

Victims or Saviours? Women in Climate Adapted Agriculture Projects in Sri Lanka's Dry Zone

Nethmi Bathige

In recent years, both the government of Sri Lanka as well as national and international development organisations have collaborated to implement climate adaptation projects (Climate Change Secretariat *et al.* 2016). The Ministry of Mahaweli Development and Environment has recognised that Sri Lanka is highly vulnerable to the adverse impacts of climate change such as temperature rise, rainfall variability, and sea level rise which may impact critical sectors of the economy.

In April 2016, Sri Lanka signed the Paris Climate Agreement and committed to the global efforts of mitigating and adapting to climate change. In response, the government developed a National Adaptation Plan (NAP) from 2016 to 2025. This is a gender sensitive plan that is in line with the United Nations Framework Convention on Climate Change (UNFCCC) looking at adaptation needs across key sectors such as food security, water resources, coastal and marine sector, to name a select few.

However, feminist political ecologists have argued that there is a more nuanced linkage between gender inequality and climate vulnerability than envisaged by the Paris Climate Agreement (Tschakert *et al.* 2019; Nightingale 2017; Arora-Jonsson *et al.* 2016; Eriksen *et al.* 2015; Kaijser and Kronsell 2014; Carr and Thompson 2014; Tuana 2013; Tschakert 2012). Feminist scholars have pushed to show that it is not only women who matter in climate adaptation, and that we must move on from focusing on the biophysical effects of climate change towards the power structures which reproduce vulnerabilities. They have resisted the conceptualisation of climate adaptation as a mere technical fix and have called for understanding it as socio-political process which addresses power hierarchies embedded in gender, caste, age, ethnicity, and other socially relevant

categories (Eriksen *et al.* 2015; Rocheleau 1994: 4). This approach goes beyond merely including women or aiming for gender equality in development initiatives as gender mainstreaming (Radcliffe 2005). It recognises that women are not a homogenous group and seeks to address power imbalances which are present in rural settings or in the workplace while recognising the agency that women have (Arora-Johnson 2011).

To begin, the political ecology framework looks at the relations between humans and their environment by analysing who has access and control over resources and the implications this has for the environment and livelihood sustainability (Watts 2017). For feminist political ecologists, a key frame of analysis is the gendered dimension to these struggles and conflicts over resources (Elmhirst 2011). According to Rocheleau, Thomas-Slayer and Wangari (1996), there are three key themes of gendered knowledge relevant to a feminist political ecological analysis: the ways in which access to scientific and ecological knowledge is structured by gender; gendered environmental rights and responsibilities, which involves looking at differential access by men and women to resources; and gendered politics and grassroots activism which is concerned with women's involvement as leaders of environmental movements (Nightingale 2006).

Given Sri Lanka's recent economic crisis (2022-present), there is a need to understand how people of different intersectional identities and socioeconomic backgrounds have been impacted. Some of the marginalised populations placed in precarity include daily wage workers living in urban areas, factory workers, refugees, elderly people, university students, agricultural and plantation workers, marginalised rural landless workers, and smallholder farmers to name a few. Women, even though not a homogenous group,

have come to face difficulties due to the “double burdens of earning an income while also performing unpaid care work at home, for children or elderly relatives” (Rafiq 2022).

In this article I use a feminist political ecology framework to analyse the impacts and outcomes of the crises faced by Sri Lankan smallholder farmers currently. Since my research¹ is based on climate adaptation, I will discuss the converging impacts of the economic, health and ecological crises, and how these have influenced the livelihoods of small farmers participating in an adaptation project in the dry zone of Sri Lanka. In the following section, I will look at how the feminist political ecology framework can be used to look at applied case studies on agrarian environments and climate adaptation projects implemented in different parts of the world.

An FPE lens on climate adaptation and other related agrarian case studies

Recently, feminist political ecologists have incorporated intersectionality to analyse contemporary social problems which include environmental issues and climate change. The intersectionality framework emerges out of Black women’s experiences of multiple forms of oppression (Crenshaw 1989). Intersectionality investigates intersecting power relations such as race, class, gender, sexuality, class, nation, ability, ethnicity, and age as interrelated and mutually shaping one another (Collins and Bilge 2020; Mikulewicz *et al.* 2023). Feminist political ecologists who have analysed climate change by looking at power structures which dictate vulnerability among certain individuals over others include Kaijser and Kronsell (2014), Nightingale (2011; 2014) and Tschakert (2012).

Kaijser and Kronsell (2014: 421) argue that the focus on one single variable such as place, gender, or economic status to look at power relations in the face of climate change is insufficient and often fails to consider other intertwined structures of domination. For example, when narrow man-woman binaries are constructed,

women are placed in relation to nature, and this reinforces categorisations without considering how differences are socially constructed, context-specific, and may shift in realities of climate change. When we consider feminist political ecology and gender mainstreaming in relation to climate adaptation politics, we see how climate change policies and adaptation projects tend to assume that the numeric participation of women in policies and projects is equal to having a feminist perspective (Gonda 2019).

Adaptation projects construct women as vulnerable to or saviours in the face of climate change, and both these narratives are problematic. The former portrays women as those without agency and the latter passes on the labour burdens of adapting into the hands of women. Finally, Gonda (2019: 91) recognises that it is important to understand the various interconnected, dynamic, ever-changing processes which make specific people vulnerable to climate change. For example, an emphasis on women through adaptation projects might mask the vulnerabilities faced by single men or widowers with limited mobility when it comes to fetching water or wood.

Feminist political ecologists have also emphasised how the environment makes particular kinds of gendered bodies (Gururani 2002; Harris 2006; Nightingale 2006; 2011). They look at the production of difference through the everyday movement of bodies in space to show how subjectivities are formed out of the multiple and intersecting exercise of power within socio-natural networks. Nightingale (2011) uses research carried out in Nepal to explain how women in lower castes are excluded from household inner spaces during menstruation and the men of lower castes, in particular Dalits, will engage in timber cutting which is considered to be dangerous. Thus, she looks at how the intersectionality of social difference, material space, and resources end up (re)producing hierarchies and power relations that have served to oppress the poorest people for generations. Nightingale (2014) argues that gender and intersectionality shape the very process of adaptation, and that the expertise implemented through these projects give priority to techno-engineering fixes, while being blind to the power dynamics of community members who may mobilise resources and services provided to their own benefit.

Feminist political ecology work in agrarian contexts have looked at women’s workload in agriculture. Birkenholtz’s (2023) work in Rajasthan, India looks at the use of drip irrigation water infrastructure. Here, he uses a FPE framing by Rocheleau *et al.* (1996) and Carney (1988; 1993) to demonstrate how “the

¹ *Acknowledgement:* I want to thank the farming communities including the farmers and the project officials of the development project in Habarana where I conducted this research. The findings in this article were built off my master’s thesis and the farmers in Palugasewwa spent many hours with me narrating their experiences on farming and climate adaptation. I want to thank my professors at the University of Kentucky Dr. Nari Senanayake (my advisor), Dr. Tad Mutersbaugh and Dr. Betsy Beymer-Farris who provided me with feedback on my master’s thesis. I also want to thank my friend Harry Quealy who has provided me with guidance and mentorship throughout my master’s degree and fieldwork. I am immensely grateful to my parents and family as well for helping me with fieldwork. Finally, I want to thank the Social Scientists’ Association in Sri Lanka for giving me the opportunity to present my work on 17 July 2024 in its Critical Agrarian Studies seminar series.

introduction of green revolution technologies such as high-yielding seed varieties, chemical fertilisers, and pesticides led to more commercial orientation in agriculture and reworked the gendered divisions of labour and exacerbated women's labour burdens. Women became responsible for both production and household reproduction, as male members of the family migrated seasonally" (Birkenholtz, 2023: 136).

Research carried out in the Sri Lankan dry zone context by Senanayake (2023) looks at chronic kidney disease hotspots. She uses a feminist political ecology of health framework. She argues that access to water filters or traditional varieties of rice is shaped through multiple axes of socio ecological difference, such as "health status, gender, class, geographical location, soil fertility, groundwater quality and pest pressures" (17). Her research on the provision of filtered water through government projects show how "filters reinscribe gendered hierarchies. Further, the increased time, distance, and labour demands of filtered water provision falls on the bodies of women who fetch water on one-to-three-day cycles and cannot afford the costs of sustaining access over larger time scales" (9).

Moving on from feminist political ecology case studies, now I will explore how this framework applies to climate adaptation projects implemented in Sri Lanka's dry zone.

Applying FPE to climate adaptation projects in dry zone farming

In this section, I offer a snapshot into the findings of my research about climate adaptation projects implemented among farmers in the dry zone of Sri Lanka. I engage with the feminist political ecology framework to analyse how adaptation projects prioritise the inclusion of women home gardeners. We see how participating in an adaptation project shapes resource access among farmers.

I carried out research on an adaptation project based in the Palugaswewa Divisional Secretariat near the town of Habarana. A key finding of this study is that climate adaptation projects place the burdens of adapting in the hands of women farmers who had no part in the outcomes of climate change. During a conversation with a technical officer of the adaptation project, I learned the following regarding why women were targeted as the main beneficiaries of the project.

We are targeting smallholder farmers and mostly women. If we take an example, in agriculture when the productivity or income reduces because there is no rainfall, the man at home goes outside and does daily wage labour and brings

money to the home, but the woman has to check on all of the necessities of the household, whether it be children, the woman is the one who stays at home, because her responsibilities are high, her stress and vulnerability is also high.

Figure 1: Location of Palugaswewa DS Division and North Central Province (map produced by author)



Feminist political ecologists such as Tschakert (2012) have studied the recurring pattern of gender-based inclusion in development projects in recent years. Women and men in rural communities experience the impacts of climate change differently given their gendered work roles, cultural norms, historically rooted power structures and inequalities present in villages. However, researchers have oftentimes rejected the simplistic portrayal of women as most vulnerable time and time again (Tschakert 2012; Arora-Jonsson 2011; MacGregor 2010b; Resurreccion 2011; Tschakert & Machado 2012). This kind of narrative used by adaptation projects ignores the roles played by women as chief agents in shaping project outcomes and leaves little room for the analysis of power imbalances present. Further, this kind of discourse ignores the processes through which vulnerability is produced in agrarian communities.

To understand how vulnerability is produced among farmers, I reviewed the results of my fieldwork where I identified two farmers participating in the climate

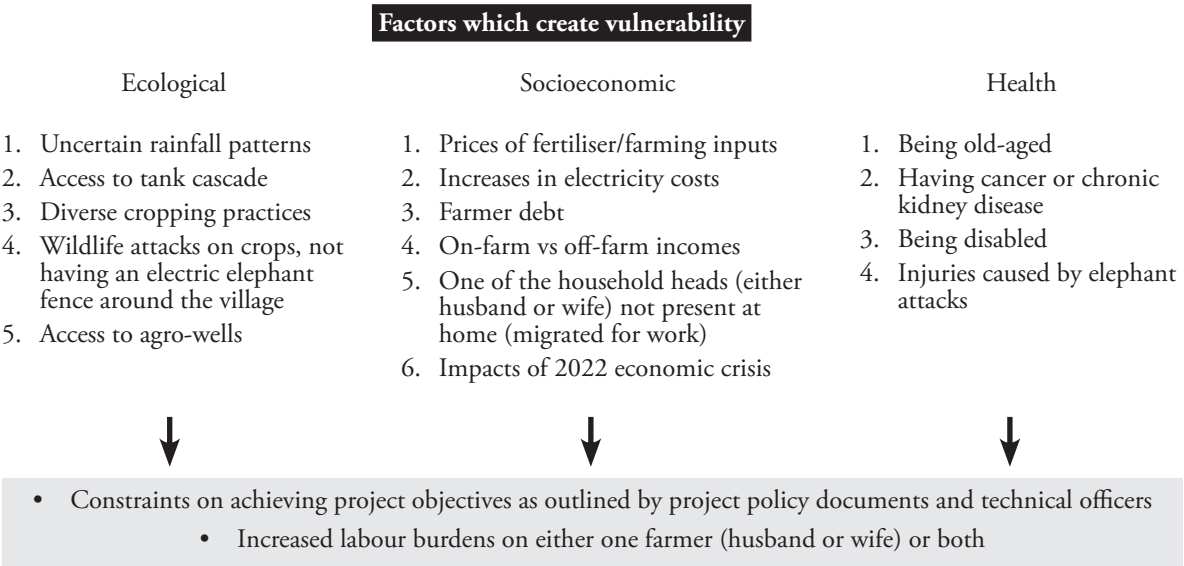
adaptation project. They were husband Gunadasa² and his wife Kusumawati who explained that they were elderly and earned money only from selling paddy and other produce grown in their home garden. Since they lived alone, they had to attend to ailments caused by their old age while looking after their crops. They spoke about the multiple problems they faced such as the high costs of electricity, farming inputs, groceries, and medicines. Additionally, they faced the problem of elephants harming their crops as well as the lack of rainfall during the drought from May to August 2023. Even though these two farmers wanted to grow crops to earn a living they were unable to do so because the lack of rainfall and cost of electricity constrained them.

Painting the participants of these projects as vulnerable to climate change is misleading as they are key actors who have helped co-create knowledge and shape adaptation projects. For example, farmer Gunadasa says that his wife farmer Kusumawati is more knowledgeable about growing different kinds of crops in the home garden. He claims this is because she has been involved with *chena*³ farming in the area for many years along with other women farmers and receives farmer training from the climate adaptation project and government agricultural officers. Farmer Kusumawati had the following to say about how she received the land where they currently carry out their home garden.

There were twelve women here in the past, when this land was still the forest, the Divisional Secretary knew about this, and these twelve people received the land. Here, we planted soya. After that it was divided up into different parts for each person, and they grew their own thing. At present, the agricultural instructor comes and talks about the different kinds of diseases which crops develop, and for those we use *kohomba* seeds (neem seeds), then we don't spray many insecticides. Now the agricultural instructor says, there is a workshop, we will teach you to make compost.

This example shows how women have been targeted by both state and development actors in the past few years for their programmes. Project officials from climate adaptation projects talk about vulnerability, they speak little about how and what processes cause this. Understanding vulnerability is about understanding the interconnected, dynamic and ever-changing processes that make specific people vulnerable to climate change (Gonda 2019). Social differences like gender, ethnicity, and age are present in everyday practices of climate change adaptation. As such it is important to work with the power structures that intersectionality creates; for example, how the core identities of being elderly intersects with being able-bodied. In Figure 2, I explore how multiple factors present in the dry zone creates vulnerability between farmers in their community.

Figure 2: Ecological, socioeconomic, and health factors which produce vulnerability and the outcomes that this vulnerability creates



2 Names are anonymised.

3 *Chena* farming is a method of upland agriculture which relies mainly on rainfall. Here, farmers carried out farming in their home garden which was previously *chena* land. The forest land which was also *chena* was cleared for home gardening.



Farmer spraying fertiliser on his crops in Palugaswewa

Further, even though the adaptation project targets women in the community for their projects and lays the burden of adapting to climate change mostly on women, both men and women perform roles in their capacities to try to overcome the impacts of the climate and economic crisis. New constraints and emerging opportunities that come up within the dynamic context of daily life shape how gender roles, obligations, and tasks in climate change adaptation are subject to change (Tschakert 2012). As such, climate adaptation projects which engage with women farmers and expect them to carry on with farming activities do not account for the gendered labour burdens placed upon them. They also do not account for the fact that not all the farming activities are carried out by women farmers.

For example, farmer Gunadasa had the following to say about his daily routines.

When I wake up in the morning, I drink some tea, then I water a few of the papaya plants. Next, I drink some more tea and then some medicine because I have blood pressure. After eating rice, I drink some medicine again and then I see that there is no wood, because my wife can't bring wood. Since we must go far. So, I go and bring some wood. For about two or three days, we don't have gas. Even if there are things which run with the electricity, the electricity bill is high. After that there is not much work. I go back to sleep.

It is mainly farmer Gunadasa who goes into the forest to fetch firewood, due to the danger posed by elephant attacks. Women tend to stay away from forest areas in dry zone farming communities. Farmer Gunadasa has to carry on this practice of going into the forest. Even though he is elderly, and this practice is dangerous, it is difficult for them to afford electricity at its current high prices. In this case, men who have limited mobility and face ailments may not be recognised as those vulnerable to climate change impacts through adaptation projects because of this biased focus on the roles played by women within home gardening settings. As Gonda (2019: 91) argues, engaging with these “interlinked, ever-changing processes that create vulnerability is a challenge that a feminist political ecology perspective can help us undertake”. Farmer Kusumawati does not go into the forest, instead she carries on with growing crops which can withstand the drought conditions in her home garden. As such, we see how both farmers are carrying out tasks to adapt to changing economic and ecological conditions.

In comparison, farmers who are of higher income and wealth levels have access to irrigation infrastructure may be better placed and might find it easier to grow crops. Farmer Chandrasoma a male farmer of higher wealth and social status, had to say the following when I spoke to him.

During the drought period, we collect water and keep it near the tank. There is no problem with that. Livestock management is good for people, people can grow grass and get a good income from milk cows. People don't get into those types of activities maybe because they don't have knowledge. If they enter it, they can do it. Even if projects give them, they don't place an importance on it. There are groups who can do it properly, other people can't do it. I don't know why? It may be because of the different ways in which people think. I also teach people how to do these things, mostly poor people, they don't do it. If they put 50 banana trees, if they receive Rs. 1000 per tree, then it is Rs. 50,000. Again, in another 6 – 8 months they will receive Rs. 50,000. That is an amount they receive for free; they only have to maintain it a little. I don't understand why people are lazy.

This narrative from farmer Chandrasoma does not consider that farmers will have to invest in irrigation technologies and farming inputs when they do livestock or banana farming. Farmer Chandrasoma does not consider that farmers may have to go into debt to invest in larger scale commercial agriculture or livestock management, laying further burdens on small farmers who he recognises as poor. Even after receiving help from the state or private sector organisations, farmers may still find it difficult to carry out livestock farming

because of the rising costs of living associated with the economic crisis. Farmer Chandrasoma has access to an agro-well and he has help from younger family members in addition to the pension he earns as a retired village servant (*Grama Sevaka*). This places him on a higher wealth and income level compared to most other farmers in the area. So, he does not consider the problems that people face from the impacts of the economic crisis. Instead, his focus is on the lack of interest, knowledge levels, or activity.

Technical officers affiliated with implementing development projects create discourses which highlight the most “appropriate” farmer for participating in the project as one who farms well. According to an agricultural officer in Palugaswewa, uneven patterns of resource distribution drove discontent among farmers. She had the following to say about the decision to select certain farmers over others to receive equipment through the project.

All the farmers expect the benefits provided by the project. But we give benefits by selecting the most appropriate farmer. Then, there will be problems from other farmers, because only a limited number of people get it. Because we only give resources to farmers who farm well, then a farmer who doesn't do well doesn't get the resources. When farmers are selected, let's say we have ten items of a certain resource, we can't give it to a hundred farmers. So, like that when we select farmers, there are challenges.

Another project officer had to say the following about how groups are selected for the project over individual farmers.

We don't usually select an individual person. Usually, we take a group. Because we can't support an individual and say there was development. Because as a group they can develop resilience and develop marketing. That is why we have taken groups like this. Earlier also we have taken groups for growing commercial fruit plants.

While the term “appropriate” farmer is a rather ambiguous term, we can infer through conversations and observations during interviews that the project favours farmers who carry out farming on a commercial scale to achieve higher productivity and incomes. By prioritising an “appropriate” farmer and developing groups of farmers, the project is oblivious to intersectional differences which may determine the extent to which farmers obtain successful outcomes.

These differing practices and narratives from farmers and development project officials show how income and wealth levels of farmers have shaped their farming practices and their participation in agricultural projects. Wealthier farmers are more interested in investing

in commercial farming practices which may require some initial investments. On the other hand, small farmers tend to water their crops from rainfall and try to use less resources during the dry season to conserve water. This shows us how wealthy farmers can be more commercially oriented and achieve project outcomes compared to poor farmers due to the varied forms of access they have to more expensive water storage infrastructure and farming inputs.

In this way, adaptation projects generate uneven outcomes among project participants, where certain farmers with greater levels of wealth, income, and access to resources may have a greater advantage when it comes to achieving the outcomes expected through the adaptation project. As such, we see how the project intervention depends on the existence of divergent patterns of diversification through increasing the varieties of crops grown in the home garden and depending on off-farm incomes. These methods help shape the resilience of farmers compared to the adaptation strategies which the project provides, such as more efficient irrigation facilities, which farmers find difficult to afford.

Conclusion

These findings contradict the common rhetoric that climate change adaptation may reduce vulnerability. In Sri Lanka and around the world, climate change adaptation tends to repeat the failings of development assistance since the end of the colonial era (Eriksen *et al.* 2021). This is understood as the post-development critique where the Western model of development has emerged as a form of domination that is unable to reverse the unequal structures and institutions that make up development assistance (Ferguson 1990; Escobar 1995; Ireland and McKinnon 2013; Sultana 2019). As such, there have been calls made to move from implementing technical adaptation measures towards paradigms which address the underlying causes of climate change and the processes which create vulnerability (Pelling 2011; Denton *et al.* 2014; O'Brien 2018). If we get stuck in this same development paradigm of transforming risks and livelihoods, it may inflict even more adverse effects on marginalised populations, because they now become responsible for adapting to climate change problems created by other actors.

Seeking a pluralism of ideas about adaptation, while moving towards a post-adaptation paradigm is important. This can be achieved through experimentation, collaboration, and deeper learning among adaptation actors who become a central target

of adaptation projects rather than delivering measurable material outputs according to development as usual standards (Eriksen *et al.* 2021). This involves working across scales through a feminist political ecology lens connecting what happens at the emotional and embodied levels to the politics of climate change adaptation (Gonda 2019). This needs to be understood as revolving around the concept of social reproduction (involves household chores such as firewood collection, water fetching, cooking, doing laundry, taking care of children and the elderly) which should be recognised as a part of adaptation rather than seeing them as traditional roles taken up by women.

Nethmi Bathige is a PhD student in the geography department at the Pennsylvania State University, USA.

Image credit: Nethmi Bathige

References

- Arora-Jonsson, Seema. (2011). "Virtue and vulnerability: Discourses on women, gender and climate change." *Global Environmental Change*, 21 (2): 744–751. <https://doi.org/10.1016/j.gloenvcha.2011.01.005>
- Arora-Jonsson, Seema, Lisa Westholm, Beatus John Temu, and Andrea Pettitt. (2016). "Carbon and Cash in Climate Assemblages: The Making of a New Global Citizenship." *Antipode*, 48 (1): 74–96. <https://doi.org/10.1111/anti.12170>
- Birkenholtz, Trevor. (2023). "Infrastructuring drip irrigation: The gendered assembly of farmers, labourers and state subsidy programs." *Environment and Planning E: Nature and Space*, 6 (1): 132–152. <https://doi.org/10.1177/25148486221100386>
- Carney, Judith. (1993). "Converting the Wetlands, Engendering the Environment: The Intersection of Gender with Agrarian Change in the Gambia." *Economic Geography*, 69 (4): 329–348. <https://doi.org/10.2307/143593>
- Carney, Judith A. (1988). "Struggles over crop rights and labour within contract farming households in a Gambian irrigated rice project." *The Journal of Peasant Studies*, 15 (3): 334–349. <https://doi.org/10.1080/03066158808438366>
- Carr, Edward R. and Mary C. Thompson. (2014). "Gender and Climate Change Adaptation in Agrarian Settings: Current Thinking, New Directions, and Research Frontiers." *Geography Compass*, 8 (3): 182–197. <https://doi.org/10.1111/gec3.12121>
- Climate Change Secretariat, Ministry of Mahaweli Development and Environment, & Sri Lanka (Eds.). (2016). *National Adaptation Plan for Climate Change Impacts in Sri Lanka 2016–2025*. Climate Change Secretariat, Ministry of Mahaweli Development and Environment.
- Collins, Patricia Hill and Sirma Bilge. (2020). *Intersectionality*. John Wiley & Sons.
- Crenshaw, Kimberlé. (1989). "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." *University of Chicago Legal Forum*, 1989: 139–168.
- Denton, Fatima, Thomas J. Wilbanks, Achala C. Abeysinghe, Ian Burton, Qingzhu Gao, Maria Carmen Lemos, Toshihiko Masui, Karen L. O'Brien, and Koko Warner. (2014). "Climate-Resilient Pathways: Adaptation, Mitigation, and Sustainable Development." In Christopher B. Field, Vicente R. Barros, David Jon Dokken, Katharine J. Mach, Michael D. Mastrandrea, T. Eren

Bilir, Monalisa Chatterjee, Kristie L. Ebi, Yuka Otsuki Estrada, Robert C. Genova, Betelhem Girma, Eric S. Kissel, Andrew N. Levy, Sandy MacCracken, Patricia R. Mastrandrea, and Leslie L. White (Eds.). *Climate Change 2014: Impacts, Adaptation, and Vulnerability* (1101–1131). Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781107415379.025>

Elmhirst, Rebecca. (2011). "Introducing new feminist political ecologies." *Geoforum*, 42 (2): 129–132. <https://doi.org/10.1016/j.geoforum.2011.01.006>

Eriksen, Siri. H., Andrea J. Nightingale, and Hallie Eakin. (2015). "Reframing adaptation: The political nature of climate change adaptation." *Global Environmental Change*, 35: 523–533. <https://doi.org/10.1016/j.gloenvcha.2015.09.014>

Eriksen, Siri., E. Lisa F. Schipper, Morgan Scoville-Simonds, Katherine Vincent, Hans Nicolai Adam, Nick Brooks, Brian Harding, Dil Khatri, Lutgart Lenaerts, Diana Liverman, Megan Mills-Novoa, Marianne Mosberg, Synne Movik, Benard Muok, Andrea Nightingale, Hemant Ojha, Linda Sygna, Marcus Taylor, Coleen Vogel, and Jennifer Joy West. (2021). "Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance?" *World Development*, 141 (2021): 105383. <https://doi.org/10.1016/j.worlddev.2020.105383>

Escobar, Arturo. (2011). *Encountering Development: The Making and Unmaking of the Third World*. Princeton, N.J.: Princeton University Press.

Ferguson, James. (1994). *Anti-Politics Machine: Development, Depoliticization, and Bureaucratic Power in Lesotho*. Minneapolis, MN: U of Minnesota Press.

Gonda, Noémi. (2019). "Re-politicizing the gender and climate change debate: The potential of feminist political ecology to engage with power in adaptation policies and projects in Nicaragua." *Geoforum*, 106: 87–96. <https://doi.org/10.1016/j.geoforum.2019.07.020>

Gururani, Shubra. (2002). "Forests of Pleasure and Pain: Gendered practices of labour and livelihood in the forests of the Kumaon Himalayas, India." *Gender, Place & Culture*, 9 (3): 229–243. <https://doi.org/10.1080/0966369022000003842>

Harris, Leila M. (2006). "Irrigation, Gender, and Social Geographies of the Changing Waterscapes of Southeastern Anatolia." *Environment and Planning D: Society and Space*, 24 (2): 187–213. <https://doi.org/10.1068/d03k>

Ireland, Philip and Katherine McKinnon. (2013). "Strategic localism for an uncertain world: A post development approach to climate change adaptation." *Geoforum*, 47: 158–166. <https://doi.org/10.1016/j.geoforum.2013.01.005>

Kaijser, Anna and Annica Kronsell. (2014). "Climate change through the lens of intersectionality." *Environmental Politics*, 23 (3): 417–433. <https://doi.org/10.1080/09644016.2013.835203>

MacGregor, Sherilyn. (2010). "Gender and climate change: From impacts to discourses." *Journal of the Indian Ocean Region*, 6 (2): 223–238.

Mikulewicz, Michael, Martina Angela Caretta, Farhana Sultana, and Neil J. W. Crawford. (2023). Intersectionality & Climate Justice: A call for synergy in climate change scholarship. *Environmental Politics*, 32 (7): 1275–1286. <https://doi.org/10.1080/09644016.2023.2172869>

Nightingale, Andrea. (2006). "The Nature of Gender: Work, Gender, and Environment." *Environment and Planning D: Society and Space*, 24 (2): 165–185. <https://doi.org/10.1068/d01k>

Nightingale, Andrea. J. (2011). "Bounding difference: Intersectionality and the material production of gender, caste, class and environment in Nepal." *Geoforum*, 42 (2): 153–162. <https://doi.org/10.1016/j.geoforum.2010.03.004>

Nightingale, Andrea. J. (2014). "A socionature approach to adaptation: Political transition, intersectionality, and climate change programmes in Nepal." In Tor Håkon Inderberg, Siri

Eriksen, Karen O'Brien, and Linda Sygna (Eds.). *Climate Change Adaptation and Development* (219-234). London: Routledge.

Nightingale, Andrea J. (2017). "Power and politics in climate change adaptation efforts: Struggles over authority and recognition in the context of political instability." *Geoforum*, 84: 11–20. <https://doi.org/10.1016/j.geoforum.2017.05.011>

O'Brien, Karen. (2018). "Is the 1.5°C target possible? Exploring the three spheres of transformation." *Current Opinion in Environmental Sustainability*, 31: 153–160. <https://doi.org/10.1016/j.cosust.2018.04.010>

Radcliffe, Sarah A. (2005). "Development and geography: Towards a postcolonial development geography?" *Progress in Human Geography*, 29 (3): 291–298. <https://doi.org/10.1191/0309132505ph548pr>

Rafiq, Shefali. (2022). "What Sri Lanka's economic crisis looks like for women." *The New Humanitarian* (13 September): <https://www.thenewhumanitarian.org/photo-feature/2022/09/13/Sri-Lanka-economic-crisis-women-workers-inflation-wages>

Resurreccion, Bernadette P. (2011). "The Gender and Climate Debate: More of the Same or New Pathways of Thinking and Doing? (MacArthur ASI WP No. 10)." *RSIS*. https://www.rsis.edu.sg/rsis-publication/nts/305-the-gender-and-climate-debate/?doing_wp_cron=1724417629.0315670967102050781250

Rocheleau, Dianne E., Barbara P. Thomas-Slayer, and Esther Wangari. (1996). *Feminist Political Ecology: Global Issues and Local Experiences*. Psychology Press.

Senanayake, Nari. (2023). "Towards a feminist political ecology of health: Mystery kidney disease and the co-production of social, environmental, and bodily difference." *Environment and*

Planning E: Nature and Space, 6 (2): 1007–1029. <https://doi.org/10.1177/25148486221113963>

Sultana, Farhana. (2019). "Decolonizing Development Education and the Pursuit of Social Justice." *Human Geography*, 12 (3): 31–46. <https://doi.org/10.1177/194277861901200305>

Tschakert, Petra. (2012). "From impacts to embodied experiences: Tracing political ecology in climate change research." *Geografisk Tidsskrift-Danish Journal of Geography*, 112 (2): 144–158. <https://doi.org/10.1080/00167223.2012.741889>

Tschakert, P., N. R. Ellis, C. Anderson, A. Kelly, and J. Obeng. (2019). "One thousand ways to experience loss: A systematic analysis of climate-related intangible harm from around the world." *Global Environmental Change*, 55: 58–72. <https://doi.org/10.1016/j.gloenvcha.2018.11.006>

Tschakert, Petra and Mario Machado. (2012). "Gender Justice and Rights in Climate Change Adaptation: Opportunities and Pitfalls." *Ethics and Social Welfare*, 6 (3): 275–289. <https://doi.org/10.1080/17496535.2012.704929>

Tuana, Nancy. (2013). "Gendering Climate Knowledge for Justice: Catalysing a New Research Agenda." In Margaret Alston and Keri Whittenbury (Eds.). *Research, Action and Policy: Addressing the Gendered Impacts of Climate Change* (17–31). Dordrecht: Springer. https://doi.org/10.1007/978-94-007-5518-5_2

Watts, Michael. (2017). "Political Ecology." In Eric Sheppard and Trevor J. Barnes (Eds.). *A Companion to Economic Geography* (1st ed., 257–274). Wiley. <https://doi.org/10.1002/9781405166430.ch16>

Williams, Jon. (2012). "Adaptation to Climate Change: From Resilience to Transformation." *Scottish Geographical Journal*, 128 (1): 83–86. <https://doi.org/10.1080/14702541.2012.692916>