to critical livelihood resources. For example, it affects food security and sovereignty, energy access, water availability – accessibility and quality – and, by extension, health, wellbeing and livelihoods. Where women bear primary responsibility for providing food, fuel, water and care for the young, sick, disabled and elderly, climate change makes their work harder and this may severely impact them. Many feminist scholars therefore argue that climate change is contributing to a crisis of care and social reproduction thereby exacerbating the gendered injustices associated with women carrying the disproportionate share of unpaid care and domestic work. There are significant economic and social consequences of this division of labour (Bhattacharya, 2017). Furthermore, as wealthier households often outsource care and domestic work to Black or racial/ethnic minority women, or men/people of a 'lower' caste or class, this type of work is racialised and associated with other social inequalities.

Health

A growing body of evidence points to the adverse health impacts of climate change in many contexts through its impacts on key health determinants such as food, water, disease vectors, heat and air quality, in addition to the impacts of acute climate change-induced disasters, such as extreme flooding, drought and storms (van Daalen et al., 2020). These impacts may exacerbate existing health inequalities which are often manifest along gender lines: women in the global South are identified as particularly exposed or vulnerable to climate-related health impacts (Watts et al., 2019). Women are in general more likely to experience high levels of food insecurity and high domestic burdens, such as collecting water during periods of drought. Women also experience an increase in reproductive health problems due to increased risks of obstetric complications, such as placental abruption, pre-term births and even miscarriages, in higher temperatures (Baharav et al., 2023). A study of 141 countries found that extreme weather events reduced the life expectancies of women more than men, which they attribute to social norms rather than physiological differences (Neumayer and Plümper, 2007).

Therefore, while some of these impacts are related to maternal health, many are the product of "socially constructed norms, roles and relations" (World Health Organization, 2014, p. 5). For example, women face higher food insecurity and nutritional deficiencies in parts of Asia due to patriarchal food hierarchies where men

generally get access to food first and consume more (World Health Organization, 2014). And women, especially young girls, in parts of Asia are more likely to die in storms, hurricanes and floods because, unlike many men and boys, they are not taught how to swim or climb trees (Oxfam International, 2005).

There are also climate change impacts which disproportionately affect men, several of which relate to mental health in times of crisis. For example, men farmers dying by suicide have become increasingly prevalent during droughts as reported in both Australia (Alston, 2012) and India (Nagaraj, 2008). In the USA, the high rate of elderly men's deaths during heat waves has been attributed to their high level of social isolation (Klinenberg, 2015).

Land and livelihoods

In terms of land and associated livelihoods, diverse impacts of climate change are already visible. Droughts, floods, storms, sea level rise, dust storms and heat waves destroy homes, ecosystems, water sources, communal areas and assets. Such phenomena affect people's ability to grow and harvest crops and raise livestock (Intergovernmental Panel On Climate Change, 2022; Land Portal, 2022). These impacts affect all who rely on land for their livelihoods. However, because of gendered land use and access to land, the impacts and the available adaptive measures are also gendered. For example, during times of drought, women, who are largely responsible for water and firewood collection, are required to walk further to find resources. This increases their labour and time burdens and risk of harm, including being targets of gender-based violence. Men may be responsible for livestock, which die during drought, and therefore they lose a significant part of their income which reduces their ability to support their families (Rao et al., 2019).

Adaptive measures are also gender differentiated. Men and women have distinct options they invoke for livelihood diversification, income generation beyond agriculture, out migration to urban areas, and seeking support through social networks (Goh, 2012). However, these are strongly mediated by marital status, caste, ethnicity, age and class. Overall, women often have a lower adaptive capacity due to their lack of access to social, financial or natural capital, as documented in studies in Pakistan and the Himalayan region of India (Bhadwal et al., 2019; Habib, Alauddin and Cramb, 2022).

Wage employment

The evidence of the impact of climate change on women's employment is mixed and varies according to context. In many parts of the global South, agriculture remains disproportionately women's work. Because agriculture is highly sensitive to changes in climate, it is suggested that women's work is more likely to be impacted (for example, Bhalotra and Umana-Aponte, 2010). Some country-specific studies, for example in South Africa, have suggested that women's labour force participation may be impacted by increases in temperature (Shayegh and Dasgupta, 2022) and extreme weather events (Ngepah and Conselho Mwiinga, 2022). However, the same study (Ngepah and Conselho Mwiinga, 2022) also suggests that because of the harmful impacts of climate change, there may be a significant increase in the demand for women to provide more health and care work – work which they largely undertake in societies around the world.

Gender injustices of transition policies

Energy injustice

Central to conversations about a just transition is energy: its production and use being the world's largest contributor to greenhouse gas emissions (Ritchie, Pablo and Roser, 2020). In many parts of the global South, most notably in sub-Saharan Africa and Central and South Asia, the transition to low-carbon energy sources must be coupled with improving energy access, for example through electrification (International Energy Agency et al., 2022). Currently approximately 733 million people, most of whom live in Asia and Africa, lack access to electricity. They often depend on fuels such as firewood, charcoal and/or kerosene (International Energy Agency et al., 2022). Therefore, decarbonisation of the energy sector in the global South must also involve the expansion of electricity access, whether through a national grid, or by means of smaller energy generation systems.

Energy access and transition requirements are connected in two ways. There is a push for increased grid expansion based primarily on large-scale renewable energy production, and for small-scale options, such as solar mini/microgrids and solar cooking systems in remote areas not connected to the grid. Here, we focus principally on small-scale electrification options which, particularly in the case of solar – unlike older fuel sources such as coal, gas or nuclear power – can be used in a highly decentralised manner.

Energy use is highly gendered, a fact recognised in most of the literature, albeit not always reflected in practice when energy improvement systems are designed and implemented (Johnson, Gerber and Muhoza, 2019). Due to social norms, women across the world commonly assume responsibility for home tasks such as cooking and cleaning. In parts of the world where biomass continues to be used for energy sources women are therefore responsible for vast amounts of energy procurement, such as collecting firewood, and energy production, such as making fires for cooking (Johnson, Gerber and Muhoza, 2019; International Energy Agency et al., 2022).

The benefits of electrification are numerous. It can create opportunities for income generation; reduce drudgery, such as time spent on firewood collection and making fires; increase opportunities for education; increase leisure time and flexibility in how people use their time; provide opportunities for entertainment and communication; reduce harmful exposure to smoke from cooking in indoor settings; and even help reduce violence (Standal and Winther, 2016; Johnson, Gerber and Muhoza, 2019; United Nations, 2021).

However, while research into the gendered outcomes of electrification suggests that electrification benefits women, it does not always address underlying gendered power imbalances. It can even exacerbate gender inequalities when these gendered dynamics are not taken into account (Johnson et al., 2020). For example, in an Indian case study, Standal and Winther (2016) found that electrification led to increases in women's income. However, they argue that "women's agency and decision-making power were not strengthened with the electrification process. On the contrary, it could be said that the channelling of more resources through the dowry system after electrification reinforced the patriarchy and structures of inequality" (p. 15). Similarly, a study on the first solar minigrid in Zambia found that little changed within the household as the grid capacity was too low to cook with, as in Standal and Winther (2016), and it was men who primarily enjoyed improvements in leisure time

(Johnson, Gerber and Muhoza, 2019). Furthermore, while the minigrid helped increase many businesses' income, these benefits largely accrued to men who were overwhelmingly the majority of businesses owners in that area.

Additionally, reductions in certain tasks sometimes result in a shift, rather than a reduction, in labour (Johnson et al., 2020). Fernández-Baldor, Lillo and Boni (2015) report that while men used the time saved from renewable electrification projects in Peru for leisure, women generally transferred this time to other livelihood-related or care tasks. Johnson et al. (2020) similarly note that transitions to sustainable energy in rural areas in Africa and India have been found to decrease women's domestic workloads. But underlying gender norms remained unchanged and "women's labour simply transferred from one domain (such as cooking) to another (such as taking care of livestock)" (p. 7).

An additional consideration when improving energy access is to differentiate between available capacity and people's access to it, which are both usually mediated by cost. Several studies have reported an increase in the cost of energy when implementing electrification systems (Wong, 2012; Mohammed, Mustafa and Bashir, 2013), even when there is an initial free connection to the grid, as in the Zambian case study (Johnson, Gerber and Muhoza, 2019). This can result in further inequality in an area where the wealthiest have the money to electrify their homes and businesses with private generation systems while many in the country cannot afford to. In places where poverty is also gendered, this can similarly create gendered outcomes in energy access.

In the case of national grids, while the levelised cost of electricity (the average cost of production over the lifetime of the system) is usually lower for renewable energy than fossil fuels (International Energy Agency, 2023), the actual transition to low-carbon electricity sources does not seem to reduce prices for users. In Germany, energy prices have doubled (García-García, Carpintero and Buendía, 2020), and in South Africa the costs of electricity are increasing exponentially (Moolman, 2022). Although these cost increases are not necessarily linked, or only linked, to the transition to renewables, they pose a threat to the 'just' part of the transition if they result in reduced energy access. If access to electricity for households becomes more difficult, this may worsen women's burden of household care work.

Land injustice

Climate change has already impacted the productivity and availability of land, particularly in the hardest hit regions, which are overwhelmingly in the global South. The low-carbon transition risks worsening pre-existing land injustices. Technologies for renewable energy, such as wind and solar, demand large areas of land, often leading to enclosure and dispossession (Sovacool, 2021). In addition, further mining and extraction is required to source the minerals needed for low-carbon technologies, such as batteries (International Renewable Energy Agency, 2023). Carbon offsetting projects can also result in large-scale land grabs, sometimes called 'green grabbing' (Fairhead, Leach and Scoones, 2012).

Land rights, access and tenure are deeply gendered. Women are not a homogenous group. Their social status with regards to class, ethnicity, marriage and age mediates their material and political power. However, we can generalise that in most of the world women have less control and ownership of land (Doss, Summerfield and

Tsikata, 2014). This is linked to local cultures and intrahousehold power dynamics (Razavi, 2003), such as assumed men's ownership or inheritance patterns. It is also linked to the ways women are incorporated into political economies on unfair terms, which results in women's lower incomes and prevents them buying land. Despite this, land still plays a central role in women's social reproductive work necessary to sustain the household, convert wages into sustenance, and reproduce the labour force (Ossome and Naidu, 2021). It is therefore essential to acknowledge "the ways in which energy transitions are intrinsically bound up with both the materiality and the historical and contemporary politics of land" (McEwan, 2017, p. 2) – including its gendered dimensions. Renewable energy projects require large tracts of land which are either acquired by companies or governments buying the necessary land, or entering into long-term leases with the landowners.

A variety of unjust outcomes are reported in case studies of large wind and solar projects in India, as detailed in Panel 1 (Ghosh, Bryant and Pillai, 2022), Morocco (Ryser, 2019) and Mexico (Vázquez-García and Sosa-Capistrán, 2021). All examples reported that women benefitted least from the projects because they were not landowners and they played little role in governance or decision-making. Furthermore, together with landless men, they were worst affected by the associated loss of common grazing lands and seasonal agricultural work (Ghosh, Bryant and Pillai, 2022).

Panel 1: Pavagada solar park in Karnataka, India

Ghosh, Bryant and Pillai (2022) provide an overview of the winners and losers of a large-scale solar park in Karnataka, India. They found that the landowners, mostly men, overwhelmingly benefitted from leasing parts of their land to the park. The establishment of the park resulted in the reduction in the need for seasonal agricultural labour, loss of common grazing areas, and an increase in migrant labour. The latter raised locals' concerns regarding safety. All of these consequences disproportionately concerned and affected women in the area. The authors concluded that: "Women have suffered the greatest losses because they are over-represented as landless workers and have lost income from agricultural work that was a source of financial independence" (Ghosh, Bryant and Pillai, 2022, p. 13). This finding intersected with caste, too, with Dalits and Adivasis, considered 'lower' caste, also facing significant losses. The intersection of gender and caste is similarly reported by Stock (2023) in India, who describes solar parks as "the colonial form of an energy plantation" (p. 162).

The gendered impacts of climate mitigation projects, such as renewable energy projects and carbon sequestration through planting trees, have been mixed. Women have sometimes been able to earn extra income, or benefit from ad hoc additional activities through these projects, as described in case studies from Bolivia (Boyd, 2002) and Mexico (Gay-Antaki, 2016). But these generally added to women's already high workloads, and failed to address the underlying institutions and processes, which resulted in inequitable outcomes. In many case studies, including in Uganda (Shames et al., 2016), Mexico (Gay-Antaki, 2016) and Costa Rica (Lansing, 2015), women benefitted less from these projects as they were not landowners which was a prerequisite for participation in them. These

projects not only relied on private models of landownership for participation, but also sometimes resulted in the enclosure and privatisation of communal land (Vázquez-García and Sosa-Capistrán, 2021). Both Lansing (2015) and Gay-Antaki (2016) report that women's labour ultimately ended up subsidising the project or benefits men accrued, either from producing crops so that (men-owned) land could be used for the projects, or through unpaid care work and community management. In addition to women being excluded financially, all the cases reported a lack of women's political participation, or their representation in leadership and managerial roles.

Both climate change and the transition are already having negative impacts on land access, land availability and productivity across the global South. It is particularly concerning that transition measures, such as renewable energy, 'green' extractives and carbon offsetting, are being conducted in ways which further marginalise those who are already precarious – namely smallholder farmers and landless rural workers. Within this, women are disproportionately represented, and the loss of land further exacerbates the challenges of care work.

Employment and livelihood injustices

Any transition will have implications for women's employment and livelihoods. The International Labour Organization (2018b) suggests that the transition could "result in a slightly lower female labour share in employment, if current female labour shares by economic sub-sector remain constant. This is because the sectors currently associated with green technology, such as electrical machinery, employ a relatively lower share of women" (p. 44). At the same time, the care economy – a significant employer of women – has been largely neglected in discussions of 'green investments' (Olivera et al., 2021). These have focused on renewable energy, new energy vehicles, transport and infrastructure, and waste management and recycling.

Research also suggests that women may not always necessarily benefit from new jobs created in a transition to a low-carbon economy. For example, a shift from using land for agriculture to using it for renewable energy installations may result in women who work as agricultural labourers losing their jobs when their agricultural work is not replaced by new energy jobs, as described by Ghosh, Bryant and Pillai (2022) in the case of one solar park in India. These processes can also result in the enclosure of the commons, as reviewed by Sovacool (2021). This may reduce people's access to resources, such as food and fuel. It can also force people into waged work where it is available locally, or increase outmigration to urban areas, as other processes of enclosure have done historically (Marx, 1887) and to the present (e.g. Diepart and Sem, 2018).

These examples briefly illustrate that a low-carbon transition will not by default improve women's employment and welfare outcomes. In many cases, particularly within energy transitions, jobs are promised but then fail to materialise, or they are only short-term jobs (Johnson et al., 2020). Sectors which may see increased demand for workers, such as care, can only materialise in positive ways with the necessary policy and financial support from government.

Just transition: The evolution of a concept

The just transition movement historically focused on ensuring justice and economic security for workers, especially those in heavily polluting or declining fossil fuel industries. From its early roots in labour organising, the

concept of a just transition was developed together with environmental justice groups, often rooted in "low-income communities of colour" who were more likely to be working in energy industries (Climate Justice Alliance, no date). With growing awareness of the climate crisis and the urgent need to shift to sustainable energy practices, the concept gained popularity among diverse groups, such as workers, Indigenous peoples and gender advocates. They recognised how the concept of a just transition could express their own priorities and concerns for environmental and energy justice. While its early roots in the labour movement meant that the initial scope of the concept was comparatively narrow – concerned mainly with the loss of jobs in the formal economy – subsequent approaches have integrated broader concerns with social, environmental and energy justice (Climate Justice Alliance, no date).

International organisations have also engaged with the concept of a just transition in ways that reflect their specific mandates. For example, the International Labour Organization (2015), with its focus on outcomes for labour, refers to: "A just transition for all towards an environmentally sustainable economy… [that] needs to be well managed and contribute to the goals of decent work for all, social inclusion and the eradication of poverty" (p. 4). The concept of a just transition was also incorporated into the 2015 Paris Agreement which calls for "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" (United Nations, 2015, p. 4).

A central principle of the just transition concept is the need to address social inequalities. Empirical analyses in the global North have highlighted the problematic ways expanding access to energy, or transitions to renewable energy, have often disproportionately impacted marginalised communities, including communities of colour or Indigenous or First Nations peoples (Newell, 2021). Representatives of such groups have often been at the heart of environmental movements, frequently in opposition to private regimes of property and ownership, including of fossil fuel extraction. These developments, with the backing of governments, have tended to further people's dispossession and disrupted their traditional use and custodianship of land.

Similar arguments have been extended more broadly to populations and countries in the global South. Global flows of energy production and consumption centre the wealth and usage benefits in the global North, with a focus on European and settler colonial states. The costs, in the form of dangerous working conditions, exploitative extractive labour, and the environmental impacts of energy production and consumption, are relegated to the often former colonised states of the global South (Newell, 2021). As Gonzalez (2021) notes: "Racialised communities all over the world have borne the brunt of carbon capitalism from cradle (extraction of fossil fuels) to grave (climate change)" (p. 108). As Sovacool et al. (2019) argue, decarbonisation must therefore be seen as "a challenge that is inherently entangled in the social realm – in politics, economics, culture, geography and knowledge" (p. 582). And, by extension, a just transition reflects the convergence of energy transitions and broader socioeconomic concerns about their potential uneven environmental and economic impacts (García-García, Carpintero and Buendía, 2020).

Approaches to just transitions

As evidence of the impacts of various transition policies and projects increased, and of the exclusion of affected groups from decision-making processes, new approaches to a just transition emerged. These new approaches placed a greater emphasis on justice in relation to both outcomes and process. The outcomes, for example, refer to transitioning from old to new forms of employment and access to social protection. The process focuses on making sure that the affected people have meaningful participation in social dialogue and decision-making. This was so that burdens were equitably shared and nobody was left behind (Galgoczi, 2018).

The notion of a just transition therefore developed both as theory to articulate potential injustices in shifts towards sustainability, and as a methodology for avoiding and preventing these injustices. In the energy sector, for example, this was reflected in calls from within academia for building a more energy democratic future which "must consciously avoid reproducing the environmental and socio-economic injustices and inequalities which are intrinsic to the existing energy regime" (Wang and Lo, 2021, p. 1).

In practice, there is a range of different and evolving ways the concept of a just transition is interpreted and applied, particularly in national policies. These different interpretations reflect differing views of 'justice'. A range of approaches to the conceptualisation and implementation of low-carbon transition policies have been summarised by the Just Transition Research Collaborative (2018b), drawing on existing frameworks in the literature on green economy transitions. These frameworks and approaches reflect the contested nature both of what any transition to a green or sustainable economy is about (the outcome) and how it can be achieved (the process). For example, Cook, Smith and Utting (2012), in exploring the social dimensions of the green economy as inputs into the United Nations Conference on Sustainable Development Rio+20 discussions, drew on the four perspectives or worldviews identified by Clapp and Dauvergne (2011) – market-liberal, institutionalist, social green and bioenvironmental – to describe pathways to a green economy. While the authors note that the boundaries between types is not always clear and that there are significant overlaps, each of these worldviews highlights "different sets of ideas, actors, policies and institutions, each with its own potentials and limitations" (Cook, Smith and Utting, 2012, p. 3).

Each of the four perspectives reflects the interests of different groups of stakeholders or advocates, with points of contention concerning "the relative and legitimate roles of markets, state and community in achieving sustainability" as well as "whether problems are viewed as technical or political, whether solutions can be incremental or require deeper structural transformation; the extent and nature of participation; and whether pre-existing inequalities need to be addressed first in order to achieve a just transition" (Cook, Smith and Utting, 2012, p. 3). As García-García, Carpintero and Buendía (2020) note, unions, racial justice organisations, First Nations groups, and gender justice groups are more likely to support transformative or structural reform approaches while governments and the private sector tend to reflect status quo or managerial reform approaches in their policies and actions.

Focusing on process, Sovacool et al. (2019) argue that "major socio-technical transitions require open and democratic participation by a wide range of actors (including firms and consumers, as well as civil society groups,

media advocates, community groups, city authorities, political parties, advisory bodies, and government ministries to minimise unwanted impacts" (p. 582). Others, who argue for transformative approaches, including many feminist scholars and activists, highlight the ways that values, power relations and systems underlying the capitalist organisation of society and economy enshrine inequality along gendered, racial and other lines. And, in a similar way, how capitalism systematises exploitative and unsustainable relationships with the environment (Gaard, 2015). They argue that market-based 'solutions' that focus on efficacy and efficiency – and fail to challenge these fundamental tenets of capitalism – "have little to say on issues of social justice" (Bailey, Gouldson and Newell, 2011, p. 700).

What constitutes justice in a just transition?

There are differing perspectives on what constitutes justice in the decarbonisation process. These lie at the heart of different approaches to just transition in practice. While some advocate for a narrower approach, assuming that any transition must ultimately lead to more just outcomes, particularly if combined with residual interventions to assist those most negatively affected (for example through job loss), others, such as climate, environmental and energy justice scholars and activists, advocate for more transformative views of justice.

For illustrative purposes we now draw on the perspectives of energy justice scholars who have expanded the debate on just transitions. They have done this starting from the early focus principally on justice for workers in carbon-intensive industries, to providing a normative framework for appraising how energy systems and transitions may inadvertently create or entrench unfairness or inequalities within societies. Originally focused on injustices arising from the pre-existing fossil fuel-intensive energy system, more recent energy justice literature has critically addressed the assumption that a low-carbon transition will automatically be more just and democratic. Empirical studies, for example, illustrate issues related to the mineral extraction required for new technologies,[2] the uneven economic costs of transitions, and the impacts of new energy infrastructure on communities (Sovacool et al., 2019).

Following other approaches to justice, the energy justice literature focuses on four key dimensions. It uses them to examine how the energy system – from extraction and production to access, cost, distribution and use – may have different implications for different groups. The four dimensions of justice, and how they are used in this literature, are:

- Distributive justice: how societies share the positive and negative effects of energy or other policies, or the benefits and burdens of energy systems, including how the costs and benefits of transitions are shared.
- Procedural justice: the importance of all stakeholders' participation and due process in energy policy development, decision-making and implementation, including access to and use of land and other resources.

[2] For example, there are dangerous and deadly cobalt mines in the Democratic Republic of the Congo (Kara, 2023). Cobalt is needed in the production of lithium-ion batteries and therefore vital to renewable energy and electric vehicles. However, extracting cobalt is both harsh on the environment and extremely dangerous for workers.

- Recognition justice: involves recognising, making visible, acknowledging, and giving voice to people who are marginalised or vulnerable due to their social position and social inequalities (Sovacool et al., 2019; Lacey-Barnacle, Robison and Foulds, 2020).
- Restorative justice: acknowledging and remediating past injustices, such as over energy or other resources. This may be within and between social groups, or within and across countries (Lacey-Barnacle, Robison and Foulds, 2020).

In principle, such approaches to justice and to just transitions can incorporate – and indeed are often informed by – diverse perspectives, including feminist concerns about gender justice. However, in practice a focus on or prioritisation of technological or managerial solutions to problems of climate, energy systems and low-carbon transitions often renders invisible the consequences for certain groups affected by deep structural inequalities. This approach fails to address, or may even exacerbate, existing inequalities (see Table 1). The next section makes explicit some of these concerns from an intersectional feminist perspective.

Table 1: Understanding different approaches to a just transition

Just transition approaches and their ideological underpinnings	**Possible strategies, policies and actions**	**Approach to justice**	**Implications and questions concerning different approaches to just transition**
Status quo (business as usual) 'Market liberal' approach to green growth. 'Greening' of capitalist economy through private, corporate and market-driven changes. Dependent on corporate actors through market mechanisms. Optimistic about break-through technologies and markets to maintain growth while reducing carbon and material inputs.	Carbon pricing/markets. Break-through technological solutions which may involve government incentives for innovation. Government incentives for businesses to reduce carbon footprint and material inputs. Market incentives should lead consumers to reduce consumption. Corporate job retraining programmes, compensation or social security for affected workers.	Limited direct focus on justice and equity beyond directly affected employees. Primary focus on new job creation/ employment transitions and worker retraining as a vehicle for justice.	Who is employed in transition sectors? In which sectors are the new jobs being created? Are they sectors in which women/minorities/ disadvantaged groups are located? Do women (other marginalised groups) have access to training to acquire skill or access to new jobs? If not, what are the implications of women's exclusion? For example, gender inequalities in the workplace, occupational segregation, the gender pay gap, responsibility for unpaid care work, among others. How are corporations held to account for the consequences, such as environmental/ labour/social of their policies? What accountability mechanisms are needed at national or global levels? Probability of achieving emissions targets or social justice is low as a reliance on market mechanisms is an inadequate driver to achieve significant change.

Just transition approaches and their ideological underpinnings	Possible strategies, policies and actions	Approach to justice	Implications and questions concerning different approaches to just transition
Managerial reform Institutionalist approach to ecological modernisation. Adaptation of current growth model while leaving broader capitalist economic system and power relations largely unchallenged. Recognises the role of key public/state and social institutions, including trade unions and key international organisations, such as the United Nations Environmental Programme and the International Labour Organization (ILO). Sees an expanded role for the state and public sector in leading green initiatives and/or private/public partnerships to reduce emissions, increase efficiency of resource use, and retain/create employment.	Improve eco-efficiency through technologies. Market incentives to reduce material/energy inputs and pollution outputs. Private sector enabled to pursue commercial opportunities for low-carbon solutions. Investments in low-carbon technologies create new jobs and growth alongside carbon reduction. State supports labour and employment/ workplace transitions through social dialogue.	Greater focus on distributive justice – primarily for workers – within the existing economic system while transitioning from fossil fuel industries. Address inequalities directly related to transitions, such as among communities that are fossil fuel dependant. Optimistic about win-win opportunity of growth/job creation alongside carbon/material input reduction and thus potential for sharing gains through jobs and redistribution.	Direct beneficiaries of transition policies, for example, fossil fuel industries, are often men. Do women have an equal voice and influence within institutions such as trade unions? How well are women's priorities represented in trade union demands around a just transition? Who is not represented by trade unions/formal institutions? What role can other institutions, such as women's cooperatives and informal worker organisations play? Does smaller-scale production, such as artisanal mining, receive benefits or incentives to adopt new technologies to transition? Who benefits from new jobs created? Do labour or social protection policies for a transition extend to smaller scale/informal workers/enterprises? Probability of achieving emissions targets and social justice remains low.
Just transition approaches and their ideological underpinnings	**Possible strategies, policies and actions**	**Approach to justice**	**Implications and questions concerning different approaches to just transition**
Structural reform 'Social green', energy and climate justice movements. Requires institutional change and structural evolution. Emphasis on *sufficiency*: recognises limits to 'green growth' – eco-efficiency gains will be	New forms of governance, institutions and structures that govern energy production and global supply chains, including the circular economy. Greater focus on collective solutions, 'commons', public goods and ownership of key assets.	Greater attention to distributive justice, including ownership, and access or control of resources. Procedural justice established through inclusive and equitable decision-making processes to guide transition.	Are existing gendered or other inequalities in, for example, energy poverty and access to clean energy, considered in transition solutions? Who will be included/have a voice in new governance structures or institutional arrangements? What impact will increased collective ownership, such as of renewable energy resources, have on broader dimensions of gender equality – for example, unpaid

overwhelmed by increasing demand. Offers a greater challenge to political and economic power structures, aiming for more equal redistribution of power and resources, and wider participation in decision-making.	Recognises the need to change/reduce consumption as well as production, at least among affluent people.	Aims for a more equitable distribution of benefits or access, such as with regards to energy, through collective management of energy and other resources.	care work, and other gender inequalities in work? To what extent do transition measures address issues of care work and social reproduction, and gendered roles in sufficiency provisioning, including through access to non-market/common resources? What mechanisms can ensure that material consumption is reduced among the affluent consumers while ensuring sufficiency for all? Potential for achieving emissions targets is higher as there is more substantive change to the systems of production but still low probability of achieving social justice because not enough is done to change the drivers of social inequality.
Just transition approaches and their ideological underpinnings	**Possible strategies, policies and actions**	**Approach to justice**	**Implications and questions concerning different approaches to just transition**
Transformation Supports a radical change of the economic system and structures which are responsible both for environmental and climate impacts, and for broader socioeconomic injustices. Requires more fundamental change in economic and political structures that underpin and reproduce environmental and social inequalities/injustices. Questions whether a transition can be accomplished with continued growth as emissions remain tightly coupled with growth. Climate finance needs to include compensation or reparations for past injustices.	Moves beyond the worker-centric just transition to look at broader interrelated inequalities. Focus on changing underlying structures and systems, including political and corporate, that benefit elites. Solutions involve grassroots empowerment, everyday resistance and struggle, and the power of movements, rather than elites and policy makers. Overall reduction in material inputs required through a decrease in consumption in affluent economies. Together with this, greater global redistribution, including compensation or reparations, for climate injustices.	*Broader views of justice* Envisages more progressive economic and social systems. Justice includes efforts to dismantle systems of social oppression, such as patriarchy, racism and class. *Recognitional and procedural justice* Inclusion of groups traditionally marginalised, excluded, or subject to exploitation and/or dispossession. *Reparative justice* Achieved, among other ways, through global redistributive mechanisms, climate reparations and compensation.	This approach puts a spotlight on the systemic drivers of gender and other inequality in work, including the way in which the capitalist economy benefits from women's work in social reproduction and in the extraction of natural resources. Transformative approaches underscore democratic and inclusive participation. This could extend to alternative forms of organising, for example, as informal economy workers, producers and consumers organising collectively to contest dominant development models. And in social solidarity economy alternatives, as well as in dispossessed and marginalised groups, such as Indigenous peoples and traditional land management systems and cultures. Balances are required to enable consumption growth to achieve sufficiency for least affluent populations while decreasing overall carbon and other material inputs. This approach has the highest likelihood of achieving both low emissions targets and social justice.

Source: Adapted from Clapp and Dauvergne (2011); Cook, Smith and Utting (2012) and Just Transition Research Collaborative (2018b)

Justice for whom? Feminist approaches for gender justice

In this section we explore some key features of a feminist approach which we suggest can inform a more expansive vision of justice. From this vision, we can derive a set of principles that could be used to guide a gender just transition. Following feminist principles, any such transition would need to take seriously inequalities at the intersection of gender and other marginalised identities and forms of oppression – by gender, race, class, ethnicity, and other structural exclusions. This would provide a framework for transformation. We begin by reflecting on feminist approaches to knowledge. We then go on to examine several areas where feminist contributions from a range of disciplines – economics, political-ecology and ecology, among others – have particularly focused their analysis and illuminated key issues that are central to the crises of climate and social reproduction. Such key issues include care work, access to resources, and ideas of social provisioning, sufficiency, depletion and regeneration.

Feminist epistemology and approaches

At a general level, feminist theory is broadly concerned with interrogating the ways in which knowledge is produced, and the values, assumptions and biases that inform this knowledge production. Feminist theory calls for attention to gendered social, cultural, political and economic institutions, and processes – and their implications – while seeking to expose the values and biases underlying dominant analyses, approaches and actions (Bee, Rice and Trauger, 2015). This section describes the contributions from feminist approaches on the dominance of certain forms of knowledge production, and the importance of intersectionality.

In the context of climate and environmental change, feminist epistemology challenges the dominant framings of climate change and its solutions as a scientific and technological problem where relevant knowledge is "objective, value-free, and independent of social location" (Moosa and Tuana, 2014, p. 678). Feminist analyses of gendered relationships and power draw on theory and methodologies from across a range of disciplines to demonstrate how "moral, political, economic and scientific frameworks for understanding and responding to climate change might be positively transformed" (Moosa and Tuana, 2014, p. 676).

The intersections of feminist economic and ecological scholarship, drawing also on feminist philosophy and political economy, help to inform a more expansive vision of justice as part of a just transition. For example, in *Feminism, ecology and the philosophy of economics* (Nelson, 1997), Nelson identifies commonalities between feminist and ecological interests, where women's unpaid work is treated in the same way that natural resources are: an infinite resource and subject to men's authority. The parallel has been drawn to the countries in the global South which have been viewed in much the same way – as a source of resources and labour for extraction. These structural factors, according to feminist economists, have led to the undervaluation of both nature and care work and other roles women predominantly play. Feminist and ecological scholars have drawn attention to the hierarchies of power and entitlement that have created a dualism that places 'humanity over Nature'. This binary in turn is used to subjugate women and groups, such as Indigenous peoples, where they are seen as being "closer to nature" (Cerise and Salleh, 2020).

An alternative approach views humans as part of the environment where they seek to meet their material and cultural needs without creating a social or ecological debt (Salleh, 2017a). Such approaches draw on non-Western and indigenous ways of knowing, including for example the concept of *buen vivir* or *sumak kawsay* across a number of countries in Latin America. These concepts focus on community wellbeing, reciprocity, solidarity and harmony with nature, and reject consumption practices associated with Western values (Salazar, 2015). Some feminist scholars have attempted to take the principles of *buen vivir* and align them more closely with feminist approaches to gendered labour and care as a basis for carbon-neutral societies (Cochrane, 2014).

Feminist perspectives on just transition also importantly emphasise intersectional approaches which help "to address the practices through which social differences such as gender and ethnicity are enrolled in climate change adaptation" (Gonda, 2019, p. 188). Such perspectives view women as often exploited, undervalued, and kept from the benefits of the wealth they generate. The perspectives recognise this is often equally true for people of colour, Indigenous peoples, and other minorities – and can also be linked in many cases to their exclusion from, or the exploitation, degradation, and undervaluing of, natural resources (Nelson, 1997).

There has been a tendency in some strands of work on gender and the environment or climate change to position women as either victims or saviours in the climate crisis (Arora-Jonsson, 2011). Such narratives oversimplify gendered dynamics. They perpetuate stereotypes and present women as a homogeneous group, while avoiding other important aspects of social differentiation, such as race and class. A deeper interrogation of gendered issues in the transition to a low-carbon economy with a feminist lens highlights important issues for a just transition without making broad and unjustified simplifications of gender dynamics.

Some of these different sources of knowledge, and ways of understanding social and environmental relations, can inform analysis both of the causes of the climate crisis and as opening possible pathways for transformative solutions. The same structures and power dynamics that have contributed to the current ecological crisis – including unsustainable patterns of production and consumption, extractivism and unsustainable wealth accumulation – are seen to have marginalised women's access to resources, formal employment, and/or economic or political power. An expansive view of justice must therefore seek to transform the structures and hierarchies of power that enable and reinforce both social inequalities and ecological degradation.

Social reproduction and care

Feminist economists have drawn attention to the invisibility or marginalisation of women in many domains of production and social reproduction, and to the mechanisms by which households absorb shocks and crises through the intensification of women's invisible care work (Elson, 2012). This has led academics and activists concerned with the differentiated impacts of climate change and transitions to focus attention on women's unpaid care work (Johnson et al., 2020). Feminist theorising about social reproduction, which specifically examines the relationship between capital accumulation and the reproduction of labour power, provides a structural interpretation of the gendered and racial division of labour, the devaluation of care work, and the ongoing exploitation of particular groups. While often equated with care work, social reproduction is a broader concept

which includes and highlights care and other forms of unpaid subsistence labour within a broader integrated process of capitalism. This includes the production of goods and services, as well as the reproduction of life and labour (Bhattacharya, 2017). In this view, the unpaid and unacknowledged work of social reproduction supports and sustains a capitalist system of production.

According to such scholars, a crisis of social reproduction comes about because "on the one hand, social reproduction is a condition of possibility for sustained capital accumulation; [and] on the other, capitalism's orientation to unlimited accumulation tends to destabilize the very processes of social reproduction on which it relies" (Fraser, 2016, p. 100). Once again, this argument has parallels in the climate crisis and exploitation of natural resources. The theory therefore provides a useful frame for the discussion of just transitions because it raises systemic issues of exploitation which can explain the gendered injustices associated with climate change and transition. It presents a case for the transformation of economic structures and processes to address the crisis of social reproduction as part of a just transition.

Care work, whether paid or unpaid, is a key component of social reproduction. Care work includes healthcare, children's education, child and elderly care, cooking, provisioning, such as of food and water, cleaning and household maintenance. Care work is performed in both formal institutions and in households. Household care work is often unpaid or underpaid and is usually carried out by the women in the household. Activities such as collecting wood and water and producing food for own household consumption have not been adequately categorised. They are therefore not well-captured in employment data or data on care work (Charmes, 2019). Nonetheless, time-use surveys repeatedly show that the discrepancy between women's and men's time spent on unpaid care work is prevalent globally, with women on average doing 75% of all unpaid care work (Charmes, 2019).

The concept of care also extends to vital social services such as healthcare, education and childcare. Feminist economists in particular highlight the importance of such social infrastructure and provisioning. Thus the International Labour Organization, in its framework for decent care work, calls for policies to address 5Rs – recognise, reduce, redistribute, reward and represent – including through the public provision of such services (International Labour Organization, 2018a). Such efforts would serve both to reduce the burden of care work for many women and relax their constraints on taking up other forms of employment. It would also support them and their households in times of crisis, including those caused by climate transitions.

The status of care work, paid and unpaid, as an explicitly gendered and feminised form of work in most societies is central to feminist approaches to just transition (Gonda, 2019; Johnson et al., 2020; Walk et al., 2021). İlkkaracan (2016) argues that the many forms of injustice that proponents of just transition have identified – racial, environmental, gender and class – are entrenched and exacerbated by the undervaluing of care and care-based work under capitalism. As discussed earlier, scholars and practitioners have highlighted how, due to their role as caregivers, women experience climate change differently to men. This leads to arguments for approaches to transition rooted in an 'ethic of care' that would both facilitate justice and discourage further environmental

degradation as part of a just transition. Fostering a value for care approach could be a means through which both social and environmental inequalities are equally addressed in ecological transition. Transitioning towards resource sustainability and addressing social justice issues should be understood as complementary. In İlkkaracan's (2016) words, the "Green economy needs a re-organization and regulation of production and consumption in harmony with the pace of renewal of natural resources; the purple [care] economy needs a re-organization and regulation of production and consumption in harmony also with an equitable and sustainable system of reproduction of human beings" (p. 6).

Gendered resource access

As already discussed, gendered relationships with the environment are contingent on access to, control of, and decision-making power over key resources. Feminist political ecologists are concerned particularly with the gendered nature of access to and control over resources, including the right to land. Land ownership, or access to land, has wider implications for control of and access to resources, such as water and fuelwood (energy), as well as for participation in decisions over allocation and use. Landowners generally hold more influence in making decisions, such as for use rights for water, and are more likely to be men (Gay-Antaki, 2016).

This leads some scholars and activists to propose alternatives to private ownership in the form of collective or common property ownership. The concept of the commons refers to resources, broadly defined, which belong equally to a community who share it to ensure their own survival and wellbeing (Rao, 2020). Such arguments arose in part as a response to the narrative of the 'tragedy of the commons' (Hardin, 1968), which theorised that an ever-growing population acting in self-interest would overuse and deplete the commons, thus concluding that private ownership was necessary for good stewardship. Following critical work by Elinor Ostrom (1992) – who demonstrated instead that commons are generally well-governed through institutional arrangements that ensure fairness and sustainability for users – interest increased in the value of common property resources, including the benefits they provide to women (Caffentzis and Federici, 2014).

Access to resources is closely linked to the ability to carry out social reproductive work at the household level. Both cooking and cleaning require water and energy. Without electricity and modern appliances these tasks impose a significant time burden on those, generally women, doing the work, and contributes to their time poverty (Fraser, 2016). Time poverty is a concept which acknowledges that time is itself a valuable resource, and that poverty is not only experienced because of low income or a lack of commodities, but also if a person is not able to rest or enjoy leisure activities due to significant amounts of paid and unpaid work (Bardasi and Wodon, 2010). Evidence globally shows that women spend more time on unpaid care work than men (Charmes, 2019), and that in response to crises women's time doing it increases, and this is often how households absorb and manage shocks. Improving energy and resource access, and reducing energy poverty – and by extension time poverty – must be addressed for a gender just transition.

Depletion and regeneration

The concept of depletion is used in environmental accounting to assess the depletion and degradation of natural resources. Feminists have similarly applied it to put a spotlight on the consequences of unpaid care and domestic work for individuals, households and communities. Drawing a parallel to environmental degradation, depletion happens when the outflows of unpaid care and domestic work combined with the inflows of medical care, income earned and leisure time falls below a threshold of human biological, financial and emotional sustainability (Rai, Hoskyns and Thomas, 2014). This analysis brings to the fore how, in order to function, economies rely on depleting women's time and health, as well as natural resources.

Reversing the harm of depletion would require mitigation, replenishment and ultimately regeneration – another concept relevant for both the environment and gender equality. In environmental justice, regeneration refers both to limiting harm to the environment and actively restoring and renewing ecosystems and natural resources. This is done with a view to enhancing the environment through a restorative relationship between humanity and ecosystems (Lovins et al., 2018). From a feminist standpoint, the concept of regeneration has been interpreted to include government prioritisation of, for example, (re)building social infrastructure to prevent the depletion of women's time and of natural resources. This recognises the value of both the paid and unpaid economy; participatory and inclusive processes that enable women to put gender-specific issues on political agendas; and the establishment of accountability mechanisms for rebuilding. It focuses on a bottom-up approach to regeneration with women's organisations and civil society's participation (Rai, True and Tanyag, 2019). Ecofeminists have also conceptualised unpaid care and domestic work as 'regenerative labour' (Salleh, 2017b). Concepts such as depletion and regeneration are clearly central to any notion of environmental, economic and social sustainability, and they highlight the shared concerns and analytic frames around the maintenance and reproduction of both natural and human resources.

Alternative approaches: Provisioning, sufficiency and an ethic of care

The previous sections have illustrated key concepts that feminist scholars have used in examining elements and drivers of gendered and climate-related inequality and injustice from various disciplinary perspectives. They connect issues of care and social reproduction, inequalities in the home and workplace, unequal access to resources and power, and relationships with nature and the environment. Scholars at the intersections of relevant disciplines (Nelson and Power, 2018; Bauhardt and Harcourt, 2020) have enabled commonalities to surface. This has led to the generation of new ideas and the construction of shared understandings that can help formulate guiding principles and policy that pursue climate and gender justice as intertwined objectives. Core concepts which have resonance across different fields are those related to sufficiency and provisioning, and by extension to sufficiency provisioning (Mellor, 2017).

From the ecological literature and concerns with sustainability within the planetary boundaries comes the notion of sufficiency. In ecological terms, sufficiency concerns living better with less (Hickel, 2019) or "the minimum that enables people to flourish" (Daly, 2013), cited in Mellor (2019, p. 190). It implies that the affluent reduce

their consumption and allow others to increase their material consumption to meet sufficiency needs. Sufficiency helps us to shift the concept of just transition from one focused on efficiency – production – to one concerned with overall limits or planetary boundaries and distributional justice. There is a need to decrease overall use of materials and resources while simultaneously ensuring an increase in consumption for the least affluent populations, particularly in the global South.

In such contexts, feminist and ecology scholarship is concerned with different imaginings of the economy, "not looking for an equal slice of a toxic pie" (Salleh, 2017a, p. 48), but rather countering neocolonial patterns of growth based on extractivism and embodied debt of humans or nature. Instead, it proposes sustainable local forms of provisioning and eco-sufficiency that avoid social or ecological debt (Sen and Grown, 1987). The idea of sufficiency is embedded in ideas drawn from non-Western or indigenous cultures, philosophies and ways of knowing and being, such as *buen vivir* described above, although as Cochrane notes (Cochrane, 2014), such approaches may still embed a gendered division of labour.

For feminist economics, a sufficiency economy must go beyond standard economic concerns with production and consumption to incorporate social reproduction. Sufficiency implies adequacy of resources – whether obtained from the market or other mechanisms – for the reproduction and wellbeing of individuals, households and communities. Sufficiency makes explicit and prioritises the role of non-market activities, such as unpaid care in the reproduction of labour for market production.

Achieving some notion of sufficiency requires forms of provisioning which "addresses the entire life course of each person, not just those aspects of production and consumption defined by market economics" (Mellor, 2019, p. 191). It also draws attention to social relations: Who does the provisioning work to ensure sufficiency at the level of the household and individuals? Thus, feminist proposals consider provisioning not only through market mechanisms, such as commodifying care work or shifting to market provisioning, but through non-market alternatives such as a caring commons (Dengler and Lang, 2022) and social provisioning through the state to address problems of unequal unpaid work burdens, time poverty and depletion. Drawing on the work of ecologists concerned with meeting needs or provisioning within natural resource constraints, the concept is extended as sufficiency provisioning. According to Mellor (2019) "Sufficiency provisioning thus implies a dual objective: the provision of goods and services necessary for social reproduction … governed by the twin principles of environmental sustainability and social justice" (p. 192).

Justice concerns are central to these concepts. Distributional justice relates to how work, burdens or responsibilities are shared, with non-monetary dimensions, including issues of choice or preference and wellbeing deficits, time poverty and depletion. There is also an inherent justice concern with what is valued. In mainstream economics, the market attributes value while the unmarketised care economy is viewed as "governed by norms rather than market signals, difficult to assign a value to" (Cook and Kabeer, 2023, p. 2). Thus, the value attributed to care lies outside the market relations of the productive economy. It may be associated instead with a 'moral' economy – work that women undertake or take responsibility for as part of a 'moral order' based on patriarchal

structures and social norms. Feminist ethics or philosophy critically examines the ways care of people and of nature work is often linked to such moral arguments around the 'right' role of women, and the value attributed to this role. It argues instead for the need to separate an approach to care from such moral arguments (Mellor, 2019).

Reclaiming provisioning as being about sufficiency not growth, centring care as vital to provisioning, and seeing sufficiency provisioning as a social responsibility or concern, will require a transformative approach to a just transition. Such a transition values care of people and of nature and is central to how the economy, society, provisioning and its distribution are organised. As Tronto (2020) argued, an ethic of care approach would recognise care work not as a matter of moral responsibility, based on moral argument or closeness to nature. It would make care a central feature of debates from which it is currently largely absent.

Reimagining justice for a gender just transition

What then are the implications for ensuring gender justice is embedded in just transition plans? As outlined earlier in the section *Just transition: The evolution of a concept*, principles for a just transition have generally been drawn from the various pillars of justice: distributive, procedural or participatory, recognitional and restorative, or reparative. These pillars of justice have been drawn on in the development of just transition frameworks and policies, for example in South Africa's Just Transition Framework (Presidential Climate Commission, 2022). However, they have rarely been interpreted or applied with a gendered lens to ensure that the just transition is also gender just. A gender just transition aims to reduce all forms of inequality, would acknowledge the invisible yet vital work of care required for life and thriving ecosystems, and would advocate alternative approaches to a transformed economy that supports regeneration and an ethic of care instead of depletion.

In this section, we apply some key insights from the feminist and gender literatures to examine how they can be used to expand what we include within the different pillars of justice (see Table 2).

Table 2: An expansive view of gender justice

Pillars of justice	Traditional view for a just transition	Expansive feminist view
Distributive	• Mitigating job losses in fossil fuel sectors. • Equitable access to 'green' jobs. • Ensuring energy affordability. • Avoiding harm, and compensating direct harm.	• Public provision of social goods within ecological limits (sufficiency provisioning). • Valuing and redistributing unpaid care work. • Access to decent work, including rights and universal entitlements for informal workers. • Access to resources/land rights/commons.
Procedural/ Participatory	• Due process – the application of fair rules and processes. • Stakeholder participation.	• Collective action and cross-movement building between environmental and feminist organisations. • Publicly-owned resources and participatory decision-making, including over commons. • Accountability in decision-making – women's and other oppressed groups should be prioritised as participants.
Recognitive	• Respect for differences between groups. • Recognition of key stakeholders.	• Recognition of unpaid care work and unpaid care for the environment. • Measure and value metrics other than gross domestic product (GDP) that support wellbeing. • Value and recognise indigenous knowledge and custodianship of land. • Ensure recognition of rights or entitlements to land and other resources as a basis for participation in transition processes.
Restorative	• Redressing harm, 'polluter pays'.	• Reparations for loss and damage, especially when marginalised groups experience it. • Acknowledge, compensate and repair gendered harms that industry has caused to both people and the environment. • Rehabilitate mines and restore ecosystems. • Protect and restore commons. • Restitution of lands and sovereignty and protection of Indigenous peoples and land dwellers' rights.

Distributive (distributional, redistributive) justice

Distributive justice is usually highlighted as the first, or central, component of justice within a just transition. It refers to the fair and equitable distribution of both the positive and negative impacts of the transition. Generally, this covers issues such as who suffers from job losses in fossil fuel sectors, and how this can be rectified, and who profits from new industries, and how these gains are distributed.

A gender just perspective, however, would need to address the underlying systems of structural inequality to ensure that just transition policies do not entrench or exacerbate these inequalities. For example, many of the sectors likely to experience job losses, such as coal mining or automotive manufacturing, are dominated by men. They are in contexts which have much higher women's unemployment. Therefore, simply compensating these job losses without addressing women's livelihood needs would fail to provide transformative and equitable benefits from the transition.

A gender just transition would entail three shifts in distribution systems. First, it requires securing universal provision of, and access to, those resources necessary to achieve an adequate livelihood (UN Women, 2021). This includes equal access to decent work and rights and entitlements for informal workers. However, of equal importance is access to and control over resources such as land, water and energy which form the basis of women's livelihoods in many parts of the global South. Because ownership and control over these resources is unequally distributed, women often bear the burden of these transition policies and do not experience the benefits they may produce. Therefore, just transition policies may take the form of improving women's ownership, governance and access to resources. But more importantly, such policies, including both mitigation and adaptation measures, should not only be defined by institutionalised privileges, such as land ownership. They should rather be based on understanding uses, needs and the responsibilities of all who rely on such resources.

Second, is the need for the public and affordable provision of social goods, including education, healthcare, child and elderly care, energy and water infrastructure, and social protection. Providing these services is essential to relieve and redistribute some of the gendered work women do, often without pay. The need for such services will likely be intensified with climate change. However, this cannot be done within the context of highly austere fiscal and government policies which reduce budgets for essential service – leading to rising costs, including for water and energy – and exclude the poorest people from getting the services they need most. In summary, austerity only serves to worsen the crisis of social reproduction, increase the burden on women, and undermine the realisation of fundamental human rights for all (United Nations Human Rights Office of the High Commissioner, 2012; Sibeko, 2019; Action Aid, 2022).

Third, is the need to acknowledge and redistribute the burden, costs and benefits of care work in the household, the economy, state and society. This requires recognising care and unpaid labour as essential to all economic activity. It also requires a commitment to alternative options for care for people and the environment, as discussed in sufficiency provisioning. Recognising and redistributing care work requires an adequate and comprehensive social infrastructure, decent work conditions and wages for paid care work, and labour conditions

which allow people of all genders to contribute to care in the household, such as shortened working hours and equitable parental leave (İlkkaracan, 2016).

These three approaches require a just transition that is distributive *and* redistributive, to ensure that the growing care burden is shared not only among genders, but also between individuals, families, and the state. Essentially, these principles of redistributive justice require a transformative approach to thinking about how the economy is organised, how labour is valued and distributed, and how economic resources are channelled. This must be underpinned by a material basis of social provisioning and sufficiency provisioning (UN Women, 2021) to ensure that all humans and other species have enough to flourish and live well.

Procedural (participatory) justice

Procedural or participatory justice refers to all stakeholders' equitable, inclusive and transparent participation in the processes, procedures and governance of the transition. While the importance of procedural justice is widely acknowledged, its interpretation and implementation have varied substantially (McCauley et al., 2023). Feminist and gendered approaches have illustrated how transition processes may be exclusionary. Exclusion could be because of how 'stakeholders' are defined, how consultations are timed and structured, whose voices are taken seriously, and how different perspectives are included in the outcomes. Feminist researchers have highlighted how elites dominate climate governance processes, rather than processes being inclusive and incorporating the voices of affected and/or marginalised people. This serves to reproduce unequal and unjust power relations in climate governance.

A transition process that is gender just must first recognise that access to participation is also dictated by existing structural inequalities. Procedures must be designed not in an equal way, but an equitable one, to address these inequalities. At a local level, this requires an explicit recognition of disadvantaged and marginalised groups and an understanding of the intersectional gendered context. This applies to governance, decision-making processes, how different inputs may be given, in what settings different groups may have a voice, as well as established livelihoods that people participate in such as farming and keeping livestock, and ownership structures. These unequal dimensions need to be taken into account when designing engagement processes to help make possible full and equitable participation of all.

The approach to participation needs to go deeper. For example, different stakeholders' contributions and inputs, particularly those of the most marginalised and affected, must be taken seriously and valued as expert knowledge; they need to be considered in a democratic process, and reflected in the actioned outcomes. This allows processes and procedures to move beyond lip-service to consultation, and towards democratic and equitable participation in decision-making. Collective action and movement-building play a key part in enabling such processes, with feminist and environmental organisations together able to push for more transformative and expansive visions of a just transition.

Through such processes participation can also form the basis for redistribution. Participatory justice cannot be limited to only addressing processes within the planning of the transition. They must also be embedded within new governance, management and ownership regimes. Democratic and participatory decision-making procedures are then both an element of and a condition for social justice. They simultaneously challenge institutionalised exclusion, a social culture of misrecognition, and current distributional patterns (Schlosberg, 2004), helping to ensure that any transition does not "reproduce social and environmental injustices" (Gonda, 2019, p. 88).

Recognitional (recognitive) justice

Recognitional justice is defined briefly as "acknowledging marginalisation and social inequalities" (Lacey-Barnacle, Robison and Foulds, 2020, p. 123), and therefore "recognizing that not all members of society are equally valued in current socio-cultural, economic, and political arrangements, and that climate change and transitional policies threaten to exacerbate existing inequalities along gender, class, and ethnic/racial lines" (Abram et al., 2022, p. 1036).

This form of justice is not always incorporated into just transition frameworks on its own terms because it also acts as a foundational requirement to achieve participatory or procedural justice. In other words, for a person or collective to participate fully and democratically, they first need to be recognised, acknowledged and respected (Schlosberg, 2004).

Recognitional justice requires recognising social inequalities and also understanding how such inequalities arise and are perpetuated. This calls for an intersectional approach which understands social inequalities and difference based on gender and through interactions with other injustices, including those of class, race and ability. Recognitional justice calls for equal rights for all groups.

Applying recognitional justice also requires acknowledging what different groups have already done for sustainability, climate change mitigation and adaptation. In recognising and incorporating marginalised groups' knowledges and values, the metrics, indicators and goals of the just transition process itself should acknowledge that marginalised groups, including Indigenous peoples, have played a critical role in environmental stewardship and have carried a large burden of unpaid care work for people, other species and the environment. Recognising that those closest to and most affected by the issues, however marginalised, are experts in their own right requires shifting away from framings of climate change and just transition as purely scientific and technological problems. It calls instead for attention to gendered social, cultural, political and economic institutions and processes while seeking to expose the values and biases underlying dominant analyses, approaches and actions.

Feminist scholars and social movements have therefore proposed new approaches, goals and guiding frameworks for what a new transformative economy should look like, based on an alternative set of values. Examples include an ethics of care and care-ful approaches, resistance to the commodification of nature, public goods and services, and use of wellbeing approaches instead of GDP and growth as key metrics of progress.

Restorative (reparative) justice

Restorative justice is not used in all just transition frameworks. However, it is an essential component of just transition processes and climate justice in the global South. It is simply defined as "redressing past harm" (Abram et al., 2022, p. 1036). This justice is generally interpreted to include compensation to those who lose jobs in the transition and that have been harmed by polluting activities, and climate finance along the polluter pays principle.

A feminist application of this principle would acknowledge, compensate and repair gendered harms. For example, extractive industries such as coal mining have impacted men and women in different ways. In general, men make up the vast majority of coal miners and have been afflicted with associated respiratory diseases (Lu et al., 2021), along with other diseases prevalent in communities living around coal-fired power stations. The resulting care responsibilities often fall on women, and workers' deaths result in women heading up households (Lahiri-Dutt et al., 2022). Mining and other extractive industries have also caused immense harm to land-based livelihoods, such as small-scale farming, because of soil, water and air pollution (Lahiri-Dutt et al., 2022). Compensation should be based on jobs lost and on damage to health and other livelihood impacts. This requires a restoration to people, including adequate healthcare, and for the environment in the form of rehabilitation of mines, detoxification of soils, and restoration of biodiversity.

Restorative justice also requires repairing the harm caused by systems which have resulted in structural inequalities, including colonialism, land dispossession, and the extractive, fossil-fuel dependent development of the global North which has fuelled climate change. The responsibility for the majority of cumulative greenhouse gas emissions resides with the early industrialised countries in the global North. The principle of *common but differentiated responsibility* has been central to global climate policy. But these countries' promises for climate finance have not been kept (Roberts et al., 2021). While historically the responsibility for emissions has been allocated by country, differences are becoming increasingly stark within countries, where consumption patterns of the wealthy generate a disproportionate share of emissions (Chancel, 2022). It is therefore necessary to hold polluters, both global North countries and elites within countries, responsible for climate reparations. This requires finance which does not increase debt levels, or contain conditionalities which are detrimental to the most marginalised, such as the privatisation of public services.

From a gendered perspective, one of the most important issues is land, and the protection and restoration of the commons (WoMin, 2019). In a context such as South Africa, where land is largely privatised and white-owned, progressive land reform and restitution would be needed to redistribute land to achieve both distributive and restorative justice. Commoning – the process and practice of producing and maintaining the commons – presents an alternative to private ownership. It provides the possibility of centring sufficiency and regeneration.

In highlighting some ways in which the established pillars of justice used in just transition literatures can be expanded and interpreted through a feminist lens, we point to issues and questions that may guide a more gender just transition. These should not be understood or implemented in silos: the types of justice outlined in this paper interact and intersect in various ways. Participatory justice, for example, cannot be achieved without adequate

recognitional justice. Distributional justice will not be fairly judged without participatory justice and the necessary restorative justice. And restorative justice cannot be achieved without recognition for past harms and the roles played by those responsible.

Conclusion

The just transition concept has become widely adopted but it is used in very different ways. Highlighting different views of justice helps to expose the limitations of some approaches and plans, where the 'just' element is at risk of losing its meaning if it is understood within a narrow framework that does not support transformation. We have shown that gender *injustice* is one of the key dimensions that underpin a range of obstacles to a just transition. To be gender just, any transition must take a transformative approach to addressing various forms of structural inequality which position women, people of colour and Indigenous peoples in unequal and inequitable ways in relation both to nature and the environment, and to social reproduction. A gender just transition requires a transformed economy that centres people's wellbeing, values providing care for people and the environment, and is designed to be regenerative.

This paper has attempted to provide an expansive view of justice based on concepts from feminist theory. These concepts draw on extensive feminist experience, research and advocacy aimed at promoting equity and inclusion. They centre the need to value care and enable equitable access to resources. The theory and approaches take an intersectional approach to prioritising oppressed and marginalised groups' views in seeking alternative economic and policy approaches. A priority is to support regeneration over depletion, including through reparations. Applying these ideas to the key pillars of justice provides insights and guidance for the process and practice of just transition. Further research can apply this framework to different country contexts, and to an analysis of existing transition plans to support policymaking for a transformative and gender just transition.

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