



Alliance



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

Enhancing synergies between gender equality and biodiversity, climate, and land degradation neutrality goals

Lessons from gender-responsive
nature-based approaches

The **Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)** delivers research-based solutions that address the global crises of malnutrition, climate change, biodiversity loss and environmental degradation.

The **Alliance** focuses on the nexus of agriculture, nutrition and environment. We work with local, national and multinational partners across Africa, Asia, Latin America and the Caribbean, and with the public and private sectors and civil society. With novel partnerships, the Alliance generates evidence and mainstreams innovations to transform food systems and landscapes so that they sustain the planet, drive prosperity and nourish people.

The **Alliance** is part of **CGIAR**, the world's largest agricultural research and innovation partnership for a food-secure future dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources.

<https://alliancebioversityciat.org>

www.cgiar.org

Enhancing synergies between gender equality and biodiversity, climate, and land degradation neutrality goals

Lessons from gender-responsive
nature-based approaches

Marlène Elias
Markus Ihalainen
Iliana Monterroso
Bryce Gallant
Ana Maria Paez Valencia

Alliance



**RESEARCH
PROGRAM ON**
Forests, Trees and
Agroforestry

Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT)

Alliance Headquarters

Via di San Domenico, 1, 00153

Rome, Italy

Website: <https://alliancebioversityciat.org>

Email: marlene.elias@cgiar.org

Citation

Elias M; Ihalainen M; Monterroso I; Gallant B; Paez Valencia AM. 2021. Enhancing synergies between gender equality and biodiversity, climate, and land degradation neutrality goals: Lessons from gender-responsive nature-based approaches. Bioversity International. Rome, Italy. 28 p.

About the authors

Marlène Elias, Gender Lead at the Alliance of Bioversity International and CIAT, and Gender Research Coordinator for the CGIAR Research Program on Forests, Trees and Agroforestry. She is also the Leader of the Alliances Module of the CGIAR GENDER Platform.

Markus Ihalainen, Senior research officer with the Center for International Forestry Research, and a member of the gender coordination team of the CGIAR Research Program on Forests, Trees and Agroforestry.

Iliana Monterroso, Environmental scientist with CIFOR's Equal Opportunities, Gender, Justice and Tenure team. She is the co-coordinator of CIFOR's Gender and Social Inclusion Research, and a member of the gender coordination team of the CGIAR Research Program on Forests, Trees and Agroforestry.

Bryce Gallant, Gender, Youth and Inclusion consultant with the International Water Management Institute. Her work focuses on environmental justice, urban agriculture, and gender and inclusion.

Ana Maria Paez Valencia, Gender specialist at World Agroforestry. She is also a member of the gender coordination team of the CGIAR Research Program on Forests, Trees and Agroforestry.

ISBN: 978-92-9255-218-3

Cover photo credit: Mokhamad Edliadi/CIFOR.

© Bioversity International 2021. Some rights reserved.

This work is licensed under a

Creative Commons Attribution NonCommercial 4.0 International License (CC-BY-NC)

<https://creativecommons.org/licenses/by-nc/4.0/>

August 2021

Acknowledgments

This paper was developed within the CGIAR Research Program on Forests, Trees and Agroforestry, with the support of the CGIAR Gender Platform and the Trust Fund Donors. The authors gratefully acknowledge Haley Zaremba for her research assistance and copyediting, and Wietske Kropff for help with referencing.





Contents

Acknowledgments	iii
1. Introduction	2
2. Exploring synergies through a social equity framework.....	4
3. Generating synergies among environmental and equity goals through nature-based approaches	6
3.1. Collaborative Forest Management	7
3.2. Nature-based Emissions Reduction.....	11
3.3. Forest and tree-based value chain development.....	16
4. Conclusions	21
5. References.....	23

1. Introduction

Almost thirty years ago, the global community highlighted three critical environmental challenges at the 1992 United Nations Conference on Environment and Development (UNCED – or the ‘Earth Summit’): climate change, the loss of biodiversity, and land degradation. Concurrently, gender inequality was garnering recognition as a root cause of economic, social, and environmental ills (United Nations, 1995; World Bank, 2011; Gates, 2014). These wicked problems have since continued to push the planet beyond a “safe and just operating space for humanity” (Raworth, 2012), eroding physical and cultural landscapes as well as livelihoods.

Climate change, biodiversity loss, and land degradation are deeply interconnected issues (Grace et al., 2016). Maintaining and restoring healthy, biodiverse ecosystems is key to mitigating and adapting to climate change, while climate change threatens biodiversity and the integrity of ecosystems functions (e.g. Omann et al., 2009). Hence, while global political agendas such as the three Rio Conventions¹ articulate stand-alone objectives and commitments within their respective focal areas, they fundamentally operate in the same ecosystems and are mutually dependent.

Land- and nature-based approaches in the agroforestry and forestry sectors provide a unique opportunity to generate win-wins toward achieving the environmental goals of the Rio Conventions (e.g. Joint Liaison Group, 2007; Joint Liaison Group, 2012). For instance, the reversal and restoration of deforested and degraded land is embedded in the CBD’s Aichi Biodiversity Targets, the UNFCCC’s Paris Agreement, the UNCCD’s Land Degradation Neutrality (LDN)² goals, as well as in the Sustainable Development Goals (SDGs), explicitly SDG 15. The Bonn Challenge – a global goal to bring 150 million hectares of degraded and deforested landscapes into restoration by 2020, and 350 million hectares

¹ The three conventions, together known as the Rio Conventions, derive directly from the Earth Summit: the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), and the United Nations Framework Convention on Climate Change (UNFCCC).



by 2030 (Bonn Challenge, 2021) – has arisen as an “implementation vehicle for national priorities such as water and food security and rural development while simultaneously helping countries contribute to the achievement of international climate change, biodiversity and land degradation commitments” (IUCN, 2020)³. Indeed, in an WWF (2015) analysis of 75 Intended Nationally Determined Contributions (INDCs) from forested countries, reforestation, afforestation and restoration goals were among the most common ones advanced to combat climate change.

Harnessing synergies among global environmental agendas thus critically hinges on land-use decisions, which are influenced by social dynamics – including gender. The relevance of engaging with gender and social inclusion for achieving environmental objectives is acknowledged in the Rio Conventions, each of which has a plan to engage with relevant gender issues. Yet, despite the linkages between gender equality and climate change, biodiversity loss, and land degradation, approaches that generate desirable feedback loops among these processes remain poorly understood and applied. Likewise, the potential synergies to be achieved across conventions through their gender-responsive implementation, and the promise of nature-based solutions for achieving these, have received limited attention.

Hence, *this paper explores how putting gender equity at the forefront of nature-based solutions can help leverage synergies between efforts to combat climate change, biodiversity loss and land degradation, contributing to both human (social) and planetary (environmental) well-being*. Moreover, it examines the possible risks that nature-based approaches used to advance the goals of the Rio Conventions can pose to gender equality if these approaches are not responsive to gender issues. The paper is

divided into three parts. First, we describe the social equity framework that guides our analysis of gender issues in relation to biodiversity, climate change, and land degradation, and initiatives to redress these. Drawing on this framework, we then present three examples of nature-based approaches that hold potential for synergistically advancing gender equality, and climate, biodiversity, and LDN goals. We demonstrate that greater gains can be accrued from gender-responsive approaches that address a wider set of priorities, harness a broader set of skills to address environmental ails, enhance capacities of marginalized groups by securing their rights and access to resources, and generate more equitable incentives to garner the buy-in of an array of actors. Yet, our examples also illustrate potential tensions between social and environmental objectives, highlighting the need to carefully consider and reconcile trade-offs while incorporating strong social safeguards.



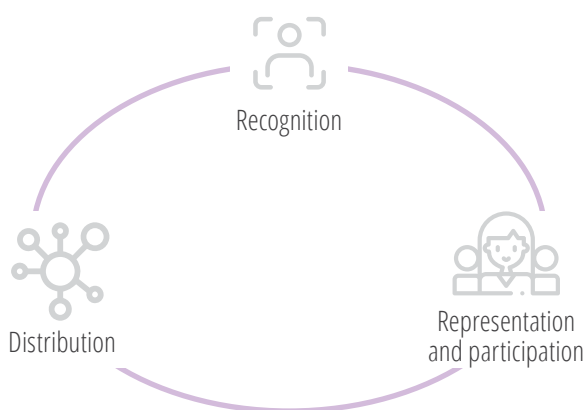
Photo: Kelvin Trautman

2 Land degradation neutrality (LDN) is defined by Parties to the UNCCD as “a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems” (IUCN, 2015a, p. iv). LDN is a function of the relationship among three processes: degradation, restoration, and sustainable land management.

3 The Bonn Challenge. Accessed online on 5 February 2021 at: <https://bit.ly/37A6BKG>

2. Exploring synergies through a social equity framework

A social equity framework provides a valuable lens through which to understand gender issues in the context of the critical environmental challenges the world is currently facing. The framework foregrounds three dimensions:



which are embedded in contextually specific power relations. As per Fraser (1995, 2009) and several others who have built upon her work from a social or environmental justice perspective (e.g. Forsyth and Sikor, 2013; Pascual et al., 2014; Forsyth, 2014; Martin, 2017, Sikor and Newell, 2014), **recognition** centers on the existence and unequal experiences and rights of different socio-cultural groups or identities. Discrimination on the basis of identities ascribed at birth, such as gender, ethnicity or caste – and their intersections, which position women from certain castes at the lowest levels on the social hierarchy, for example – can be particularly difficult to challenge. Recognition entails upwardly revaluing marginalized identities, recognizing the legitimacy of diverse stakes and knowledge systems in a given issue, publicly valorizing socio-cultural diversity, and transforming societal representations of marginalized groups' identities, which affect the group's sense of self.

From an equity perspective, the recognition of marginalized identities and their histories is not only an end in itself, but also a condition for enabling groups experiencing collective disadvantages to have a seat and a voice at the decision-making table with respect to processes that affect their well-being. The second dimension of equity – procedural equity – refers to such **representation** and to the effective **participation** and influence of these social groups in political processes, such as decision-making in environmental management initiatives. It also entails the institutionalization of values and norms that enable effective participation for all groups. Fraser (2009, p. 16) refers to 'participatory parity' as "social arrangements that permit all to participate as peers in social life. Overcoming injustice means dismantling institutionalised obstacles that prevent some people from participating on a par with others, as full partners in social interaction." These parity principles can apply to all spheres of life, from the household to markets, associations, and formal and informal politics. In addition to the ability to engage as full members of society, they include strategies for safeguarding the rights of communities and collectives participating in environmental management initiatives, such as through their 'free, prior and informed consent' (FPIC) and impartial and effective grievance mechanisms.

Finally, **distribution** refers to the way costs and benefits (in our case, emerging from climate action, biodiversity conservation, and LDN initiatives) are shared, including the ability to decide over the mechanisms of delivery and allocation. For example, such benefits may be direct payments for planting trees or other remunerated work, but also indirect benefits, such as those derived from a range of ecosystem services (e.g. biodiversity, water regulation, provisioning services), new livelihood options, and intangible benefits such as social capital or knowledge. Costs can include opportunity and transaction costs for implementing land-use change, increased labor burdens as well as management costs and passive costs, such as reduced access to resources (Pascual et al., 2014). These costs can

be intended or unintended. Distributional issues are mediated by, and in turn influence, the recognition and representation of social groups in decision-making processes. As McDermott et al. (2013) argue, much of the discourse on equity in conservation focuses on such distributional issues and overlooks other critical and interdependent dimensions of equity, which may be affected by conservation, restoration, or mitigation initiatives.

Each of these dimensions of equity, and the way they are impacted by environmental management interventions, is shaped by the social context. This context refers to the formal (e.g. policies, laws) and informal (e.g. culture, practices, and belief systems) institutions, and their constituent power relations, which mediate interactions and negotiations among different actors (e.g. individuals, particular social groups, nation states). McDermott et al. (2013, p. 420) describe this context as the uneven playing field “created by the existing political, economic and social conditions under which people engage in and benefit from resource distributions – and which limit or enable their capacity to do both.” Different actors engage in climate change, biodiversity and degradation initiatives within this context, and the original distribution of power and resources among actors influences their ability to gain recognition, engage in decision-making, and secure a fair distribution of benefits and burdens through these agendas (McDermott et al., 2013; Pascual et al., 2014).

The three dimensions of equity are interrelated and may be mutually reinforcing. For instance, recognition is needed to gain a seat at the decision-making table, and procedural changes may improve distributive outcomes. In our below analysis, we consider gender-responsive nature-based approaches as those that include strategies or measures to enhance equity across these dimensions, and to mitigate the risks that other approaches can pose in this regard.

Yet, there may also be tensions and trade-offs across these dimensions and across spatial, governance and temporal scales. For example, the resource-based livelihoods of

current generations may be constrained so as to safeguard resources for future generations (temporal trade-offs); or spatial trade-offs may arise when local communities shoulder burdens (e.g. of land-use changes for enhanced carbon sequestration) for the benefit of the global community (McDermott et al., 2013). Synergies and trade-offs may also occur between equity and other objectives, such as ecological goals. Drawing from a range of contexts and studies, Pascual et al.’s (2014) work on payments for ecosystem services (PES) shows that ecological outcomes from PES are influenced in positive ways when equity is enhanced, and in negative ways when equity decreases as a result of PES schemes. More generally, strengthened resource rights and enhanced livelihood opportunities are often considered factors enabling the inclusive and sustainable implementation of the different environmental agendas, whereas local exclusions, elite capture, loss of access to resources, and tenure insecurity often have the contrary effect (e.g. IUCN and WRI, 2014; Robinson et al., 2014, 2018; McLain et al., 2021). Meanwhile, Duchelle et al. (2017) find that while the heavy command-and-control measures deployed in Brazil have been successful in reducing Amazonian deforestation, they have also reduced local tenure security and households’ wellbeing. In sum, as trade-offs among goals may occur, positive synergies must be actively promoted rather than assumed.

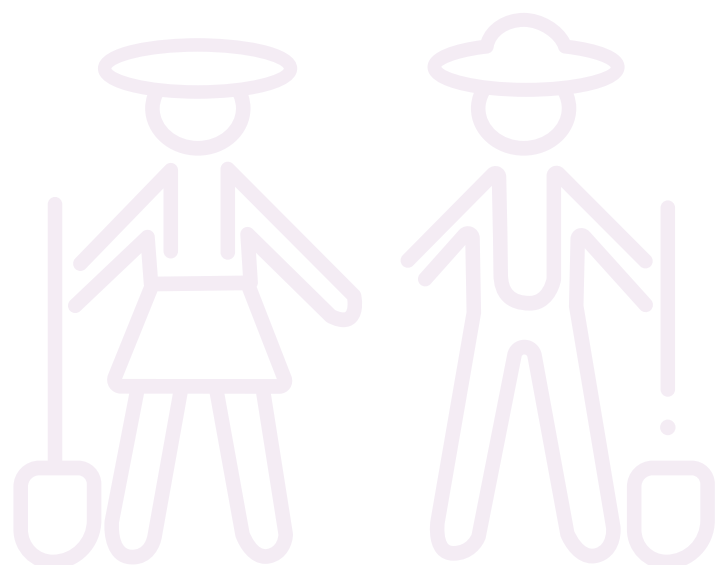




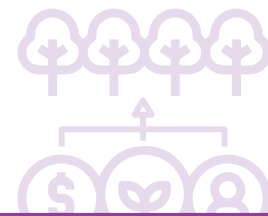
Photo: Ulet Ifansasti/CIFOR

3. Generating synergies among environmental and equity goals through nature-based approaches

In this section, we provide three illustrative examples of nature-based approaches emerging from forestry and agroforestry initiatives with potential to foster synergies among climate, biodiversity and land degradation agendas as well as gender equality. While in no way exhaustive, our examples illustrate how the dimensions of the social equity framework elucidated above take shape in the implementation of nature-based approaches. The first example, collaborative forest management, exemplifies a rights-based approach aimed at recognizing rights of local communities to sustainably manage forest resources. The second example, Reducing Emissions from Deforestation and Forest Degradation (REDD+), illustrates a market-based (or donor-funded) approach intended to incentivize and/or compensate resource users, jurisdictions and/or countries for conserving and enhancing natural carbon sinks through sustainable forest management. The third example, forest and tree-based value chain development, discusses a different set of market-based approaches aiming to promote 'green' value chains and to curb environmentally harmful practices and impacts associated with various value chain activities. As noted earlier, nature-based approaches, and specifically forest and agroforestry-focused initiatives, offer strong potential to advance multiple environmental and social goals (Rayner et al., 2010). Yet, as we demonstrate below, there is nothing inherently equitable about nature-based approaches; these must be intentionally and strategically developed to address gender and inclusion issues.

3.1

3.1 Collaborative Forest Management



Recent shifts toward decentralization of forest governance have resulted in a range of community-based/collaborative forest management (CFM) arrangements (Joshi et al., 2020). Such arrangements acknowledge the rights of forest-dependent people to forest resources and benefits, including income, and aim to reconcile conservation and human development goals (Baynes et al., 2015; Hajjar et al., 2021). They are founded on the idea of sharing power, decision-making, responsibilities, and benefits between the state and forest-dependent communities to enhance the efficiency and equity of forest management (Ansell and Gash, 2008; Berkes, 2009). Central to the implementation of CFM are community forest user groups (CFUGs), wherein community representatives come together to make forest-related decisions. In some contexts, such as India and Nepal, regulatory reforms have introduced quotas and membership rules to increase local women's participation in CFUGs, thereby opening spaces for women in community forestry (Gupte, 2004; Martin and Lemon, 2001; Das, 2011; McDougall et al., 2013a, 2013b; Wagle et al., 2017).

When justly implemented, CFM arrangements can promote synergies among several environmental goals (Pratiwi et al., 2018). Community-based protection of forest resources can prevent destructive practices and unregulated access to the forest, including by outsiders. Effective CFM, wherein communities engage in forest conservation and management, rehabilitate degraded forest or improve and sustain forest ecosystems, can help to combat threats to forest biodiversity, land degradation and deforestation, and to sequester carbon (Carter and Gronow, 2005; Hajjar et al., 2021; Baynes et al., 2015). For instance, in Kyrgyzstan, CFM enhanced the conservation

of biodiversity in walnut-fruit forests, and local people's motivation to conserve the forest due to improved livelihoods through sustainable resource use and income generation (Carter et al., 2003). The high density and diversity of tree species conserved through CFM provides benefits for climate change mitigation and biodiversity conservation, as well as ecosystem services that offer a range of economic benefits.

At the same time, if implemented through a gender-responsive approach, CFM can enhance gender equality by increasing women's voice and influence in forest management and governance, improving their access to forest resources, and enabling them to secure livelihood benefits. Gender-responsive CFM can also foster improved environmental outcomes of relevance to the Rio Conventions through various pathways. In India, Agarwal (2015) has shown that women's effective participation in decision-making influences the nature of decisions made in CFUGs, such as the rules regarding forest use and how these should be implemented, results in fewer violations against these rules, and increases the likelihood of improved forest condition. Various cases illustrate that women's participation in forest governance and management are positively linked with ecological conditions, including improved forest growth (greater biomass regeneration) (Agarwal 2009) and ability of forests to store carbon, and increase forest-based livelihood benefits (Mwangi et al., 2011; Coleman and Mwangi, 2013). In India, Das (2012) notes slight increases in the value of non-timber forest products in forests managed by all-female user groups compared to those managed by male-dominated groups. Likewise, in Nepal, women's active participation in CFUGs is found to promote more cooperative, sustainable

management practices as well as improved incomes from the forest (Upadhyay, 2005). In their review of the collective action literature, Leisher et al. (2016) substantiate that the Indian and Nepalese cases provide clear and strong evidence of improved resource governance and conservation outcomes when women participate in CFUGs, although important data gaps remain for other regions.

Mixed-gender groups in particular have been linked to better community compliance with rules for resource use as well as conflict resolution, improved patrolling and rule enforcement, greater accountability and transparency, more equitable access to resources, and more effective resource conservation (Agarwal 2015; Leisher et al., 2017). Promoting more equitable voice and influence can also generate broader buy-in and enhanced capacities, thereby improving prospects for socioeconomic development and positive environmental outcomes (Covelli-Metcalf et al., 2015; Horlings, 2015; Lescourret et al., 2015).

Yet, equity is far from assured in CFM. An incomplete devolution of rights and decision-making authority to communities in some cases has raised concerns about the equitability of the model, both in terms of representation as well as in terms of distribution of costs and benefits, even when significant progress around recognition has been made (Sarin, 2001; Sarker and Das, 2002; Nightingale and Ojha, 2013). Within communities, too, hierarchies, social norms and other institutional structures are (re)produced in formal and informal forest management institutions, creating constraints for certain groups to actively participate in and benefit from collaborative management arrangements (Agarwal, 2001; Varughese and Ostrom, 2001; Blaikie, 2006). Groups which are marginalized in terms of access to land, education and public influence – which are frequently also the most forest-dependent – are typically excluded from forest management committees and decision-making (Agrawal and Gibson, 1999). Exclusions are particularly pronounced for those who are discriminated

against due to several factors of social differentiation, such as gender and ethnicity or caste, socioeconomic status, age, and more (Agarwal, 2010; Nightingale, 2002).

Approaches such as **Adaptive Collaborative Management (ACM)** have been developed to address these inequalities and exclusions, and support more equitable processes and outcomes (Evans et al., 2020). ACM is a collective problem-solving and management approach that fosters the participation of diverse community members and their capacities to contribute knowledge and learn to solve important challenges together (Mukasa et al., 2016). In ACM, people with interests in using forest resources agree to act together to plan, observe, and learn from the implementation of their plans (Colfer, 2013). ACM is characterized by conscious, facilitated efforts among such groups to communicate, collaborate, negotiate and learn collectively. The process involves actors at multiple scales, including CFUGs at the community level and district officials (Colfer, 2013).

ACM, like other dialogic approaches (e.g. Hegde et al., 2017), is premised on the idea that effective participation in local resource governance can be supported through the creation of knowledge-sharing and discussion spaces, wherein diverse actors engage in dialogue and social learning around collective resource management. Social learning – a “process in which multiple stakeholders bring together their different knowledge, experiences, perspectives, values, and capacities for a process of communication and critical reflection as a means of jointly understanding and addressing shared issues, challenges, and potential options” – can play a central role in equitable governance processes (McDougall et al., 2008, p. 30). Knowledge-sharing platforms can take the form of elected committees and formal boards or informal meetings. CFM arrangements can support the creation of these spaces (Carter and Gronow, 2005), wherein careful and inclusive facilitation allows marginalized groups to feel more comfortable speaking up in group settings (Hegde et al., 2017).



As women's heavy work burdens or social norms may keep them from participating in such a process, ACM promotes identifying appropriate locations and times for meetings, adapting activities around women's schedules, and bringing training to the community when women cannot easily leave their village (Mukasa and Tibazalika, 2018). Moreover, it focuses on strengthening women's capacities - increasing their knowledge, skills, leadership, and confidence - and on gender relations, through supporting mixed-gender dialogues that address gender issues and encouraging men to champion women's empowerment (Mukasa et al., 2016).

An ACM approach can support equity in CFM (and related environmental outcomes), beginning with the **recognition** that women and vulnerable groups are key stakeholders who have their own priorities for forest management (McDougall et al., 2013a), and whose knowledge and interests are equally valuable as those of more powerful groups. Unequal rights to access and control forest-based resources and gender differences in the collection, processing and sale of non-timber forest products or the cultivation of forest gardens imbue different social groups with differentiated sets of knowledge and priorities for the species they rely on and use. Priorities related to forest rehabilitation, such as restoration objectives, location, duration, scale, approaches, and selection of species, are also influenced by gendered norms which underpin women's and men's sets of knowledge, rights, roles and responsibilities. When women and men from diverse social groups are recognized as legitimate stakeholders, engaging them in the planning and implementation of such forest management and/or restoration initiatives can harness their diverse knowledge and experiences, including insights into drivers of degradation and potential benefits of recovered ecosystem services and livelihood opportunities (Sijapati Basnett et al., 2017). As noted above, recognition and integration of different priorities in CFM can increase the buy-in and compliance of diverse groups with the rules of forest use. Public recognition of these groups as land



Photo: Kelvin Trautman

managers and ecological knowledge holders, and ensuring this recognition is formalized in terms of an ability to realize rights, can also enhance social standing (Elias et al., 2020).

Enhanced recognition of marginalized groups can lead to more equitable **representation** and **participation** in CFM across scales. ACM encourages active and equitable engagement and voice in forest management and governance by fostering dialogue, planning, and a shared vision among diverse forest-dependent actors (Evans et al., 2014). At those meetings, participants envision goals for promoting gender equality; identify concrete actions to advance these goals; implement and monitor those actions; and reflect on and adapt the process as needed (Evans et al., 2021). For instance, in Uganda, researchers supported mixed-gender groups in identifying the factors constraining women's meaningful participation in forest management decisions and limiting their access to forests and trees, with the aim of enhancing women's active participation and tenure rights (Evans et al., 2014).

After eight years of ACM implementation in Uganda, women's confidence, engagement, agency, and decision-making had increased in CFUGs (Evans et al., 2014), as the approach provided a safe platform for women to voice their interests in the presence of men without intimidation or retribution (Mukasa and Tibazalika, 2018). Women additionally felt empowered to seek out external assistance, and collective action in mixed CFUGs led to more effective and sustainable forest interventions (Mwangi et al., 2009). The development of horizontal linkages (with other communities) and vertical linkages (with the National Forest Authority and NGOs) garnered support and recognition for women beyond the local level (Mukasa et al., 2016).

Yet, participation in CFM does not guarantee equal access to benefits, or **distributional** equity. Monetary cost-benefit analyses used to forecast the economic value of environmental change and the sustainability of investments are often gender-blind, and fail to capture the

costs of women's labor (and other) contributions to forest management, restoration, or other LDN initiatives (Sijapati Basnett et al., 2017). Unintended consequences also need to be carefully monitored to avoid burdening women with additional responsibilities without gaining commensurate benefits. For example, initiatives to combat deforestation have often tasked women with nursing and planting seedlings without compensation (Rocheleau and Edmunds, 1997). This has added to their unpaid work responsibilities, while failing to directly benefit them due to their insecure rights to land and trees when these mature (Sijapati Basnett et al., 2017).

By generating a shared vision for forest governance among forest users, ACM has shown potential to improve distributional equity in CFM. For example, in some communities in Uganda, cultural norms prevent women from planting certain tree species. Through ACM, which brought spouses together to discuss forest and tree management, men and women shared their concerns about this restriction and agreed that tree planting by women could benefit the entire family. The dialogues have resulted in some women having their own plots and planting a greater diversity of tree species, including formerly forbidden trees, such as *Eucalyptus* spp., *Pinus* spp. and *Maesopsis* spp., for income (Mukasa et al., 2016). The ACM approach further improved coordination among communities, state forestry agencies, and NGOs, and enhanced local people's access to resources. It enabled women to strengthen and protect their rights to trees on-farm within the community, and to lobby for equitable access to tree seedlings and allocation of land between women and men in government-managed central forest reserves (Mukasa and Tibazalika, 2018). This, in turn, enabled both women and men to restore degraded forestlands from which they derived forest income as well as environmental benefits (Evans et al., 2014). Strategies and lessons learned from ACM for generating synergies are also relevant to other nature-based approaches, such as those responding to climate change.





According to a recent IPCC (2019, p. 20) report, “Many land-related responses that contribute to climate change adaptation and mitigation can also combat desertification and land degradation and enhance food security.” This section explores how gender-responsive nature-based approaches to climate action can advance synergistic climate, biodiversity, LDN, and gender equality objectives, using the example of Reducing Emissions from Deforestation and Forest Degradation (REDD+).

REDD+ is a global initiative under the UNFCCC to reduce greenhouse gas emissions by curbing deforestation and forest degradation, conserving and enhancing forest carbon stocks through rehabilitation of ecosystems and reforestation, and sustainably managing forests.⁴ REDD+ relies on actions at a national level to create conditional, performance-based incentives to prevent forest conversion and enhance forest carbon stocks (Sunderlin et al., 2018). In REDD+ countries, local populations are rewarded through market-based mechanisms or public services for conserving and sustainably using lands and forests, based on verified reductions in emissions in the forest sector (UN-REDD, 2011; Newton et al., 2012; Visseren-Hamakers and Verkooijen, 2012). To date, hundreds of pilot projects have been implemented across diverse landscapes and regions (Wunder et al., 2020).

REDD+ can promote synergies across environmental agendas by reducing deforestation and forest degradation, which contribute around 20% of global greenhouse gas emissions (Visseren-Hamakers and Verkooijen, 2012). Land degradation has been identified as an offshoot of deforestation through shifting cultivation and logging (Bai et al., 2008; Olsson et al., 2019). A national approach to REDD+ may require a country to maintain levels of forest

cover to protect existing land areas and/or support reforestation activities to protect areas already deforested, thereby contributing to LDN goals. Sustainable forest management policies and practices aim to prevent soil erosion and flooding, increase carbon sinks, and sustainably use and conserve biodiversity and ecosystem services, thereby contributing to biodiversity targets under the CBD.

Gender-responsive REDD+ can lead to improved environmental outcomes across areas of concern to the Rio Conventions in several ways. For one, REDD+ processes have highlighted the need for more secure rights to land and resources among women and marginalized groups as a precondition for more sustainable land management decisions (Larson et al., 2015). Several authors have advanced such positive links between tenure security, including women’s rights to land, and incentives and capacities to invest in sustainable land, soil, and environmental management (e.g. Etongo et al., 2018; Meinzen-Dick et al., 2019). For instance, in their global review of 117 studies, Tseng et al. (2021) elucidate a positive relationship (in 2/3 of studied cases, $n=48$) between improved land tenure security and environmental outcomes, including more sustainable agricultural practices, improved forest condition, and investments in agroforestry and forest conservation. They further identify ‘win-win’ situations among human well-being and environmental outcomes, as well as trade-offs among outcomes. Based on an analysis from nine countries, Tseng et al. (2021) also find that in 72% of the cases studied, enhanced land tenure security has positive effects on women’s empowerment, while the IPCC (2019, p. 31) notes that, “empowering women can bring synergies and co-benefits to household food security and sustainable land

4 For more information on REDD+, see: <https://www.unredd.net/about/what-is-redd-plus.html>

management.” In Uganda, Ekesa et al. (2020) further link improved tenure security for women and men with an increased diversity of species grown on those lands.

When REDD+ and other climate-related projects, programs and policies **recognize** and fulfill the rights of women and marginalized groups, these actors are also better poised and incentivized to support climate mitigation and adaptation, biodiversity, and LDN objectives, thereby strengthening environmental outcomes. According to UN Women (2016, p. 8), “systematically addressing gender gaps in the response to climate change is one of the most effective mechanisms for building climate resilience and reducing emissions.” In contrast, when climate policies and actions linked to mitigation or to strengthening resilience fail to meaningfully address gender issues, they risk exacerbating gender inequalities by increasing women’s burdens (Westholm and Arora-Jonsson, 2015) and constraining their access to resources (Bee and Sijapati Basnett, 2017), which jeopardizes the efficiency and sustainability of interventions. Acknowledging the potential to achieve positive synergies among environmental and equity outcomes, some Nationally Determined Contributions (NDCs), which are the basis for national climate plans, include a framework for integrating gender equality, specifying the type of climate actions, related targets, policies and measures governments will pursue to account for how women and other underrepresented groups engage in these processes (Huyer et al., 2016).

REDD+ calls attention to equity and community well-being (Larson et al., 2018) and to supporting the full and effective participation of relevant stakeholders, in particular Indigenous Peoples and local communities, in local planning and sustainable land management. The UNFCCC’s Cancun safeguards (2010)⁵ and Warsaw Framework (2013)⁶ require countries participating in REDD+ to address and respect social issues, develop plans (including gender

action plans) for doing so, establish safeguard systems, and report on how this is being achieved (Bhandari et al., 2018). Nonetheless, early REDD+ projects and programs have largely sidelined gender considerations, which has reduced their effectiveness (Larson et al., 2018). There are, however, ongoing efforts to make REDD+ more inclusive.

Gender-responsive REDD+ acknowledges that: 1) actual and projected climatic changes will have differentiated impacts on diverse social groups depending on where they live, how they sustain their livelihoods, and the roles they play within their families and communities (Dekens and Dazé, 2019); 2) different gender groups hold valuable and differentiated knowledge, capacities, priorities, and constraints to adapt to climatic changes (Arwida et al., 2016); and 3) women – just as men – are key agents of change and must have a voice in climate action (e.g. Djoudi and Brockhaus, 2011). Hence, it recognizes the rightful claims of women and men – particularly from marginalized groups, which are most vulnerable to climate change – in climate action and as REDD+ stakeholders.



Photo: Patrick Shepherd/CIFOR

5 See UNFCCC decisions: 1/CP.16, 12/CP.17, 12/CP.19, 17/CP.21, accessed online April 16 at: <https://redd.unfccc.int/fact-sheets/safeguards.html>.

6 See Decision 12/CP.19: UNFCCC 2013, accessed online April 16 at: <https://unfccc.int/topics/land-use/resources/warsaw-framework-for-redd-plus>

Yet, initiatives frequently fail to recognize and value the diversity of interests in, and contributions to, the management of resources under REDD+, particularly those of marginalized actors. In Larson et al.'s (2018) global comparative study, women and men shared many wellbeing goals, but women (unlike men) also emphasized the importance of having their own source of income. Lack of recognition of women's interests, however, resulted in a much greater drop in their perceived well-being over time in REDD+ villages compared to men.

Such a lack of recognition results in an exclusion from **participation** in REDD+ decision-making. For instance, in two REDD+ projects in the Democratic Republic of Congo, Stiem and Krause (2016) found that although rural women spent as much time in the forests as men, the systemic devaluation of women's forest-related work and knowledge legitimized men's dominance in forest governance and related initiatives. In Vietnam, Pham et al. (2016) show that local women are poorly represented and lack influence in REDD+ processes. Strategic decisions for the programme are concentrated at the national

and international levels (Westholm and Arora-Jonsson, 2015); and as research from Vietnam shows, even at the national level, women who participate in REDD+ meetings rarely occupy leadership positions or engage in REDD+ working groups (Pham et al., 2016). When decisions are made locally, women's influence is limited due to gender inequalities in rights to land and forest products, access to information, and to women's normative exclusion from public decision-making spaces, including those where REDD+ issues are discussed (Sarmiento Barletti et al., 2019).

As a case in point, in Larson et al.'s (2018) comparative study, rural women in 62 villages participating in 16 REDD+ initiatives knew much less about the program than men and had little voice in local REDD+ decision-making processes. In Vietnam, women's nominal participation curtailed their ability to advocate for their preferred benefits from REDD+ and the means of receiving them. Initiatives opted for uniform cash benefits despite women's preferences for non-cash benefits, which constrained women's access to benefits and reduced their willingness to participate in project activities (Pham and



Brockhaus, 2015; Pham et al., 2016). Findings from these studies highlight the need to examine shared and separate interests among women and men in REDD+ communities, and to engage with multiple actors to develop initiatives that will generate their buy-in and equitable benefits.

Measures are needed at several scales (from the local to the national and international) to promote equitable access to decision-making spaces on climate change-related strategies, policies and programmes, such as REDD+ (Khadka et al., 2014; Saito-Jensen et al., 2014; UN Women, 2014; Westholm, 2016). Larson et al. (2018) underscore the need to engage local women across the entire life cycle of a REDD+ initiative to make relevant design and implementation decisions. Similarly, UN-REDD (2017) calls for equitably involving women and men in REDD+ workshops, committees, participation structures, task forces, consultations, decision-making, and capacity building. Other measures include encouraging women's nomination and participation in meetings; sharing workshop topics with all participants before meetings to ensure equal capacity to participate; identifying in-country mentors to encourage gender-equal participation in REDD+; and providing regular reports of women's participation rates within supported activities to REDD+ focal points (UN-REDD, 2017). Specific provisions, such as having women-only groups or mixed groups implementing REDD+, may also be needed to enhance women's active participation (Bee and Sijapati Basnett, 2017; Westholm, 2016).

To be effective, these measures must be accompanied by capacity-strengthening processes and an attention to the power dynamics and institutional structures that maintain gender inequalities (Agarwal, 2010; UN Women, 2014). For instance, as social norms often constrain women's participation in forest decision-making (Stiem and Krause, 2016), there is a need to work with local opinion leaders who play an important role in shaping gender norms and perceptions in order to make space and create opportunities for women in REDD+.

These approaches show promise for increasing women's buy-in and ownership of REDD+ initiatives, as well as the effectiveness, efficiency and sustainability of REDD+ by accounting more accurately for their specific knowledge, needs, priorities and contributions (Larson et al., 2018).

These are some of the measures The African Women's Network for Community Management of Forests (Réseau des Femmes Africaines pour la Gestion Communautaire des Forêts (REFACOF)) has taken to promote the influential participation of women in REDD+ processes (IUCN, 2015b). REFACOF is a network of women involved in sustainable forest resource management in Africa that serves as Cameroon's civil society REDD+ and climate change platform coordinator. The government of Cameroon has shown interest in the platform's contributions to the national REDD+ strategy, such that the platform has been able to influence high-level decision-making processes. The decentralized platform's Coordination Unit spans the village, district, and regional levels, and at each level, a seat has been reserved for a woman as well as an Indigenous People's representative. Across levels, 30 to 40 percent of seats in this influential platform are occupied by women, giving them a voice in REDD+ policy, programming and processes. Moreover, REFACOF has built strong networks with powerful actors, including customary authorities, parliamentarians, and mayors, to raise their sensitivity to gender issues and have them champion gender equality (ibid).

Initiatives like REDD+ are inscribed in landscapes of pre-existing resource struggles, patronage, and politics, and **distributional** outcomes critically depend on measures to redress these interlocking political and economic inequalities (Eilenberg, 2015). In the absence of such measures, elite capture of REDD+ benefits has been reported (Indrarto et al., 2012). This, too, has a gender dimension, as rural women rarely have access to the authorities and policymakers who can facilitate access to benefits (Stiem and Krause, 2016; Westholm, 2016).

Lack of formal rights to land and related ecosystem services further undermines the ability of marginalized groups to benefit from REDD+, which advises that benefits should accrue to ‘forest and tree owners’ (Indrarto et al., 2012; Sunderlin et al., 2018). Tying results-based benefits to land tenure has significant implications for gender equality because women’s rights to land and trees are typically insecure and mediated by male relatives (e.g. husband, father, uncle) (Meinzen-Dick et al., 2019). As noted earlier, this means that as land gains value, it may revert to (male) landowners (Turner 2014), putting women at risk of dispossession (Arwida et al., 2017; Khadka et al., 2014; Larson et al., 2015; Peach Brown, 2011). Even when titling of lands to Indigenous communities is promoted through climate actions, interventions have not necessarily ensured that all women and men in those communities benefit, and may have actually reinforced inequalities (Robinson et al., 2017; Monterroso and Larson, 2018). Understanding land-use practices, claims, and customary and statutory tenure relations is thus integral for mitigating the risks REDD+ initiatives may pose to different land and tree user groups. Strong social safeguards are also needed to uphold the rights of marginalized people to decide on and control their resources (Elias et al., 2020).

Several authors have stressed that tenure security and social inclusion are pre-conditions for successful REDD+ interventions, and that REDD+ can contribute to forest land tenure security and gender equality (Larson et al., 2018; Sunderlin et al., 2018). REFACOF’s work in Cameroon demonstrates that REDD+ can indeed offer opportunities to enhance gender equality by contributing to global efforts to enhance women’s land rights. The network has used REDD+ as an opening to bring articles and forest policies that secure women’s rights to land and forests and enhance their access to benefit-sharing mechanisms to the table. As the network’s President, Cécile Ndjebet, has stated: “If women have the property rights to the forest, she will build in forest enterprises

[sic], give added value, develop partnerships, gain money, change her status and the status of her family—we don’t need money from REDD+, we don’t need carbon from REDD+, we need reforms. Bring REDD+ for reforms—we care about reforms that will secure women’s rights” (IUCN 2015b, p. 3). These efforts have not gone in vain. According to IUCN (2015b, p. 4), REFACOF has “achieved remarkable headway in reforming national land tenure laws through the lens of gender and REDD+ by presenting women’s legislation for land tenure reform and using REDD+ as a window for opportunity.” Given the links between secure tenure and sustainable land and resource management decisions, changes in this area also hold prospects for improved environmental outcomes.

Despite potential synergies among the equity and environmental goals of REDD+, however, there may sometimes be a need to reconcile trade-offs or tensions among goals. For instance, research on climate mitigation/adaptation linkages in Burkina Faso has shown that women’s livelihood options and access rights, which are associated with women’s adaptive capacities, are significantly greater in indigenous tree-based parklands (dominated by *Vitellaria paradoxa* and *Parkia biglobosa* trees) and small-scale restored lands than in (less diverse) monoculture tree plantations (Djoudi et al., 2015). In this regard, women’s adaptive capacities are positively linked with biodiversity goals. Yet, as some monoculture tree plantations contain higher carbon stocks than parklands, prioritizing carbon stocks for mitigation action over other goals can compromise women’s adaptive capacities. Assessing the potential impacts of REDD+, or any other climate mitigation initiatives, on women’s and men’s adaptive capacities is needed to identify potential tensions or trade-offs among gender equality and resilience, climate action, biodiversity conservation, and LDN, and to develop options that can help reconcile these tensions. The same holds true for other nature-based initiatives, such as the development of tree-based value chains.



The development of forest and tree product value chains offers additional opportunities to generate synergies among the equity and environmental agendas advanced in the Rio Conventions. These value chains include timber and non-timber products, and encompass all value-adding activities from production to consumption (Ingram et al., 2014). While the commercial exploitation of forest and tree resources may intuitively (and often rightly) be considered at odds with the ultimate objectives of the Rio Conventions, the development of sustainable forest and tree-based value chains is increasingly touted as a vehicle for incentivizing more sustainable land use. For instance, value chains that generate income from biodiversity can add value to biodiversity conservation relative to other land uses while improving smallholder income (de Leeuw et al., 2018). These prospects are often promoted to incentivize the adoption and sustainable uptake of restorative practices, such as agroforestry, that yield tree products with market value (Brancalion et al., 2017).

Gender-responsive value chain development can support synergies between various environmental objectives in three key ways.

✓ **First**, the development of women-dominated non-timber forest product (NTFP) value chains can provide economic incentives for restoring and conserving a greater diversity of species than if focusing only on typically male-dominated mainstream commodities, such as various timber species (e.g. Kristjanson et al., 2019). This, in turn, can support more biodiverse restoration and resource management options as well as climate change mitigation and adaptation through more diversified

livelihood portfolios (e.g. Shackleton et al., 2011; Djoudi et al., 2016).

✓ **Second**, while the implementation of many nature-based solutions relies on local women's and men's labor contributions, gender inequalities often limit women's access to benefits (Sijapati Basnett et al., 2017), thereby reducing their incentives to participate in such initiatives (e.g. Pham et al., 2016). The development of women-coded value chains can increase the flow of economic benefits to women and incentivize their contributions toward sustainable land management while diversifying and enhancing household livelihood portfolios (Ahenkan and Boon, 2011). For instance, the commercialization of NTFPs that are primarily traded by women, such as shea nuts and butter (*Vitellaria paradoxa*) or néré seasoning (soubala or dawa dawa - *Parkia biglobosa*) in West Africa, can provide income-generating opportunities to women that motivate the protection of standing trees or forests (Carr and Hartl, 2008; Pehou et al., 2020).

✓ **Third**, entry barriers and inequitable access to service provision may constrain rural women's abilities to adopt sustainable land-use practices. In Ethiopia, for instance, Tsige et al. (2020) find that women farmers' capacity to adopt climate-smart agriculture is constrained by their limited access to cooperatives, extension services, and credit. Catacutan and Naz (2015) show that similar factors limit women's uptake of agroforestry practices in Vietnam. Gender inequities in terms of accessing machinery and information can lead to more ineffective resource use. For example, in Cameroon, women firewood producers who

relied on machetes rather than chainsaws were found to often cut younger (and thinner) mangroves (Feka et al., 2011). Value chain development efforts that explicitly address inequities and enhance women's competitiveness in value chains, such as through enhanced technological capabilities or access to services, can hence help unlock synergies between equity and sustainability in rural value chains. For instance, the promotion of women-only cooperatives through an organic coffee certification scheme in Guatemala incentivized the uptake of more sustainable production practices while yielding improvements in women's skills and social status (Verhart and Pyburn, 2010).

Given the high spatial overlap between tropical forests and the world's rural poor, forest product value chains are increasingly seen as channel for 'pro-poor' development (Ingram et al., 2014). To this end, the past few years have witnessed an increased emphasis on 'inclusive value chain development', often with the aim to improve smallholders' access to information, inputs, services and markets while developing more equitable relations between different value chain actors (Stoian et al., 2018). Yet, with their emphasis on an undifferentiated group of smallholders, these efforts often continue to overlook gender relations and undervalue women's roles in forest product value chains, maintaining the invisibility – or even the criminalization – of women's livelihood activities (Shackleton et al., 2011). In some instances, this is changing as some value chain development efforts are more explicitly targeting gender equality and women's economic empowerment (Stoian et al., 2018).

Gender-responsive value chain development begins with a **recognition** of the gendered nature of market systems, and the legitimacy of women and men as stakeholders in these markets and in the management of tree resources on which they are based. Although both women and men play a role in collecting and trading in forest and tree products, gender specialization is evidenced in the gathering and processing of most types

of forest products (Sunderland et al., 2014). For instance, across Latin America, Asia and Africa women dominate the collection of products used for food, fuel, fodder, and medicine, as well as for small-scale trade (Ertug, 2003; Gausset et al., 2005; Price, 2006), whereas men gather wood for construction or sale and dominate the collection of higher-value forest products sold on the market (Sunderland et al., 2014). Differences in reliance on tree biodiversity influence the knowledge women and men acquire about species, their uses, management, and markets, and result in gendered knowledge systems that are at times distinct, overlapping, and complementary (Degrande and Arinloye, 2014; Elias, 2016). Use and knowledge differences also occur within gender groups, and along the lines of ethnicity, age, marital status, socio-economic status, kinship, mode of livelihood, and other factors of social differentiation (Kiptot et al., 2014; Elias, 2016). Recognizing the legitimacy of this knowledge and of the roles women, Indigenous People, and other groups play in using, managing, processing, and trading in natural resources is needed to acquire reliable information on (Howard, 2003), and generate equitable influence and opportunities in, value chains.

Gender norms and roles limit the ways and terms under which women **participate** in markets for more remunerative products, with women often being confined to less remunerative value chains and nodes and men capturing the trade of products that gain commercial value (Ingram et al., 2016). Nonetheless, recent studies highlight the significant, yet often less visible, roles that women play in conventionally men-coded value chains, such as charcoal (Ihalainen et al., 2020a), wood furniture (Nansereko, 2010) and oil palm (Li, 2015; Elmhirst et al., 2016, 2017). Gender inequalities both within and beyond most forest and tree-based value chains tend to disproportionately constrain women's participation and beneficiation by limiting their decision-making power and access to assets and resources such as information, inputs, credit, and markets (Ingram et al., 2016, Ihalainen et al., 2020b).

Social norms also restrict women's influence and leadership roles in mixed-producer cooperatives and associations. For instance, women are less able than men to join coffee growers' associations or their boards, and when they do, negative stereotypes about businesswomen create hostility towards them. As Nestlé (cited in IFC, 2016, p. 35) notes, "Women do more than two-thirds of the work involved in coffee farming in Kenya. However, fewer than 5 percent of leadership roles in coffee cooperatives in the country are currently held by women." Constraints must also be understood in relation to other factors of social discrimination (e.g. education, age, wealth and marital status), which intersect with gender to present women from different groups with differentiated opportunities.

Discriminatory norms further restrict women's active representation and participation in the management and conservation of the forest or tree biodiversity that forms the basis of value chains at various scales. If not gender-responsive, integrated conservation-livelihood initiatives, such as those focused on tree product value chain development, can overlook women's strategic interests, fail to preserve and leverage their ecological knowledge, and augment their work burden (Elias, 2016). In contrast, gender-responsive approaches have already allowed women to actively participate in livelihood development activities and public decision-making platforms, including in the creation of policies (UN Women, 2018). Toward this end, Lewark et al. (2011, p. 203) call for "consistent and long-term training programmes with a focus on gender equality to eradicate these socially embedded inequalities."

The capacity of women and marginalized groups to participate in decisions around value chain development and to influence trade negotiations and the ways benefits are defined, transferred and consumed, has implications for fairness in the **distribution** of costs and benefits from these value chains (Martin et al., 2013; UN Women, 2018). The potential tree-based value chains hold for delivering equitable benefits and enhancing gender

equality depends on the gender relations embedded in the type of production system in which these forest products are inscribed. For example, monoculture tree plantations, which tend to be controlled by men and which may supplant other land uses that sustain women's livelihoods, typically present different challenges for gender equality than products from agroforestry plantations or from the forest. Oil palm, for one, has been shown to displace local women from land on which they cultivate food crops (White, 2012; Li, 2015; Elmhirst et al., 2017). Women's contributions to large- and small-scale palm oil production are often poorly visible, rendering them 'shadow workers', and they are over-represented in the casual worker category, where they lack decent working conditions (Sijapati Basnett et al., 2016).



Photo: Ewa Hermanowicz/Bioversity International

In the organic coffee value chain, Kasente (2012) shows that women producers in Uganda provide unpaid labor on family farms that fall under their husband's authority, but have little opportunity to manage their own farms because of lack of secure rights to land and notions that coffee is a 'man's crop'. Hence, "coffee production offers more income, and more possibilities for off-farm diversification for men, and while a few women may benefit from it, coffee production increases labour burdens, and strains social relations for women" (Kasente 2012, p. 120).

Products that are controlled by women producers such as argan oil in North Africa, and shea butter in West Africa, offer insights into possibilities for enhancing women's benefits from tree-product value chains. The expansion of economic opportunities available to rural women can help improve women's independent incomes, which in turn may be leveraged for renegotiating broader gender inequalities within the household and community (Ihalainen et al., 2020b). Benefits have been particularly significant when women producers come together and exercise collective action in cooperatives and associations (Rice, 2010). Women's full membership and influence in these associations, and the various functions and services these can offer, have supported women's empowerment and gender equality.

For instance, women's argan cooperatives in Morocco provided literacy training, financial management, and home economics courses to members, as well as daycare facilities and shops with discounted products. Through cooperative membership and engagement with these services, women members reported gaining the respect of their husband and other male members of their community, and a sense of empowerment through increased control of their own incomes (Biermayr-Jenzano et al., 2014). Gender-responsive value chain development initiatives can support such processes. For example, in Burkina Faso, an association of shea butter producer groups, which received many years of support from NGOs, fostered knowledge-sharing and innovation, joint production, and improved product quality and returns.

Members strengthened their social relations and experienced changes in intra-household gender relations as a result of an increase in women's income, confidence, and skills (Elias, 2010). Other studies similarly show that women's meaningful participation in associative structures can strengthen social bonds, sense of identity, empowerment, and common culture (Le Mare, 2008), and that coming together outside the home around issues that matter to them can enable women to forward their own agendas (Elias and Arora-Jonsson, 2017). Hence, although they should not be idealized as necessarily empowering or egalitarian, women's associations do demonstrate the power that women's collective action can have for supporting gender equality at the household and community levels and across scales.

The above examples illustrate that gender-responsive value chain development that addresses recognitional, procedural, and distributional equity can advance gender equality. Yet, concerted efforts are needed to tackle inequalities both within and beyond the value chain, and gender-responsive value chain development must not be reduced to simple 'add-ons' to environmental programming. The incorporation of marginalized populations into global value chains for niche products may make them vulnerable to price fluctuations and buyer policies (Elias and Saussey, 2013; Burke, 2012), and the commercialization of NTFPs of importance to women can result in men's appropriation of production activities (Shackleton et al., 2011). What is more, women's involvement in under-commercialized value chains may owe to socially constructed gender roles and inequities, rather than necessarily reflecting their preferences and aspirations (Arora-Jonsson, 2011; Westholm and Arora-Jonsson, 2015). Women's involvement is also no guarantee for sustainable value chains and may result in an overexploitation of resources (Marshall et al., 2006; Villamor et al., 2014) as women, just as men, are faced with material realities and social expectations that shape their engagement with natural resources. Hence, synergies between social and environmental outcomes must be carefully created, rather than presumed.



Photo: Kelvin Trautman



Conclusions



When they strengthen local resource users' rights, abilities, and incentives to sustainably use and manage forest and tree-based landscapes, gender-responsive nature-based approaches hold promise for synergistically addressing climate change, protecting biodiversity, and combating land degradation. As we have shown, placing equity concerns at the heart of these approaches can integrate diverse knowledges, draw on a wider set of priorities, harness a greater range of capacities to restore diverse ecosystem functions, and deliver broader-ranging benefits that generate the buy-in of multiple stakeholders.

Yet, as we have illustrated, synergies between gender equality and climate, biodiversity and land degradation goals must be created and nurtured rather than presumed. Trade-offs among goals may occur and need to be reconciled. As our case studies illustrate, the multiple dimensions of social equity – recognition, representation and distribution – offer a useful framework for identifying entry points and potential trade-offs, understanding key linkages, and promoting synergies between gender equality and environmental outcomes across various types of efforts and interventions.

1

Our first example showed that gender-responsive approaches in collaborative forest management have the potential to open spaces for women's influence in forest management, improve their access to resources and decision-making, and enable them to secure livelihood benefits. The case highlighted that gender quotas alone are not enough to address gender inequalities; initiatives must also address social barriers, recognize rights, equitably distribute benefits, and enhance capacities.

2

Our second case illustrated that the implementation of incentive-based mechanisms such as REDD+ requires recognizing rights, inclusive benefit-sharing mechanisms, and effective representation to avoid exacerbating social differentiation and increasing the vulnerability and exclusion of women. Furthermore, it called for integrating women's knowledge and priorities in initiatives to strengthen resilience and create more effective and sustainable land use systems.

3

Finally, the third example showed the potential of forest and tree-based value chain development for improving gender equality and women's empowerment, expanding livelihood options, and increasing the uptake of sustainable practices in restoration and conservation.

Indeed, advancing gender equity and social inclusion requires the recognition of women and marginalized groups as legitimate stakeholders, and equal value given to their knowledge, priorities and claims (Sijapati Basnett et al., 2017). It calls for strategies to enhance the participation, voice, and influence of women and marginalized groups in making decisions about land use and control and about priorities for resource management at multiple scales. Finally, it means equitably distributing the costs and benefits, and acknowledging and addressing any negative unintended consequences of environmental change and nature-based initiatives. Safeguards, discussed in the case of market-based REDD+, are important mechanisms to address unfavorable gender outcomes, whereas further actions are needed to reconcile tensions and unintended outcomes in the development of value chains. For instance, although several certification bodies seek to promote equitable markets, important gender considerations remain unaddressed within certification standards, limiting the potential of these market-based mechanisms to address gender equality (Sijapati Basnett et al., 2016).

All of our cases underscore the importance of addressing discriminatory gender norms and practices as well as exclusionary formal and informal institutions and processes that cause interlocking inequalities at the household, community, state and market levels, and that limit the ability of women and marginalized groups to voice their perspectives, interests and concerns effectively. The cases demonstrate that we should not assume that women's representation in environmental initiatives alone will result in more equitable decision making and benefits. Even well-meaning efforts may inadvertently reinforce or exacerbate marginalization if underlying inequalities are left unaddressed. To promote positive social-environmental synergies, gender-responsive policy and programming – and, critically, a broader enabling environment – will need to safeguard the rights of women and marginalized groups, strengthen their capacities to exercise leadership and influence environmental agendas, and ensure that they reap the benefits, and not only the costs and burdens, of environmental change.



References

- Agarwal, B. (2001). Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World Development*, 29(10), 1623-1648.
- Agarwal, B. (2009). Rule making in community forestry institutions: The difference women make. *Ecological Economics*, 68(8-9), 2296-2308.
- Agarwal, B. (2010). Does women's proportional strength affect their participation? Governing local forests in South Asia. *World Development*, 38(1), 98-112.
- Agarwal, B. (2015). The power of numbers in gender dynamics: illustrations from community forestry groups. *Journal of Peasant Studies*, 42(1), 1-20.
- Agarwal, A., & Gibson, C. C. (1999). Enchantment and disenchantment: the role of community in natural resource conservation. *World Development*, 27(4), 629-649.
- Ahenkan, A. & Boon, E. (2011). Non-timber forest products (NTFPs): Clearing the confusion in semantics. *Journal of Human Ecology*, 33(1), 1-9.
- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543-571.
- Arora-Jonsson, S. (2011). Virtue and vulnerability: Discourses on women, gender and climate change. *Global Environmental Change*, 21(2), 744-751.
- Arwida, S. D., Maharani, C. D., Basnett, B. S., Yang, A. L., Resosudarmo, D. P., Wong, G. Y., et al. (2016). Gender in forestry and REDD+ in Indonesia. Bogor: Center for International Forestry Research (CIFOR).
- Arwida, S. D., Maharani, C. D., Basnett, B. S., & Yang, A. L. (2017). Gender-related considerations in the development of REDD+ indicators: Lessons from Indonesia. CIFOR Infobrief, (172). Bogor: Center for International Forestry Research (CIFOR).
- Bai, Z. G., Dent, D. L., Olsson, L., & Schaepman, M. E. (2008). Proxy global assessment of land degradation. *Soil Use and Management*, 24(3), 223-234.
- Baynes, J., Herbohn, J., Smith, C., Fisher, R., & Bray, D. (2015). Key factors which influence the success of community forestry in developing countries. *Global Environmental Change*, 35, 226-238.
- Bee, B. A., & Sijapati Basnett, B. (2017). Engendering social and environmental safeguards in REDD+: lessons from feminist and development research. *Third World Quarterly*, 38(4), 787-804.
- Berkes, F. (2009). Evolution of co-management: role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management*, 90(5), 1692-1702.
- Bhandari, T.S., Timalisina, N., Pant, B., Laudari, H.K., Bhattarai, S., Wagle, et al. (2018). Inclusion of Gender Issue in REDD+: Experiences from REDD+ Pilot Implementation in Nepal. *Journal of Forest and Livelihood*, 17, 1.
- Biermayr-Jenzano, P., Kassam, S. N., & Aw-Hassan, A. (2014). Understanding gender and poverty dimensions of high value agricultural commodity chains in the Souss-Masaa-Draa region of southwestern Morocco. ICARDA working paper, mimeo. Amman: International Center for Agricultural Research in the Dry Areas (ICARDA).
- Blaikie, P. (2006). Is small really beautiful? Community-based natural resource management in Malawi and Botswana. *World Development*, 34(11), 1942-1957.
- Brancalion, P. H., Lamb, D., Ceccon, E., Boucher, D., Herbohn, J., Strassburg, B., & Edwards, D. P. (2017). Using markets to leverage investment in forest and landscape restoration in the tropics. *Forest Policy and Economics*, 85, 103-113.
- Burke, B. J. (2012). Transforming power in Amazonian extractivism: Historical exploitation, contemporary "fair trade", and new possibilities for indigenous cooperatives and conservation. *Journal of Political Ecology*, 19(1), 114-126.
- Carr, M., & Hartl, M. (2008). Gender and non-timber forest products: promoting food security and economic empowerment. Rome: International Fund For Agricultural Development (IFAD).
- Carter, J., & Gronow, J. (2005). Recent experience in collaborative forest management: a review paper (No. 43). Jakarta: Center for International Forestry Research (CIFOR).
- Carter, J., Steenhof, B., Haldimann, E., & Akenshaev, N. (2003). Collaborative forest management in Kyrgyzstan: moving from top-down to bottom-up decision-making. Gatekeeper Series No. 108: International Institute for Environment and Development.
- Catacutan, D., & Naz, F. (2015). Gender roles, decision-making and challenges to agroforestry adoption in Northwest Vietnam. *International Forestry Review*, 17(4), 22-32.
- Coleman, E.A. & Mwangi, E. (2013). Women's participation in forest management: A cross-country analysis. *Global Environmental Change*, 23, 193-205.
- Colfer, C. J. P. (2013). The gender box: A framework for analysing gender roles in forest management. CIFOR Occasional Paper, (82). Bogor: Center for International Forestry Research (CIFOR).
- Covelli-Metcalf, E. C., Mohr, J. J., Yung, L., Metcalf, P., & Craig, D. (2015). The role of trust in restoration success: public engagement and temporal and spatial scale in a complex social-ecological system. *Restoration Ecology*, 23(3), 315-324.

- Das, N. (2011). Women's dependence on forest and participation in forestry: A case study of joint forest management programme in West Bengal. *Journal of Forest Economics*, 17(1), 67-89.
- Das, N. (2012). Impact of participatory forestry program on sustainable rural livelihoods: lessons from an Indian province. *Applied Economic Perspectives and Policy*, 34(3), 428-453.
- Degrande, A., & Arinloye, D. D. A. (2014). Gender in agroforestry: implications for action-research. *Nature & Faune*, 6.
- Dekens, J., & Dazé, A. (2019). Conducting Gender Analysis to Inform National Adaptation Plan (NAP) Processes. Winnipeg: International Institute for Sustainable Development.
- de Leeuw, J., Koech, G., Yaye, A., Josephat, N., Carsan, S. (Eds.) (2018). A review of best practices for selected biodiversity-based value chains that promotes pro-poor conservation in the Horn of Africa. Nairobi: The World Agroforestry Centre (ICRAF) and African Network for Agriculture, Agroforestry and Natural Resource Education (ANAFE).
- Djoudi, H., & Brockhaus, M. (2011). Is adaptation to climate change gender neutral? Lessons from communities dependent on livestock and forests in northern Mali. *International Forestry Review*, 13(2), 123-135.
- Djoudi, H., Djenontin, N., Dayamba, D., Zida, M. (2015). Is Carbon gender neutral? Adaptation mitigation gendered linkages in the dry forest context of Burkina Faso. CIFOR Presentation. Center for International Forestry Research (CIFOR), Bogor. Available at: https://www.see.leeds.ac.uk/fileadmin/Documents/research/sri/Multi-level_governance/ESEE_2015_Houria.pdf
- Djoudi, H., Locatelli, B., Vaast, C., Asher, K., Brockhaus, M., & Sijapati, B. B. (2016). Beyond dichotomies: Gender and intersecting inequalities in climate change studies. *Ambio*, 45(3), 248-262.
- Duchelle, A.E., de Sassi, C., Jagger, P., Cromberg, M., Larson, A.M., Sunderlin, et al. (2017). Balancing carrots and sticks in REDD+: implications for social safeguards. *Ecology and Society* 22(3), 2.
- Eilenberg, M. (2015). Shades of green and REDD: Local and global contestations over the value of forest versus plantation development on the Indonesian forest frontier: The value of forest in Indonesia. *Asia Pacific Viewpoint*, 56(1), 48-61.
- Ekesa, B., Ariong, R.M., Kennedy, G., Baganizi, M., Dolan I. (2020). Relationships between land tenure insecurity, agrobiodiversity, and dietary diversity of women of reproductive age: Evidence from Acholi and Teso subregions of Uganda. *Maternal & Child Nutrition* 16(Suppl 3).
- Elias, M. (2010). *Transforming nature's subsidy: Global markets, Burkinabè women and African shea butter* (Doctoral dissertation, McGill University Library).
- Elias, M. (2016). Distinct, shared and complementary: gendered agroecological knowledge in review. *CAB Reviews*, 11(040), 1-16.
- Elias, M., & Arora-Jonsson, S. (2017). Negotiating across difference: Gendered exclusions and cooperation in the shea value chain. *Environment and Planning D: Society and Space*, 35(1), 107-125.
- Elias, M., & Saussey, M. (2013). 'The gift that keeps on giving': Unveiling the paradoxes of fair trade shea butter. *Sociologia Ruralis*, 53(2), 158-179.
- Elias, M., Grosse, A., & Campbell, N. (2020). Unpacking 'gender' in joint forest management: Lessons from two Indian states. *Geoforum*, 111, 218-228.
- Elmhirst, R., Siscawati, M., & Colfer, C. J. P. (2016). Revisiting gender and forestry in Long Segar, East Kalimantan, Indonesia. *Gender and forests: Climate change, tenure, value chains and emerging issues*, 300-318.
- Elmhirst, R., Siscawati, M., Sijapati Basnett, B., & Ekowati, D. (2017). Gender and generation in engagements with oil palm in East Kalimantan, Indonesia: Insights from feminist political ecology. *The Journal of Peasant Studies*, 44(6), 1135-1157.
- Ertug, F. (2003). Gendering the tradition of plant gathering in Central Anatolia (Turkey). *Women & plants: Relations in biodiversity management and conservation*, 183-196.
- Etongo, D., Epule, T. E., Djenontin, I. N. S., & Kanninen, M. (2018). Land management in rural Burkina Faso: the role of socio-cultural and institutional factors. In *Natural Resources Forum* (Vol. 42, No. 3, pp. 201-213). Oxford: Blackwell Publishing Ltd.
- Evans, K., Larson, A., Mwangi, E., Cronkleton, P., Maravanyika, T., Hernandez, X., et al. (2014). Field Guide to Adaptive Collaborative Management and Improving Women's Participation. Bogor: Center for International Forestry Research (CIFOR).
- Evans, K., Larson, A. M., & Flores, S. (2020). Learning to learn in tropical forests: Training field teams in adaptive collaborative management, monitoring and gender. *International Forestry Review*, 22(2), 189-198.
- Evans, K., Monterroso, I., Ombogoh, D. B., Liswanti, N., Tamara, A., Mariño, H., et al. (2021). Getting it right, a guide to improve inclusion in multistakeholder forums. Bogor: Center for International Forestry Research (CIFOR).
- Feka, N. Z., Manzano, M. G., & Dahdouh-Guebas, F. (2011). The effects of different gender harvesting practices on mangrove ecology and conservation in Cameroon. *International Journal of Biodiversity Science, Ecosystem Services & Management*, 7(2), 108-121.
- Forsyth, T. (2014). Climate justice is not just ice. *Geoforum*, 54, 230-232.
- Forsyth, T., & Sikor, T. (2013). Forests, development and the globalisation of justice. *The Geographical Journal*, 179(2), 114-121.
- Fraser, N. (1995). From redistribution to recognition? Dilemmas of justice in a 'post-socialist' age. *New Left Review*, 68-68.
- Fraser, N. (2009). Social justice in the age of identity politics. *Geographic thought: A praxis perspective*, 72-91.
- Gates, M.F. (2014). Putting women and girls at the center of development. *Science*, 345(6202), 1273-1275.
- Gausset, Q., Yago-Ouattara, E. L., & Belem, B. (2005). Gender and trees in Péni, South-Western Burkina Faso. Women's needs, strategies and challenges. *Geografisk Tidsskrift-Danish Journal of Geography*, 105(1), 67-76.
- Grace J.B., Anderson T.M., Seabloom E.W., Borer E.T., Adler P.B., Harpole W.S., et al. (2016). Integrative modelling reveals mechanisms linking productivity and plant species richness. *Nature* 529, 390-393.

- Gupte, M. (2004). Participation in a gendered environment: The case of community forestry in India. *Human Ecology*, 32(3), 365-382.
- Hajjar, R., Oldekop, J. A., Cronkleton, P., Newton, P., Russell, A. J., & Zhou, W. (2021). A global analysis of the social and environmental outcomes of community forests. *Nature Sustainability*, 4(3), 216-224.
- Hegde, N., Elias, M., Lamers, H. A. H., & Hegde, M. (2017). Engaging local communities in social learning for inclusive management of native fruit trees in the Central Western Ghats, India. *Forests, Trees and Livelihoods*, 26(1), 65-83.
- Horlings, L. G. (2015). The inner dimension of sustainability: Personal and cultural values. *Current Opinion in Environmental Sustainability*, 14, 163-169.
- Howard, P. L. (2003). Women and the plant world: an exploration. *Women & Plants. Gender Relations in Biodiversity Management & Conservation* (pp. 1-48). Zed Books.
- Huyer, S., Chao, V., Towle, A., & Baumwoll, J. (2016). Gender equality in national climate action: Planning for gender-responsive nationally determined contributions. United Nations Development Programme (UNDP), New York.
- Ihalainen, M., Schure, J., & Sola, P. (2020a). Where are the women? A review and conceptual framework for addressing gender equity in charcoal value chains in Sub-Saharan Africa. *Energy for Sustainable Development*, 55, 1-12.
- Ihalainen, M., Shaikh, S., Mujawamariya, G., Mayanja, S., Adetonah, S., Tavenner, K., & Elias, M. (2020b). Promise and contradiction: value chain participation for women's empowerment. Advancing gender equality through agricultural and environmental research: past, present and future. Washington, DC: IFPRI.
- Indrarto, G. B., Murharjanti, P., Khatarina, J., Pulungan, I., Ivalerina, F., Rahman, J., et al. (2012). The context of REDD+ in Indonesia: *Drivers, agents and institutions (Working Paper 92)*. Bogor: Center for International Forestry Research (CIFOR).
- Ingram, V., Schure, J., Tieguhong, J. C., Ndoye, O., Awono, A., & Iponga, D. M. (2014). Gender implications of forest product value chains in the Congo basin. *Forests, Trees and Livelihoods*, 23(1-2), 67-86.
- Ingram, V., Haverhals, M., Petersen, S., Elias, M., Basnett, B. S., & Phosiso, S. (2016). Gender and forest, tree and agroforestry value chains: Evidence from literature. In *Gender and Forests: Climate Change, Tenure, Value Chains, and Emerging Issues* (pp. 221-242). London: Earthscan/CIFOR.
- IFC. (2016). Investing in women along agribusiness value chains. Washington, DC: International Finance Corporation.
- IPCC. (2019). Summary for Policymakers. In: *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)].
- IUCN. (2015a). Land Degradation Neutrality: Implications and opportunities for conservation, Technical Brief 2nd Edition, November 2015. Nairobi: IUCN. 19p.
- IUCN. (2015b). The African Women's Network for Community Management of Forests (REFACOF): Empowering African Women to Influence REDD+. Washington DC: IUCN and USAID.
- IUCN and WRI. (2014). A guide to the Restoration Opportunities Assessment Methodology (ROAM): Assessing forest landscape restoration opportunities at the national or sub-national level. Working Paper (Road-test edition). Gland: IUCN.
- Joint Liaison Group. (2007). Report of the seventh meeting of the Joint Liaison Group of the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification. Bonn: Germany.
- Joint Liaison Group. (2012). The Rio Conventions: Action on Gender.
- Joshi, D., Monterroso, I., Gallant, B., Perera, K., & Peveri, V. (2021). A gender-natural resources tango: Water, land, and forest research. In R. Pyburn & A. van Eerdewijk (Eds.), *Advancing gender equality through agricultural and environmental research: Past, present, and future* (pp. 182-220). Washington, DC: International Food Policy Research Institute (IFPRI).
- Kasente, D. (2012). Fair trade and organic certification in value chains: Lessons from a gender analysis from coffee exporting in Uganda. *Gender & Development*, 20(1), 111-127.
- Khadka, M., Karki, S., Karki, B. S., Kotru, R., & Darjee, K. B. (2014). Gender equality challenges to the REDD initiative in Nepal. *Mountain Research and Development*, 34(3), 197-207.
- Kiptot, E., Franzel, S., & Degrande, A. (2014). Gender, agroforestry and food security in Africa. *Current Opinion in Environmental Sustainability*, 6, 104-109.
- Kristjansson, P., Bah, T., Kuriakose, A., Shakirova, M., Segura, G., Siegmund, K., et al. (2019). *Taking action on gender gaps in forest landscapes*. Working Paper. Washington, DC: Program on Forests (PROFOR).
- Larson, A. M., Dokken, T., Duchelle, A. E., Atmadja, S., Resosudarmo, I. A. P., Cronkleton, P., et al. (2015). The role of women in early REDD+ implementation: Lessons for future engagement. *International Forestry Review*, 17(1), 43-65.
- Larson, A. M., Solis, D., Duchelle, A. E., Atmadja, S., Resosudarmo, I. A. P., Dokken, T., & Komalasari, M. (2018). Gender lessons for climate initiatives: A comparative study of REDD+ impacts on subjective wellbeing. *World Development*, 108, 86-102.
- Le Mare, A. (2008). The impact of fair trade on social and economic development: A review of the literature. *Geography Compass*, 2(6), 1922-1942.
- Leisher, C., Temsah, G., Booker, F., Day, M., Samberg, L., Prosnitz, D., et al. (2016). Does the gender composition of forest and fishery management groups affect resource governance and conservation outcomes? A systematic map. *Environmental Evidence*, 5(6).

- Leisher, C., Booker, F., Agarwal, B., Day, M., Matthews, E., Prosnitz, D., et al. (2017). A preliminary theory of change detailing how women's participation can improve the management of local forests and fisheries. SocArXiv working paper.
- Lescourret, F., Magda, D., Richard, G., Adam-Blondon, A. F., Bardy, M., Baudry, J., et al. (2015). A social–ecological approach to managing multiple agro-ecosystem services. *Current Opinion in Environmental Sustainability*, 14, 68-75.
- Lewark, S., George, L., & Karmann, M. (2011). Study of gender equality in community based forest certification programmes in Nepal. *International Forestry Review*, 13(2), 195-204.
- Li, T. M. (2015). Social impacts of oil palm in Indonesia: A gendered perspective from West Kalimantan (Vol. 124). Bogor: Center for International Forestry Research (CIFOR).
- Marshall, E., Schreckenberg, K., & Newton, A. (2006). Commercialization of non-timber forest products in Mexico and Bolivia: Factors influencing success. *Research Conclusions and Policy Recommendations for Decision-makers*, UNEP-WCMC, Cambridge, United Kingdom.
- Martin, D. M. (2017). Ecological restoration should be redefined for the twenty-first century. *Restoration Ecology*, 25(5), 668-673.
- Martin, A., & Lemon, M. (2001). Challenges for participatory institutions: The case of village forest committees in Karnataka, South India. *Society & Natural Resources*, 14(7), 585-597.
- Martin, A., McGuire, S., & Sullivan, S. (2013). Global environmental justice and biodiversity conservation. *The Geographical Journal*, 179(2), 122-131.
- McDermott, M., Mahanty, S., & Schreckenberg, K. (2013). Examining equity: A multidimensional framework for assessing equity in payments for ecosystem services. *Environmental Science & Policy*, 33, 416-427.
- McDougall, C., Ojha, H., Banjade, M. R., Pandit, B. H., Bhattarai, T., Maharjan, M., et al. (2008). *Forests of learning: experiences from research on an adaptive collaborative approach to community forestry in Nepal*. Bogor: Center for International Forestry Research (CIFOR).
- McDougall, C. L., Leeuwis, C., Bhattarai, T., Maharjan, M. R., & Jiggins, J. (2013a). Engaging women and the poor: Adaptive collaborative governance of community forests in Nepal. *Agriculture and Human Values*, 30(4), 569-585.
- McDougall, C., Jiggins, J., Pandit, B. H., Thapa Magar Rana, S. K., & Leeuwis, C. (2013b). Does Adaptive Collaborative Forest Governance Affect Poverty? Participatory Action Research in Nepal's Community Forests. *Society & Natural Resources*, 26(11), 1235-1251.
- McLain, R., Lawry, S., Guariguata, M. R., & Reed, J. (2021). Toward a tenure-responsive approach to forest landscape restoration: A proposed tenure diagnostic for assessing restoration opportunities. *Land Use Policy*, 104, 103748.
- Meinzen-Dick, R., Quisumbing, A., Doss, C., & Theis, S. (2019). Women's land rights as a pathway to poverty reduction: Framework and review of available evidence. *Agricultural Systems*, 172, 72-82.
- Monterroso, I., & Larson, A.M. (2018). Progress in formalizing “native community” rights in the Peruvian Amazon (2014-2018) (Vol. 233). Bogor: Center for International Forestry Research (CIFOR).
- Mukasa, C., & Tibbazalika, A. (2018). Enhancing Women's Participation in Forestry Management Using Adaptive Collaborative Management: The Case of Mbazzi Farmers Association, Mpigi District Uganda. GLF Brief 6. Bofor: Center for International Forestry Research (CIFOR).
- Mukasa, C., Tibbazalika, A., Mwangi, E., Banana, A.Y., Bomuhangi, A., & Bushoborizi, J. (2016). Strengthening women's tenure rights and participation in community forestry. CIFOR Infobrief no. 155. Bogor: Center for International Forestry Research (CIFOR).
- Mwangi, E., Meinzen-Dick, R., & Sun, Y. (2009). Does gender influence forest management? Exploring cases from East Africa and Latin America. CID Working Papers 40. Cambridge: Center for International Development at Harvard University.
- Mwangi, E., Meinzen-Dick, R., & Sun, Y. (2011). Gender and sustainable forest management in East Africa and Latin America. *Ecology and Society*, 16(1).
- Nansereko, S. C. (2010). A gender perspective to value chain analysis for wood-furniture industry upgrading: A case of Jepara, Central Java-Indonesia.
- Newton, P., Nichols, E. S., Endo, W., & Peres, C. A. (2012). Consequences of actor level livelihood heterogeneity for additionality in a tropical forest payment for environmental services programme with an undifferentiated reward structure. *Global Environmental Change*, 22(1), 127-136.
- Nightingale, A. (2002). Participating or just sitting in? The dynamics of gender and caste in community forestry. *Journal of Forest and Livelihoods*, 2, 17-24.
- Nightingale, A. J., & Ojha, H. R. (2013). Rethinking Power and Authority: Symbolic Violence and Subjectivity in Nepal's Terai Forests. *Development and Change*, 44(1), 29-51.
- Olsson, L., Barbosa, H., Bhadwal, S., Cowie, A., Delusca, K., Flores-Renteria, D., et al. (2019). Land Degradation. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)].
- Omman, I., Stocker A. & Jäger, J. (2009). Climate change as a threat to biodiversity: An application of the DPSIR approach. *Ecological Economics*, 69, 24-31.
- Pascual, U., Phelps, J., Garmendia, E., Brown, K., Corbera, E., Martin, A., et al. (2014). Social equity matters in payments for ecosystem services. *Bioscience*, 64(11), 1027-1036.
- Peach Brown, H. C. (2011). Gender, climate change and REDD+ in the Congo Basin forests of Central Africa. *International Forestry Review*, 13(2), 163-176.

- Pehou, C., Djoudi, H., Vinceti, B., & Elias, M. (2020). Intersecting and dynamic gender rights to *néré*, a food tree species in Burkina Faso. *Journal of Rural Studies*, 76, 230-239.
- Pham, T.T., & Brockhaus, M. (2015). Gender mainstreaming in REDD+ and PES: Lessons learned from Vietnam. Gender Climate Brief no. 5. Bogor: Center for International Forestry Research (CIFOR).
- Pham, T. T., Mai, Y. H., Moeliono, M., & Brockhaus, M. (2016). Women's participation in REDD+ national decision-making in Vietnam. *International Forestry Review*, 18(3), 334-344.
- Pratiwi, R. D., Nurhaeni, I. D. A., & Kartono, D. T. (2018). Gender responsiveness in forest management towards sustainable development. In *E3S Web of Conferences* Vol. 74, p. 08005.
- Price, L. L. (2006). Wild food plants in farming environments with special reference to Northeast Thailand, food as functional and medical, and the social roles of woman. In *Eating and Healing: Traditional Food as Medicine* (pp. 65-99)/ New York: Haworth.
- Raworth, K. (2012). A safe and just space for humanity: Can we live within the doughnut? Oxfam.
- Rayner, J., Buck, A., & Katila, P. (2010). Embracing complexity: meeting the challenges of international forest governance. A global assessment report (Vol. 28). IUFRO (International Union of Forestry Research Organizations) Secretariat.
- Rice, J. (2010). Free trade, fair trade and gender inequality in less developed countries. *Sustainable Development*, 18(1), 42-50.
- Robinson, B. E., Holland, M. B., & Naughton-Treves, L. (2014). Does secure land tenure save forests? A meta-analysis of the relationship between land tenure and tropical deforestation. *Global Environmental Change*, 29, 281-293.
- Robinson, B. E., Holland, M. B., & Naughton-Treves, L. (2017). Community land titles alone will not protect forests. *Proceedings of the National Academy of Sciences*, 114(29), E5764.
- Robinson, B. E., Masuda, Y. J., Kelly, A., Holland, M. B., Bedford, C., Childress, M., et al. (2018). Incorporating Land Tenure Security into Conservation. *Conservation Letters*, 11(2).
- Rocheleau, D., & Edmunds, D. (1997). Women, men and trees: Gender, power and property in forest and agrarian landscapes. *World Development*, 25(8), 1351-1371.
- Saito-Jensen, M., Rutt, R. L., & Chhetri, B. B. K. (2014). Social and Environmental Tensions: Affirmative Measures Under REDD + Carbon Payment Initiatives in Nepal. *Human Ecology*, 42(5), 683-694.
- Sarin, M. (2001). Disempowerment in the name of 'participatory' forestry? - Village forests joint management in Uttarakhand. *Forests Trees and People Newsletter*, 26-35.
- Sarker, D., & Das, N. (2002). Women's participation in forestry: Some theoretical issues. *Economic and Political Weekly*, 4407-4412.
- Sarmiento Barletti, J. P., Hewlett, C., & Larson, A. M. (2019). How does context affect the outcomes of multi-stakeholder forums on land use and/or land-use change?: A Realist Synthesis Review of the scholarly literature. Bogor: Center for International Forestry Research (CIFOR).
- Shackleton, S., Paumgarten, F., Kassa, H., Husselman, M., & Zida, M. (2011). Opportunities for enhancing poor women's socioeconomic empowerment in the value chains of three African non-timber forest products (NTFPs). *International Forestry Review*, 13(2), 136-151.
- Sijapati Basnett, B., Gnych, S., & Anandi, C. A. M. (2016). Transforming the Roundtable on Sustainable Palm Oil for greater gender equality and women's empowerment. CIFOR Infobrief. Bogor: Center for International Forestry Research (CIFOR).
- Sijapati Basnett, B., Elias, M., Ihalainen, M., & Paez Valencia, A.M. (2017). Gender matters in forest landscape restoration: A framework for design and evaluation. Bogor: Center for International Forestry Research (CIFOR).
- Sikor, T., & Newell, P. (2014). Globalising environmental justice? *Geoforum*, 54, 151-241.
- Stiem, L., & Krause, T. (2016). Exploring the impact of social norms and perceptions on women's participation in customary forest and land governance in the Democratic Republic of Congo—implications for REDD+. *International Forestry Review*, 18(1), 110-122.
- Stoian, D., Donovan, J., Elias, M., & Blare, T. (2018). Fit for purpose? A review of guides for gender-equitable value chain development. *Development in Practice*, 28(4), 494-509.
- Sunderland, T., Achdiawan, R., Angelsen, A., Babigumira, R., Ickowitz, A., Paumgarten, F., et al. (2014). Challenging Perceptions about Men, Women, and Forest Product Use: A Global Comparative Study. *World Development*, 64(1), 56-66.
- Sunderlin, W. D., de Sassi, C., Sills, E. O., Duchelle, A. E., Larson, A. M., Resosudarmo, I. et al. (2018). Creating an appropriate tenure foundation for REDD+: The record to date and prospects for the future. *World Development*, 106, 376-392.
- Tseng, T. W. J., Robinson, B. E., Bellemare, M. F., BenYishay, A., Blackman, A., Boucher, T., et al. (2021). Influence of land tenure interventions on human well-being and environmental outcomes. *Nature Sustainability*, 4, 242-251.
- Tsige, M., Synnevåg, G., & Aune, J. B. (2020). Gendered constraints for adopting climate-smart agriculture amongst smallholder Ethiopian women farmers. *Scientific African*, 7, e00250.
- Turner, B. (2014). Neoliberal politics of resource extraction: Moroccan argan oil. *Forum for Development Studies*, 41(2), 207-232.
- United Nations. (1995). United Nations, Beijing Declaration and Platform of Action, adopted at the Fourth World Conference on Women, 27 October 1995, accessed on 7 May 2021 at: <https://www.refworld.org/docid/3dde04324.html>
- UN-REDD. (2011). The Business Case for Mainstreaming Gender in REDD. Geneva: UN-REDD Program Secretariat.
- UN-REDD. (2017). 9th Consolidated Annual Progress Report of the UN-REDD Programme Fund. UN-REDD Programme Fund.
- UN Women. (2014). World survey on the role of women in development 2014: Gender equality and sustainable development. New York: UN Women.

- UN Women. (2016). Implementation of gender-responsive climate action in the context of sustainable development. Report of the expert group meeting, Bonn, Germany, 14-16 October 2015. Bonn, Germany: UN Women.
- UN Women. (2018). Towards a gender-responsive implementation of the Convention on Biological Diversity. New York: UN Women.
- Upadhyay, B. (2005). Women and natural resource management: Illustrations from India and Nepal. *Natural Resources Forum*, 29(3), 224-232.
- Varughese, G., & Ostrom, E. (2001). The contested role of heterogeneity in collective action: some evidence from community forestry in Nepal. *World Development*, 29(5), 747-765.
- Verhart, N., & Pyburn, R. (2010). The rough road to gender equitable growth: The case of Café de Mujer Guatemala. *Development*, 53(3), 356-361.
- Villamor, G. B., Desrianti, F., Akiefnawati, R., Amaruzaman, S., & van Noordwijk, M. (2014). Gender influences decisions to change land use practices in the tropical forest margins of Jambi, Indonesia. *Mitigation and Adaptation Strategies for Global Change*, 19(6), 733-755.
- Visseren-Hamakers, I., & Verkooijen, P. (2012). The practice of interaction management: enhancing synergies among multilateral REDD+ institutions. In *Forest and Nature Governance* (pp. 133-149). Dordrecht: Springer.
- Wagle, R., Pillay, S., & Wright, W. (2017). Examining Nepalese Forestry Governance from Gender Perspectives. *International Journal of Public Administration*, 40(3), 205-225.
- White, J. B. (2012). Gendered experiences of dispossession: oil palm expansion in a Dayak Hibun community in West Kalimantan. *The Journal of Peasant Studies*, 39(3-4), 995-1016.
- Westholm, L. & Arora-Jonsson, S. (2015). Defining solutions, finding problems: Deforestation, gender and REDD+ in Burkina Faso. *Conservation and Society*, 13(2):189-199.
- Westholm, L. (2016). Fruits from the forest and the fields: Forest conservation policies and intersecting social inequalities in Burkina Faso's REDD+ program. *International Forestry Review*, 18(4): 511-521.
- World Bank. (2011). World Development Report 2012: Gender equality and development. Washington, DC: World Bank.
- Wunder, S., Duchelle, A. E., Sassi, C. D., Sills, E. O., Simonet, G., & Sunderlin, W. D. (2020). REDD+ in theory and practice: How lessons from local projects can inform jurisdictional approaches. *Frontiers in Forests and Global Change*, 3, 11.
- WWF. (2015). INDC analysis: An overview of the forest sector. Washington, DC: World Wildlife Fund (WWF).



Alliance



**RESEARCH
PROGRAM ON**
Forests, Trees and
Agroforestry



Bioversity International and the International Center for Tropical Agriculture (CIAT) are part of CGIAR, a global research partnership for a food-secure future.

Bioversity International is the operating name of the International Plant Genetic Resources Institute (IPGRI).

Alliance Headquarters

Via di San Domenico, 1, 00153
Rome, Italy
Phone: (+39) 0661181
Fax: (+39) 0661979661

<https://alliancebioversityciat.org>
www.cgiar.org