Bringing women's livelihood and care perspectives into climate decision-making

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Revised version submitted 16 October 2020
for inclusion in Climate Change, Gender and Livelihoods:
Vulnerabilities and Adaptations
Edited by Joshua Eastin and Kendra Dupuy

Abstract: All manifestations of climate chaos affect women differently from men because of gendered social roles, economic positions, and differential political access, everywhere in the world. Gender violence accompanies the socio-economic disruptions linked to climate change. Fossil fuel extraction and processing affect women and men differently – and intersectionally -- as a function of gender. The "green transition" entails gendered challenges as well as opportunities. Women and men also have different access to redress and to collective processes shaping public responses to climate change. Women's perspectives, intersectionally grounded in their lives and gendered social roles, have great potential to improve the efficiency and effectiveness of climate policy and governance processes at all levels. This chapter cites examples from around the world of how community-based organizations, women's groups, and activists are addressing the gendered impacts of climate change from the grassroots. It outlines the implications of women's approaches to climate change based on livelihood provisioning and care, and how these movements organize to broaden women's climate resilience -- for example, through citizen science, community-based education and networking, and commoning: building resilient means of sharing livelihood necessities (e.g. land, food, water, care, and skills). Steps towards bringing women's livelihood and care perspectives into climate policy decision-making include obtaining better data on women's work, sharing and using that data to improve policies, and opening access for women's participation at all levels of governance.

Keywords: climate change; gendered impacts of climate change; women and climate policy; women's climate organizing; intersectional climate justice; commoning; care; livelihoods; womens work

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I. Introduction: Intersectional, gendered impacts of climate change affect everyone's lives and livelihoods

It is well-understood that the impacts of climate change fall hardest on those who are already disadvantaged due to existing inequities linked to gender, race, ethnicity, dis/ability, sexuality and other identity-based differences, which are also often related to geographic location (Jafry 2019). Disproportional climate change impacts on women – half of humanity -- stem not only from gender-based workplace discrimination and women's concentration in lower-paying health, care, education and other service occupations, but also from their unpaid or underpaid home, care, community, and intergenerational skills-transmission roles – all part of unjust patriarchal social and economic systems. An intersectional and non-binary gender perspective expands this view to include discrimination of all kinds, calling for everyone who is affected by climate change to be included in climate decision-making -- exactly because climate change worsens pre-existing vulnerabilities. While this chapter's examples mainly focus on women, our analysis extends to gender more broadly. Evidence is mounting that the effectiveness of climate governance depends on the inclusion and wide participation of all, especially those who are most vulnerable. Climate impacts, too, should be understood broadly, from the viewpoint of people whose lives and livelihoods are increasingly being disrupted by climate change. In this chapter, we provide examples of such gendered impacts, what they imply for climate governance, and potential steps toward their inclusion.

For example, the terrible impacts of three recent mine tailings dam collapses in Canada and Brazil (partly induced by climate change-related rainfall extremes) were very gendered. Women not only fed and cared for the injured, traumatized and homeless, cleaned up the mud and ruined homes, rebuilt communities and social institutions; many also had to seek paid work to supplement household income when men's jobs in the mines were suspended. Their triple workdays (child and elder care, homemaking and food production, informal sector earnings) roughly doubled, due to unpaid work they carried out to help neighbours and relatives with community reconstruction, and to seek alternative means of livelihood preservation (Maso 2017, Marshall 2018, Almeida et al. 2019, Marshall and Campolino 2020, Shandra et al. 2017, McAllister 2019). Obviously gendered pressures like these are unsustainable – but climate change is expanding the scale and incidence of such crises.

Female-headed households In South Africa and other countries are impacted by a "triple burden" comprising gender discrimination in assets and access to productive resources, lone household headship requiring both domestic duties and breadwinning, and relatively high numbers of dependents (Flatø et al. 2017); this heightens the sensitivity of some female-headed households to environmental factors like variations in rainfall which reduce agricultural production. To address women's worsening climate vulnerability, thus, "strong, coordinated interventions by various ministries and government departments, specifically those in the social, economic, and environmental sectors" are needed (Flatø et al. 2017:61). Starting with the livelihoods of the marginalized reveals interconnections and important intervention pathways that might not be apparent from the top down.

In another example, drawing from how climate change affects people in the Hindu Kush, class, caste, and ethnicity-based socio-cultural institutions, along with religion, age, health, education, disability, language and other features of identities, all interact with gender to produce differing climate vulnerabilities in different geographic locations, economic settings, and political environments. Since social contexts determine power relations, which act at all scales from the household to formal and information institutions including the state and the market, intersectional, gendered climate vulnerabilities are produced by a wide variety of conditions and are embedded in "everyday patterns of social interaction and organization and of access to resources" (Goodrich et al. 2019:12). This means that livelihood perspectives offer indications of vulnerabilities which constrain women's options at ever-widening scales, and offer insights about effective policy approaches, as well as strategies available to women themselves (Dankelman et al. 2008).

This chapter explores livelihood and care implications of the climate crisis from a gendered viewpoint that includes the implications of this approach for climate decision-making at multiple scales, from local to global. We focus on grassroots political organizing, activism, and movements as well as women's community-based actions to (re)build social resilience in the face of climate chaos. We discuss challenges and policy implications as governments struggle to meaningfully and equitably address climate change. We also highlight the transformational imperatives of care and livelihood priorities which cast into stark relief the unsustainability of the long-established gender inequities that serve as the foundation for economic systems everywhere.

In this paper, we refer to "women's livelihood perspectives," which simply means starting with women's daily lives and basic survival strategies to understand how climate change is affecting them and what they can do about it. We recognize that there is no one "livelihood perspective" because contexts, women and livelihoods are dynamic and diverse. This framing is different from other uses of the term "livelihoods" in development and gender literatures. These include the "sustainable livelihood approach," which "evolved within the context of … intentional development… by which development practitioners were seeking to maximise the effectiveness of their interventions to help the disadvantaged" (Morse and McNamara 2013:17). The "sustainable livelihood approach" is discussed and critiqued in a substantial

literature, as "an analysis of peoples' current livelihood and what is needed for an 'enhancement' … useful in avoiding the inappropriate interventions critiqued by the post-developmentalists" (Morse and McNamara 2013:18; see also Elasha et al. 2005). Its original neglect of power relations, and subsequent attempts to include how power affects livelihood enhancements, have led more recently to research focused on meta-analyses of livelihood studies (De Haan 2012; see also Quandt 2018). The recent turn to the "everyday" in political science and political ecology acknowledges the importance of formerly-unrecognized work, care, activism and consumption, whose invisibility is directly tied to patriarchy (Elias and Roberts 2016; Saave et al. 2020).

Another rich, growing literature uses various forms of livelihood approaches to assess climate change impacts in many specific contexts (see, for example, Mersha et al. 2016, Hahn et al. 2009, Panthi et al. 2016, Antwi-Agyeh et al. 2017, Alhassan et al. 2019, Shah et al. 2013, Below et al. 2012, Adzawla et al. 2019, Ravera et al. 2016, Tanner et al. 2014). Our use of the phrase "women's livelihood perspectives" is close to the "subsistence perspective" advanced by Maria Mies and Veronika Bennholdt-Thomsen, which they define as a "'perspective from below,' from what is necessary…, (including) everyday life and its politics, the strategies of women to keep life going, … (based in their) control over means of subsistence, …. dignity, ….. (understanding that) what is good for the village women should be good for the whole society, … (and that this is) equally valid for the so-called developed countries and classes" (Mies and Bennholdt-Thomsen 2000:3-4; see also Mies 2014).

The global climate crisis emphasizes this sense of urgency and shared livelihoods. New research is demonstrating that women's vital but unpaid work in the home and in communities to create, educate, socialize, feed, and care for the labour force so it can undertake economic activity, and which also sustains economies in many other ways (O'Hara 1995, 1997), involves worker-related carbon emissions just like other forms of production. Those emissions, which are much higher in developed countries because of the carbon-intensity of lifestyles and work-saving household technologies, must be addressed as part of the energy transition to low-carbon energy sources (Horen Greenford et al. 2020; see also Saave et al. 2020). Ignoring women's work simply because it is unpaid both perpetuates gender injustice and hides important tools for addressing climate change. Global equity and development require that women have access to energy sources to reduce household drudgery such as for water provision, laundry, and clean cooking, and these technologies should be prioritized alongside others that contribute to economic livelihoods in factories, transportation, and infrastructure -- but as long as women's work is viewed as "free", this priority may be invisible and ignored. Moreover, home-based energy conservation practices (such as installing LED lights, turning off lights when not in use, and using heavy appliances on evenings and weekends) in effect shift the responsibility for maintaining a healthy atmosphere from industries (costed) onto households (uncosted) where in some cases this work may be done "for free" by women, similar to how recycling enrolls households in work formerly done by industries (Thoyre 2020; see also Johnson et al. 2020). The resulting increases in the "gender-climate gap" signal that equity-enhancing climate policies, and the knowledge and data (including input from women) required to develop them, are crucial to tap into the synergies between development

imperatives, social equity, trust, and enhanced climate action (See Rojas et al. 2016). Such complexities and possibilities can only be revealed using livelihood and care perspectives.

The gendered realities of their working lives generally give women special insights, grounded in their lived experience, about effective ways to prioritize and structure climate risk reduction initiatives. Since women are on the front lines of climate impacts, their perspectives are vital for efficient, equitable, and informed climate policy (Lieu et al. 2020). Otherwise, grassroots action to protect livelihoods for all in the face of climate change inevitably takes precedence, sidelining or counteracting government policy. In any case, the actions women are taking in households, communities, jurisdictions at all scales and global networks are greatly affecting carbon emissions and the energy transition, as part of the changes in societies, social norms, governance systems and methods of providing care, food, shelter, clothing, skills transmission, and cultural cohesion as the world faces the climate crisis.

In the next section of this chapter, we discuss how women all over the world, in various ways, are putting their livelihood perspectives to use in climate change organizing, action and (where possible) policy development as part of the energy transition. The third section provides a range of examples from around the world of women's climate agency and its areas of focus – including community-based education and networking, citizen science for better data collection on the climate crisis, youth movements, and commoning -- re/creating and organizing shared-use, jointly-owned resources and initiatives for community resilience (Fournier 2013; Federici 2019). We draw some lessons on the characteristics, challenges, and climate policy implications of livelihood and care perspectives in the chapter's concluding section.

II. Women's organizing and participation drive climate change activism and emissions reductions

Probably because of their lived experiences and commitment to address the kinds of differential impacts noted above, women have long been leaders in environmental movements and activism (Perkins 2013; Mellor 1997). Women are more likely than men to be environmental and climate activists (Stein 2004, McCright and Xiao 2014, Whyte 2014, Wickramasinghe 2015, Pearse 2017, Vinyeta et al. 2016, Dankelman and Jansen 2010, Black 2016). Women, and marginalized people in general, place a stronger priority on addressing climate change than other groups, and are more likely to take personal and political climate action (Godfrey and Torres 2016, Crawford 2019, Bryan et al. 2018, Resurrección 2013, Glemarec et al. 2016, Nagel 2015: 166–182; Perkins 2017b). Environmental and climate justice activists often use organizing techniques developed by the feminist movement, such as consciousness-raising, grounded theory, and contextual reasoning, which result from starting with women's lived experiences rather than political abstractions (Weiss 2012). When climate change is seen as a scientific problem, to be solved using technical methods, this excludes and marginalizes women's contributions (Gaard 2015), but intersectional organizing counters this technocratic approach to climate change through grassroots climate justice activism.

Engagement with environmental and climate justice activism also helps women deepen their understanding of, and confront, the wider gendered economic and political constraints they face, which can lead to activism for broader change towards more social justice (Weiss 2012; see also Perkins 2018; Sangita 2016). The global climate justice movement is organized as a decentralized polycentric network of semiautonomous, coordinated units, allowing it to simultaneously influence multiple sites of environmental governance from the local to the global (Tormos-Aponte and García-López 2018).

Carbon emissions per capita are lower in countries where women have more political voice (Ergas and York 2012, Mavisakalyan and Tarvedi 2019). Men's lower rates of environmental concern and activism, on average, are often understood as being linked to their relative social position and sense of invulnerability (Nagel 2015: 168; Goldsmith et al. 2013: 161). Thus, increasing political equity for women is a climate-friendly step as well as an advance on moral, ethical and human rights grounds.

III. Women's collective activism prioritizes climate change from livelihoods and care perspectives

Irene Dankelman, one of the earliest gender and climate researcher-activists, summarizes the reasons for women's engagement in climate activism as follows: "Women play a key role in protecting, managing and recovering their household and assets during a disaster. They have been strong advocates for preparedness measures at the community level because they understand what disaster means to the day-to-day realities of life (Dankelman et al. 2008: 61)." Dankelman further notes women's capacities in strengthening preparedness and adaptation to the changing nature of disasters. Women have not only the knowledge for developing innovative strategies to address climate change impacts but are also resourceful community mobilizers in disaster response. Most women demonstrate diverse adaptation and coping strategies and mechanisms, including moving to safer places, saving their assets, adopting strict dietary adaptations, energy-saving, adapting agricultural practices, earning income from alternative sources, alternative health care, organization, and collective action. Indeed, women have shown and continue to show a clear sense of the capacities needed to adapt to climate change.

We have gathered some examples of how livelihoods and care perspectives are expressed collectively through women's activism to address climate change. They are organized into sections on community-based education and networking, citizen science and data collection, youth movements, and commoning. There are many more examples and categories discussed elsewhere in the literature which could have been cited; we have organized this discussion around four categories which demonstrate priorities for action as well as women's political agency in climate decision-making.

a. Community-based education and networking

Women tend to rely on “bonding” forms of social capital, including informal connections to family, relatives, and friends, rather than “bridging” and “linking” social capital as men are more likely to do (Perez et al. 2015:101). Throughout Africa and in many parts of Asia and Latin America, women’s collaborative and reciprocal sharing of work, food, fuel, childcare, and community celebrations is the norm. Collective sharing and assistance through micro-lending credit pools, schools, seed-sharing, labour pools, insurance, and international links via diaspora communities aid resilience for individuals and communities in preparing for, adapting to, and recovering from climate-induced crises (Perez et al. 2015).

In the case of women’s community-building roles and social trust, data from the European Bank for Reconstruction and Development’s Life in Transition Survey, which includes detailed interviews about people’s life circumstances, shows that women are more likely than men to take personal action to help fight climate change, especially when they are married and thus more likely to be responsible for household management, child and elder care, and purchasing decisions. Social dilemmas and social trust play a critical role for women’s personal engagement in pro-environmental behaviours irrespective of the burden. Strengthening social trust – resulting in strong community cohesion -- was found to be as important as environmental policies in shaping women’s environmental behaviours, even when these were time-consuming (Gür 2020).

In the Sahelian country of Mali, firewood and charcoal production, which is an important source of income for many women, causes environmental degradation by intensifying deforestation, soil erosion, and exposure to flooding. Sinsibere Cooperative, a women’s grassroots organization in the villages of Bougoula, Sanankoroba and Dialakoroba, works to counteract this and bring a win-win benefit for women’s livelihoods and the environment. The cooperative educates members on tree-planting and provides training and microfinance support for developing alternative sources of incomes from shea butter production, soap making, and vegetable gardening. The program has benefitted over 600 women and about 80 percent have stopped or significantly reduced firewood extraction (UNISDR 2008; Alam et al. 2008; Wenden 2011; Sinsibere 2013).

Another example of women’s community-based organizing with positive climate impacts is the Alianza Internacional de Reforestación (AIRES), a non-governmental organization based in Iztapa, Guatemala, founded out of concern with deforestation. For more than 20 years, AIRES has relied on the support of Indigenous Maya women and forestry professionals to implement afforestation programs to fight erosion and other environmental hazards. Through the partnership, the Indigenous women have planted millions of trees on previously deforested mountain slopes to prevent deadly mudslides. AIRES provides these women, who are mainly smallscale farmers, with the seeds and tools to implement and maintain the reforestation activities.

Although women in Mali and those from Maya communities in Guatemala have key roles to cater for their families’ needs, their decisions to plant trees and reduce firewood-cutting illustrate their concerns to protect ecological resources they depend on for their livelihoods.

This also indicates the many contributions community members can make to sequester carbon and mitigate the threats of climate change (Hallum-Montes 2009; UNFCCC 2014; Alam et al. 2015).Overcoming climate change problems related to livelihoods also involves championing environmentally sustainable sources of income, and upgrading and ensuring that energy for household cooking and lighting is efficient. In southern Kenya, women are taking leading roles in reducing the use of kerosene lanterns through an initiative launched by the Maasai Wilderness Conservation Trust (MWCT) and the organization New Course. Women's groups receive solar lanterns and put half the money saved in kerosene costs into funding for their own collective enterprises (MWCT 2015; Multer 2016). Another network of women across Tanzania, Uganda, and Nigeria known as Solar Sisters is bringing clean energy, including environmentally efficient cooking stoves and lights to off-grid communities. The network currently consists of about 4,565 women entrepreneurs reaching out to about 2 million people (Solar Sister 2020). Solar sisters recruit, train, and support new entrepreneurs in marketing durable, affordable solar-powered household items. Entrepreneurs earn income selling environmentally sustainable products at affordable prices directly to community members. These two women-led solar entrepreneurship initiatives enable poor families to gain economic and financial stability, in addition to the broader benefits to the environment. Households' use of renewable and sustainable sources of energy contributes to reduce carbon emissions (Alam et al. 2015; Heuër 2017; Bechtel 2017). Nonetheless, the reach of such initiatives is still relatively low, and thus partnership with environmental financing agencies is necessary to scale up these win-win climate mitigation and adaptation approaches.

b. Citizen science and data collection

Governments often do not collect the kind of data that is most useful to document who is being harmed by climate crises, how they are acting in response, and who they rely on for assistance (and therefore how a climate resilience strategy should be designed). In particular, the benefits of the kinds of multi-tasking that women are often experts in, for providing basic community necessities of food, shelter, water/sanitation, care and education with low levels of fuel/energy and material energy inputs, often elude government data-gathering mechanisms which may be stuck in sectoral silos, blind to the value of skills transmission, care and/or social reciprocity, and unwilling to recognize unpaid work.

During the COVID crisis, Dr. Nancy Folbre of the University of Massachusetts, an expert on unpaid carework, invited international participants in webinars organized by the International Association for Feminist Economics (IAFFE) to gather 'citizen science' time-use data on how childcare and other household work was being done at home during the shutdown, since government agencies were not collecting this important data (IAFFE 2019). Without time-use data on household activities, care, food processing and overlapping work responsibilities, it is impossible to plan or even understand the constraints on emissions reductions involving such things as materials recycling, composting, reduced food waste, efficient low-polluting cookstoves, solar water heating, rainwater harvesting, energy storage in water tanks, solar lighting and refrigeration, and other techniques that require understanding and work by users. By collecting and documenting the various data on household activities in times of the

pandemic-induced shutdown, Dr. Folbre, an expert on unpaid economic contributions and their limits, is harnessing the opportunity to provide governments with evidence for policymaking and planning.

When women play a leadership role in early warning systems and reconstruction, this aids community disaster outcomes. Women tend to share information related to community well-being, choose less polluting energy sources, and adapt more easily to environmental changes when their family's survival is at stake. During Hurricane Mitch in 1998, for example, women trained in early warning disaster reduction made a big difference in La Masica, a village in Honduras that, unlike nearby communities, reported no deaths during Hurricane Mitch in 1998. Prior to the disaster, La Masica received gender-sensitive disaster preparedness education on early warning systems and hazard management through a programme implemented by the Central America Disaster Preparedness Agency. The training focused on gender-disaggregated vulnerability analysis and capacity-building activities, and compelled women to take active roles over the abandoned and previously men-held task of continuously monitoring the early warning system. The women's roles in disseminating early warning information facilitated the municipality's ability to evacuate the area promptly when Hurricane Mitch struck. Integrating gender perspectives in the design and implementation of policies and programmes also helps curtail the gender-differentiated impacts of environmental degradation – shortage of water, deforestation, desertification – which are exacerbated by climate change (ILO 2008: 3).

South African water activist Ferrial Adam, working with the Johannesburg-based Co-Operative and Policy Alternative Centre (COPAC), trains local women's organizations to use "people's science" to generate new scientific data to help reclaim water commons and protect community livelihoods in times of climate change. The Anti-Privatisation Forum (APF) also in Johannesburg, South Africa, challenged private firms which had been put in charge of water management, calling for water to be recognized as a public good. The APF used various approaches including mobilization, education, and mass struggles to reclaim human and constitutional rights to water. One of their grassroots campaigns, Operation Vulamanzi ("water for all"), saw communities take control over systems that had been forced on them such as trickler systems, re-routed water piping and pre-paid meters, to gain access to water supplies. The campaign changed water governance in Johannesburg: it forced the ANC government to implement a partial free water policy in late 2002; and contributed to both the failure and re-negotiation of many South African water privatisation projects (Adam 2017).

Women may be less familiar than men with scientific terminology and technical / policy approaches although their contributions to environmental activism, as presented in the case studies, are invaluable. One possible way to strengthen women's active role, inclusion, and continuous recognition in policy processes is to start with discussions on personal experiences relating to health, environment, climate, and collective responses in livelihoods-orientated community-based data collection and organizing . Although there is a likely peril of self-exclusion, especially for busy women in developing countries, continuous support from government to strengthen women's agency and ownership of the policy discussions is an

important way to overcome these potential challenges (Gasior Altman et al. 2008; see also Perkins and Walker 2015).

Community-based data collection via "citizen science" allows women to specify and share knowledge that is fundamental for inclusive climate action, thus integrating their lived experience in how climate change is addressed, beginning at the household and local levels.

c. Youth movements

Youth climate movements founded and led by young women include School Strike for the Climate / Global Climate Strike (Global Climate Strike 2020), Fridays for Future (Fridays for Future 2020), Mother Earth Project and Parachutes for the Planet (Mother Earth Project 2020), and many others worldwide (Nevett 2020; Parker 2020; Kaplan 2019; UN Women 2020). As the motivation for their activism, young women cite home and community concerns related to consumption and transportation choices, environmental damage in local communities, food security and health – in other words, livelihood issues.

Fridays For Future, a Swedish-based movement, for example, was born out of strikes by Greta Thunberg and other young people who took their frustrations to the front of the Swedish parliament every school day for three weeks in August 2018. The young activists demand for political actions to fasten the transition away from fossil fuel-based economy and lifestyles, and has become a global movement of school students, particularly from the majority world countries, including the UK and Australia, who take time off from class on Fridays to participate in these demonstrations (Fridays for Future 2020). While the activities of these young people have attracted the attention and support of many parents, teachers, and adult groups, Conservative politicians have described the strikes as truancy and punished students for joining such calls for action. Nevertheless, these young people, like many other strikers, bring solidarity in the fight against climate change. The Global Climate strikers who captivated the world in September 2019 are still connecting, organizing, and reaching out to new strikers online to increase awareness on the need for action on climate change. Since climate discussions have long been the preserve of adults and bureaucrats, the activities of young activists represent a paradigm change.

While youth activism, especially by girls, is not new and is complicated and contested, global networks of youth activists show "resilience… in rising against patriarchy and intersecting oppressions with fervor and urgency, particularly when exercised communally and collaboratively" (Vanner and Dugal 2020:xii; see also Budgeon 2001). Climate activists who are young women have become widely recognizable; they have become celebrated cultural figures "through a potent combination of hopefulness, harmlessness, and heroism" (Taft, 2020:13). As Greta Thunberg was quoted as saying, 'Oh you children, you young people are the hope. You will save the world,'….. I think it would be helpful if you could help us just a little bit" (Sengupta 2019, quoted in Taft 2020:13). Young women's climate activism is global, and includes movements led by young women of colour in Uganda, Brazil, New Zealand, Fiji, Samoa, the

Philippines, Kenya, Nigeria, and India as well as Canada, Germany, and the United States (Amnesty International UK 2020; Global Citizen 2019).

Young Indigenous women are at the forefront of many climate and environmental justice movements, calling attention to the essentiality of water, land and care for human survival and the importance of Indigenous wisdom regarding these relationships (Whyte 2014, Vinyeta et al. 2016, Konsmo and Pacheco 2016). Indigenous women are respected and effective leaders of networked environmental and climate struggles worldwide (Nixon 2015; Gorecki 2014; Giacomini 2016; Acha 2017; Whyte 2018; Manuel 2015:211; Thomas-Muller 2014).

Young women's leadership highlights inter-generational justice as a complement to intra-generational justice, the traditional focus of climate justice movements. This is part of "a growing movement of community-scale demands for accountability and action, particularly at the local level" (Cretney and Nissen 2019). When male leaders and voters don't care or act to improve environmental protection, the resulting delays in developing and implementing effective climate change policies increase the intensity and impacts of climate change, which fall more heavily on women, in part because they tend to live longer – an intergenerational injustice feedback loop. This cycle of youth and age, care and interpersonal empathy, is also central to women's livelihood struggles worldwide.

d. Commoning

Commoning means building and preserving means of sharing livelihood necessities (e.g. land, food, water, care, skills, work) as a communal approach to protecting collective social values as well as material and ecological resilience (Mies and Bennholdt-Thomsen 2001). For women, this can mean the difference between life and death in times of crisis; "Women have less access than men to common property resources" (Perez et al. 2015:95).

Many kinds of commons are being (re)developed and protected worldwide, through women's partnerships and global solidarity, to help address the challenges of climate change at the local/urban level (Perkins 2017a; Röhr et al. 2008; Alber et al. 2017; Röhr et al. 2010; Ostrom 2014). These initiatives and models include equitable local-economy institutions, cooperatives and land trusts, community gardens and food programmes, childcare and elder care cooperatives, support for victims of gender-based violence, water-harvesting schemes, community shelters, agroforestry projects, and many other collective livelihood and care initiatives, appropriately adapted for local socio-ecological conditions (Kaufman 2012; Gibson-Graham 2006; Klein 2014). All bring people together to build community resilience in the face of climate change while developing the skills and relationships necessary for equitable and sustainable commons governance.

In Kenya, where firewood is used to meet three-quarters of household energy needs, the Greenbelt Movement started by Wangari Maathai in 1977 under the auspices of the National Council of Women of Kenya has organized women to plant more than 20 million trees throughout Africa. In the process, they have strengthened their claims to the land, learned and

used business strategies and traditional ecological knowledge, built food sovereignty, and expressed their political agency and resolve to heal environmental damage collectively (Brownhill 2007).

La Via Campesina and It Takes Roots climate activists, building on years of experience in women's feminist struggles, understand their movement as part of "the transition from life-denying capitalism to a life-affirming, postcapitalist commons …. defending life by strengthening commons systems including, centrally, Indigenous people's long-established political economies and cultures" (Giacomini 2020:195-196). Since commons have always allowed marginalized people to survive through mutual aid, care and food provision (Federici 2019, Shenaz Hossain 2018, the climate crisis is activating long-held social traditions and growing global commons networks (Leroy 2017) which also help to spread information and foster commons development at community and local scales.

IV. Conclusion: Bottom-up climate action led by women draws strength from its focus on livelihoods and care

We started this chapter by advancing the idea that adopting livelihood and care perspectives could be a way to 'bring women in' to decision-making processes that affect climate change mitigation and adaptation. But the examples cited above show that in fact, livelihood perspectives are already central to climate decision-making.

Seen from the vantage-point of everyday life (the kitchen table), decisions about food, clothing, shelter, transport to work or school, energy for cooking and perhaps space heating, water provision and care are the crux of basic human needs which access to energy makes manageable – shaped by the infrastructures each society has built. From this vantage-point, it is clear that livelihood necessities are fundamental, and much higher priority than alternate, wasteful uses of energy such as air travel, luxury consumption, or rapid-turnover resource use.

Around the kitchen table, discussions about climate change, its causes and impacts, have a rationale that is incontrovertible. If this kitchen-table rationale should come into conflict with a very different policy-table view -- for example that rights to consume energy and emit carbon should be allocated according to wealth, rather than for livelihood necessities -- this would probably not bode well for the policy-table approach. There are, after all, many more kitchen tables than policy tables.

Attempts to bring gendered livelihood and care perspectives into formal, top-down policy processes have a long and fraught history. In patriarchal societies and economies which depend on women's exploitation, this is no surprise. The COVID pandemic – showing the grim toll society pays for undercutting and underpaying for care, and the unjust burden this places on women and marginalized communities -- has heightened awareness of the threat this poses for everyone (McLaren et al. 2020, Wenham et al. 2020, Priola and Pecis 2020). Government expenditures to restart economies reeling from the pandemic could address both climate

mitigation and adaptation / community resilience by focusing on care, social services, renewable distributed energy access, and provision of energy efficient housing, transport and food security for all (Di Chiro 2019, van den Berg et al. 2020, Loske 2020).

Requiring that women be fairly represented even just as participants in government-initiated climate interventions, through gender quotas, improves not just the interventions' equity outcomes but also their effectiveness more broadly (Cook et al. 2020).

The International Labour Organization has stated that for women to be able to assume a fair share of the jobs and responsibilities connected with global climate change, the following elements must be in place for them:

- access to education, training and upgrading
- access to and control over productive resources including access to land and ownership rights
- access to markets (land, labour, financial and product markets)
- access to services
- benefits from the use of public funds, particularly for infrastructure, and access to public goods
- means of enforcing claims for unpaid/reproductive work and redistribution/remuneration for such work
- the possibility of generating income from the use of their own labour (Bäthge 2010: 7; see also ILO 2016)

But can women's livelihood and care perspectives be included in climate policy decision-making itself? The "add women and stir" approach, of getting some women to sit at the policy table, is notably unpromising. Women's token participation, in fact, may solidify power in the hands of those who hold it; communication and governance processes must themselves be critically examined and changed if they are to integrate bottom-up, community-driven priorities (Roncoli et al. 2010, Kythreotis 2019).

If governments truly aim to include women's livelihood and care perspectives more fully in climate policy decision-making, there are three important first steps:

1) **Obtain good data** on women's economic contributions and climate-related work. This means recognizing that much of this work is unpaid, informal and/or carried out in synergistic, overlapping ways rather than easily-quantifiable 'jobs'. It also requires inviting and paying women to help develop ways of measuring and valuing this work, and believing and disseminating the resulting statistics in policy circles rather than burying them.
2) **Use that data** for policy development to facilitate women's synergistic contributions to care, livelihoods and climate mitigation / adaptation, again by consulting with women who are experts in these areas and listening to their advice, in equitable contexts that ensure power-sharing, support, security and respect for their contributions.

3) **Open the doors** for women's participation at all levels of governance, from basic voting rights to grassroots, neighbourhood and community decision-making to regional, national and global positions of leadership. This requires equitable education access, mentorship, and structural changes in work regimes that make it possible for women to flourish.

Fortunately, as described in the examples above, initiatives grounded in women's livelihoods perspectives are already underway everywhere, effectively addressing the climate crisis in multiple appropriate and creative ways.

REFERENCES

Acha, Maria Alejandra Rodriguez (2017). "We have to Wake up, humankind! Women's struggles for survival and climate and environmental justice." *Development* 60, pp. 32-39.

Adam, Ferrial (2017). *Building People's Power for Water Sovereignty: An Activist Guide*. Johannesburg: COPAC. http://www.safsc.org.za/wp-content/uploads/2017/11/Water-Guide-Final-Web_colour.pdf

Adzawla, Willian, S.B. Azumah, P.Y. Anani, and S.A. Donkoh (2019)."Gender perspectives of climate change adaptation in two selected districts of Ghana." Heliyon 5:11, e02854.

Alam, Mayesha, R. Bhatia, and B. Mawby (2015). *Women and Climate Change: Impact and Agency in Human Rights, Security, and Economic Development*. Georgetown Institute for Women, Peace and Security. https://giwps.georgetown.edu/resource/women-and-climate-change/

Alber, G., K. Cahoon, and U. Röhr (2017). "Gender and urban climate change policy: tackling cross-cutting issues towards equitable, sustainable cities." In S. Buckingham and V. Le Masson (eds.), *Understanding Climate Change Through Gender Relations* (Oxon / New York: Routledge), pp. 64-86.

Alhassan, Suhiyini I., J.K.M. Kuwornu, and Y.B. Osei-Asare (2019). "Gender dimension of vulnerability to climate change and variability: empirical evidence of smallholder farming households in Ghana." *International Journal of Climate Change Strategies and Management* 11:2, pp. 195-214.

Almeida, Ildeberto M., J.M.J. Filho, and R.A.G. Vilela (2019). Reasons for investigating the organizational dynamics of the Vale tailings dam disaster in Brumadinho, Minas Gerais State, Brazil. *Cadernos de Saúde Pública* 35:4, May 2. https://www.scielo.br/scielo.php?pid=S0102-311X2019000400301&script=sci_arttext&tlng=en

Amnesty International UK (2020). "Five young women of colour fighting climate change worldwide." https://www.amnesty.org.uk/climate/five-women-colour-fighting-climate-change-worldwide.

Antwi-Agyeh, Philip, C.H. Quinn, S.G.K. Adiku, S.N.A. Codjoe, A.J. Dougill, R. Lamboll, and D.B.K. Dovie (2017). "Perceived stressors of climate vulnerability across scales in the Savannah zone of Ghana: a participatory approach*." Regional Environmental Change* 17, pp. 213-227.

Bechtel, Jamie (2015). "What Every Environmentalist Needs to Know About Time Security," The Huffington Post, Aug. 7, 2015. http://www.huffingtonpost.com/jamie-bechtel/what-every-environmentalist-needs-to-know-about-time-security_b_7951920.html.

Below, Till B., K.D. Mutabazi, D. Kirschke, C. Franke, S. Sieber, R. Siebert, and K. Tscherning (2012). "Can farmers' adaptation to climate change be explained by socio-economic household-level variables?" *Global Environmental Change* 22:1, pp. 223-235.

Black, T., (2016). "Race, gender, and climate injustice: Dimensions of social and environmental inequality." In: P. Godfrey and D. Torres, eds. *Systemic Crises of Global Climate Change: Intersections of Race, Class and Gender* (New York: Routledge), pp. 172–184.

Brownhill, Leigh (2007). "Gendered struggles for the commons: food sovereignty, tree-planting and climate change." *Women and Environments International Magazine*, special issue on Women and Global Climate Change, No. 74/75, pp. 34-37.

Bryan, Elizabeth, Claudia Ringler, B.O Okoba, and C. Roncoli (2018). "Adapting agriculture to climate change in Kenya: household strategies and determinants." *Journal of Environmental Management* 114C, pp. 26-35.

Budgeon, Shelley (2001). "Emergent feminist(?) identities: young women and the practice of micropolitics." The European Journal of Women's Studies 8:1, pp. 7-28.

Cook, Nathan, Tara Grillos and K.P. Andersson (2020). "Gender quotas increase the equality and effectiveness of climate policy interventions." *Nature Climate Change* 9, pp. 330-334.

Crawford, Neta C., (2019) *Pentagon Fuel Use, Climate Change, and the Costs of War*. Brown University: Watson Institute of International and Public Affairs. https://watson.brown.edu/costsofwar/files/cow/imce/papers/Pentagon%20Fuel%20Use%2C%20Climate%20Change%20and%20the%20Costs%20of%20War%20Revised%20November%202019%20Crawford.pdf

Cretney, Raven and Sylvia Nissen (2019). "Climate politics ten years from Copenhagen: activism, emergencies, and possibilities." *Women Talking Politics: A research magazine of the New Zealand Political Studies Association*, November, pp. 15-19.

Dankelman, Irene and W.H.M. Jansen (2010). "Gender, environment and climate change: understanding the linkages." In Irene Dankelman (ed.), *Gender and Climate Change: An Introduction* (London: Routledge), pp. 21-54.

Dankelman, Irene, K. Alam, W. B. Ahmed, Y.D. Geyey, N. Fatema, and R. Mensah-Kutin (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal.* Women's Environment and Deelopment Organization (WEDO) with ABANTU for Development

in Ghana, ActionAid Bangladesh and ENDA in Senegal. https://repository.ubn.ru.nl/bitstream/handle/2066/72456/72456.pdf

De Haan, Leo (2012). "The Livelihood Approach: A Critical Exploration," *Erdkunde* 66:4, pp. 345-357.

Di Chiro, Giovanna (2019). "Care not Growth: Imagining a subsistence economy for all." *British Journal of Politics and International Relations* 21(2), pp. 303-311.

Elasha, Balgis Osman, NG. Elhassan, H. Ahmed, and S. Zakieldin (2005). *Sustainable Livelihood approach for assessing community resilience to climate change: case studies from Sudan*. AIACC Working Paper No. 17. https://citeseerx-ist-psu-edu.ezproxy.library.yorku.ca/viewdoc/download?doi=10.1.1.616.2622&rep=rep1&type=pdf

Elias, Juanita and Adrienne Roberts (2016). "Feminist Global Political Economies of the Everyday: From Bananas to Bingo." *Globalizations* vol. 13 iss. 6, Pages 787-800.

Ergas, Christina and Richard York (2012) "Women's status and carbon dioxide emissions: a quantitative cross-national analysis." *Social Science Research* 41:4, pp. 965-976.

Federici, Sylvia (2019). *Re-enchanting the world: feminism and the politics of the commons*. Oakland, CA: PM Press.

Flatø, Martin, Raya Muttarak, and André Pelser (2017). "Women, weather, and woes: the triangular dynamics of female-headed households, economic vulnerability, and climate variability in South Africa." *World Development* 90, February, pp. 41-62.

Fondation Yves Rocher (2015). "Tuuli Kaskinen & Johanna Togola, 1e prix Finlande 2010 [Sinsibere]," http://www.yves-rocher-fondation.org/fr/fr/terre_de_femmes/les_laureates/details/6262/.

Fournier, Valérie (2013). "Commoning: on the social organisation of the commons." *M@n@gement* 4(16), pp. 433-453.

Fridays for Future (2020). https://fridaysforfuture.org/

Gaard, Greta (2015). "Ecofeminism and climate change." *Women's Studies International Forum* 49, pp. 20-33.

Gasior-Altman, Rebecca, R. Morello-Frosch, J. Green Brody, R. Rudel, P. Brown, and M. Averick (2008). "Pollution comes home and gets personal: Women's experience of household chemical exposure," *Journal of Health and Social Behaviour* 49:4, pp. 417-435.

Giacomini, Terran (2016). "Ecofeminism and system change: women on the frontlines of struggle against fossil capitalism and for the solar commons." *Canadian Woman Studies* 31:1-2, pp. 95-100.

Giacomini, Terran (2020). "An ecofeminist perspective on the just transition from capitalism to commons," in Brian Tokar and Tamra Gilbertson (eds.), *Climate Justice and Community Renewal: Resistance and Grassroots Solutions* (London / New York: Routledge), pp. 194-205.

Gibson-Graham, J.K. (2006). *A Postcapitalist Politics*. Minneapolis: University of Minnesota Press.

Glemarec, Yannick, Fiona Bayat-Renoux, and Oliver Waissbein (2016). "Removing barriers to women entrepreneurs' engagement in decentralized sustainable energy solutions for the poor." *AIMS Energy* 4:1, pp. 136-172.

Global Citizen (2019). "12 Female Climate Activists who are Saving the Planet". https://www.globalcitizen.org/en/content/female-activists-saving-planet/

Global Climate Strike (2020). https://globalclimatestrike.net/

Godfrey, P. and Torres, D., eds. (2016). *Systemic Crises of Global Climate Change: Intersections of Race, Class and Gender* (New York: Routledge).

Goodrich, Chanda Gurung, Pranita Bhushan Udas, and Harriet Larrington-Spencer (2019). "Conceptualizing gendered vulnerability to cliate change in the Hindu Kush Himalaya: Contextual conditions and drivers of change," *Environmental Development* 31, September, pp. 9-18.

Gür, Nurullah (2020). "Does social trust promote behaviour aimed at mitigating climate change?" *Economic Affairs* 40:1, pp. 36-49.

Hahn, Micha B., A.M. Riederer, and S.O. Foster (2009). "The Livelihood Vulnerability Index: a pragmatic approach to assessing risks from climate variability and change – a case study in Mozambique." *Global Environmental Change* 19:1, pp. 74-88.

Hallum-Montes, R. (2009). Agricultural development, environmental degradation, and women's work in highland Guatemala. *The Latin Americanist*, *53*:2, pp. 5-28.

Heuër, A. (2017). Women-to-women entrepreneurial energy networks: A pathway to green energy uptake at the base of pyramid. *Sustainable Energy Technologies and Assessments*, *22*, 116-123.

Horen Greenford, Daniel, T. Crownshaw, C. Lesk, K. Stadler, and H.D. Matthews (2020). "Shifting economic activity to services has limited potential to reduce global environmental impacts due to the household consumption of labour," *Environmental Research Letters.*

https://www.academia.edu/42973203/Collaborative_Feminist_Degrowth_Pandemic_as_an_Opening_for_a_Care-Full_Radical_Transformation

IAFFE (2020). *Feminist Economics Perspectives on COVID-19*, recorded webinar, April 15. International Association for Feminist Economics. https://mailchi.mp/28a34cf496b4/iaffepresents-covid-1901

ILO (2008). *Green jobs: improving the climate for gender equality too!* International Labour Organization.http://www.ilo.org/wcmsp5/groups/public/@dgreports/@gender/documents/publication/wcms_101505.pdf

ISDR (2008) *Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation*. United Nations International Strategy for Disaster Reduction.

https://www.un.org/waterforlifedecade/pdf/2008_isdr_gender_perspectives_disaster_risk_reduction_cc_eng.pdf

Jafry, Tahseen, ed. (2019). *Routledge Handbook of Climate Justice*. (London /New York: Routledge).

Johnson, Oliver W., J. Y. Han, A.-L. Knight, S. Mortensen, M.T. Aung, M. Boyland, and B.P Resurrección (2020). *Assessing the gender and social equity dimensions of energy transitions* (Stockholm: Stockholm Environment Institute).

Kaplan, Sarah (2019). "Teen girls are leading the climate strikes and helping change the face of environmentalism." *The Washington Post*, September 24.

Kaufman, Cynthia (2012). *Getting past capitalism: history, vision, hope*. Lanham, MD: Lexington Books.

Klein, Naomi (2014). *This Changes Everything: Capitalism vs. the Climate*. New York: Simone and Schuster.

Konsmo, Erin M. and Kahea Pacheco (2016). *Violence on the Land, Violence on our Bodies*. Native Youth Sexual Health Network / Women's Earth Alliance. http://www.nativeyouthsexualhealth.com/weanyshnpartnership.pdf

Kythreotis, Andrew P., C. Mantka-Pringle, T.G. Mercer, L.E. Whitmarch, A. Corner, J. Paavola, C. Chambers, B.A. Miller and N. Castree (2019). "Citizen social science for more integrative and effective climate action: a science-policy perspective." Frontiers in Environmmental Science, 5 February. https://doi.org/10.3389/fenvs.2019.00010

Leroy, Jean-Pierre (2017). "Markets or the Commons? The role of indigenous peoples, traditional communities and sectors of the peasantry in the environmental crisis." In Liz-Rejane Issberner and Philippe Léna (eds.), *Brazil in the Anthropocene: conflicts between predatory development and environmental policies* (London / New York: Routledge), ch. 5, pp.

Lieu, Jenny, A.H. Sorman, O.W. Johnson, L.D. Virla, and B.P. Resurrección (2020). "Three sides to every story: Gender perspectives in energy transition pathways in Canada, Kenya and Spain." *Energy Research and Social Science* 68, 101550.

Loske, Reinhard (2020). "Re-embedding the economy in nature and society." CUSANUS Working Papers No. 62. https://www.econstor.eu/bitstream/10419/222291/1/1713956764.pdf

MacGregor, Sherilynn (2017). *Routledge Handbook of Gender and Environment*. (New York / London: Routledge).

Mali Folkecenter (2015). "The gender, energy & environment department," Mali Folkecenter, http://www. malifolkecenter.org/lowersection/Dep2_GEE/dep2_GEE_intro.html; "Sinsibere project," http://www.malifolkecenter.org/lowersection/Dep2_GEE/dep2_GEE_sinsibere. html.

Marshall, Judith (2018). *Tailings dam spills at Mount Polley and Mariana: Chronicles of Disasters Foretold*. Vancouver: Corporate Mapping Project / Canadian Centre for Policy Alternatives. https://www.policyalternatives.ca/tailings-disasters

Marshall, Judith and Daniela Campolino (2020). *Mine Tailings Dam Collapses in Canada and Brazil: Who Cares?* Toronto: Kairos webinar recording, May 29. https://www.kairoscanada.org/may-29-mining-tailings-dam-collapses-in-canada-and-brazil-who-cares

Maso, Tchenna (2017). "Women affected by the dam failure fighting against the power of big business," CIDSE Together for Global Justice, December 15. https://www.cidse.org/2017/12/15/women-affected-by-the-dam-failure-fighting-against-the-power-of-big-business/

Mavisakalyan, Astghik and YasharTarverdi (2019). "Gender and climate change: do female parliamentarians make a difference*?" European Journal of Political Economy* 56:C, pp. 151-164.

McAllister, Shianna (2019). *Speaking with authority: gender and Indigenous politics in the Mount Polley Mine Disaster*. Doctoral thesis, University of Victoria, Canada. https://dspace.library.uvic.ca/handle/1828/11133

McCright, Aaron and Chenyang Xiao (2014). "Gender and environmental concern: insights from recent work and for future research." *Society and Natural Resources* 27:10, pp. 1109-1113.

McLaren, H.J., K.R. Wong, K.N. Nguyen, and K.M. D. Mahamadachchi (2020). "Covid-19 and Women's Triple Burden: Vignettes from Sri Lanka, Malaysia, Vietnam and Australia." *Social Sciences* 9(5), pp. 87. https:// doi.org/10.3390/socsci9050087

Mersha, Azeb Assefa and Frank Van Laerhoven (2016). "A gender approach to understanding the differentiated impact of barriers to adaptation: responses to climate change in rural Ethiopia." *Regional Environmental Change* 16, pp. 1701-1713.

Mies, Maria (2014). "Housewifisation – Globalization – Subsistence-Perspective." In Marcel van der Linden and K.H. Roth (eds.), *Beyond Marx: Theorising the Global Labour Relations of the Twenty-First Century* (Leiden / Boston: Brill), pp. 209-237.

Mies, Maria and Veronika Bennholdt-Thomsen (2000). The Subsistence Perspective: Beyond the Globalised Economy (London / New York / Australia: Zed Books / Spinifex).

Mies, Maria and Veronika Bennholdt-Thomsen (2001). "Defending, reclaiming and reinventing the commons." *Canadian Journal of Development Studies* 22:4, pp. 997-1023.

Morse, Stephen and Nora McNamara (2013). "The theory behind the sustainable livelihood approach." In S. Morse and N. McNamara*, Sustainable Livelihood Approach: a critique of theory and practice* (Dordrecht: Springer), chapter 2, pp. 15-60.

Mother Earth Project (2020). "Mother Earth Project: Activating Sustainability Worldwide". https://motherearthproject.org/

Multer, Joshua (2016) "A little solar light sparks BIG changes for women in Kenya," July 18. https://mpowerd.com/blogs/bright-ideas/new-course-fgc

MWCT (2015). "Conservation Program Update: Luci Lights Initiate Change," Maasai Wilderness Conservation Trust, http://maasaiwilderness.blogspot.com/2015/06/conservation-program-update-luci-lights.html.

Nagel, J. (2015). *Gender and Climate Change: Impacts, Science, and Policy*. (London: Taylor and Francis).

Nevett, Joshua (2020). "The Greta effect? Meet the schoolgirl climate warriors." BBC News, 7 July. https://www.dhushara.com/Biocrisis/19/5/climate%20warrriors.Reduce%20to%20300%20dpi%20average%20quality%20-%20STANDARD%20COMPRESSION.pdf

O'Hara, Sabine (1995). "From Production to Sustainability: Considering the Whole Household**."** *Journal of Consumer Policy* 18(2):111-134. DOI: 10.1007/BF01016508

O'Hara, Sabine (1997). **"**Toward a sustaining production theory." *Ecological Economics* 20(2):141-154. DOI: 10.1016/S0921-8009(96)00024-9

Ostrom, Elinor (2014). "A polycentric approach for coping with climate change." *Annals of Economics and Finance* 15:1, pp. 97-134.

Panthi, Jeeban, S. Aryal, P. Dahal, P. Bhandari, N.Y. Krakauer, and V.P. Pandey (2016). "Livelihood vulnerability approach to assessing climate change impacts on mixed agro-livestock smallholders around the Gandaki River Basin in Nepal*." Regional Environmental Change* 16, pp. 1121-1132.

Parker, Laura (2020). "Greta Thunberg wasn't the first to demand climate action. Meet more young activists." *National Geographic,* March 25.

Pearse, Rebecca (2017). "Gender and climate change." *WIREs Climate Change* 8:2. https://doi-org.ezproxy.library.yorku.ca/10.1002/wcc.451

Perez, C., E.M. Jones, P. Kristjanson, L. Cramer, P.K. Thornton, W. Förch, and D. Barahona (2015). "How resilient are farming households and communities to a changing climate in Africa? A gender-based perspective." *Global Environmental Change* 34, pp. 95-107.

Perkins, P.E. (2017a). "Gender justice and climate justice, building women's economic and political agency through global partnerships." In: S. Buckingham and V. Le Masson (eds.) *Understanding Climate Change Through Gender Relations* (Oxon/New York: Routledge), pp. 45–63.

Perkins, P.E. (2017b). "Canadian Indigenous female leadership and political agency on climate change." In: M.G. Cohen (ed.) *Climate Change and Gender in Rich Countries: Work, Public Policy and Action* (London/New York: Routledge/Earthscan), pp. 283–296.

Perkins, P.E. (2018). "Gender, Climate Justice, Indigenous Leadership and Political Agency in Canada," in Marjorie Griffin Cohen (ed*.), Climate Change and Gender in Rich Countries: Work, Public Policy and Action* (London/New York: Routledge), pp. 282-296.

Perkins, P.E. (2019). "Climate justice, gender, and intersectionality," in Tahseen Jafry (ed.), *Routledge Handbook of Climate Justice* (New York / London: Routledge), pp. 349-358.

Perkins, P.E. and P.F. Walker (2015). "International partnerships of women for sustainable watershed governance in times of climate change," In Stephanie Buechler and Anne-Marie Hanson (eds.), *A Political Ecology of Women, Water and Global Environmental Change* (New York / London: Routledge), pp. 118-140.

Priola, Vincenza and Lara Pecis (2020). "Missing voices: the absence of women from Italy's Covid-19 pandemic response." *Gender in Management*. https://doi-org.ezproxy.library.yorku.ca/10.1108/GM-07-2020-0218

Quandt, Amy (2018). "Measuring livelihood resilience: The Household Livelihood Resilience Approach (HLRA)." *World Development* 107, July, pp. 253-263.

Ravera, Federica, B. Martín-López, U. Pascual, and A. Drucker (2016). "The diversity of gendered adaptation strategies to climate change of Indian farmers: a feminist intersectional approach." *Ambio* 45, pp. 335-351.

Resurrección, B. (2013). "Persistent women and environment linkages in climate change and sustainable development agendas." *Women's Studies International Forum* 40:33-43.

Röhr, Ulrike, M. Hemmati and Y. Lambrou (2010). "Towards gender equality in climate change policy: challenges and perspectives for the future," in Elaine Enarson and P.G.D. Chakrabarti (eds*.), Women, gender and disaster* (New Delhi: Sage Publications), pp. 289-304.

Röhr, Ulrike, M. Sitzner, E. Stiefel, and U. Winterfeld (2008). *Gender Justice as the Basis for Sustainable Climate Policies.* Bonn: German NGO Forum on Environment and Development.

Rojas, Ana, J. Siles, and M. Roth (2016). "Promote gender equality to realize the benefits of low emission development," Low Emission Development Strategies Global Partnership / IUCN, https://ledsgp.org/wp-content/uploads/2016/06/CDKN_LEDS_CB_Gender_final_web-res-1.pdf

Roncoli, Carla, B.S. Orlove, M.R. Kabugo and M.W. Waiswa (2010). "Cultural styles of participation in farmers' discussions of seasonal climate forecasts in Uganda." *Agriculture and Human Values* 28, pp. 123-138.

Saave, Anna, Corinna Dengler, D. Just, E.R. McDonald, E, Kouromichaki, J. Dannanberg, L. Temper, L. Hansen, L. Barbieri, N.-R. Avlona, R. Rutt, S. Sanniti, S. Barca, S. Paulson (2020). "Collaborative Feminist Degrowth: Pandemic as an Opening for a Care-Full Radical Transformation," *Degrowth.info*.

Sangita, Khapung (2016). "Transnational feminism and women's activism: Building resilience to climate change impact through women's empowerment in climate smart agriculture." *Asian Journal of Women's Studies* 22:4, pp. 497-506.

Sengupta, Somini (2019). "Becoming Greta: 'Invisible Girl' to global climate activist, with bumps along the way. *New York Times*, 18 February.

Shah, Kalim U., H.B. Dulal, C. Johnson, and A. Baptiste (2013). "Understanding livelihood vulnerability to climate change: applying the livelihood vulnerability index in Trinidad and Tobago." *Geoforum* 47, pp. 125-137.

Shandro, Janis, L. Jokinen, A. Stockwell, and F. Mazzei (2017). "Risks and impacts to First Nation Health and the Mount Polley Mine Tailings Dam Failure", *International Journal of Indigenous Health* 12:2, pp. 84 – 102.

Shenaz Hossain, Caroline (2018). *The Black Social Economy in the Americas: Exploring Diverse Community-Based Markets* (Dordrecht: Springer).

Sinsibere (2013). "Sinsibere — Combating desertification with women's sustainable livelihoods," Ministry for Foreign Affairs of Finland (2013), http://formin.finland.fi/public/default.aspx?contentid=287057&contentlan=2&culture=en-US.

Solar Sister (2020) Our Impacts - Solar Sister entrepreneurs create a ripple effect. https://solarsister.org/what-we-do/our-impact/

Stein, Rachel (2004). *New perspectives on environmental justice: Gender, sexuality, and activism* (New Brunswick, NY: Rutgers University Press).

Taft, Jessica K. (2020). Hopeful, harmless, and heroic: figuring the girl activist as global savior. *Girlhood Studies* 13:2, pp. 1-17.

Tanner, Thomas, D. Lewis, D. Wrathall, R. Bronen, N. Cradock-Henry, S. Huq, C. Lawless, R. Nawrotzki, V. Prasad, M.A. Rahman, R. Alaniz, K. King, K. McNamara, M.Nadiruzzaman, S. Henly-Shepard and F. Thomalla (2015). "Livelihood resilience in the face of climate change." *Nature Climate Change* 5, pp. 23-25.

Thoyre, Autumn (2020). "Home climate change mitigation practices as gendered labor," *Women's Studies International Forum* 78:102314. https://doi.org/10.1016/j.wsif.2019.102314

Tormos-Aponte, Fernando and Gustavo A. García-López (2018). "Polycentric struggles: the experienceof the global climate justice movement." *Environmental Policy and Governance* 28:4.

UN Women (2020). "Advice from young activists: How COVID-19 is changing climate activism for young women." April 21. https://www.unwomen.org/en/news/stories/2020/4/compilation-covid-19-and-climate-activism

UNFCCC (2014). "Women Farmers in Guatemala: Engaging in Agro-Forestry," United Nations Framework Convention on Climate Change. http://unfccc.int/secretariat/momentum_for_change/ items/7843.php.

UNISDR (2008). *Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation*. United Nations Office for Disaster Risk Reduction.

https://www.un.org/waterforlifedecade/pdf/2008_isdr_gender_perspectives_disaster_risk_reduction_cc_eng.pdf

Van den Berg, Rogier, L.N. Sorkin, A. Molenaar, and R. Tuts (2020). "Building climate-resilient and equitable cities during COVID-19." World Resources Institute Commentary. https://www.wri.org/news/building-climate-resilient-and-equitable-cities-during-covid-19#looking-ahead-post-covid

Vanner, Catherine and Anuradha Dugal (2020). "Personal, powerful, political: Activist networks by, for, and with girls and young women." *Girlhood Studies* 13:2, pp. i-xv.

Vinyeta, K., K.P. Whyte, and K. Lynn (2015). *Climate change through an intersectional lens: gendered vulnerability and resilience in Indigenous communities in the United States.* United States Department of Agriculture, U.S. Forest Service, Pacific Northwest Research Station, General Technical Report PNW-GTR-923. https://www.researchgate.net/publication/291523872_Climate_change_through_an_intersectional_lens_Gendered_vulnerability_and_resilience_in_indigenous_communities_in_the_United_States

Weiss, C., (2012), "Women and environmental justice: A literature review", Women's Health in the North (WHIN), Australia (http://www.whealth.com.au/documents/environmentaljustice/EJ-literature-review-HR-DP.pdf).

Wenden, A. L. (2011). "Women and climate change: Vulnerabilities and challenges." In Inka Weissbecker (ed.), *Climate Change and Human Well-Being: Global Challenges and Opportunities* (New York: Springer), pp. 119-133.

Whyte, K.P. (2014). "Indigenous women, climate change impacts, and collective action." *Hypatia* 29:3, pp. 599–616.

Wenham, Clare, J. Smith, and R. Morgan (2020). "COVID-19: the gendered impacts of the outbreak." *The Lancet* 395(10227), pp. 846-848.

Whyte, K.P. (2014). "Indigenous women, climate change impacts, and collective action. *Hypatia* 29(3), pp. 599-616. https://doi-org.ezproxy.library.yorku.ca/10.1111/hypa.12089

Wickramasinghe, Anoja (2015). "Energy for rural women: beyond energy access." In Lakshman Guruswamy (ed.), International Energy and Poverty: the emerging contours (London/New York: Routledge), pp. 231-244.