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Gendering the Commons: Climate Change and Forest Governance in Indonesia

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Abstract

This article examines how gender shapes forest governance within Indonesia's social forestry schemes, a key component of the country's 2060 net-zero emissions agenda. Drawing on feminist political ecology and commons scholarship, we develop a 'gendered commoning' framework to compare two village cases with contrasting governance models: a male-dominated forest group in Pundilemo (South Sulawesi) and a more gender-inclusive group in Banyusoco (Yogyakarta). Based on multi-sited fieldwork (2023–24) and a mixed-methods design, the study finds that, as a result of the governance structure in Pundilemo, male forest decision-makers benefit the most, primarily from agricultural inputs, whereas, in Banyusoco a gender-inclusive approach promotes relatively better benefits for women, improves food and water security, and encourages diversified livelihoods and agroforestry. The comparison demonstrates that social forestry is not a gender-neutral policy space but one shaped by embedded inequalities and competing values. More inclusive models of governance enable more equitable and regenerative outcomes to better integrate women's knowledge and leadership in climate-related forest governance.

Keywords. social forestry, forest governance, commons, women, gender, Indonesia

Introduction

Indonesia has positioned social forestry (SF, *perhutanan sosial)* at the centre of its climate change mitigation strategy, identifying it as one of the key pillars of the *Forest and Other Land*

Use (FOLU) Net Sink 2030 roadmap and the 2060 net zero emissions target.[1] Through granting local communities formal rights to manage forest areas, the policy seeks to reduce deforestation, restore degraded lands, and strengthen rural livelihoods. Yet, despite its technocratic framing, social forestry is profoundly shaped by social relations, political contestation, and entrenched inequalities.

One such axis of inequality is gender. Research across South and Southeast Asia shows that gender mediates access to resources, decision-making authority, and benefits.[2] Yet Indonesia's social forestry programs seldom incorporate gendered perspectives in design, implementation, or evaluation. Their presumed neutrality obscures how men and women participate differently in forest governance, how their knowledge is valued, and how benefits and burdens are shared. Consequently, SF may reproduce, or even deepen, existing hierarchies rather than transform them, with implications for both social justice and ecological sustainability.[3]

This article addresses these issues by asking: how gender shapes management practices, values, and outcomes in Indonesia's social forestry programmes. Drawing on feminist political ecology and commons theory, we propose the concept of 'gendered commoning' to analyse how gendered norms, practices, and relationships are embedded in the management of social forests. Recognising these processes, we argue, is crucial for understanding how communities define well-being and distribute its benefits, negotiate authority, and respond to climate change.

Our analysis is based on comparative fieldwork conducted between 2023 and 2024 in two villages holding *Hutan Kemasyarakatan* (HKm, Community Forestry) permits but with contrasting gender compositions in their management structures: a male-dominated group in Pundilemo, South Sulawesi, and a more gender-inclusive group in Banyusoco, Yogyakarta. By juxtaposing these cases, we show how gender composition shapes distributive logics, ecological practices, and the values underpinning the forest commons.

Our findings contribute to ongoing debates about the gendered dimensions of environmental governance and to policy discussions on the role of SF in advancing equitable and inclusive climate action. The analysis also speaks to broader theoretical concerns about how commons are produced through social relations of power, care, and knowledge, rather than existing as apolitical resource-management systems.

We outline the conceptual framework, followed by the methodology and case studies, situating SF within the context of forest governance in Indonesia. A comparative analysis

[1] 'FOLU NET SINK: Indonesia's Climate Actions toward 2030' (Ministry of Environment and Forestry, 2023), https://www.menlhk.go.id/cadmin/uploads/PHOTO_BOOK_FOLU_NET_SINK_Indonesia_s_Climate_Actions_Towards_2030_a3d4f1fa43.pdf.

[2] See Bina Agarwal, 'Gender and forest conservation: The impact of women's participation in community forest governance' *Ecological Economics 68*, no. 11 (2009), https://doi.org/10.1016/j.ecolecon.2009.04.025; Bina Agarwal, 'The power of numbers in gender dynamics: illustrations from community forestry groups,' *Journal of Peasant Studies* 42, no. 1 (2015), https://doi.org/10.1080/03066150.2014.936007; Andrea J. Nightingale, 'Commoning for inclusion? Commons, exclusion, property and socio-natural becomings,' *International Journal of the Commons* 13, no. 1 (2019), https://doi.org/10.18352/ijc.927.

[3] Smriti Das, 'Of Climate, Communities and Commons: A Gendered Perspective,' in *Climate Change Adaptation: Traditional Wisdom and Cross-Scale Understanding*, ed. Nalini Bikkina and Rama Mohana R. Turaga (Palgrave Macmillan, 2024), https://doi.org/10.1007/978-981-97-1076-8_5; Floriane Clement et al., 'Feminist political ecologies of the commons and commoning (Editorial to the Special Feature),' *International Journal of the Commons* 13, no. 1 (2019), https://doi.org/10.18352/ijc.972.

examines how gendered governance structures influence distributive well-being, livelihood outcomes and ecological practices. The conclusion reflects on theoretical and policy implications, underscoring the need for gender-sensitive approaches to environmental governance and climate policy.

Gendering the commons

In this article, we bring feminist political ecology (FPE) into conversation with commons-focused scholarship to examine how gendered power relations shape local forest governance in Indonesia. We draw from feminist politics of the commons that calls for integrating feminist analysis of power into commons scholarship[4]—an area where, historically, studies have emphasised institutional design and collective action while often neglecting social inequalities and everyday politics.

FPE, by contrast, foregrounds how gendered power and social difference structure access to and benefits from resources, labour, and decision-making.[5] Gender is not simply a variable but a relational and contested category that shapes how authority is exercised and benefits distributed. Feminist scholars further emphasise *situated knowledge*—distinct ecological expertise held by men and women, rooted in their daily practices and responsibilities which are, in turn, shaped by and through gendered access and labour divisions.[6]

Informed by such understandings, recent commons scholarship reconceptualises the commons as a set of social practices rather than as fixed resources.[7] Commons are continuously produced through negotiation and cooperation, embedded in social relations of governance and everyday practices, which shape and are shaped by access to, use of, and the distribution of benefits from commons resources.[8] This perspective stresses that commons are deeply political and cultural spaces, departing from early formulations of ideas relating to the commons, particularly Garrett Hardin's 'tragedy of the commons' thesis of naturalised degradation in the absence of private property or state control,[9] and Elinor Ostrom's

[4] For feminist political ecology of the commons, see Clement et al., 'FPEs of the commons and commoning.'

[5] Dianne Rocheleau and David Edmunds, 'Women, men and trees: Gender, power and property in forest and agrarian landscapes,' *World Development* 25, no. 8 (1997), https://doi.org/10.1016/S0305-750X(97)00036-3; Rebecca Elmhirst, 'Introducing new feminist political ecologies, *Geoforum* 42, no. 2 (2011): 129–32, https://doi.org/10.1016/j.geoforum.2011.01.006; Vanessa Lamb et al., 2019. 'Gendered eviction, protest and recovery: a feminist political ecology engagement with land grabbing in rural Cambodia,' in *Gender and Generation in Southeast Asian Agrarian Transformations,* ed. Clara Mi Young Park and Ben White (Routledge, 2019), https://doi.org/10.4324/9781351037181-7; Nightingale, 'Commoning for inclusion.'

[6] Agarwal, 'Gender and forest conservation'; Wendy Harcourt and Ingrid L. Nelson, eds, *Practising Feminist Political Ecologies: Moving Beyond the 'Green Economy'* (Zed Books, 2015), https://doi.org/10.5040/9781350221970.

[7] Peter Linebaugh, *The Magna Carta Manifesto: Liberties and Commons for All* (University of California Press, 2008), https://doi.org/10.1525/9780520932708; Clement et al., 'FPEs of the commons and commoning'; Nightingale, 'Commoning for inclusion.'

[8] Das, 'Of Climate, Communities and Commons: A Gendered Perspective,' 56; Clement et al., 'FPEs of the commons and commoning.'

[9] Garrett Hardin, 'The Tragedy of the Commons,' *Science* 162, no. 3859 (13 December 1968), https://doi.org/10.1080/19390450903037302.

institutional design approach.[10] Hence, we understand the commons as an active, living process sustained through participation and the collective maintenance of shared purposes, making it, at its core, a relational social framework.[11] This perspective links commoning to reproductive labour, viewing it as the collective work of sustaining life rather than the management of a fixed resource.[12] At the same time, we understand commoning as a political project contesting capitalist enclosures.[13]

Building on these insights, we examine social forestry as a form of forest commons in which access is material, political, and relational. As illustrated in Figure 1, our framework conceptualises the commons through three interconnected dimensions.[14] The first, *res communis*, refers to common-pool resources themselves, such as forests, land, water, or other collectively held resources. In this study, social forestry represents a form of *res communis* in which forest resources are managed collectively. The second, *rex communis,* refers to political authorities—including the state,[15] customary leaders, and other institutions—that claim the right to govern the commons for the benefit of all.[16] Although these actors may present themselves as stewards of the commons, they also shape access and control through rules, regulations, and administrative authority, and may legitimise enclosure, bureaucratic control, and the exclusion and dispossession of local users. The third dimension, *praxis communis*, captures the everyday practices through which people negotiate, contest, and reproduce the commons.

Connecting these dimensions is *lex communis*, which encompasses the legal, political, and normative orders that shape how the commons are governed and experienced. This includes formal political and regulatory frameworks, informal social norms, and gender relations that mediate interactions between governing authorities, common resources, and everyday practices. Rather than treating gender as an external variable, the framework positions gender relations as constitutive of the commons itself, shaping who can access resources, participate in governance, and benefit from collective management. Together, these dimensions provide a framework of gendered commoning that links macro-level

[10] Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990).

[11] David Bollier and Silke Helfrich, eds, *Patterns of Commoning* (Commons Strategy Group and Off the Common Press, 2015).

[12] Silvia Federici, 'Feminism and the Politics of the Commons,' *The Commoner* 15 (2012), https://thecommoner.org/wp-content/uploads/2020/06/federici-feminism-and-the-politics-of-commons.pdf.

[13] Massimo De Angelis, *Omnia Sunt Communia: On the Commons and the Transformation to Postcapitalism*. (Bloomsbury Publishing, 2017), https://doi.org/10.5040/9781350221611.

[14] This three-dimensional framework draws on the work of Tom Avermaete (2021), who develops these concepts primarily in relation to urban commons. See Tom Avermaete, 'Constructing the commons: Towards another architectural theory of the city?' In *The New Urban Condition*, ed. Leandro Medrano, Luiz Recamán, and Tom Avermaete (Routledge, 2021), https://doi.org/10.4324/9781003100362.

[15] Jane Mansbridge, 'The role of the state in governing the commons,' *Environmental Science and Policy* 36 (2014): 8–10, http://dx.doi.org/10.1016/j.envsci.2013.07.006.

[16] State control over collective resources was set out with the formation of Indonesia as a nation, enshrined in the Constitution. Specifically, Article 33, paragraph (3) of Indonesia's 1945 Constitution states that 'the earth, water, and the natural resources contained therein shall be controlled by the state and used for the greatest prosperity of the people.' This means that the state holds the authority to manage and oversee all natural resources for the benefit of its citizens, with the aim of ensuring social justice and equitable welfare.

governance with everyday practices to explain how access to and control over social forestry are continually produced and contested. The framework reinforces the argument that the commons is not simply a resource, but a socio-political process constituted through these interrelated dimensions.[17] Within this framework, gender relations operate through institutions and hierarchies, and through social norms that shape everyday access to resources.[18]

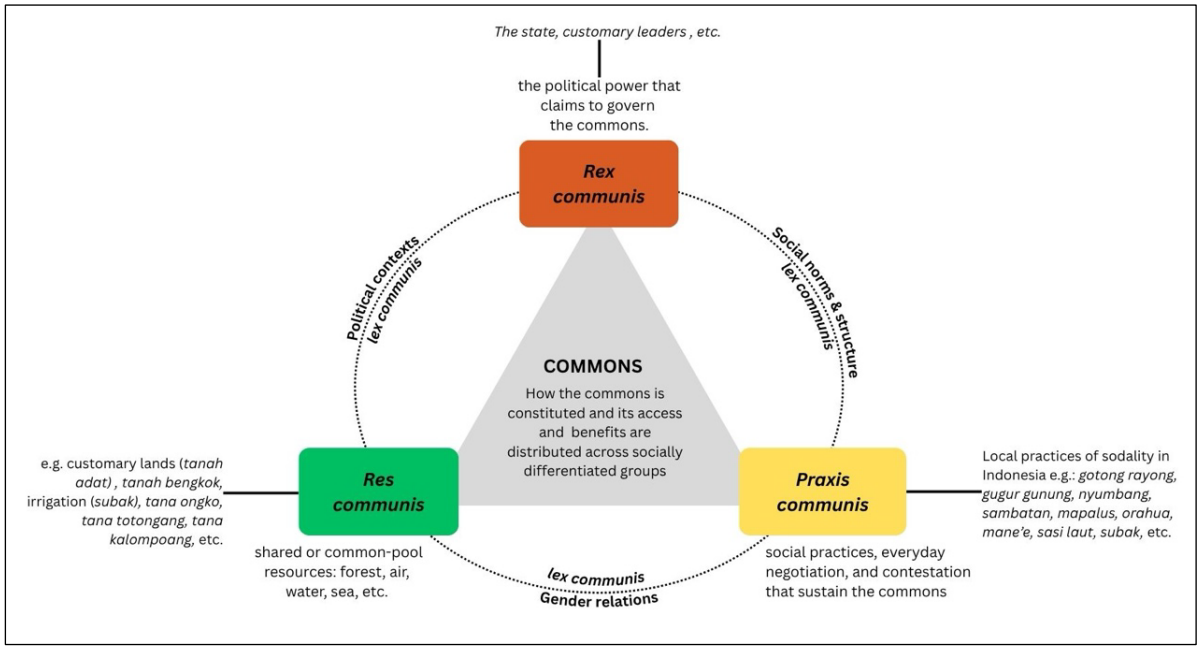

Figure 1. Gendered commons of environmental governance: a relational social framework.
Source. Authors' elaboration

The framework above therefore reflects a notion of gendered commoning that foregrounds 'everyday practices, social relations and spaces of creativity and social reproduction.'[19] In Indonesia, traditions of commoning practices are often expressed through forms of agrarian sodality, referring to non-kinship-based, democratic groups formed within societies to pursue specific economic or social purposes.[20] These groups facilitate collective, reciprocal labour, the pooling of resources, the reduction of socio-economic disparities,[21] and the governance of shared assets.[22] Agrarian sodalities also provide an important cultural

[17] Nancy Lee Peluso and Peter Vandergeest, 'Writing political forests,' *Antipode* 52, no. 4 (2020), https://doi.org/10.1111/anti.12636.

[18] Rocheleau and Edmunds, 'Women, men and trees'; Elmhirst, 'Introducing new feminist political ecologies.'

[19] Clement et al., 'FPEs of the commons and commoning,' 2.

[20] Sediono M.P. Tjondronegoro, *Social Organization and Planned Development in Rural Java: A Study of the Organizational Phenomenon in Kecamatan Cibadak, West Java and Kecamatan Kendal, Central Java* (Oxford University Press, 1984).

[21] Eric R. Wolf, *Peasants* (Prentice-Hall, 1966), https://monoskop.org/images/9/9b/Wolf_R_Eric_Peasants_1966.pdf.

[22] Tobias Haller et al., eds, *Balancing the Commons in Switzerland: Institutional Transformations and Sustainable Innovations* (Routledge, 2021), https://doi.org/10.4324/9781003043263.

mediation space between traditional rural communities and broader societal development frameworks.[23]

One of the most prominent examples of sodality is *gotong royong*, a Javanese tradition of mutual cooperation that has been widely adopted and embedded into local practice across Indonesia, through which community members voluntarily contribute labour or money towards collective goals and needs.[24] Other examples include the *subak* irrigation cooperatives in Bali, which enable members to equitably distribute water and coordinate planting, harvesting, and pest management,[25] and *sasi laut* in Maluku, a customary marine management system that temporarily restricts access to particular resources or fishing grounds to prevent resource depletion and promote conservation.[26] Similar principles underpin a wide range of customary land and resource governance systems across the archipelago, demonstrating the enduring significance of collective stewardship and reciprocal social relations in Indonesian communities.

In this paper, we analyse SF as a form of shared forest and land governance (forest and land commons) and as a contemporary expression of agrarian sodality through a gendered lens. In doing so, we recognise the forest as a political space—one that reveals how social, economic, and political inequalities shape who accesses, manages, and benefits from shared resources.[27] Commons are thus continually made and remade through gendered norms and practices that structure labour, knowledge, and leadership. Gendered commoning highlights how activities that reproduce inclusion and exclusion (from agroforestry and seed management to rituals and collective care) are embedded in forest management. Gendered commoning reframes social forestry not as a technocratic intervention, but as a political, economic, and cultural process with deep-rooted gendered relations.[28] Recognising these dynamics highlights the importance of forestry and climate policies that not only expand women's participation but also transform existing gendered power relations through which access, authority and environmental stewardship are negotiated in Indonesia's forest frontiers.

Methodology

This study adopted a mixed-methods, community-based research design that prioritised the diverse experiences and perspectives of women and men in forest-edge communities.[29] We used qualitative and quantitative methods to capture the multidimensional and context-

[23] Gutomo Bayu Aji, 'Desa Dan Rumah Tangga Petani Di Bawah Pembangunan: Kontekstualisasi Pemikiran Sodality SMP Tjondronegoro Dalam Agroekologi,' *Sodality: Jurnal Sosiologi Pedesaan* 9, no. 1 (2021), https://doi.org/10.22500/9202134938.

[24] Agus Suwignyo, 'Gotong Royong as Social Citizenship in Indonesia, 1940s to 1990s,' *Journal of Southeast Asian Studies* 50, no. 3 (2019), https://www.jstor.org/stable/26859705.

[25] Clifford Geertz, 'The wet and the dry: Traditional irrigation in Bali and Morocco,' *Human Ecology* 1, no. 1 (1972), https://doi.org/10.1007/BF01791279.

[26] Abdul Muin and Heinrich Rakuasa. '*Sasi laut* as a culture of natural resources conservation to overcome the tragedy of the commons in Maluku Province,' *International Journal of Multidisciplinary Approach Research and Science* 1, no. 3 (2023), https://doi.org/10.59653/ijmars.v1i03.139.

[27] Hélène Périvier, 'Crossing Gender Studies with the Commons.' *International Journal of the Commons* 18, no. 1 (2024), https://doi.org/10.5334/ijc.1341.

[28] Peluso and Vandergeest, 'Writing political forests.'

[29] Vicki L. Plano Clark and John W. Creswell, *The Mixed Methods Reader* (Sage, 2008).

specific notions of wellbeing in forested areas and their connections with forest ecosystem services and social forestry (SF) schemes. Methods included participant observation, semi-structured and life history interviews, face-to-face and online focus group discussions (FGDs), and household livelihood questionnaires (Figure 2). Participants included the village head, other members of the village administration, customary head and other Indigenous leaders, heads of women's and youth groups, farmers' groups, religious leaders, members of the social forestry management body, as well as farmers and local people from different social groups. We also analysed forest cover data to trace patterns of land use and ecological change and to examine how these intersect with forest governance practices. All names in this article are pseudonyms to protect the privacy and secure confidentiality of our interlocutors. All quotes have also been translated from Bahasa Indonesia into English by the authors.

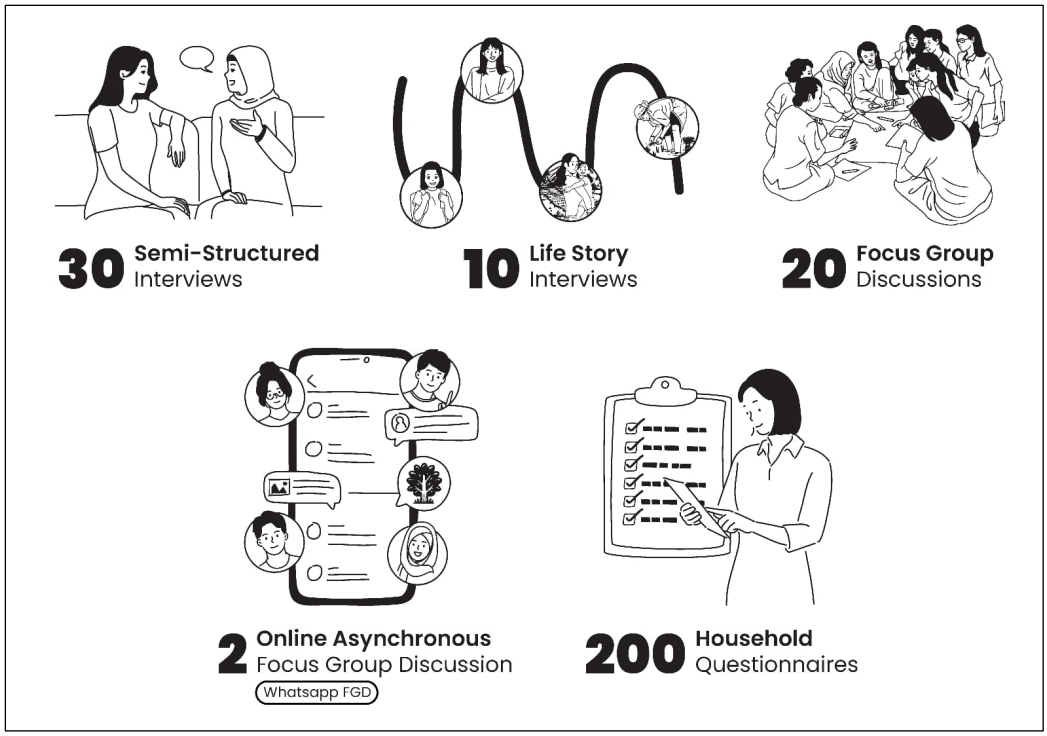

Figure 2. The various methods used in this study.
Source. Authors' elaboration

To analyse the links between SF governance and outcomes, we drew on a well-being framework we have previously developed elsewhere, which identifies six inter-related domains: material assets, bodily well-being, social relations, security, freedom of choice and action, as well as cultural and spiritual fulfilment.[30] These domains capture the material, relational, and subjective outcomes of forest commons, allowing us to situate everyday experiences of SF within broader governance and ecological contexts as conceptualised in our gendered commoning framework.

A comparative logic structured the research, enabling us to examine how gender shapes governance practices, values, and distributive outcomes of Indonesian SF schemes. In this paper, we contrast two village sites with community forestry permits: Pundilemo, South

[30] Tessa D. Toumbourou et al., 'Social forestry for a good life? The uneven well-being benefits of Indonesia's social forestry scheme.' *People and Nature* 7, no. 6 (2025), https://doi.org/10.1002/pan3.70042.

Sulawesi, where social forestry is organised through a male-dominated management group, and Banyusoco, Yogyakarta, where a more gender-inclusive management group has evolved.[31] The juxtaposition of these cases allows us to explore how different gender compositions within governance structures produce divergent social and ecological outcomes that reinforce existing structural inequalities.[32]

Social forestry in Indonesia

Commoning the forest through social forestry

Throughout its history, Indonesia's SF scheme has functioned as a key technology of state governance through which access to, use of, and benefits from forest resources are regulated. Often framed as an administrative reform that devolves forest management responsibilities to local communities, SF grants legally recognised 'management rights' in the form of permits to village groups, cooperatives, and community organisations within communities historically excluded from state forests. The program is intended to redress longstanding inequalities in forest tenure, improve rural livelihoods and transform residents from being informal or 'illegal' forest users.[33]

Despite this rhetoric of devolution, the state remains the landowner and controls access and use through zoning. SF permit areas in Indonesia are divided into zones with different rules governing use. Utilisation areas (*zona pemanfaatan*) allow cultivation and other sustainable livelihood-benefiting activities, including eco-tourism, while protection areas (*zona perlindungan*) restrict cultivation but permit the collection of some non-timber forest products.[34] Empirical studies suggest that such arrangements can foster collective practice: SF can encourage communities to manage small areas of arable land (within *zona pemanfaatan* areas) cooperatively and develop shared enterprises.[35] These community dynamics illustrate how the commons emerge through negotiation, cooperation, and rule-making—processes which can also generate internal tensions and conflicts with existing governance frameworks.

In practice in Indonesia, SF is often pursued by communities as a vehicle for redistributive justice, particularly through claims to cultivable land in utilisation areas, and

[31] In our broader KONEKSI study, we examine four case study villages across Indonesia. For the purposes of this comparative article, we focus on the two most comparable cases: Pundilemo and Banyusoco.

[32] Sango Mahanty et al., 'A fair share? Sharing the benefits and costs of collaborative forest management,' *International Forestry Review* 11, no. 2 (2009), https:doi.org/10.1505/ifor.11.2.268; Robin Loveridge et al., 'Pathways to win-wins or trade-offs? How certified community forests impact forest restoration and human wellbeing,' *Philosophical Transactions of the Royal Society B* 378 [1867] (2023), https://doi.org/10.1098/rstb.2021.0080.

[33] See John F. McCarthy, 'The limits of legality: State, governance and resource control in Indonesia,' in *The State and Illegality in Indonesia,* ed. Edward Aspinall and Gerry van Klinken (Brill, 2010), 93, https://doi.org/10.1163/9789004253681_006.

[34] See Ministry of Environment and Forestry regulation no. 8/2021: Article 5, Paragraph 6: Utilisation areas for social forestry management in protected forests; and Article 5, Paragraph 10: Utilisation areas for social forestry management in production forests.

[35] Haudec Herrawan et al., 'Commoning the state forest: Crafting commons through an Indonesian social forestry program,' *Forest and Society* 6, no. 1 (2022), https://doi.org/0.24259/fs.v6i1.10680.

regulated access to resources in protection areas.[36] Yet these redistributive aspirations remain mediated by bureaucratic regimes of licensing, regulation, and state oversight that structure the terms under which rights are recognised, exercised and maintained. Rather than a straightforward transfer of authority, SF reconfigures state power through new institutional arrangements that shape differentiated access to SF forest and land resources, often reproducing existing social hierarchies, including gendered inequalities embedded in prevailing norms.

Consequently, distributive outcomes from SF remain uneven, shaped by local political economies, leadership structures and entrenched gender hierarchies that determine whose knowledge counts, who decides, and in turn, who benefits and in what ways. SF thus represents a contradictory space: state-run with a technocratic system of governance, and at the same time, a potential site of commoning. SF groups also represent contemporary forms of agrarian sodality in managing shared forest and land resources. While SF opens possibilities for communities to reclaim authority over forests and land, it also reproduces inequality through embedded forms of regulation. Comparable dynamics are observed in Cambodia, where forest commoning operates as a site of 'violence, resistance, adaptation, and continuity,' with communal enclosures reshaping gender, class, and ethnic relations.[37] In both contexts, women and young families are disproportionately disadvantaged, constrained by care burdens and limited access to capital or patronage. Understanding these contradictions requires attention to the everyday practices through which forest governance is enacted and contested.

From enclosure to commoning: Shifting governance of Indonesia's forest

The trajectory of Indonesia's SF programme (Table 1) reveals an ongoing negotiation between *res communis*—the legal conception of shared resources—and *rex communis*—the political authority governing the commons 'for all.' Conceived as a participatory alternative to state forestry, SF has evolved into a moral-political field through which communities reclaim relations to the forest within a regulatory framework.

Under Suharto's New Order administration, the Basic Forestry Law No. 5 of 1967 classified most of the archipelago as land designated for forestry purposes (*kawasan hutan*), regardless of actual forest cover—bringing it under state control (*rex communis*). Implementation varied, occurring earlier in Java where state forest institutions were more established during the 1970s and 1980s, when the state re-zoned customary forests as protected areas or as areas permitted for industrial concessions.[38]

As these enclosures deepened social and ecological inequalities, donor-supported initiatives in the 1980s and 1990s promoted 'community participation' under *Perum Perhutani*, the state forestry enterprise mandated to manage state forest resources specifically in Java and Madura islands. Yet participation remained constrained by

[36] Toumbourou, 'Social forestry for a good life?'

[37] Alice Beban and Joanna Bourke Martignoni, '"Now the Forest is Over": Transforming the Commons and Remaking Gender in Cambodia's Uplands,' *Frontiers in Sustainable Food Systems* 5 (October 2021): 1, https://doi.org/10.3389/fsufs.2021.700990.

[38] This process was linked to the implementation of Forestry Law No. 5 of 1967, which enabled the allocation of large-scale forest concessions to private companies. It was further reinforced by Government Regulation No. 33 of 1970 on Forest Area Planning, which provided the legal basis for the gazettement and rezoning of forested areas, including many customary (*adat*) forests.

bureaucratic priorities of authority and timber extraction.[39] Mounting agrarian conflicts in the 1990s prompted legal reforms: the *Hutan Kemasyarakatan* (HKm) policy of 1995 marked the first recognition of community forest managers, though rights remained conditional and revocable. Here, the forest was reconstituted as *res communis*—collective resources held in trust by the state—without displacing the sovereign logic of *rex communis*. The state remained the custodian and licensor, retaining the power to define and withdraw access.

Table 1. The shifting governance of Indonesia's forests: from enclosure to commoning

Period	Policy milestone	Key actors	Dominant logic	Commons perspective
1960s - 1980s	Basic Forestry Law No. 5/ 1967; PP No.33/1970 on forest area planning; Perum Perhutani established in Java through Gov. Regulation No. 15/1972.	State, state forest enterprise, timber corporations	Centralised control and extraction	**Enclosure of customary commons**; communities rendered "illegal" users
1980s - 1990s	Donor-supported participatory forestry pilots (Ford Foundation, GTZ)	Perhutani, Ministry of Forestry, donors	'Participation' within state control	**Technocratic inclusion**; local labour without authority
1990s - 2000s	HKm policy (1995); Forestry Law No. 41/1999; decentralisation reforms	State, NGOs, academics	Community access and co-management	**Regulated commons**—conditional participation under state ownership
2000s - 2010s	PHBM (Perhutani, 2001); PP No 6/2007; distributing access and consolidating of five SF schemes; Gov. Reg. No. 72/2010 expands Perum Perhutani mandate to Madura islands.	State enterprises, LMDH, local groups	Partnership and livelihood focus	**Bureaucratised commoning**—limited distribution, shared labour, unequal benefit
2010s - 2020s	Permen (MoF Regulation) 18/2009 Forest use through community forestry IUPHKm; Permen No. 83/2016 marks the national SF programme (target 12.7 million ha); KUPS (2016); KHDPK (2022)	KLHK, CSOs, forest communities	Climate mitigation, poverty alleviation, legal pluralism and recognition of customary practice	**Hybrid commons**—bureaucratised commoning within technocratic and market opportunities.

Source. Authors' elaboration

Post-Suharto reforms accelerated this shift towards state-controlled, limited community management rights. Law No. 41/1999 replaced the 1967 statute, granting limited local access. In Java, in the early 2000s, Perum Perhutani's *Pengelolaan Hutan Bersama Masyarakat* (PHBM) sought to quell conflict but retained unequal profit-sharing and control over teak, a key forest timber resource.[40] Government Regulation No. 6/2007 introduced several community-based models—*Hutan Desa* (HD, Village Forest), *Hutan Adat* (HA,

[39] Ahmad Maryudi et al., 'Holding social forestry hostage in Indonesia: Contested bureaucracy mandates and potential escape pathways,' *Environmental Science & Policy* 128 (2022), https://doi.org/10.1016/j.envsci.2021.11.013.

[40] Masahiko Ota et al., 'Payment for what? The realities of forestry benefit sharing under joint forest management in a major teak plantation region of Java, Indonesia,' *Small-scale Forestry* 19, no. 4 (2020), https://doi.org/10.1007/s11842-020-09446-5; San Afri Awang et al., *Panduan Pemberdayaan Lembaga Masyarakat Desa Hutan (LMDH)* (CIFOR, 2008), https://www2.cifor.org/lpf/docs/panduan%20pemberdayaan%20lmdh.pdf.

Customary Forest), and *Hutan Tanaman Rakyat* (HTR, Community Plantation Forest)—positioning SF as a vehicle for democratising resource governance. Yet forest land remained state-controlled, and management-right permits were temporary.

President Joko Widodo's 2015 *Nawacita* agenda revived SF within agrarian reform, targeting 12.7 million hectares for redistribution.[41] Since 2017, SF has become a national priority, consolidating five schemes[42]—HKm, HD, HA, HTR, and *Kemitraan Kehutanan* (KK, Forest Partnership)—in order to alleviate poverty, mitigate the effects of climate change, and conserve biodiversity.[43] By October 2025, 1.4 million recipients held permits covering 8.3 million hectares.[44] This paper focuses on the HKm scheme, one of the most prevalent forms of community forest management.[45] Under this scheme, management right permits are granted to community or forest farmers' groups (*Kelompok Tani Hutan* or *KTH*) who have established an institutional structure and forest management plan. To render access to economic value, the Ministry of Environment and Forestry (MoEF) established *Kelompok Usaha Perhutanan Sosial* (KUPS, Social Forestry Business Groups) as SF's entrepreneurial arm. Categorised as 'growing,' 'developing,' or 'independent,' KUPS institutionalise performance metrics that align local initiatives with state indicators of productivity and sustainability, as regulated through MoEF Decree No. 83/2016.

From a legal-political perspective, SF operates as a *res communis*—a domain neither fully private (*res privata*) nor wholly public (*res publica*). Forests under SF remain state-owned but are managed by local groups under time-bound permits and restrictive zoning. The MoEF retains authority to allocate and revoke rights, thereby institutionalising collective access and limiting autonomy. SF thus constitutes a 'regulated commons,' where access and stewardship

[41] Cabinet Secretariat of the Republic of Indonesia (Setkab RI), 'President Jokowi Launches Policies on Economic Equality and Agrarian Reform,' 22 April 2017, https://setkab.go.id/en/president-jokowi-launches-policies-on-economic-equality-and-agrarian-reform/?TSPD_101_R0=08978305a1ab2000864806407a11a156ad8ebb4f24c79ec2ac6d75c5c2bc2c339929cac8b2e86d5708653627ba1430004638e43bc9a3692666275165127 3889be9eebaa7f6373fdabf965ff594a3ad847d1e39a07841b6c10ae0b7b7daf7b6c3.

[42] Ari Rakatama and Ram Pandit, 'Reviewing social forestry schemes in Indonesia: Opportunities and challenges,' *Forest Policy and Economics* 111 (February 2020), https://doi.org/10.1016/j.forpol.2019.102052.

[43] Several relevant pieces of literature on social forestry include Rudi Kresna et al., 'Out of the woods: social capital and smallholder dairy farmers' access to state-owned agroforestry lands in West Java, Indonesia,' *Agroforestry Systems* 98, no. 3 (2024), https://doi.org/10.1007/s10457-023-00934-z; Levina Augusta Geraldine Pieter et al., 'Implications of omnibus law for forestland conflict resolution systems (a case study in Sumbawa),' *IOP Conference Series: Earth and Environmental Science* 917, no. 1 (2021), https://doi.org/10.1088/1755-1315/917/1/012019; Moh. Andika Lawasi et al., 'Reviewing social forestry in Indonesia through an integrative framework for collaborative governance,' *International Forestry Review* 26, no. 3 (2024), https://doi.org/10.1505/146554824839071625; Myrna Safitri, 'Social forestry and land tenure conflicts in Indonesia,' in *Routledge Handbook of Community Forestry*, ed. Janette Bulkan et al. (Routledge, 2022); Abetnego P.P. Tarigan and Mahawan Karuniasa. 'Analysis of agrarian conflict resolution through social forestry scheme,' *IOP Conference Series: Earth and Environmental Science* 716, no. 1 (2021), https://doi.org/10.1088/1755-1315/716/1/012082.

[44] Ministry of Environment and Forestry (MoEF), 'Peta Interaktif SIGAP Kementerian Kehutanan.' Ministry of Environment and Forestry, n.d., https://geoportal.menlhk.go.id/portal/apps/webappviewer/index.html?id=2ee8bdda1d714899955fccbe7fdf8468.

[45] As of December 2025, the Ministry of Environment and Forestry data shows that both HD and HKm account for roughly 89% of SF permits issued, with HD accounting for approximately 37% and HKm for approximately 52% (MoEF, 2026).

are shared, yet ultimately mediated by state oversight. Acting as *rex communis*, the state defines and supervises permissible uses, ensuring that 'common' management operates within often narrow boundaries.

From the perspective of commoning, SF opens political and moral spaces for communities to reclaim collective relations to land yet embeds these relations within technocratic systems of surveillance and measurement responsibilities.[46] Indonesian SF thus exemplifies the double movement of the commons: it recognises forests as shared goods (*res communis*) even as it reasserts state authority (*rex communis*). SF policies are therefore not simply instruments of empowerment or enclosure, but sites of ongoing negotiation where ideals of stewardship coexist—and often collide—with administrative and market logics. As we show in the empirical sections that follow, the devolution of forest management rights does not eliminate state authority; rather, it reconfigures it through membership rules, permit systems, and development interventions that shape access to resources and participation in governance, often in gendered ways.

The gender dimension of social forestry in Indonesia

The forest is a gendered space. The notion that 'forest work is men's work' remains pervasive in Indonesia, obscuring women's longstanding roles as resource users, knowledge holders, and custodians of forest life.[47] This framing is evident not only in state-owned plantations but also permeates SF discourses and practices. Although contemporary SF schemes espouse holistic governance integrating ecological, economic, and social aims, gender perspectives remain peripheral.

Research consistently highlights this gender gap, in which women are rarely recognised as primary forest users, are under-represented in SF groups, and receive fewer benefits or training opportunities.[48] Such exclusions reflect broader patriarchal norms, religious beliefs, and state gender ideologies that cast men as household heads and breadwinners, and women in domestic, supportive roles.[49] These ideologies are deeply rooted since the New Order era under Suharto, when state *ibuism* defined women's citizenship through domesticity, moral guardianship, and service to family and nation.[50] Despite the political reforms of the *Reformasi* period and the emergence of diverse feminist movements, gendered roles in governance persist within decentralised and technocratic development programs—such as SF—where women's social and ecological labour remains

[46] James T. Erbaugh, 'Responsibilization and social forestry in Indonesia,' *Forest Policy and Economics* 109 (2019), https://doi.org/10.1016/j.forpol.2019.102019.

[47] Nancy Lee Peluso and Debbie Prabawati, 'A forest runs through it: gendered work and forest transformations in mountain Java,' *Journal of Agrarian Change* 25, no. 4 (2025): 1, https://doi.org/10.1111/joac.70035.

[48] Dadang Anugrah et al., 'Injustice against women in a social forestry program: Case studies from two Indonesian villages,' *Forest and Society* 6, no. 2 (2022), https://doi.org/10.24259/fs.v6i2.20006.

[49] Susan Blackburn, *Women and the State in Modern Indonesia* (Cambridge University Press, 2004).

[50] Kathryn Robinson, 'Indonesian women: From *orde baru* to *reformasi*,' in *Women in Asia: Tradition, Modernity, and Globalisation*, ed. Louise Edwards and Mina Roces (Routledge, 2000); Julia I. Suryakusuma, 'State Ibuism: The Social Construction of Womanhood in the Indonesian New Order,' PhD diss., Institute of Social Studies, The Hague, Netherlands, 1987.

undervalued.[51] Rooted in these enduring gendered state ideologies, access to land, forest benefits and decision-making continues to reproduce hierarchical relations that constrain women's participation in environmental governance.

Case study sites

The study villages were selected based on three key criteria: (1) the presence of HKm SF permits, (2) the formalisation of SF management bodies, and (3) the establishment of SF enterprise groups (*Kelompok Usaha Perhutanan Sosial* or KUPS). Accordingly, the article focuses on two villages in Indonesia that have held HKm permits over the past five to seventeen years. Variation in forest functions over time—both production and protection forests—as well as differing levels of women's participation in SF activities were also considered. This research was conducted in two villages: Pundilemo village, Enrekang Regency, South Sulawesi Province, and Banyusoco village, Gunungkidul Regency, Special Region of Yogyakarta Province (Figure 3).

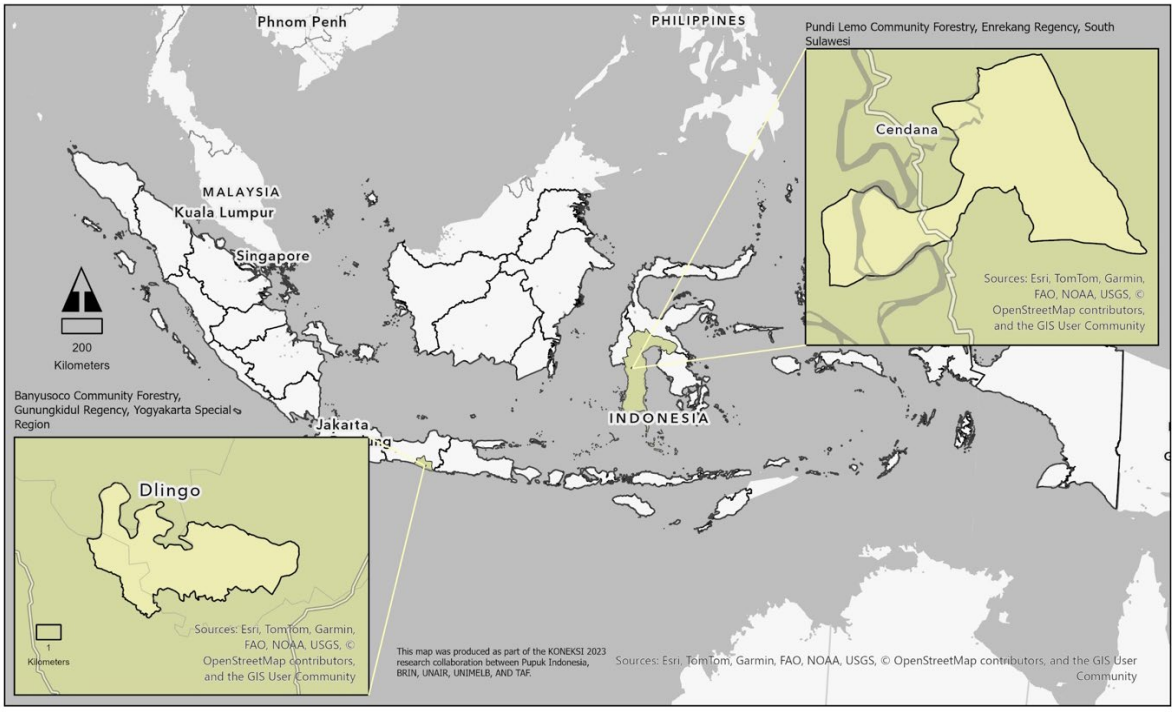

Figure 3. Case study locations including Banyusoco village in Yogyakarta and Pundilemo village in South Sulawesi (see insets).
Source. Indicative Map of Social Forestry Areas (PIAPS), Director General of Social Forestry and Environmental Partnerships (PSKL), Ministry of Forestry, 2010, https://sigap.kehutanan.go.id/peta-cetak-detail/19093?scale=244

Case study 1: Pundilemo, South Sulawesi

Remotely situated in the highlands, Pundilemo village relies heavily on land and forest resources, with approximately eighty-eight per cent of the households engaged in forest-based livelihoods. Forest commodities in Pundilemo include hardwood timber, tuberous

[51] Michele Ford and Lyn Parker eds, *Women and Work in Indonesia* (Routledge, 2008), https://doi.org/10.4324/9780203932360; Sri Wiyanti Eddyono, 'Women's Work and State Policies: Contending Paid and Unpaid Care,' *Jurnal Perempuan* 28, no. 3 (2023), https://doi.org/10.34309/jp.v28i3.888; Peluso and Prabawati, 'A forest runs through it.'

plants, candlenut, sugar palm, fruit, spices, mushrooms, honey, and game (wild boar). The area is dominated by the Massenrumpulu ethnic groups, such as the Duri and Enrekang, whose ancestors held historical claims to mountain forestlands.[52] The forest served as both a livelihood source and a place of refuge for these ancestors during post-independence turmoil in South Sulawesi.[53] Traces of swidden rice fields in fallow, or planted with fruit or cash crops, remain visible across the forested landscape.[54] These lands were abandoned after the 1990s reclassification of the area as *hutan lindung* (protected forest), which criminalised customary users—some villagers were fined or had their *senso* (chainsaws) confiscated. This history of criminalisation and uncertain boundaries has discouraged full use of the SF area even after the permit formally restored access rights for the Forest Farmers' Groups (KTH) in the village.

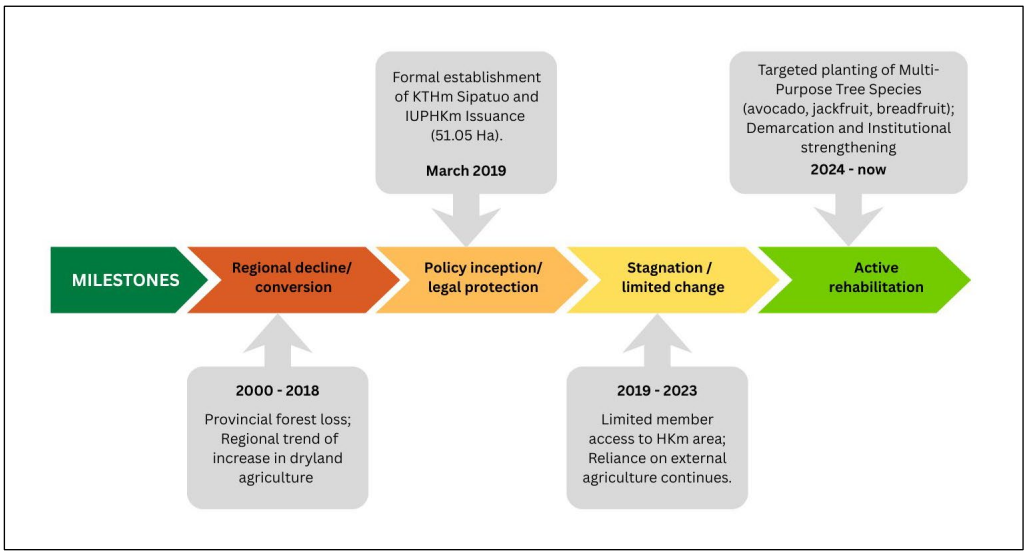

Figure 4. Key chronological milestones of KTH Sipatuo and corresponding forest area drivers. Source. Authors' elaboration

Among the three KTHs in Pundilemo, this study focuses on KTH Sipatuo which manages fifty-two hectares under an SF permit issued by the MoEF under Decree No. 3009 on 29 March 2019.[55] The HKm Sipatuo permit area is located within a Protection Forest (*Hutan Lindung*), including a Watershed Protection Zone, and is designated as a Utilisation Block (*Blok*

[52] The Massenrumpulu ethnic group is not yet formally recognised by the state, instead it is registered as the Duri ethnic group. For ethnography of the group, see Munsi Lampe, 'Massenrempulu ethnicity from South Sulawesi in the transformation of political identity and the production of cultural differences,' *Forum Ilmu Sosial* 49, no. 2 (2022), https://doi.org/10.15294/fis.v49i2.39406.

[53] This is related to The Darul Islam/Tentara Islam Indonesia (DI/TII) movement in South Sulawesi, led by Abdul Kahar Muzakkar (1921–65). Initially, he led guerrilla efforts against Dutch colonial forces, but dissatisfaction with the central government's policies after independence drove him to rebellion. By 1953, he declared South Sulawesi part of the Islamic State of Indonesia under the DI/TII banner, advocating for Islamic law. For more information, see Thomas Gibson, 'Revolutionary Islam and the Nation-State, 1900–1965,' in *Islamic Narrative and Authority in Southeast Asia: From the 16th to the 21st Century,* ed. Hillary Kaell et al. (Palgrave Macmillan US, 2007), https://doi.org/10.1057/9780230605084_7.

[54] Yulia Indrawati Sari et al., *Women in Social Forestry in Indonesia: Life Story Excerpts of Women Involved in Social Forestry in Indonesia* (The University of Melbourne, Report, 2024), https://doi.org/10.26188/26762455.v1.

[55] The name Sipatuo comes from the Bugis Enrekang language, meaning 'life giving.'

Pemanfaatan) under Indonesia's social forestry zoning system. This designation permits communities to undertake limited agroforestry cultivation, cultivate non-timber forest products such as coffee, maize, and fruit trees, and develop environmental services, while maintaining the forest's protective function. Timber harvesting remains strictly prohibited, reflecting the conservation objectives of the protection forest classification. The trajectory of KTH Sipatuo is illustrated in Figure 4.

All twenty-seven members of KTH Sipatuo, including its leadership, are men. This gender composition reflects the patrilineal orientation of Massenrumpulu kinship networks, in which senior men are traditionally viewed as the heads of the family and primary custodians of ancestral land and natural resources.[56] The male dominance of the SF group was further reinforced during the initial information and outreach session (*sosialisasi*) conducted by extension agents from the Enrekang Forest Management Unit (*KPH Mata Allo*) in 2016. Invitations to the session were limited to individuals formally registered as 'farmers' in their family registry or identity cards, with only one representative permitted per household.

These selection criteria mirrored the provisions of MoEF Regulation No. 83/2016, which restricts KTH membership to one representative per household and requires members to be formally recognised as farmers. To join the KTH, applicants must submit a Residence Identity Card (KTP), Family Registry Card (*Kartu Keluarga*), or a village-issued residence certificate. The Family Registry Card, which records household composition and roles, typically lists men as the head of the household. Although some women may also be registered as farmers, they are typically excluded from KTH membership if their household is already represented by a male member.[57] As the leader of KTH Sipatuo explained: 'Since only one person can represent each household in the KTH membership, the man was chosen since he is the head of the household and has the status of a farmer.'[58]

These institutional and sociocultural factors contributed to the exclusion of women from formal membership and leadership roles within KTH Sipatuo. Despite women's substantial contributions to farming and forest care, their reliance on forest products for food and household income, and in some cases their independent land ownership, the one-member-per-household rule constrains their participation in the KTH. In practice, women are frequently represented by their husbands, reinforcing the state-sanctioned view that 'forest work is men's work.' Despite owning land in the SF area, around 13 women in the village could not be KTH members and were instead represented by their husbands or other male family members. As a result, women remain largely excluded from social forestry decision-making bodies and must rely on male household representatives to articulate their interests. In Pundilemo, this perception is deeply entrenched. One woman described how, despite owning land in several locations, her involvement in the KTH is mediated through her husband: 'I actually have a lot of land in several locations, but I let my husband handle all of it because I don't know what to do with it. I only help him when it's time to plant and during harvest.'[59]

[56] Abd. Rahman Pilang, 'Socio-cultural system of Duri Community of Enrekang Regency South Sulawesi,' *Macrothink Institute Issues in Social Science* 2, no. 1 (2014), http://dx.doi.org/10.5296/iss.v2i1.5109.

[57] Anugrah et al., 'Injustice against women in SF.'

[58] Sando, 56, interview, 8 April 2024.

[59] Mutia, 42, interview, 15 January 2024.

Moreover, the SF area allocated to KTH Sipatuo consists largely of degraded, steep land far from the settlement, limiting its practical use for both men and women, and making the SF scheme not only a devolution of rights, but importantly a devolution of responsibility. KUPS Gollamalea—whose 12 members are all women—generates modest income from palm sugar and local snacks, yet its membership rules restrict participation to the spouses of KTH men, thereby excluding non-members and female-headed households.[60] Consequently, SF participation in Pundilemo reproduces existing gender hierarchies, positioning women as auxiliary rather than autonomous actors in forest governance.

Case Study 2: Banyusoco, Yogyakarta

The second case study focuses on Banyusoco village, in Gunungkidul district, Special Region of Yogyakarta, home to a long-settled Javanese ethnic community. During the Dutch colonial period, forests were controlled by the state, and residents required official permits to cultivate small plots of forest land. Most villagers worked as labourers in forestry or plantation sectors and later diversified into dryland farming—gogo rice, corn, soybeans, peanuts, fodder grasses, medicinal plants, teak, and cattle. In the late 1990s, widespread illegal logging led to severe forest degradation, prompting local and government reforestation efforts. Under a national reforestation program, farmers were granted small parcels and teak seedlings in exchange for cash payments.[61] These initiatives became the basis for *Hutan Kemasyarakatan* (HKm) permits issued across Banyusoco in the 1990s and 2000s.

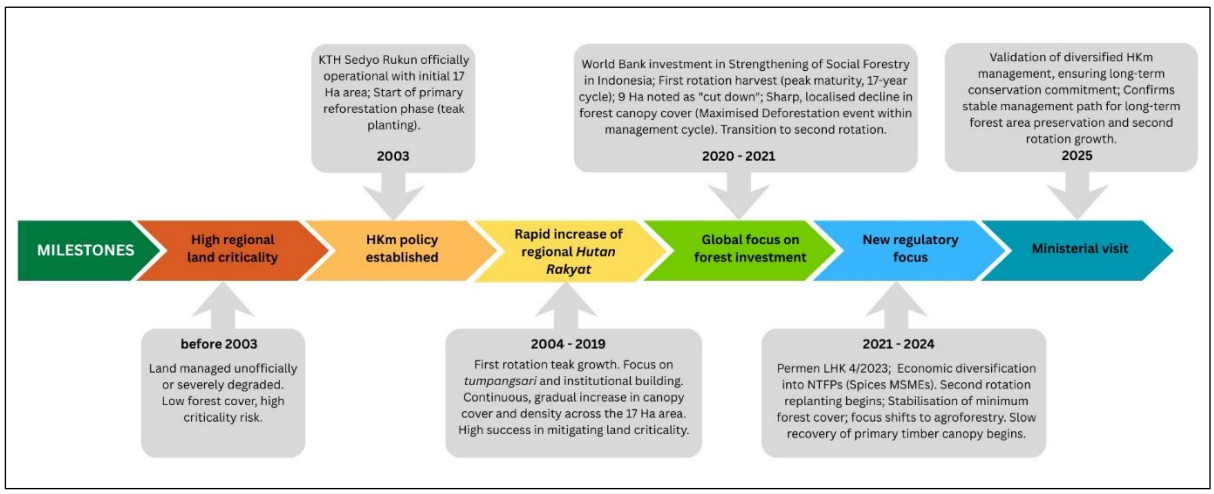

Figure 5. Key chronological milestones of KTH Sedyo Rukun and land use change.
Source. Authors' elaboration

This study focuses on KTH Sedyo Rukun, one of the most active and long-running SF groups in the village (Figure 5). Formed in 2000, the group received a temporary permit in

[60] MoEF Decree No. 9/2021 stipulates that KUPS members must be drawn from the KTH. However, the local NGO Tim Layanan Kehutanan Masyarakat (TLKM) negotiated with members of KTH Sipatuo to allow their wives to become members of KUPS Gollamalea, thereby expanding women's access to the group. See Anugrah et al., 'Injustice against women in SF,' 731–32.

[61] Tri Lestari Djamhuri, 'Community participation in a social forestry program in Central Java, Indonesia: the effect of incentive structure and social capital,' *Agroforestry Systems* 74, no. 1 (2008), https://doi.org/10.1007/s10457-008-9150-5.

2003 and an official HKm permit in 2007.[62] It manages about 17 hectares of productive forest and has grown from 37 to 48 members, including 14 women. Sedyo Rukun stands out for its female leadership under Halimah, the second woman to chair the group. Her leadership challenges entrenched gender norms, creating more space for women's participation. Banyusoco's proximity to major roads and the city of Yogyakarta, together with sustained engagement from civil society organisations (CSOs) and local universities, has fostered a more participatory and gender-inclusive governance culture. Yet this inclusivity also reflects how women like Halimah have transformed forest management into a space of both ecological and social renewal while strategically navigating and reinterpreting gender hierarchies. This finding aligns with previous studies, which demonstrate that strengthening women's decision-making roles in commons management—when supported by enabling institutional environments—enhances ecological outcomes and reduces conflict.[63]

In contrast to KTH Sipatuo in remote Pundilemo, where state enclosure and criminalised land access and geographic distance from the village settlement (and from support by state and non-state actors) constrain women's involvement, Sedyo Rukun demonstrates how accessibility and social networks enable more inclusive and gender-responsive forms of commoning within Indonesia's SF programme. Although membership regulations are formally identical, local interpretation and institutional partnerships matter. Encouraged by the Yogyakarta-based NGO Javlec and the local Forest Management Unit, Halimah was appointed group chair, drawing on her strong social capital as an educated woman from a respected forestry family within the village.

Born in 1964, Halimah grew up in a household where both parents worked as forest supervisors. She earned an associate degree (Diploma-3) from the Yogyakarta Academy of Industry and later accompanied her husband, a forestry employee, during postings in Bantul and Gunungkidul before returning to Banyusoco in 1990 to care for her ageing parents. Her family background and education fostered a commitment to sustainable forest management and community welfare. She expressed: 'This is where I grew up, at the edge of the forest. Before HKm, I heard stories about the impacts on the forest. At first, the forest was good. But because of a lot of looting and people kept taking from the forest, eventually the forest became barren.'[64]

Under Halimah's leadership over the past eleven years, Sedyo Rukun expanded collaboration with universities to identify water sources and secure CSR support for water storage during dry seasons. Beyond teak and timber management, Halimah has spearheaded initiatives to process non-timber forest products (NTFPs) such as medicinal herbs and natural dyes for batik. She also leads KUPS *Wana Manunggal Lestari*, a community development

[62] See Gunungkidul Regent Decree No. 208/2007, and DLHK Pemda DIY. 'Buku Statistik Kehutanan Tahun 2019', Dinas Lingkungan Hidup dan Kehutanan Pemerintah Daerah DI Yogyakarta, December 2019, https://dlhk.jogjaprov.go.id/wp-content/uploads/2023/10/Buku-Data-Statistik-Kehutanan-DIY-2019.pdf.

[63] Eric A. Coleman and Esther Mwangi, 'Women's participation in forest management: A cross-country analysis,' *Global Environmental Change* 23, no. 1 (2013), https://doi.org/10.1016/j.gloenvcha.2012.10.005; Daniel Revollo-Fernández et al., 'Exploring the role of gender in common-pool resource extraction: evidence from laboratory and field experiments in fisheries,' *Applied Economics Letters* 23, no. 13 (2016), https://doi.org/10.1080/13504851.2015.1119786; Cheryl Doss and Ruth Meinzen-Dick, 'Land tenure security for women: A conceptual framework,' *Land Use Policy* 99 (2020), https://doi.org/10.1016/j.landusepol.2020.105080.

[64] Halimah, 60, interview 8 January 2024.

scheme linking forest resource management with small-scale enterprise and social reproduction. She elaborated further on her leadership:

> I have my own way of leading: a chairperson shouldn't just give orders. The most important thing is to lead from the front and set an example in everything we do. I've always tried to do that, by contributing what I can, even making sacrifices [as an example] for others to follow. That way, we can maintain unity and manage the group for everyone's benefit.[65]

Her leadership exemplifies how women's agency within SF can reconfigure both ecological stewardship and gender relations, positioning Banyusoco as a model for gender-inclusive forest commoning in Indonesia.

Comparative analysis

Historical relations to land

The contrasting trajectories of forest governance in Banyusoco and Pundilemo illustrate how historical relations to land, the availability of external support, and the time elapsed since the granting of SF rights shape people's participation in collective forest governance. Although both villages are formally incorporated into Indonesia's SF programme, they entered it under markedly different social, political, and institutional conditions.

In Banyusoco, the relationship between people and forests has long been mediated by the state. During the colonial and early post-independence periods, forests were nationalised, and residents were cast primarily as labourers or users rather than customary custodians. SF was thus perceived as a chance to reclaim moral and material stewardship that had long been governed by external authorities (*rex communis*). Importantly, this transition unfolded gradually over more than two decades. KTH Sedyo Rukun was established in 2000, received a temporary permit in 2003, and secured a formal HKm permit in 2007. This extended period enabled members to become familiar with regulatory procedures, strengthen organisational capacity, and build trust in the durability of their access rights. Continuous engagement with the provincial forestry office, local NGOs, universities and Corporate Social Responsibility (CSR) programs further reinforced these processes by providing technical assistance, organisational support, and opportunities for collective learning. These factors have enabled KTH Sedyo Rukun to institutionalise relatively stable and inclusive forms of collective forest management.

By contrast, in Pundilemo, SF overlays living memories of customary access and more recent experiences of exclusion. Older residents recall when the forest was an open commons, providing food, materials, and refuge, before its reclassification as a protected forest in the 1990s criminalised customary forest use practices. Sando, the leader of KTH Sipatuo, explained: 'Since the HKm began, we've had access to the protected forest we couldn't enter before. With the ministry's permission we can go in—though not to cut wood, but to plant fruit trees and gather things like honey, rattan, ginger, turmeric, and *gadung* [*Dioscorea hispida*, wild yam].'[66]

Compared with Banyusoco, Pundilemo has experienced fewer gains in well-being due to the interaction of several reinforcing conditions. In addition to lower levels of gender inclusivity within the KTH, the village has had less time to build trust in SF rights, more limited

[65] Halimah interview.

[66] Sando, 56, interview, 23 January 2024.

engagement with external organisations, and consequently less institutional support. Its remote location, degraded forest conditions, and weaker institutional networks have further constrained opportunities for capacity building and collective experimentation, particularly for women, whose participation depends more heavily on external facilitation and inclusive village institutions. These conditions have produced greater uncertainty regarding access, boundaries, and long-term rights. Within this context, these broader structural constraints compound and entangle with gendered norms, further restricting women's opportunities to participate in decision-making, influence resource governance, and access the benefits of social forestry.

Gendering the forest over time

In Pundilemo, older women recall the forest as a space of intimacy and subsistence, where gathering roots and herbs, and weaving fibres formed part of a local *praxis communis*—a moral economy of care and reciprocity. Unlike men, who were more directly affected by the criminalisation of timber extraction following the area's reclassification as protected forest in the 1990s, women generally continued to access forest products for household use. Nevertheless, the reclassification disrupted long-standing relationships with the forest and introduced uncertainty about which forms of access and use remained permissible.

Although SF later promised to restore access rights, many women continue to experience the forest through a lens of ambiguity and dependence. Excluded from KTH membership and decision-making processes, they often rely on husbands or other male relatives for information about rules, boundaries, and permitted activities. This exclusion compounds feelings of uncertainty and can perpetuate distrust towards forest governance institutions: even though women were not the primary targets of past enforcement, they feared criminal sanctions for foraging food and cooking fuel. Women gained legitimate access to forest resources only after the establishment of KUPS Gollamalea, facilitated by the local NGO Community Forestry Service Team (TLKM) in 2021. As a result, the forest remains an ambivalent space—simultaneously associated not only with belonging and livelihood, but also with threat and the possibility of exclusion.

In Banyusoco, women's relationships with the forest evolved through sustained engagement with NGOs and local forest agencies. Forest work remains gendered, but women are more visible: under Halimah's leadership in KTH Sedyo Rukun, women lead KUPS enterprises producing herbal snacks, sugar, and dyes, transforming care labour into cooperative income generation. Participation is still framed within feminised roles, with women assumed to be caretakers rather than decision-makers—but it nonetheless expands recognition and agency.

Across both sites, the forest becomes gendered through everyday negotiations, affects, and memories that constitute *praxis communis*. In both villages, subnational forest offices facilitated *sosialisasi* meetings that invited only formal household heads, typically men, or those listed as 'farmers' on identity cards—criteria that systematically excluded women. Women thus accessed information indirectly through their husbands or kin, perpetuating gendered uncertainty about rights and boundaries.

Seen through *praxis communis*, gendering the forest is an ongoing negotiation between regulatory power and relational practices. Women's acts of gathering, tending, and negotiating access reconstitute the commons as a moral landscape rather than an administrative category, transforming regulation into care and constraint into relationships and connections. Their embodied memories of both freedom and restriction animate the

continual remaking of the commons—not only as *res communis* or under *rex communis*, but through gendered *praxis communis*.

SF outcomes

The analyses above demonstrate that the forest is not a neutral or universal space but a deeply gendered one, shaping everyday practices, relations, and meanings. This section explores how the gendering of the commons produces uneven livelihood benefits and well-being outcomes for men and women, shaped by differing priorities and moral understandings of a good life. Building on findings from our previous study, participation in SF particularly enhances the material, social, physical, cultural and spiritual elements of well-being—dimensions that are relational and mutually reinforcing.[67] Among these, social relations are crucial, mediating access to land and forest products, as well as to the less tangible domains of confidence, belonging, and mutual care.

Distribution of well-being benefits

Our data (Table 2) show how SF governance shapes distributive outcomes through everyday practices of commoning, both in terms of landholdings and the income derived from them. The distribution of land within utilisation areas (as described earlier) is determined by SF management bodies (leaders of KTH), in accordance with SF management plans.

In Pundilemo, male-headed households control nearly twice as much land (in the form of land plots within the SF utilisation area) as female-headed households. Although overall landholdings are smaller in Banyusoco, the gender gap is narrower, and women's ownership, access, and management roles are more widely recognised. Gender disparities are also evident in income from SF land. In Pundilemo, male-headed households earn almost twice as much as female-headed ones, whereas in Banyusoco men's earnings are about 1.75 times higher—meaning women-headed households earn only 57 per cent as much as male-headed households (Figure 6). These patterns suggest that (gendered) governance arrangements—rather than resource endowments alone—are among the factors that structure how benefits from SF are distributed. Where SF management is more inclusive, as in Banyusoco, benefit distribution tends to be more equitable than in Pundilemo and benefits are more widely shared, although significant gender disparities still exist.

Across both sites, *praxis communis* reveals contrasting distributive logics of inclusion and exclusion. In Pundilemo, authority over forest cultivation plots and their benefits rests with men, while women's labour remains informal and undervalued. Men control timber and land allocations, while women sustain the commons through collective maintenance—cleaning water pipes, supporting new forest growth, processing *gadung* tubers, and gathering non-timber forest products. Their work anchors the commons socially and ecologically yet remains largely invisible within formal governance. Though limited, participation in the KUPS's palm sugar enterprise has opened pathways for women's empowerment. As one member described: 'If sales go smoothly, we can earn IDR 200,000-500,000 every 2–3 months. Because of the *aren* (sugar palm), we can also go outside the village, meet people from other places, and take part in various meetings' (Mutia, 42, 15 January 2024).

[67] Toumbourou, 'Social forestry for a good life?'

Table 2. Social forestry's impacts on well-being dimensions.

Well-being dimensions	**Pundilemo** *male-dominated KTH*	**Banyusoco** *Gender inclusive KTH*
Memberships	27 KTH members, all men 3 KUPS with all-male members, and 1 KUPS with 12 women members	48 KTH members, 13 (27%) are women 48 KUPS members, 38 (80%) are women
Material dimensions		
Landholding sizes in the village	Avg. 1.83 hectares per male-headed household Avg. 0.94 hectares per female-headed households (12% of respondents)	Avg. 0.48 hectares per male-headed households Avg. 0.28 hectares per female-headed households (38% of respondents)
SF land area total *SF plot size (land within SF cultivation area)*	52 hectares in total, 48% of SF smallholders (people within households who have land plot allocations in the cultivation area) are women Avg. 2.09 hectares pp for male members Avg.1.36 hectares pp for female members (held by 13 women who are non-SF members, represented by men from their households)	17 hectares in total, 27% of SF smallholders (people within households who have land plot allocations in the cultivation area) are women Avg. 0.49 hectares pp for male members Avg. 0.33 hectares pp for female members
Main commodities	Fruit and timber trees, including *jengkol* (*Archidendron jiringa*), teakwood, candlenut, avocado, mahogany, durian and nutmeg trees	Teakwood *(Tectona grandis, or jati in the local language),* Cajuputi (*Melaleuca cajuputi*), corn, and traditional herbs
Income from the last year from SF (cultivation area) land (as at 2024)	IDR 1,428,044 (USD 92) avg. per household	IDR 2,024,131 (USD 130) avg. per household
Livelihood products from forests	Hardwood timber, tuberous plants, candlenut, sugar palm, fruits, spices, mushrooms, honey, and wild game (wild boar)	Hardwood timber, tuberous plants, wild grass for cattle fodder and herbs
Assistance provided to SF members	Seedlings (fruit and timber trees), cattle, training, palm-sugar processing equipment	Seedlings (teak and fruit trees), borehole and water pump, training
Good social relations	KUPS activities have strengthened members' confidence and social ties	KUPS participation has built confidence and social cohesion; bore construction has also reduced water-related conflicts
Bodily well-being and health	Forest and waterways contribute to health and serenity	River clean-up and waste separation improved water quality; bore-water increased food production and access to clean water; women's volleyball through KUPS improved physical and mental health
Security (livelihood, tenure, and resource)	Continued uncertainty over access rights, forest boundaries, and benefits due to the remoteness of the SF area and limited utilisation of the permit area	Improved food, income, water, and tenure security; reduced water-related conflict through bore construction
Freedom of choice and action	Some flexibility to diversify crops	Greater flexibility to choose and diversify land-based crops
Cultural and spiritual	Cultural traditions centred on forest and water ecosystems, including the use of forest products	Cultural traditions centred on forest and water ecosystems, including the use of forest products

Source: authors' elaboration

In Banyusoco, by contrast, SF governance is anchored in more participatory and gender-inclusive practices of commoning. Here, women's leadership and recognition as capable forest managers have shaped decision-making and benefit-sharing arrangements. Under Halimah's leadership, KTH Sedyo Rukun distributed ninety-five land plots to women and men within the cultivation area for multifunctional use—combining teak with corn, peanuts, cassava, arrowroot, and cattle fodder, and dedicating areas for nature tourism. Around thirteen members (or 38% of the SF smallholders) are women, who are also official members of the KTH. The KUPS, however, are dominated by women. KUPS activities link production, care, and ecological renewal, enhancing not only household incomes, but also social and bodily well-being. As Sulis, a member of KUPS, expressed: 'Being part of the HKm really helps support our family—covering daily needs, children's schooling, and care for the elderly. We usually earn between IDR 50,000 and 100,000 a day from KUPS work. It's been a big help, especially since my husband is no longer working after his project ended.'[68]

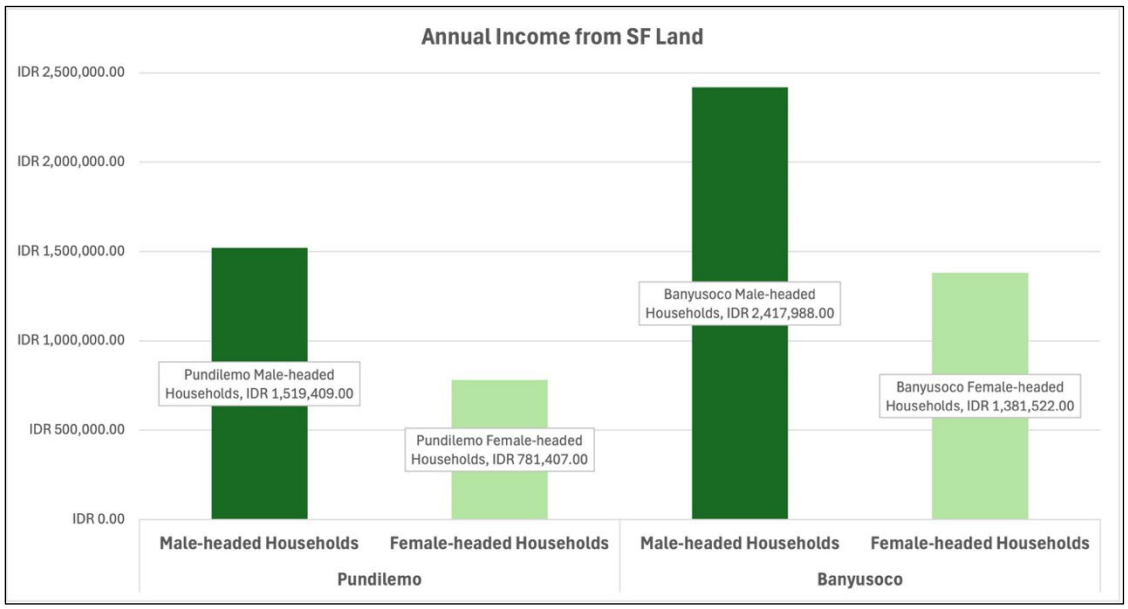

Figure 6. Annual income gap from SF land.
Source. Authors' elaboration based on survey data.

Gender-inclusive governance in Banyusoco not only brings economic benefits, but also socio-ecological benefits. In 2019, KTH Sedyo Rukun successfully drilled a well that supplies water for the residents' daily needs. Sulis further elaborated:

> *Alhamdulillah*, things are much better now because we have plenty of water. In the past, our hamlets were the most difficult areas for accessing water. I had to walk 5 km just to get water from the river. We relied on water from neighbouring hamlets and often received only a small flow for about 20 minutes a day. Water shortages frequently led to arguments among neighbours. After a drilled well was established through the social forestry programme, water became much more accessible. Now we have a reliable supply, and people no longer have to compete for water. We simply pay for the service and can meet our daily needs without difficulty.[69]

[68] Sulis, 48, interview 13 December 2023.

[69] Sulis interview.

These cases illustrate that SF governance is not a gender-neutral framework for accessing or distributing resources, but a dynamic field in which the gendered labour, leadership, and social relations that sustain collective life actively shape who benefits and how. Where women's participation is institutionally recognised and embedded in governance practices, the commons become both more equitable and more resilient.

Gendered knowledge systems

SF outcomes reflect not only access to land, capital, or benefits, but also distinct gendered knowledge systems. Women's expertise in forest water systems, herbs, and food processing constitutes an ecological archive sustaining both biodiversity and community health.

In Banyusoco, women draw on their knowledge, experience, and social networks to identify new opportunities to utilise forest resources and to improve household livelihoods. For example, when given the opportunity, women may act as innovators and knowledge brokers bringing external ideas to add value to local resources, and thereby enhancing the economic benefits derived from social forestry. As Halimah clarified:

> Our enterprise initially focused on producing crystal ginger, an idea I adopted from another HKm group. I saw that we had the same resources and believed we could do the same. I encouraged community members to cultivate ginger and process it into value-added products. Since then, I have continued to look for innovations that could create additional income for the community. Although we have not achieved all our goals, we have successfully started the initiative.[70]

In Pundilemo, the *mindio saluran tallu* ritual—the annual collective cleaning of sacred water channels—embodies the link between ecology and spirituality.[71] Women maintain the pipes year-round, ensuring water security and environmental care by clearing blockages and protecting troughs from wild boar, while men contribute occasionally to heavy repair work. Karsinah, for example, implemented a simple system to separate organic and inorganic waste at her home. As she explained:

> People here often throw household waste into the river. I started thinking that the trash would eventually flow downstream and pile up at the estuary. We in this hamlet aren't directly affected, but I feel sorry for those who live near the estuary. I've wanted to turn some of this waste into compost, but I can only manage a little.[72]

Together, these cases reveal that *gendered commoning*—particularly, the everyday, embodied labour of sustaining forests—remains central to ecological resilience yet peripheral within state-led governance. Recognising this relational labour is essential to building equitable and sustainable forest futures.

Discussion

Indonesia's SF program is often celebrated as a participatory mechanism that reduces deforestation, enhances rural livelihoods, and contributes to climate mitigation. Yet, as this study has shown, SF is far more than a technocratic policy instrument: it is a social and moral

[70] Halimah interview.

[71] Nurlela et al., 'Mindio Saluran Tallu: tradisi budaya masyarakat Ba'ka Cendana Enrekang,' *Prosiding Seminar Nasional Pendidikan Ilmu-Ilmu Sosial Membentuk Karakter Bangsa dalam Rangka Daya Saing Global* 2 (2017), https://ojs.unm.ac.id/PSN-HSIS/article/view/3235.

[72] Karsinah, 47, interview, 17 December 2023.

field in which relations of power, gender, and care are continually negotiated. Framed legally as *res communis* yet governed by the state's political power (*rex communis)*, SF extends the state's custodial authority even as it decentralises management responsibility to local communities. The state's role therefore continues to shape forest access and use, not only through formal regulations but also through the norms, categories, and practices that determine who participates and who benefits. Understanding SF through *praxis communis* draws attention to the everyday practices through which commons are actively made and remade.

The comparison between Pundilemo and Banyusoco demonstrates that SF outcomes are shaped not only by the formal allocation of rights, but also by the gendered social relations through which those rights are enacted. Although both communities operate under the same national policy framework, they display markedly different patterns of participation, leadership, and benefit sharing. In Pundilemo, SF governance remains dominated by men: all twenty-seven KTH members are male, and women participate primarily through a separate KUPS whose membership is restricted to relatives of the nine male KTH members. In Banyusoco, by contrast, women comprise more than one-third of KTH members and around 80 per cent of KUPS members, some of them occupying leadership positions. These differences in governance arrangements are reflected in the broader well-being outcomes associated with SF.

The material benefits generated through SF remain modest in both sites, yet Banyusoco demonstrates a greater capacity to translate collective forest management into livelihood diversification and community development. Average annual income from SF land is higher in Banyusoco than in Pundilemo, and the range of benefits extends beyond timber to include water infrastructure, traditional herbal products, and women-led small-scale enterprises. In contrast, the remoteness of Pundilemo's SF area, its relatively degraded condition, and continued uncertainty over access rights limit both the economic value of SF and the opportunities available to women. These findings suggest that formal access rights alone do not automatically generate equitable livelihood benefits; rather, benefits also depend on the social and institutional arrangements through which rights are exercised. In particular, the composition of forest management bodies plays a decision-making role in determining which areas are prioritised for SF permits. In Pundilemo, women's exclusion from the management body right from the outset has exacerbated the structural constraints they face in terms of access. Had women's knowledge and everyday use of forests been integrated earlier in the SF permit decision-making process, more accessible forests might have been prioritised for SF schemes and under different access conditions.

Our findings also reveal that gender-inclusive commoning generates outcomes that extend beyond conventional measures of income or productivity. In Banyusoco, women's participation has contributed to stronger social cohesion, greater confidence among members, fewer water-related conflicts, improved access to clean water, and enhanced bodily well-being through collective activities and improved food production. These outcomes emerged not simply from the forest itself but from the social relations that developed around collective resource management. Women's leadership under Halimah helped connect forest governance with broader concerns of household welfare, water security, health, and community development. In this sense, the commons functioned not only as a mechanism for resource management but also as a site for the reproduction of social relations and collective care.

By contrast, the exclusion of women from formal decision-making structures in Pundilemo constrained the transformative potential of SF. Although women continue to contribute substantially to forest-based livelihoods, water management, food processing, and household reproduction, these activities remain largely invisible within official governance structures. As a result, women's knowledge and priorities are less likely to shape collective decisions regarding resource management or benefit distribution. The persistence of male-dominated leadership therefore limits not only women's participation but also the range of social and ecological benefits that SF can generate. The comparison suggests that a system that excludes women from participation and decision-making weakens the capacity of commons institutions to mobilise diverse forms of knowledge, labour, and care that contribute to community resilience.

These findings support the argument that commons governance is fundamentally gendered. In both villages, women's labour and ecological knowledge sustain the everyday functioning of the forest commons—maintaining water systems, processing non-timber forest products, caring for households, and supporting collective activities—yet these contributions are rarely recognised as central components of climate governance. Evaluating SF primarily through indicators such as carbon sequestration, forest cover, or income generation obscures the forms of social reproductive labour that make collective resource management possible. A gendered commoning perspective reveals that embedded within (multi-level) climate governance are everyday practices of care, cooperation, and reciprocity that sustain both communities and ecosystems.

More broadly, the findings demonstrate that gender-inclusive management strengthens multiple dimensions of well-being simultaneously. Where women are able to participate meaningfully in decision-making, as in Banyusoco, SF contributes not only to more equitably distributed material livelihoods but also to social cohesion, bodily health, water security, and freedom to pursue diverse livelihood strategies. These outcomes are central components of adaptive capacity and climate resilience. Conversely, where women remain marginalised from governance structures, as in Pundilemo, the very selection of which forests were chosen for SF, and under what management conditions, constrains their ability to access these forests. In turn, the benefits from SF are narrower—accruing to those already more materially and socially privileged (such as those with the financial and time flexibility to access land plots further away from their households). This sharpens social differentiation and diminishes the potential for transformation. The comparison therefore suggests that gender equity is not simply an add-on to effective commons governance but a constitutive element of it. Gendered governance shapes how resources are managed, how benefits are distributed, and ultimately how communities respond to environmental change. In this sense, gender governance is inseparable from climate governance: the quality of social relations within the commons directly influences the social and ecological outcomes of environmental policy.

Conclusion

We have shown how Indonesia's Social Forestry (SF) programme—framed as a participatory solution to deforestation and rural poverty—operates both as a technocratic system and as a site of commoning. A comparative analysis of Pundilemo (South Sulawesi) and Banyusoco (Yogyakarta) reveals that forests are gendered commons, continually shaped by everyday practices of labour, care, and negotiation. Women's contributions to forest maintenance, water management, and non-timber production are vital to SF's sustainability, yet they remain marginal within its formal structures. Where management and decision-making are

more inclusive, as in Banyusoco, the social, material, and ecological dimensions of well-being reinforce one another, strengthening collective resilience.

Drawing on feminist political ecology of the commons, this analysis understands SF not merely as a system of resource management but as a dynamic, relational, and contested space in which gendered power, care, and collective life are continually produced and reconfigured. Where persistent gender norms continue to shape and constrain the everyday practices of commoning, social reproduction and power relations underpin the making—and remaking—of the commons.

Theoretically, the paper advances a relational framework of gendered commoning—comprising *res communis*, *rex communis*, *praxis communis,* and *lex communis*—to analyse contemporary environmental governance. As *res communis*, SF defines forests as shared property under state custodianship; as *rex communis*, it reflects the state's sovereign claim to govern resources 'for the public good.' *Praxis communis* denotes the everyday practices of commoning, in which the forest becomes a lived moral and ecological community. These elements are continually produced through *lex communis*, the political and gendered norms determining what is shared, and who may access and benefit from it. This relational perspective bridges feminist political ecology and commons theory, demonstrating that truly inclusive commons must also reckon with gendered divisions of labour, knowledge, and social reproduction.

Policy-wise, the findings call for moving beyond technocratic, productivity-oriented models towards gender-sensitive, relational approaches to SF governance. Recognising women's ecological knowledge, leadership, and social labour as central—not supplementary—to environmental management would enhance both equity and effectiveness. Programs must go beyond numerical inclusion to enable transformative participation, in which decision-making, benefit-sharing, and well-being reflect the lived experiences of all forest users. Because SF remains a state-mediated policy subject to political shifts, sustaining it as commons requires strengthening networks of non-state actors while strategically negotiating power with the state—ensuring that governance remains both participatory, inclusive, and grounded in everyday practices of care and commoning.

Ultimately, rethinking SF through the lens of gendered commons invites a broader reconsideration of what counts as environmental governance. Sustainable futures will depend not only on legal recognition or institutional reform, but also on nurturing the relations of care, trust, and reciprocity through which communities make the forests common once again. In this sense, commoning is not only an ecological practice but an ethical and political project—one that redefines what it means to live well with the forest.

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References

Agarwal, Bina. 'Gender and forest conservation: The impact of women's participation in community forest governance'. *Ecological Economics* 68, no. 11 (2009): 2785–99. https://doi.org/10.1016/j.ecolecon.2009.04.025.

Agarwal, Bina. 'The power of numbers in gender dynamics: illustrations from community forestry groups.' *Journal of Peasant Studies* 42, no. 1 (2015): 1–20. https://doi.org/10.1080/03066150.2014.936007.

Aji, Gutomo Bayu. 'Desa Dan Rumah Tangga Petani Di Bawah Pembangunan: Kontekstualisasi Pemikiran Sodality SMP Tjondronegoro Dalam Agroekologi.' *Sodality: Jurnal Sosiologi Pedesaan* 9, no. 1 (2021): 18–28. https://doi.org/10.22500/9202134938.

Anugrah, Dadang, Andi Vika Faradiba Muin, Irlan Irlan et al. 'Injustice against women in a social forestry program: Case studies from two Indonesian villages.' *Forest and Society* 6, no. 2 (2022): 723–41. https://doi.org/10.24259/fs.v6i2.20006.

Avermaete, Tom. 'Constructing the commons: Towards another architectural theory of the city?' In *The New Urban Condition*, edited by Leandro Medrano, Luiz Recamán, and Tom Avermaete. Routledge, 2021. https://doi.org/10.4324/9781003100362.

Awang, San Afri, Wahyu Tri Widayanti, Bariatul Himmah, et al. *Panduan Pemberdayaan Lembaga Masyarakat Desa Hutan (LMDH)*. Center for International Forestry Research (CIFOR), 2008. https://www2.cifor.org/lpf/docs/panduan%20pemberdayaan%20lmdh.pdf.

Beban, Alice and Joanna Bourke Martignoni. '"Now the Forest Is Over": Transforming the Commons and Remaking Gender in Cambodia's Uplands.' *Frontiers in Sustainable Food Systems* 5 (October 2021): 1–15. https://doi.org/10.3389/fsufs.2021.700990.

Blackburn, Susan. *Women and the State in Modern Indonesia*. Cambridge University Press, 2004.

Bollier, David and Silke Helfrich, eds. *Patterns of Commoning*. Commons Strategy Group and Off the Common Press, 2015.

Bollier, David and Silke Helfrich. *Free, Fair, and Alive: The Insurgent Power of the Commons*. New Society Publishers, 2019. https://www.boell.de/sites/default/files/free_fair_and_alive_book.pdf.

BP2SDM KLHK. 'Data Kelompok Tani Hutan Kab. Gunung Kidul Prov. D.I. Yogyakarta.' Ministry of Environment and Forestry, n.d. https://simluh.bp2sdm.kehutanan.go.id/index.php/Portal/data_kth_list?kelompok_active=1&kabupaten_id=3403&provinsi_id=34;iframe=true&width=1000&height=600.

Cabinet Secretariat of the Republic of Indonesia (Setkab RI). 'President Jokowi Launches Policies on Economic Equality and Agrarian Reform.' 22 April 2017. https://setkab.go.id/en/president-jokowi-launches-policies-on-economic-equality-and-agrarian-reform/?TSPD_101_R0=08978305a1ab2000864806407a11a156ad8ebb4f24c79ec2ac6d75c5c2bc2c339929cac8b2e86d5708653627ba1430004638e43bc9a3692666275165127388 9be9eebaa7f6373fdabf965ff594a3ad847d1e39a07841b6c10ae0b7b7daf7b6c3.

Clark, Vicki L. Plano, and John W. Creswell. *The Mixed Methods Reader*. Sage, 2008.

Clement, Floriane, Wendy Harcourt, Deepa Joshi, and Chizu Sato. 'Feminist political ecologies of the commons and commoning (Editorial to the Special Feature).' *International Journal of the Commons* 13, no. 1 (2019): 1–15. https://doi.org/10.18352/ijc.972.

Coleman, Eric A., and Esther Mwangi. 'Women's participation in forest management: A cross-country analysis.' *Global Environmental Change* 23, no. 1 (2013): 193–205. https://doi.org/10.1016/j.gloenvcha.2012.10.005.

Das, Smriti. 'Of Climate, Communities and Commons: A Gendered Perspective'. In *Climate Change Adaptation: Traditional Wisdom and Cross-Scale Understanding*, edited by Nalini Bikkina and Rama Mohana R. Turaga. Palgrave Macmillan, 2024. https://doi.org/10.1007/978-981-97-1076-8_5.

De Angelis, Massimo. *Omnia Sunt Communia: On the Commons and the Transformation to Postcapitalism*. Bloomsbury Publishing, 2017. https://doi.org/10.5040/9781350221611.

Djamhuri, Tri Lestari. 'Community participation in a social forestry program in Central Java, Indonesia: The effect of incentive structure and social capital.' *Agroforestry Systems* 74, no. 1 (2008): 83–96. https://doi.org/10.1007/s10457-008-9150-5.

DLHK Pemda DIY. 'Buku Statistik Kehutanan Tahun 2019.' Dinas Lingkungan Hidup dan Kehutanan Pemerintah Daerah DI Yogyakarta, December 2019. https://dlhk.jogjaprov.go.id/wp-content/uploads/2023/10/Buku-Data-Statistik-Kehutanan-DIY-2019.pdf.

Doss, Cheryl, and Ruth Meinzen-Dick. 'Land tenure security for women: A conceptual framework.' *Land Use Policy* 99 (2020): 105080. https://doi.org/10.1016/j.landusepol.2020.105080.

Eddyono, Sri Wiyanti. 'Women's Work and State Policies: Contending Paid and Unpaid Care.' *Jurnal Perempuan* 28, no. 3 (2023): 225–33. https://doi.org/10.34309/jp.v28i3.888.

Elmhirst, Rebecca. 'Introducing new feminist political ecologies.' *Geoforum* 42, no. 2 (2011): 129–32. https://doi.org/10.1016/j.geoforum.2011.01.006.

Erbaugh, James. T. 'Responsibilization and social forestry in Indonesia.' *Forest Policy and Economics* 109 (2019): 1–9. https://doi.org/10.1016/j.forpol.2019.102019.

Federici, Silvia. 'Feminism and the Politics of the Commons.' *The Commoner* 15 (2012): 1–22. https://thecommoner.org/wp-content/uploads/2020/06/federici-feminism-and-the-politics-of-commons.pdf.

Ford, Michele and Lyn Parker eds. *Women and Work in Indonesia.* Routledge, 2008. https://doi.org/10.4324/9780203932360.

Geertz, Clifford. 'The wet and the dry: Traditional irrigation in Bali and Morocco.' *Human Ecology* 1, no. 1 (1972): 23–39. https://doi.org/10.1007/BF01791279.

Gibson, Thomas, 'Revolutionary Islam and the Nation-State, 1900–1965.' In *Islamic Narrative and Authority in Southeast Asia: From the 16th to the 21st Century,* edited by Hillary Kaell, Sowparnika Balaswaminathan and David Kloos. Palgrave Macmillan, 2007. https://doi.org/10.1057/9780230605084_7.

Haller, Tobias, Karina Liechti, Martin Stuber, François-Xavier Viallon, and Rahel Wunderli, eds. *Balancing the Commons in Switzerland: Institutional Transformations and Sustainable Innovations*. Routledge, 2021. https://doi.org/10.4324/9781003043263.

Harcourt, Wendy, and Ingrid L. Nelson, eds. *Practising Feminist Political Ecologies: Moving Beyond the 'Green Economy.'* Zed Books, 2015. https://doi.org/10.5040/9781350221970.

Hardin, Garrett. 'The Tragedy of the Commons.' *Science* 162, no. 3859 (13 December 1968): 1243–48. https://doi.org/10.1080/19390450903037302.

Herrawan, Haudec, Nurhady Sirimorok, Munajat Nursaputra, et al. 'Commoning the state forest: Crafting commons through an Indonesian social forestry program.' *Forest and Society* 6, no. 1 (2022): 20–39. https://doi.org/0.24259/fs.v6i1.10680.

Kompas. 'MK Putuskan Masyarakat Adat Tak Perlu Izin Pemerintah Berkebun di Hutan: Asal Nonkomersial.' *Kompas.com,* 17 October 2025. https://nasional.kompas.com/read/2025/10/17/05410091/mk-putuskan-masyarakat-adat-tak-perlu-izin-pemerintah-berkebun-di-hutan-asal.

Kresna, Rudi, Aji Winara, Ary Widiyanto, et al. 'Out of the woods: social capital and smallholder dairy farmers' access to state-owned agroforestry lands in West Java, Indonesia.' *Agroforestry Systems* 98, no. 3 (2024): 637–52. https://doi.org/10.1007/s10457-023-00934-z.

Lamb, Vanessa, Laura Schoenberger, Carl Middleton and Borin Un. 'Gendered eviction, protest and recovery: a feminist political ecology engagement with land grabbing in rural Cambodia' In *Gender and Generation in Southeast Asian Agrarian Transformations,* edited by Clara Mi Young Park and Ben White. Routledge, 2019. https://doi.org/10.4324/9781351037181-7.

Lampe, Munsi. 'Massenrempulu ethnicity from south Sulawesi in the transformation of political identity and the production of cultural differences.' *Forum Ilmu Sosia* 49, no 2 (2022): 73–84. https://doi.org/10.15294/fis.v49i2.39406.

Lawasi, Moh. Andika, Dicky Rachmawan, Angela Iban, et al. 'Reviewing social forestry in Indonesia through an integrative framework for collaborative governance.' *International Forestry Review* 26, no. 3 (2024): 291–305. https://doi.org/10.1505/146554824839071625.

Linebaugh, Peter. *The Magna Carta Manifesto: Liberties and Commons for All.* University of California Press, 2008. https://doi.org/10.1525/9780520932708.

Loveridge, Robin, Andrew R. Marshall, Marion Pfeifer, et al. 'Pathways to win-wins or trade-offs? How certified community forests impact forest restoration and human wellbeing.' *Philosophical Transactions of the Royal Society* B, 378 [1867] (2023). https://doi.org/10.1098/rstb.2021.0080.

Mahanty, Sango, John Guernier, J. and Yurdi Yasmi. 'A fair share? Sharing the benefits and costs of collaborative forest management. *International Forestry Review* 11, no 2 (2009): 268–80. https:doi.org/10.1505/ifor.11.2.268.

Mansbridge, Jane. 'The role of the state in governing the commons.' *Environmental Science and Policy* 36 (2014): 8–10. http://dx.doi.org/10.1016/j.envsci.2013.07.006.

Maryudi, Ahmad, Muhammad Alif K. Sahide, Muhammad H. Daulay, Dhany Yuniati, Wildan Syafitri, Suryanto Sadiyo, and Micah R. Fisher. 'Holding social forestry hostage in Indonesia: Contested bureaucracy mandates and potential escape pathways.' *Environmental Science & Policy* 128 (February 2022): 142–53. https://doi.org/10.1016/j.envsci.2021.11.013.

McCarthy, John F. 'The limits of legality: State, governance and resource control in Indonesia'. In *The State and Illegality in Indonesia,* edited by Edward Aspinall and Gerry van Klinken. Brill, 2010. https://doi.org/10.1163/9789004253681_006.

Meinzen-Dick, Ruth S., Audrey Pereira, Rajendra Pradhan, and Cheryl R. Doss. Women's empowerment, extended families and male migration in Nepal: Insights from mixed methods analysis.' *International Food Policy Research Institute (IFPRI) Discussion Paper* 1977 (2020): 1–41. https://doi.org/10.2499/p15738coll2.134159.

Meinzen-Dick, Ruth S., Lynn R. Brown, Hilary Sims Feldstein, and Agnes R. Quisumbing. 'Gender, property rights, and natural resources.' *World Development* 25, no. 8 (1997): 1303–15. https://doi.org/10.1016/j.worlddev.2019.06.018.

Ministry of Environment and Forestry (MoEF). 'FOLU NET SINK: Indonesia's climate actions toward 2030.' Ministry of Environment and Forestry, n.d. https://www.menlhk.go.id/cadmin/uploads/PHOTO_BOOK_FOLU_NET_SINK_Indonesia_s_Climate_Actions_Towards_2030_a3d4f1fa43.pdf.

Ministry of Environment and Forestry (MoEF). 'Peta Interaktif SIGAP Kementerian Kehutanan.' Ministry of Environment and Forestry, n.d. https://geoportal.menlhk.go.id/portal/apps/webappviewer/index.html?id=2ee8bdda1d714899955fccbe7fdf8468.

Muin, Abdul, and Heinrich Rakuasa. 'Sasi laut as a culture of natural resources conservation to overcome the tragedy of the commons in Maluku Province.' *International Journal of Multidisciplinary Approach Research and Science* 1, no. 3 (2023): 277–87. https://doi.org/10.59653/ijmars.v1i03.139.

Nightingale, Andrea J. 'Commoning for inclusion? Commons, exclusion, property and socio-natural becomings.' *International Journal of the Commons* 13, no. 1 (2019): 16–35. https://doi.org/10.18352/ijc.927.

Nurlela, Abdul Rahman, and Jumadi. 'Mindio Saluran Tallu: tradisi budaya masyarakat Ba'ka Cendana Enrekang.' *Prosiding Seminar Nasional Pendidikan Ilmu-Ilmu Sosial Membentuk Karakter Bangsa dalam Rangka Daya Saing Global* 2 (2017): 459–74. https://ojs.unm.ac.id/PSN-HSIS/article/view/3235.

Ostrom, Elinor. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, 1990.

Ota, Masahiko, Misa Masuda, and Kaori Shiga. 'Payment for what? The realities of forestry benefit sharing under joint forest management in a major teak plantation region of Java, Indonesia.' *Small-scale Forestry* 19, no. 4 (2020): 439–60. https://doi.org/10.1007/s11842-020-09446-5.

Peluso, Nancy Lee, and Peter Vandergeest. 'Writing political forests.' *Antipode* 52, no. 4 (2020): 1083–103. https://doi.org/10.1111/anti.12636.

Peluso, Nancy Lee and Debbie Prabawati. 'A forest runs through it: gendered work and forest transformations in mountain Java.' *Journal of Agrarian Change* 25, no. 4 (2025): 1–19. https://doi.org/10.1111/joac.70035.

Périvier, Hélène. 'Crossing Gender Studies with the Commons.' *International Journal of the Commons* 18, no. 1 (2024): 564–84. https://doi.org/10.5334/ijc.1341.

Pieter, Levina Augusta Geraldine, Marcellinus Mandira Budi Utomo, and Clara Siagian. 'Implications of Omnibus law for forestland conflict resolution systems (a case study in Sumbawa).' *IOP Conference Series: Earth and Environmental Science* 917, no. 1, (2021): 1–8. https://doi.org/10.1088/1755-1315/917/1/012019.

Pilang, Abd. Rahman. 'Socio-cultural system of Duri Community of Enrekang Regency South Sulawesi.' *Macrothink Institute Issues in Social Science* 2, no.1 (2014): 31–41. http://dx.doi.org/10.5296/iss.v2i1.5109.

Rakatama, Ari, and Ram Pandit. 'Reviewing social forestry schemes in Indonesia: Opportunities and challenges.' *Forest Policy and Economics* 111, (February 2020): 1–13. https://doi.org/10.1016/j.forpol.2019.102052.

Revollo-Fernández, Daniel, Alonso Aguilar-Ibarra, Fiorenza Micheli, and Andrea Sáenz-Arroyo. 'Exploring the role of gender in common-pool resource extraction: evidence from laboratory and field experiments in fisheries.' *Applied Economics Letters* 23, no. 13 (2016): 912–20. https://doi.org/10.1080/13504851.2015.1119786.

Robinson, Kathryn. 'Indonesian women: From orde baru to reformasi.' In *Women in Asia*: *Tradition, Modernity, and Globalisation*, edited by Louise Edwards and Mina Roces. Routledge, 2000.

Rocheleau, Dianne, and David Edmunds. 'Women, men and trees: Gender, power and property in forest and agrarian landscapes.' *World Development* 25, no. 8 (1997): 1351–71. https://doi.org/10.1016/S0305-750X(97)00036-3.

Safitri, Myrna. 'Social forestry and land tenure conflicts in Indonesia.' In *Routledge Handbook of Community Forestry*, edited by Janette Bulkan, John Palmer, Anne M. Larson, Mary Hobley. Routledge, 2022.

Sari, Yulia Indrawati, Tessa D. Toumbourou, Lilis Mulyani, Annisa Sabrina Hartoto and Mia B. Dunphy. '*Women in Social Forestry in Indonesia: Life Story Excerpts of Women Involved in Social Forestry in Indonesia*.' The University of Melbourne, Report, 2024. https://doi.org/10.26188/26762455.v1.

Suryakusuma, Julia I. 'State Ibuism: The Social Construction of Womanhood in the Indonesian New Order.' PhD diss., Institute of Social Studies, The Hague, 1987.

Suwignyo, Agus. 'Gotong Royong as Social Citizenship in Indonesia, 1940s to 1990s.' *Journal of Southeast Asian Studies* 50, no. 3 (2019): 387–408. https://www.jstor.org/stable/26859705.

Tarigan, Abetnego PP, and Mahawan Karuniasa. 'Analysis of agrarian conflict resolution through social forestry scheme.' *IOP Conference Series: Earth and Environmental Science* 716, no. 1 (2021): 1–9. https://doi.org/10.1088/1755-1315/716/1/012082.

Tjondronegoro, Sediono. M. P. *Social Organization and Planned Development in Rural Java: A Study of the Organizational Phenomenon in Kecamatan Cibadak, West Java and Kecamatan Kendal, Central Java.* Oxford University Press, 1984.

Toumbourou, Tessa D., Mia B. Dunphy, Lilis Mulyani, et al. 'Social forestry for a good life? The uneven well-being benefits of Indonesia's social forestry scheme.' *People and Nature* 7, no. 6 (2025): 1443–63. https://doi.org/10.1002/pan3.70042.

Wolf, Eric R. *Peasants*. Prentice-Hall, 1966. https://monoskop.org/images/9/9b/Wolf_R_Eric_Peasants_1966.pdf.