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A female farmer in Pattaneteang village harvesting coffee.  
Photo: RECOFTC Indonesia

## Transforming agroforestry through gender practice: challenges and opportunities

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*“Initiatives that aim at  
empowering women –  
recognizing their contributions  
and addressing the constraints  
they face – can lead to  
increased adoption of these  
agricultural practices.”*

### Introduction

The global agriculture sector relies heavily on women, who constitute a significant portion of the workforce, especially in developing countries (FAO 2014). Despite their crucial role, women face inequalities in access to essential resources (FAO 2011), which results in lower agricultural productivity and increased poverty (Kiptot and Franzel 2011). Research in the agriculture sector estimates that if women had equitable access to education and other resources, production would increase by 10 to 20% (Quisumbing and Pandolfelli 2010). And as climate change threatens food systems (Steiner et al. 2020), addressing these gender gaps becomes even more urgent.

Agroforestry, as a climate-smart agricultural practice, offers promise by increasing land productivity, improving socioeconomic outcomes and promoting climate change mitigation and adaptation (Bose 2015; Haeggman et al. 2020). Agroforestry is a broadly defined term that involves the cultivation of a diverse mix of trees, shrubs and crops, and, in some cases, their integration with livestock farming. This dynamic system of natural resource management, rooted in ecological principles, effectively incorporates trees into various landscapes, including farms and ranches (Kitalyi et al. 2013). Regarded as a sustainable land-use practice, agroforestry contributes to agricultural productivity, delivering economic, ecological, social and cultural benefits (Awazi and Tchamba 2019). Agroforestry significantly reinforces smallholder farmers' climate resilience, supporting food security, health benefits, environmental stability and reduced vulnerability to natural hazards (Haeggman et al. 2020).

In agroforestry systems across the globe, women play a significant role, (Debbarma et al. 2015). However, agroforestry systems are not gender-neutral (FAO 2013; Degrande and Arinloye 2014; Haeggman et al. 2020). Despite their pivotal role, women experience more disadvantages compared to men due to a complex net of socioeconomic, cultural and institutional factors (Kiptot and Franzel 2012). Gender disparities persist, and social norms influence how men and women engage with natural resources, affecting the adoption of agroforestry (Kiptot and Franzel 2012). Barriers such as restricted access to land, education, decision-making processes and finance hinder women's participation (Nguyen et al. 2021). Yet, empowering women to adopt agroforestry can lead to increased household well-being, food security and community development (Nguyen et al. 2021; Jamal 2023).

## Gender roles in agroforestry management

Gender dynamics in agroforestry play a crucial role in community life. Gender roles, which consist of the expected behaviours and responsibilities of individuals based on their gender (Blackstone 2003), significantly influence how both men and women engage with forests, agroforestry and trees as vital resources for their livelihoods. Unfortunately, especially in rural areas there are notable disparities in the roles, rights and duties assigned to women and men. These inequalities are evident in various aspects of daily life, including decision-making, access to benefits from forest and tree resources, and experiences in forest and tree-based environments (Kiptot 2015).

Research conducted by Pasaribu et al. (2019) in Sungai Langka village, Indonesia, shows the tangible manifestation of these gender roles. Findings from this study reveal that women's contributions extend beyond household chores, with several households actively involving women in various agroforestry management activities (Figure 1).

The study highlights a prevailing gender divide in agroforestry management activities, with men primarily handling these responsibilities due to their role as primary earners for their families. This finding aligns with Suwardi's (2010) research, which also observed that men tend to invest more time in community forest management tasks due to their greater familial financial responsibilities. In addition, the division of labour between men and women in agroforestry is often influenced by the perception of physical strength and abilities. Men are typically assigned tasks perceived as physically demanding or requiring greater strength, such as land preparation, planting, plant maintenance and transportation. These gender-based roles have historical roots and are reinforced by cultural norms and expectations (Elias 2016).

Consequently, this gender-based division of labour in agroforestry can have significant implications for women's participation in decision-making processes and their access to and control over critical resources (Kinasih and Wulandari 2021). When women are primarily engaged in tasks seen as less physically demanding, they may have limited influence over decisions related to agroforestry practices, resource allocation and household expenditures.

## Constraints faced by women in agroforestry adoption

Barriers to these five key aspects have significant impacts on women's engagement in agroforestry.

### Land access

Securing land tenure rights is a crucial factor in agroforestry investment. However, women often find themselves in a less favourable situation than men when it comes to securing land access (Benjamin et al. 2021). For instance, in many land tenure systems of sub-Saharan Africa, women are largely excluded from obtaining permanent and secure land rights (Kiptot and Franzel 2011; Benjamin et al. 2021), due to the prevailing pattern of land inheritance (i.e., patrilineal), whereby land is typically passed down to male offspring (Kiptot and Franzel 2011).

Women's ownership of agricultural land remains limited (Kiptot and Franzel 2011; Chiputwa et al. 2021), with only 13% of agricultural landowners worldwide being women (UN Women 2018). This percentage varies across regions, with female heads of households and farm operators accounting for an average of 15% of agricultural landholders in sub-Saharan Africa, more than 25% in Latin America and less than 5% in Asia (FAO 2011).

**Literacy and extension services**

In certain cultures, girls are withdrawn from school earlier than boys and assigned to household and economic activities (Catacutan and Naz 2015). This results in lower literacy rates among women (Kiptot and Franzel 2011) and consequently, in their lower participation in extension activities and services (Catacutan and Naz 2015). The latter is further exacerbated by the time constraints faced by women due to their role as caregivers (Diawuo et al. 2019; Chiputwa et al. 2021).

Educational disparities hinder female adoption of innovative agricultural practices and cultivation methods that could help them achieve greater efficiency and profitability in farming (Kumase et al. 2010). Inadequate extension services further impede women's farming practices, as programmes often fail to address their specific needs (Nguyen et al. 2021).

While women's participation in educational programmes enhances agroforestry adoption and empowerment, restricted access to knowledge through farmer groups, controlled by socially higher-ranked males, poses challenges for female farmers (FAO and CARE 2019). This leads to many women preferring local, informal training and learning from other women (Nguyen et al. 2021), which emphasizes the need for accessible, culturally relevant and women-centric extension materials and methods.

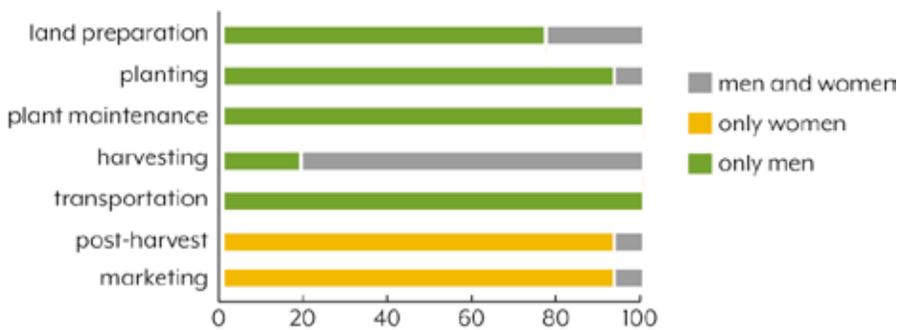
**Decision-making**

Another important constraint is the imbalance in the power that women and men have in decision-making processes within the household and the community. As explained above, traditional social norms have long considered agriculture, including agroforestry, as a domain of men. These norms are deeply rooted at both the household and community level (Wiyanti et al. 2022), and they associate agricultural activities and responsibilities with male participation (Catacutan and Naz 2015; Wiyanti et al. 2022). This leads to a prevailing belief that men possess superior knowledge and expertise in agriculture (Wiyanti et al. 2022). As a result, men are typically deferred to when it comes to making decisions about agricultural and agroforestry-related processes (Catacutan and Naz 2015).

Decision-making bodies with gender imbalance within the community may intentionally or unintentionally increase gender biases and reinforce existing power dynamics. Men may dominate discussions and decisions (Catacutan and Naz 2015), which can limit the inclusion of gender-sensitive approaches and policies. Such situations may disregard issues that are crucial to women, such as access to land and credit. When women's insights and experiences are overlooked, it can result in missed opportunities to develop the innovative solutions needed to address complex challenges in agroforestry and rural development (Catacutan and Naz 2015; Wiyanti et al. 2023).

**Labour**

Limited access to labour is a major challenge for female farmers. Women allocate more time to family and child-rearing tasks compared to men, which reduces the amount of time they can dedicate to farm work (Kumase et al. 2010). Agroforestry demands careful planning and management, which can be hindered by time constraints.



**Figure 1. Gender roles (%) in agroforestry management activities of farmer households in Sungai Langka village, Indonesia.** Based on: Pasaribu et al. (2019)





Female farmers in Bantaeng harvesting coffee. Photo: RECOFTC Indonesia

Evidence shows that women often rely on hired labour, while men invest more of their own or family labour in their farms (Ayodele 2020). This labour constraint can increase women's production costs, reduce profits and discourage agroforestry adoption. Poor women with limited financial resources are especially affected, and the shortage of labour resources in female-headed households can lead to reduced productivity and efficiency (Kiptot and Franzel 2011).

### **Financial resources**

When it comes to finance, women can face constraints in many forms, such as limited access to credit, loans or investment capital. Female farmers often lack secure land rights and collateral assets (Catacutan and Naz 2015), which are frequently required as prerequisites for securing loans or credit (Hill and Vigneri 2011). Establishing an agroforestry system often requires initial investments in tree seedlings, equipment and other resources (Shennan-Farpon et al. 2022); therefore, the inability to access credit impedes female farmers from adopting this agricultural practice (Chiputwa et al. 2021). Moreover, cultural norms and societal expectations can restrict women from engaging in certain economic activities or controlling their capital (Fletschner and Kenney 2014).

Additionally, women possess less knowledge about marketing in comparison to men, and have minimal influence in transactions involving the buying and

selling of agricultural products and farm equipment (Armbruster et al. 2019). This lack of financial literacy can be a significant barrier to adopting agroforestry practices (Chiputwa et al. 2021).

### **Women as agents of change**

The Sustainable Development Goals (SDGs) set by the United Nations recognize the key role of women as agents of change, and gender equality in policy development is now deemed essential for sustainable development (UN 2015). Women's potential as agents of change for the adoption of agroforestry is evident, given their capacity for building social capital, their greater sense of community (UNDP and UN Women 2022) and their extensive knowledge of tree and forest species diversity, management and range of uses (Catacutan and Naz 2015).

In many projects, the involvement of women has been proven to be essential for success. In southern Chile, Peredo Parada et al. (2020) highlighted the key role of peasant women in the establishment of agroforestry due to the importance of the knowledge they hold. This was also observed by Singh (2023), who noted that the knowledge possessed by women in male-headed households regarding seeds, compatibility of crops used in intercropping and mixed cropping, manure and pest management was crucial for the adoption of a successful practice. Nevertheless, men continue to dominate the



**A female farmer in Campaka village harvesting coffee. Photo: RECOFTC Indonesia**

practice of agroforestry on a global scale. This imbalance is evident in various regions, as revealed by research conducted by Jahan et al. (2022) in Bangladesh, along with similar findings by Kiyani et al. (2017) in Rwanda and Kouassi et al. (2021) in Côte d'Ivoire.

Interestingly, Bourne et al. (2015) discovered that despite women valuing and preferring agroforestry as a potential form of land use more than men do, the lower number of trees in their lands showed that their capacity to adopt this practice is constrained. In line with this, Catacutan and Naz (2015) found in Viet Nam that, while women placed a higher priority on agroforestry than men did, female-headed households had fewer tree species in their homegardens. This gender disparity can be attributed to a multitude of factors; deeply entrenched social norms are among the main ones. As explained above, these norms contribute to women's lower wealth levels and restricted access to land, labour and extension services, as well as limitations imposed by inheritance systems, and the lack of rights for women to grow trees (Kiptot and Franzel 2011; Bourne et al. 2015; Diawuo et al. 2019; Hemida et al. 2022).

### ***Female farmers' willingness to adopt agroforestry***

In a recent study conducted by Agúndez and colleagues (Agúndez et al. 2022) in Niger, the findings showed that women, mainly those who were heads of household,

were more willing to adopt climate change adaptation programmes or agroforestry systems than men were. In Uganda, Bourne et al. (2015) found that, in male-headed households, both men and women expressed similar preferences for new land uses, whereas female-headed households preferred agroforestry. Two main reasons can explain this phenomenon.

First, as explained above, men and women have different roles (Chiputwa et al. 2021), which leads to a difference in knowledge of natural resources and a difference in preferences (Gumucio et al. 2017). In El Salvador, Kelly (2009) found that women, whether as heads of household or as members, valued agroforestry fruit systems significantly more than men did because these systems provide food and access to additional markets, as well as ecosystem services such as soil enrichment. Similarly, Blare and Useche (2015) found that, on average, women placed a considerably higher value on cocoa agroforests than men did. In Viet Nam, women in male-headed households prioritized agroforestry more than men did (Catacutan and Naz 2015).

Second, as a consequence of resource degradation, men often opt for seasonal migration as a means to diversify their labour activity, a phenomenon that occurs in countries of the Sahel (Agúndez et al. 2022), and is also prevalent across the globe (Kelly 2009; Kiptot and Franzel 2011; Paudel et al. 2022). Consequently, this migration

pattern results in households being led by women and exposed to greater vulnerability (Agúndez et al. 2022), which might influence the willingness of women to adopt agroforestry practices (Paudel et al. 2022).

Therefore, in contexts where women express a greater appreciation for agroforests than men do (Kelly 2009; Agúndez et al. 2022), the inclusion of women, both household heads and members, in land-use decision-making is likely to result in increased adoption of agroforestry systems (Blare and Useche 2015).

## **Conclusion and recommendations**

Agroforestry plays a vital role by promoting sustainable forest management, empowering local communities, enhancing livelihoods and conserving biodiversity. Importantly, agroforestry has the potential to devolve forest management rights to communities while addressing their socioeconomic needs and contributing to environmental sustainability.

However, gender plays a significant role in agroforestry management, reflecting sociocultural expectations assigned to individuals based on their sex category. While both women and men contribute to forest- and tree-based livelihoods and management, gender disparities persist, hindering women's adoption of agroforestry. These inequalities stem from social norms deeply rooted in cultural expectations, which perpetuate gender biases and restrict women's access to education and vital resources, as well as their participation in decision-making processes.

Despite these challenges, women have the potential to be powerful agents of change in the adoption of agroforestry. Their complex knowledge of natural resources and their greater sense of community make them valuable contributors to agroforestry initiatives. Initiatives that aim at empowering women — recognizing their contributions and addressing the constraints they face — can lead to increased adoption of these agricultural practices, ultimately fostering more sustainable and resilient agricultural systems.

This article describes several ways in which gender mainstreaming can enhance the effectiveness and sustainability of agroforestry initiatives. The following are key recommendations:

### ***Collect gender-disaggregated data***

Investing in robust data collection and analysis will help researchers and organizations better understand gender disparities and dynamics within agroforestry contexts. Accurate gender-disaggregated data will inform evidence-based policies, programmes and interventions, enabling tailored approaches that address the specific needs of and challenges faced by women and men in order to promote gender equity and sustainability in agroforestry.

### ***Support equal access to resources***

Policies and initiatives by governments and organizations that provide equal access to land, financial resources, agricultural inputs and extension services for women and men can help level the playing field and enable both genders to fully participate in agroforestry activities.

### ***Promote gender-inclusive training and education***

Gender-sensitive training programmes and educational initiatives developed and implemented by governments and organizations can challenge traditional perceptions and stereotypes. By focusing on increasing women's and men's knowledge and skills in agroforestry initiatives can empower both genders to participate effectively in decision-making processes.

### ***Implement gender-responsive policies***

Advocacy by organizations and individuals for the incorporation of gender-responsive policies at all levels of government includes enforcing regulations that ensure a minimum representation of women in decision-making bodies, such as the introduction of a quota for women in farmers' groups.

### ***Foster women's leadership and participation***

Women have proven to be effective agents of change due to their ability to nurture social connections, trust and community networks. Their greater sense of community enables them to share valuable information through informal channels, which plays a significant role in promoting agroforestry and time-saving practices within the community. The Weaving Leadership for Gender Equality (WAVES) programme by RECOFTC, for example, conducted from 2019 to 2022, focused on building women's leadership skills and increasing their participation in agroforestry and rural development initiatives. It created an effective network of 36 gender leaders across seven countries, fostering

their engagement in decision-making processes and amplifying their work through collaborations. This initiative contributed to reshaping the gender agenda, emphasizing inclusion and social justice in the respective societies.

### **Raise awareness and challenge social norms**

Awareness campaigns and community dialogues conducted by organizations and governmental bodies can challenge deeply ingrained social norms that reinforce gender inequalities in agroforestry. In addition, engaging with communities can help change perceptions about women's expertise in and contributions to agriculture and agroforestry.

Acting on these recommendations will help mainstream gender in agroforestry by addressing the root causes of gender disparities and promoting inclusivity. They will challenge traditional gender roles, empower women, and create an environment where both women and men have equal opportunities to engage in decision-making processes, benefit from agroforestry resources, and contribute to sustainable rural development.

### **References**

Agúndez D, Lawali S, Mahamane A, Alía R and Soliño M. 2022. Development of agroforestry food resources in Niger: Are farmers' preferences context specific? *World Development* 157:105951. <https://doi.org/10.1016/j.worlddev.2022.105951>.

Armbruster S, Solomon J, Blare T and Donovan J. 2019. Women's time use and implications for participation in cacao value chains: Evidence from VRAEM, Peru. *Development in Practice* 29(7):827–843. <https://hdl.handle.net/10883/20539>.

Awazi NP and Tchamba NM. 2019. Enhancing agricultural sustainability and productivity under changing climate conditions through improved agroforestry practices in smallholder farming systems in sub-Saharan Africa. *African Journal of Agricultural Research* 14(7):379–388. <https://doi.org/10.5897/AJAR2018.12972>.

Ayodele OV. 2020. Ageing and resultant changing gender roles of farmers' involvement in cocoa production in Ekiti State, Nigeria. *Agriculture, Forestry and Fisheries* 9(3):39–44. <https://doi.org/10.11648/j.aff.20200903.11>.

Benjamin EO, Ola O, Sauer J and Buchenrieder G. 2021. Interaction between agroforestry and women's land tenure security in sub-Saharan Africa: A matrilineal perspective. *Forest Policy and Economics* 133:102617. <https://doi.org/10.1016/j.forpol.2021.102617>.

Blackstone AM. 2003. Gender roles and society. In: Miller JR, Lerner RM and Schiamberg LB. eds. *Human ecology: An encyclopedia of children, families, communities and environments*, pp. 335–338. Santa Barbara, CA: ABC-CLIO.

Blare T and Useche P. 2015. Is there a choice? Choice experiment to determine the value men and women place on cacao agroforests in coastal Ecuador. *International Forestry Review* 17(4):46–60. <https://doi.org/10.1505/146554815816086390>.

Bose P. 2015. India's drylands agroforestry: A ten-year analysis of gender and social diversity, tenure and climate variability. *International Forestry Review* 17(4):85–98. <https://doi.org/10.1505/146554815816086435>.

Bourne M, Kimaiyo J, Tanui J, Catacutan D and Otiende V. 2015. Can gender appreciation of trees enhance landscape multifunctionality? A case of smallholder farming systems on Mount Elgon. *International Forestry Review* 17(4):33–45. <https://doi.org/10.1505/146554815816086480>.

Catacutan D and Naz F. 2015. Gender roles, decision-making and challenges to agroforestry adoption in Northwest Vietnam. *International Forestry Review* 17(4):22–32. <https://www.ingentaconnect.com/content/cfa/ifr/2015/00000017/A00404s4/art00003>.

Chiputwa B, Obeng Adomaa F, Ihli HJ and Rusinamhodzi L. 2021. Gender equality as a pathway to sustainable development of cocoa and coffee value chains in East and West Africa. In: Minang PA, Duguma LA and van Noordwijk M. eds. *Tree commodities and resilient green economies in Africa*. Nairobi: World Agroforestry (ICRAF). <https://www.cifor-icraf.org/gtci/publication/>.

Debbarma J, Taran M and Deb S. 2015. Contribution of women in agroforestry practices of West Tripura, North-East India. *Octa Journal of Environmental Research* 3(4). [http://www.sciencebeingjournal.com/sites/default/files/11-151223\\_0304\\_MT.pdf](http://www.sciencebeingjournal.com/sites/default/files/11-151223_0304_MT.pdf).

Degrande A and Arinloye D-DA. 2014. Gender in agroforestry: Implications for action-research. *Nature & Faune* 29(1):6–11. <https://www.fao.org/documents/card/es/c/7ad92f61-ff88-44f4-9fcc-f2d6f36c1fe4>.

Diawuo F, Kosoe EA and Doko DA. 2019. Participation of women farmers in agroforestry practices in the Jaman South Municipality, Ghana. *Ghana Journal of Development Studies* 16(2):267–289. <https://doi.org/10.4314/gjds.v16i2.13>.

Elias M. 2016. Gendered knowledge sharing and management of shea (*Vitellaria paradoxa*) in central-west Burkina Faso. In: Colfer CJP, Basnett BS and Elias M. eds. *Gender and forests: Climate change, tenure, value chains and emerging issues*, pp. 263–282. Bogor: Center for International Forestry Research (CIFOR). [https://www.cifor.org/publications/pdf\\_files/Books/BColfer1701.pdf](https://www.cifor.org/publications/pdf_files/Books/BColfer1701.pdf).

- FAO. 2014. *The state of food and agriculture: Innovation in family farming*. Rome: Food and Agriculture Organization. <http://www.fao.org/3/a-i4040e.pdf>.
- FAO. 2013. *Forests, food security and gender: Linkages, disparities and priorities for action*. Food and Agriculture Organization. <https://www.fao.org/forestry/37071-07fcc88f7f1162db37cfea44e99b9flc4.pdf>.
- FAO. 2011. *Women in agriculture: Closing the gender gap for development. The state of food and agriculture 2010–2011*. Rome: Food and Agriculture Organization. <https://www.fao.org/3/i2050e/i2050e.pdf>.
- FAO and CARE. 2019. *Good practices for integrating gender equality and women's empowerment in climate-smart agriculture programmes*. Rome: Food and Agriculture Organization and Atlanta: Cooperative for Assistance and Relief Everywhere. <https://www.fao.org/3/ca3883en/ca3883en.pdf>.
- Fletschner D and Kenney L. 2014. Rural women's access to financial services: credit, savings and insurance. In: Quisumbing AR, Meinzen-Dick R, Raney TL, Croppenstedt A, Behrman JA and Peterman A. eds. *Gender in agriculture: Closing the gender gap*, pp. 187–208. The Food and Agriculture Organization of the United Nations and Springer Science + Business Media B.V. <https://www.fao.org/3/am312e/am312e.pdf>.
- Gumucio T, Twyman J and Clavijo M. 2017. *Gendered perspectives of trees on farms in Nicaragua: Considerations for agroforestry, coffee cultivation and climate change*. Working Paper. International Center for Tropical Agriculture (CIAT); CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS); CGIAR Research Program on Forests, Trees and Agroforestry (FTA). Cali, Colombia. <https://hdl.handle.net/10568/78670>.
- Haeggman M, Lundberg J and Moberg F. 2020. *Agroforestry, biodiversity and ecosystem services. Creating a resilient and sustainable future by farming with trees*. Stockholm: Agroforestry Network. [agroforestrynetwork.org/database\\_post/agroforestry-biodiversity-and-ecosystem-services-creating-a-resilient-and-sustainable-future-by-farming-with-trees/](http://agroforestrynetwork.org/database_post/agroforestry-biodiversity-and-ecosystem-services-creating-a-resilient-and-sustainable-future-by-farming-with-trees/).
- Hemida M, Mulyana B and Vityi A. 2022. Determinant of farmers' participation and biodiversity status in the program of agroforestry rehabilitation in Sudan. *Biodiversitas Journal of Biological Diversity* 23(11). <https://doi.org/10.13057/biodiv/d231113>.
- Hill RV and Vigneri M. 2011. *Mainstreaming gender sensitivity in cash crop market supply chains*. ESA Working Paper No. 11-08. Rome: Food and Agriculture Organization, Agrifood Economics Division. <https://www.fao.org/3/am313e/am313e.pdf>.
- Jahan H, Rahman MW, Islam MS, Rezwan-Al-Ramim A, Tuhin MMUJ and Hossain ME. 2022. Adoption of agroforestry practices in Bangladesh as a climate change mitigation option: Investment, drivers and SWOT analysis perspectives. *Environmental Challenges* 7 100509. <https://doi.org/10.1016/j.envc.2022.100509>.
- Jamal M. 2023. *Women as agents of change for greening agriculture and reducing gender inequality*. UNDP Global Policy Network Brief. New York: United Nations Development Programme. <https://www.undp.org/publications/dfs-women-agents-change-greening-agriculture-and-reducing-gender-inequality>.
- Kelly JJ. 2009. *Reassessing forest transition theory: Gender, land tenure insecurity and forest cover change in rural El Salvador*. Doctoral dissertation, Rutgers University, Graduate School. <https://rucore.libraries.rutgers.edu/rutgers-lib/26300/PDF/1/play/>.
- Kinasih SR and Wulandari I. 2021. Gender-based division of labor in agroforestry management in the Upper Citarum Watershed. *Indonesian Journal of Anthropology* 6(1):29–44. In Bahasa Indonesian. <https://doi.org/10.24198/umbara.v6i1.33414>.
- Kiptot E. 2015. Gender roles, responsibilities and spaces: Implications for agroforestry research and development in Africa. *International Forestry Review* 17(4):11–21. <https://doi.org/10.1505/146554815816086426>.
- Kiptot E and Franzel S. 2012. Gender and agroforestry in Africa: A review of women's participation. *Agroforestry Systems* 84:35–58. <https://doi.org/10.1007/s10457-011-9419-y>.
- Kiptot E and Franzel SC. 2011. *Gender and agroforestry in Africa: Are women participating? Occasional Paper No. 13*. Nairobi: World Agroforestry Centre. <https://www.worldagroforestry.org/publication/gender-and-agroforestry-africa-are-women-participating>.
- Kitalyi A, Otsyina R, Wambugu C and Kimaro D. 2013. *FAO characterisation of global heritage agroforestry systems in Tanzania and Kenya*. Tanzania: Agroforestry and development alternatives (AFOREDA) and Rome: Food and Agriculture Organization (FAO). <https://www.fao.org/3/bp876e/bp876e.pdf>.
- Kiyani P, Andoh J, Lee Y and Lee DK. 2017. Benefits and challenges of agroforestry adoption: A case of Musebeya sector, Nyamagabe District in southern province of Rwanda. *Forest Science and Technology* 13(4):174–180. <https://doi.org/10.1080/21580103.2017.1392367>.
- Kouassi JL, Kouassi A, Bene Y, Konan D, Tondoh EJ and Kouame C. 2021. Exploring barriers to agroforestry adoption by cocoa farmers in South-Western Côte d'Ivoire. *Sustainability* 13(23):13075. <https://doi.org/10.3390/su132313075>.
- Kumase WAN, Bisseleua H and Klases S. 2010. *Opportunities and constraints in agriculture: A gendered analysis of cocoa production in Southern Cameroon*. Discussion Paper No. 27. Georg-August-Universität Göttingen, Courant Research Centre - Poverty, Equity and Growth (CRC-PEG), Göttingen. <http://hdl.handle.net/10419/90510>.

- Nguyen MP, North H, Duong MT and Nguyen MC. 2021. *Assessment of women's benefits and constraints in participating in agroforestry exemplar landscapes*. Working Paper No. 315. Nairobi: World Agroforestry (ICRAF). <https://apps.worldagroforestry.org/downloads/Publications/PDFS/WP21021.pdf>.
- Pasaribu SW, Kaskoyo H and Safe'i R. 2019. The gender role in agroforestry management in Sungai Langka village, Gedong Tataan District, Pesawaran Regency, Lampung Province. *Journal of Sylva Indonesiana* 2(02):62–69. <https://doi.org/10.32734/jsi.v2i2.980>.
- Paudel D, Tiwari KR, Raut N, Bajracharya RM, Bhattarai S, Sitaula BK and Thapa S. 2022. What affects farmers in choosing better agroforestry practice as a strategy of climate change adaptation? An experience from the mid-hills of Nepal. *Heliyon* 8(6):e09695. <https://doi.org/10.1016/j.heliyon.2022.e09695>.
- Peredo Parada S, Barrera C, Burbi S and Rocha D. 2020. Agroforestry in the Andean Araucanía: An experience of agroecological transition with women from Cherquén in southern Chile. *Sustainability* 12(24):10401. <https://doi.org/10.3390/su122410401>.
- Quisumbing AR and Pandolfelli L. 2010. Promising approaches to address the needs of poor female farmers: Resources, constraints and interventions. *World Development* 38(4):581–592. <https://doi.org/10.1016/j.worlddev.2009.10.006>.
- Shennan Farpón Y, Mills N, Souza A and Homewood K. 2022. The role of agroforestry in restoring Brazil's Atlantic Forest: Opportunities and challenges for smallholder farmers. *People and Nature* 4(2):462–480. <https://doi.org/10.1002/pan3.10297>.
- Singh P. 2023. Exploring gender approach to climate change and agroecology: Women farmer's search for agency in India. *Asian Journal of Social Science* 51(1):18–24. <https://doi.org/10.1016/j.ajss.2022.09.004>.
- Steiner A, Aguilar G, Bombá K, Bonilla JP, Campbell A, Echeverria R, Gandhi R, Hedegaard C, Holdorf D, Ishii N, Quinn K, Ruter B, Sunga I, Sukhdev P, Vergheze S, Voegelé J, Winters P, Campbell B, Dinesh D, Huyer S, Jarvis A, Loboguerrero Rodriguez AM, Millan A, Thornton P, Wollenberg L and Zebiak S. 2020. *Actions to Transform Food Systems under Climate Change*. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Wageningen, The Netherlands. <https://cgspace.cgiar.org/bitstream/handle/10568/108489/Actions%20to%20Transform%20Food%20Systems%20Under%20Climate%20Change.pdf>.
- Suwardi N. 2010. *Gender analysis in community forest management activities and the contribution of community forests to household income. A case study of community forests in Sukaresmi village, Sukaresmi Sub-District, Cianjur Regency, West Java*. Undergraduate thesis, Bogor Agricultural University. <https://repository.ipb.ac.id/handle/123456789/63582>.
- UN. 2015. *Transforming our World: The 2030 Agenda for Sustainable Development*. New York: United Nations. <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>.
- UNDP and UN Women. 2022. *Women and climate-smart agriculture: A programming guide for Eastern and Southern Africa*. Training Guide. United Nations Development Programme, UN Women East and Southern Africa. <https://africa.unwomen.org/sites/default/files/2023-05/CSA%20programme%20guide%5B53%5D.pdf>.
- UN Women. 2018. *Turning promises into action: Gender equality in the 2030 agenda for sustainable development*. United Nations Women, New York. <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2018/SDG-report-Gender-equality-in-the-2030-Agenda-for-Sustainable-Development-2018-en.pdf>.
- Wiyanti DT, Abdoellah OS, Iskandar J and Parikesit P. 2023. Becoming *Majikan* in our own farm: A study on agroforestry in Cianjur, West Java. *Sosiohumaniora* 25(1):126–134. <https://jurnal.unpad.ac.id/sosiohumaniora/article/view/44727/19603>.

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