Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

Social Capital and Empowerment in Forest Governance: A Systematic Review of Southeast Asian Social Forestry Models

Sri Suwanto*, San Afri Awang, Tri Atmojo, Marinus Kristiadi Harun

Graduate School of Forestry Science, Faculty of Forestry, Universitas Gadjah Mada, Jl. Agro No. 1, Bulaksumur, Indonesia 55281

Received July 14, 2025/Accepted November 11, 2025

Abstract

This systematic literature review investigates the role of social capital in the success and challenges of tropical forest governance and social forestry models in Southeast Asia. Amidst the climate and deforestation crises, understanding the factors that support legitimacy and sustainability is crucial, especially how social capital influences governance and community empowerment. Using a PRISMA-based systematic review approach, this study analyzes 15 peer-reviewed articles published between 2015 and 2025. The results indicate that social capital, whether bonding, bridging, or linking, is critical to building local legitimacy in tropical forest governance, often more influential than formal authority in promoting sustainable empowerment. Social capital also functions as a multi-dimensional asset (cultural, political, and economic) but can reinforce inequalities. Theoretically, this study enriches the understanding of social capital by highlighting its role in power struggles. The results advance the scholarly debate by demonstrating how strategic investment in all three forms of social capital can transform social forestry policies toward genuine empowerment, sustainability, and equity. While the dominant focus on Indonesia limits generalizability, this study offers a significant comparative synthesis of tropical forest governance in the region.

Keywords: *social capital, empowerment, social forestry, forest governance, Southeast Asia, systematic literature review*

**Correspondence author, email*: *srisuwanto16041967@gmail.com*

Introduction

Amid the accelerating climate crisis and increasing pressure on tropical forests, restructuring natural resource governance is an urgent global imperative. With alarming global deforestation rates, this challenge is particularly acute in Southeast Asia. Between 2010 and 2020, the region lost approximately 9.6 million ha of forest–about 5% of its total forest cover–mainly due to agricultural expansion, logging, and infrastructure development (Food and Agriculture Organization, 2020; Global Forest Watch, 2023). Home to some of the world's richest tropical forest cover, the region faces serious challenges of deforestation, ecosystem degradation, and complex tenurial conflicts. These tensions involve not only states and the private sector but also millions of local and indigenous communities who have historically depended on forests for their economic, social, and cultural survival (Agrawal et al., 2008; Larson et al., 2010; Larson & Dahal, 2012).

A new paradigm based on community participation has emerged in response to the failure of technocratic and centralized approaches to forest management. The social forestry model has developed in various Southeast Asian countries as a form of collaboration between the state, local communities, and non-state actors in forest management and conservation (Rakatama & Pandit, 2020; Sahide et al., 2020; Budi et al., 2021). This model is not only positioned as a technical mechanism for conservation but also as a political and social instrument to redistribute power, strengthen the rights of indigenous peoples, and improve local resource-based welfare (Pauly & Zeller, 2019; Maryudi et al., 2020). In the global framework, social forestry is in line with sustainable development commitments, especially Sustainable Development Goals (SDGs) 13 (climate action), 15 (life on land), and 16 (strong institutions), which emphasize ecological and social justice in terrestrial ecosystem management (Hák et al., 2016; Pedersen, 2018; Zakari et al., 2022). In this context, empowerment is often defined as increasing the capacity of communities to make decisions, access resources, and influence policies that impact their lives within the forest governance system (Gregersen et al., 2004; Sandström et al., 2017; Stubenrauch et al., 2022).

In this framework, attention to the role of social capital and its relationship to local community empowerment has become increasingly important (Lee et al., 2017). Social capital–which includes social networks, norms of trust, and informal institutions–is recognized as an important determinant of the success of social forestry programs (Djamhuri, 2008; Górriz-Mifsud et al., 2016). This capital influences the ability of communities to build solidarity, articulate collective interests, and access opportunities in the resource governance arena (Pretty, 2012; Pretty & Bharucha, 2014). However, the influence of social capital is not always

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

positive. In some contexts, it can reinforce social exclusion through local elites' dominance or give rise to internal fragmentation that weakens collective capacity (Cleaver, 2005; 2017). Conversely, in other situations, strong social capital can foster institutional innovation and strengthen the community's bargaining position vis-à-vis external actors in the context of forest governance (Borg et al., 2015).

The social forestry models adopted in Southeast Asia show a diversity of approaches and outcomes that reflect the region's social, political, and ecological complexities (Pareira et al., 2020). For example, the Social Forestry schemes in Indonesia and Community-based Forest Management in the Philippines demonstrate how the interaction between social capital, state policies, and local dynamics shapes empowerment practices. However, understanding how social capital works as both a prerequisite and an outcome of community empowerment processes in forest governance is still very limited, especially in the context of cross-country comparisons.

The region's social forestry literature is growing, but it tends to be fragmented, based on local case studies (Aryono et al., 2018), and focuses more on technical and economic-ecological aspects (Wijaya et al., 2015). Not many studies systematically analyze the relationship between social capital and empowerment within the framework of social forestry policies at the regional level in Southeast Asia. Furthermore, little research explicitly links the conceptual framework of social capital–such as bonding, bridging, and linking–to the forms of structural, economic, and political empowerment resulting from social forestry schemes. This lack of synthesis has resulted in a weak integration of social aspects in formulating and implementing social forestry policies, risking ignoring the potential for strengthening local capacities and structural barriers. Accordingly, this review explores how different forms of social capital–bonding, bridging, and linking–shape empowerment outcomes across Southeast Asian social forestry models.

Therefore, this article aims to fill this gap through a systematic literature review discussing the relationship between social capital and empowerment in social forestry models in Southeast Asia. Using a systematic literature review (SLR) approach, which allows for a comprehensive synthesis of studies, this review will identify how these concepts are interpreted, measured, and implemented in the context of policy and practice across regional countries. Unlike previous descriptive or country-specific studies, this article offers a comparative synthesis across cases that demonstrates common patterns, contextual variations, and theoretical relevance of the relationship between social capital and empowerment in sustainable forest governance.

Methods

Review protocol This review was prepared based on the SLR approach following the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines to ensure transparency, repeatability, and rigour. PRISMA was used as the main methodological framework in compiling the stages of identification, screening, eligibility assessment, and inclusion of studies (Tando et al., 2022). Database searches (Scopus, Web of Science, and Google Scholar) were conducted from 15 January to 15 February 2025, with an update search on 1 March 2025. The search identified 423 records in total. Duplicates were removed using Zotero's de-duplication function and manual DOI/title cross-checks in Excel, yielding 190 unique records. Title and abstract screening was completed on 3–6 April 2025 (n = 190), followed by full-text assessment on 7–12 May 2025, resulting in 15 studies included. Each article obtained from the initial search results was evaluated through a systematic selection process (duplicate removal, title/abstract screening, and full-text review) to assess relevance to the relationship between social capital and empowerment in the context of social forestry in Southeast Asia. Two independent reviewers carried out title/abstract screening as well as full-text review to ensure consistency; differences of opinion were resolved through discussion and consensus.

Figure 1 presents a flow diagram of the study selection process for a systematic review, which adopts the PRISMA methodology. The process began with identifying 423 articles (records identified through database searching). After eliminating duplicates and restricting to relevant journal formats, 190 titles (records after duplicates removed) were evaluated. Further screening was based on initial relevance criteria in the title and abstract, which left 153 articles (records screened). These articles were then reviewed for full-text articles and assessed for eligibility based on strict inclusion and exclusion criteria, ultimately yielding 15 key studies (studies included in qualitative synthesis) that will be analyzed in depth in this systematic review.

Search strategy The search strategy in this study was carried out systematically by accessing three major databases of internationally reputable sources, namely Scopus, Web of Science (WOS), and Google Scholar. The selection of these databases was based on their broad coverage of peer-reviewed and scholarly articles, as well as their high

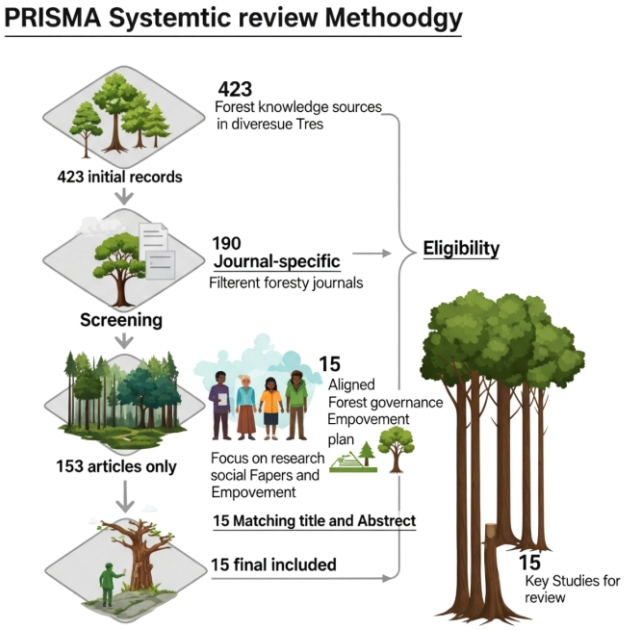

Figure 1 Preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow.

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

relevance to the topic of forest governance. Scopus and WOS were considered representative of high-impact peer-reviewed literature, while Google Scholar was included to capture potentially relevant open-access and regional studies not indexed in commercial databases. Initial trials with other databases did not produce significant additional unique articles according to the inclusion criteria.

The database searches were conducted between 15 January and 15 February 2025, with an update search performed on 1 March 2025. The initial search yielded 178 records from Scopus, 80 from Web of Science, and 165 from Google Scholar, resulting in a total of 423 articles before duplicate removal.

The search process used a combination of predetermined main keywords, namely: "social capital", "community forestry", "empowerment", "Southeast Asia", and "forest governance". These keywords were combined with Boolean operators (AND/OR) to increase the accuracy and breadth of the search results. An example of a complete search string used is: ("social capital" OR "social network") AND ("community forestry" OR "social forestry" OR "forest management") AND empowerment AND "Southeast Asia" AND "forest governance". Search restrictions were also applied to the type of document (journal article) and subject areas related to environmental, social, and agricultural sciences.

Inclusion and exclusion criteria This study's inclusion and exclusion criteria (Table 1) were strictly set to ensure the selection of relevant, up-to-date, and quality literature (Ayaz-Shah et al., 2018; Patino & Ferreira, 2018; Keung et al., 2020). The included studies were peer-reviewed articles published between 2015 and 2025, written in English, and focused on social capital (trust, norms, networks) and community empowerment that contribute to the success of sustainable forest management in social forestry models in Southeast Asia.

Quality appraisal, data extraction, and thematic coding Before the data extraction process, each of the 15 selected articles underwent a rigorous quality appraisal. This assessment aimed to evaluate the methodological soundness and reliability of each study's findings. The evaluation criteria included the clarity of the research question, appropriateness of the methodology, validity of findings, and transparency of conclusions. Studies showing significant methodological weaknesses were excluded from the final analysis, although no studies were excluded at this stage in this review.

The data extraction process was carried out systematically on the 15 selected articles using a matrix format developed according to the study's objectives. Each article was reviewed to identify key information classified into five main categories: 1) the form of social capital discussed, 2) the research method used, 3) the study's geographical location within Southeast Asia, 4) the level of community empowerment analyzed, and 5) the type of social forestry policy examined.

The coding process was conducted thematically using two complementary strategies: NVivo software was employed for qualitative coding of full-text digital articles, while Scival (via Scopus) and Biblioshiny were used to generate a bibliometric overview and map relationships between authors, institutions, and major themes. The coding framework was developed inductively and deductively, combining predetermined theoretical categories and emerging patterns from the data. Main nodes included "bonding trust" (community solidarity and internal cohesion), "bridging collaboration" (cross-community partnerships and NGO facilitation), "linking governance" (vertical relationships with government and external agencies), "tenure negotiation" (land rights and access struggles), "gendered access" (women's inclusion and participation), and "local legitimacy" (perceived fairness and acceptance of governance processes).

Table 1 Inclusion and exclusion criteria

Category	Inclusion criteria	Exclusion criteria
Type of publication	Peer-reviewed articles published in scientific journals	Non-peer-reviewed articles (e.g., opinion pieces, editorials, institutional reports, or theses/dissertations not published in scientific journals)
Time range	Published between 2015 and 2025	Published before 2015 or after 2025
Language	Written in English	Written in languages other than English
Study region	Studies conducted in Southeast Asia	Studies focusing on regions outside Southeast Asia
Main topic	Focuses on social capital (trust, norms, networks) and community empowerment in the context of sustainable forest management	Studies that do not address social capital or community empowerment within the context of social forestry, or focus on unrelated forestry issues
Implementation context	Studies explicitly related to social forestry models	Studies that do not link their findings or context to the practice or model of social forestry
Conceptual relevance	Contributes to understanding the relationship between social capital and successful community empowerment in sustainable forest management	Does not provide a clear analysis of the relationship between social capital and community empowerment, or lacks theoretical relevance to the research focus

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

All extracted data were then categorized based on similarities in conceptual patterns, recurrence of themes, and each country's contextual characteristics to facilitate a comparative synthesis across Southeast Asian social forestry cases.

Results

Descriptive analysis A descriptive analysis was conducted on the 15 studies that met the inclusion criteria, providing an overview of the research landscape on social capital and empowerment in social forestry in Southeast Asia.

Geographical distribution of studies The geographical distribution map of studies (Figure 2) shows that most studies (10 out of 15 studies, or 67%) focused on Indonesia, making it the primary and most comprehensive study location in this dataset. Indonesia's dominance indicates the importance of social forestry programs as a national strategic agenda and a relevant research subject in the country. A few studies have a broader scope in Southeast Asia, with specific comparisons between Indonesia and Vietnam (Moeliono et al., 2017). The Philippines also appears in one case study (Cagalanan, 2015), while Cambodia is represented by one study (Persson & Prowse, 2017). Interestingly, other countries such as Thailand and Laos were not the main focus of the articles that met our inclusion criteria. This geographical imbalance may reflect a publication and accessibility bias, where Indonesia's more established research infrastructure, availability of English-language publications, and greater international funding support have resulted in higher visibility of Indonesian studies compared to other Southeast Asian countries.

Publication trends and key topics The publications span from 2015 to 2025, with a significant research concentration in the last few years (2019–2025). This indicates a continued and even increasing academic and policy interest in the issue of social forestry, social capital, and its impacts on communities. This upward trend aligns closely with major policy developments in the region, particularly the expansion of Indonesia's Social Forestry Program (*Perhutanan Sosial*) since 2016, which aimed to allocate 12.7 million ha of forest to community management. It also corresponds with ASEAN's growing regional cooperation on forest governance and sustainable landscape initiatives, such as the ASEAN Social Forestry Network (ASFN) and the post-2020 Vision for ASEAN Cooperation in Forestry. This convergence between research and policy developments suggests that the topic remains relevant and continues to evolve in response to new challenges in tropical forest governance.

Keyword frequency analysis (word cloud visualization in Figure 3) identified terms such as "social capital," "community," "forest management," and "empowerment" as the most frequently occurring concepts, confirming the relevance of the core research. Furthermore, Figure 4, which displays the key discussion topics, shows that most articles discuss aspects of participation, tenure rights, local institutions, and socio-economic impacts, which directly support the identification of qualitative themes.

Summary of included studies Table 2 presents a summary analysis of the 15 included articles, including author names, short title, study country, year of publication, research methods, key actors involved, and key findings of each study. This table provides a quick overview of each article's specific

Figure 2 Country distribution.

Figure 3 Word cloud.

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

contribution to understanding social capital and empowerment in social forestry.

Thematic findings This descriptive analysis provides important context for the research landscape in Southeast Asia. Building on this study summary, five key themes were then identified through in-depth content analysis. These themes collectively fill a gap in the literature by providing a previously fragmented cross-country comparative synthesis and explicitly linking different forms of social capital to different dimensions of empowerment in forest governance.

Theme 1: The dominance and interconnection of three forms of social capital for forest sustainability The success of social forestry, reflected in reduced forest degradation and improved community well-being, depends on three interrelated forms of social capital: bonding, bridging, and linking. Bonding social capital strengthens internal solidarity and collective action in managing shared resources, while bridging social capital promotes collaboration and knowledge exchange across communities (Figure 5). Linking social capital connects communities with government and NGOs, ensuring legitimacy, access to technology, and market opportunities for sustainable non-timber forest products (NTFPs). When all three operate synergistically, they create a strong foundation for ecological sustainability and community empowerment.

Theme 2: The complexity of participation in forest management planning Strong social capital is often assumed to increase participation, but analysis shows a more complex relationship. Unequal distribution of social capital often creates unequal participation in forest planning processes. More established households tend to dominate the process, capture most of the benefits, and direct management decisions in their favor (Persson & Prowse, 2017; Toumbourou et al., 2025). The dark side of strong bonding social capital can systematically exclude poor and marginalized groups (Lawasi, 2024; Maharani et al., 2019). This violates the principle of equity and is also ecologically risky; marginalized groups may be forced to resort to encroachment or unsustainable practices as their only alternative livelihood. Thus, social capital can be a double-edged sword for tropical forest management: it can drive conservation or reinforce inequalities that threaten forest sustainability.

Theme 3: Centrality of local leadership and institutions in forest policy implementation Without functional local institutions and strong leadership, national forest policies will be in vain. Local institutions are identified as governance infrastructure at the site level that determines the success of forest resource utilization (Kurniasih et al., 2021). This is where the role of local leaders as "brokers" becomes central. They mobilize communities and proactively bridge the need for land boundary conflict resolution with external technical support (Asmin et al., 2019). In this study, leadership is understood as a multi-dimensional construct encompassing social, political, and institutional capacities. Socially, it refers to the ability of individuals or groups to build trust and mobilize collective action; politically, it involves negotiation and representation in decision-making arenas; institutionally, it concerns the enforcement of rules and coordination within local governance structures. Weak leadership capacity is directly correlated with the failure to enforce local rules, high rates of degradation, and stalled restoration programs (Cagalanan, 2015; Erbaugh, 2019). Therefore, investment in strengthening leadership capacity to manage forest resources is as important as granting permits themselves.

Theme 4: Structural barriers in complex tropical forest landscapes Behind the optimistic narrative, structural barriers threaten social and ecological sustainability. The most prominent social exclusion of vulnerable groups is (Persson & Prowse, 2017; Toumbourou et al., 2025). This practice creates injustice and vulnerability, pushing marginalized groups to seek alternative subsistence that may not be in line with conservation principles. These obstacles are even more acute in Southeast Asia's resource-rich tropical forest landscapes, which are home to multiple interests (agriculture, mining, and conservation). Weak governance, inconsistent government support, and fragmented collabora-

Topic	Scholarly Output	Publication Share	Field-Weighted Citation Impact	Prominence percentile
Empowerment and Governance in Forest Management T.17368	6	1.25% ▲	2.40	85.384
Community-Based Forest Management and Governance T.3372	2	0.22% ▲	1.90	89.965
Mangrove Ecosystems and Carbon Sequestration Potential T.196	1	0.02% ▲	1.54	99.599
REDD+ Framework for Climate Change Mitigation T.3282	1	0.09%	1.67	93.382
Shifting Cultivation and Land Use Dynamics T.11535	1	0.27% ▲	1.52	76.193
Cultural Rituals and Traditions in Sulawesi T.52890	1	1.12%	1.27	39.530
Sustainable Forest Management and Agricultural Practices T.62273	1	1.67%	0.81	24.750

Figure 4 Discussion topics.

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

Table 2 Article analysis

Name and years	Country	Method	Main actors	Key findings
Toumbourou et al. (2025)	Indonesia	Mixed methods	Community, government	Social relationships are crucial for well-being, but exclusion and inequality of access occur.
Ambayoen et al. (2025)	Indonesia	Qualitative	Tengger community	Analyse the dominant role of social capital bonding, bridging, and linking in agricultural resilience.
Lawasi (2024)	Indonesia	Literature review	Farmers, government	Collaboration fragmentation, weak institutions, and inequality of access are major obstacles.
Buenavista and Purnobasuki (2023)	Southeast Asia	PRISM	Coastal communities	Traditional practices (social capital) are very important in management. Recommend a culturally sensitive approach.
Kurniasih et al. (2021)	Indonesia	Qualitative	Community institutions	Shows the evolution of institutions (bonding, bridging) and the importance of external networks and support (linking).
Wong et al. (2020)	Southeast Asia	Discourse analysis	Countries, CSOs	Social forestry schemes often create inequities in rights, participation, and access.
Harbi et al. (2020)	Indonesia	PRISM	Community, government	Empowerment requires access rights, management authority, and knowledge transfer.
Erbaugh (2019)	Indonesia	Theoretical analysis	User groups, countries	There is a tension between welfare goals and the lack of post-permitting capacity building.
Asmin et al. (2019)	Indonesia	Case studies	Local government, NGOs, communities	The importance of NGO support (linking) and the challenges in building participatory institutions.
Maharani et al. (2019)	Indonesia	Gender analysis	Dayak community	Development has a distinct impact on gender and class, highlighting the role of social capital in access.
Moeliono et al. (2017)	Vietnam, Indonesia	Policy analysis	Government, community	Policies often fail to deliver on promises to serve the interests of local communities.
Persson and Prowse (2017)	Cambodia	Mixed methods	Community	There is exclusion of poor and female groups from information and decision-making.
Colfer et al. (2015)	Indonesia	Gender analysis	Household	Encourage the improvement of women's agencies in landscape management decision-making.
Cagalanan (2015)	Philippines	Case studies	Country, community	Lack of ongoing support from governments & poor policy design hinders success.
Mulyani and Jepson (2015)	Indonesia	Case studies	Villagers, projects	Social learning is essential for the community to be able to negotiate with outsiders.

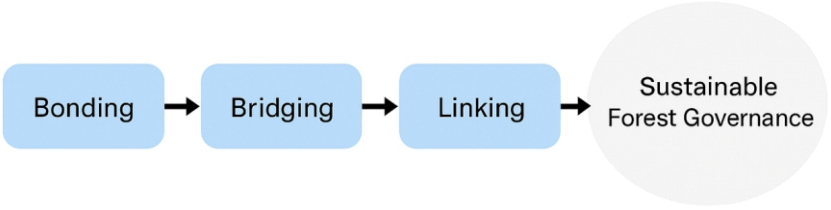

Figure 5 Conceptual linkages between forms of social capital and sustainability outcomes.

tion exacer-bate this situation (Wong et al., 2020; Lawasi, 2024). Ultimately, this combination of factors triggers conflicts over land and resource tenure, leading to irregular use patterns, increased illegal logging, and failure to achieve the dual objectives of social forestry: community welfare and forest sustainability (Moeliono et al., 2017).

Theme 5: Genuine empowerment strategies for ecological sustainability and social justice In response to the various obstacles, these studies suggest a shift strategy from mere transfer of responsibility to genuine empowerment (Harbi et al., 2020). This begins with ensuring equity and inclusiveness, which will directly reduce population pressure on forest areas. Furthermore, institutional capacity building is needed through technical assistance in forest inventory, NTFP-based business planning, and conflict mitigation (Buenavista & Purnobasuki, 2023). Programs will be much more sustainable if they can integrate local ecological knowledge (e.g., on traditional land rotation or medicinal plant cycles) into modern forest management planning, an approach crucial for

Jurnal Manajemen Hutan Tropika, *32*(1), 128–137, April 2026
EISSN: 2089-2063
DOI: 10.7226/jtfm.32.2.128

Scientific Article
ISSN: 2087-0469

the unique context of tropical forests (Mulyani & Jepson, 2015). The role of government and NGOs must transform into active facilitators of external connections (linking social capital), encouraging communities to negotiate and interact with outsiders on an equal footing (Colfer et al., 2015; Asmin et al., 2019). Through this holistic approach, social forestry can evolve into a movement capable of creating ecologically sustainable and socially just tropical forest landscapes.

Discussion

The analysis provided in-depth insights into the central role of social capital in the dynamics of social forestry in Southeast Asia, particularly Indonesia. This discussion interprets the key findings of the systematic review, which collectively provide an unprecedented comparative synthesis of the complex interactions between social capital and empowerment in forest governance in the region, going beyond the previously dominant single case study focus. It links them to broader theoretical frameworks, formulates concrete policy implications, and reflects on the limitations of the review.

A key finding of the researchers' analysis, as illustrated in Theme 1, "Dominance and interconnection of three forms of social capital", is that social capital is not simply a social asset but the foundation for local legitimacy in forest management. In many cases, particularly in areas with a history of tenure conflict, legitimacy borne of communal trust, norms, and networks (bonding and bridging social capital) often proves stronger and more adhered to than formal legitimacy conferred by the state. Successful social forestry programs are those that are able to align formal legitimacy with existing social legitimacy. Furthermore, this analysis interprets social capital as a multi-dimensional asset that functions: (a) as cultural capital in the form of local ecological knowledge (ILKS) that is vital for sustainable forest management practices, where social ties (bonding) facilitate the transfer and validation of knowledge between generations and communities; (b) as political capital where local networks and leadership (especially linking and bridging capital) become the arena for power negotiations to secure tenure and resource rights from external actors; and (c) as economic capital that can be directly converted into benefits through cooperation and collective market access for forest products, supported by trust (bonding) and external connections (linking). These findings empirically echo the classic argument of Ostrom (1990) regarding eight design principles for sustainable management of common-pool resources, where social capital in the form of trust, norms, and shared monitoring serves as an essential lubricant for collective action.

Although the available data focus heavily on Indonesia (dominating 67% of included studies), some comparisons can be drawn to understand the importance of context. Indonesia presents a highly complex model, driven by a strong national political agenda for tenure transfer, but its implementation on the ground is fraught with contestation and inequality, as highlighted in Themes 2 and 4. In contrast, the experience in the Philippines highlights different governance challenges, with the main issues being the lack of sustained government support and overlapping, unintegrated programs (Cagalanan, 2015). The absence of specific data on Laos or Thailand in this review underscores the dangers of generalizing findings from one country to another in this highly diverse region. As a comparative example outside the region, the success of community forest user groups (CFUGs) in Nepal is often attributed to the strong synergy between high levels of local social capital and a clear and supportive national legal framework (Spielman & Pandya-Lorch, 2010), a contrast to the situation in many locations in Indonesia where formal policies are often ambiguous and implementation weak. The main interpretation is that there is no single universal "Southeast Asian social forestry" model; rather, there is a series of policy experiments whose outcomes are largely determined by each location's unique history, political structures, and social capital. This underscores the importance of contextually tailored approaches. The findings also have significant theoretical implications, particularly in enriching classical social capital theory (Putnam, Bourdieu, Coleman) by adding layers of political ecology and intersectionality perspectives. The findings suggest that participation (Putnam's key concept) is not a neutral outcome but can be an arena of exclusion, where unequal social capital reinforces inequality (in line with Theme 2), a phenomenon that development critics have called the "tyranny of participation" where participatory processes can be used to legitimize external agendas without any real transfer of power (Cooke & Kothari, 2001). Social capital (as Bourdieu proposed) is distributed unequally and can reproduce existing power structures, an observation reinforced by the political ecology framework advocated by Peluso (1992), which shows how 'access' to forest resources is controlled and contested through power networks, rather than simply through formal rights. Furthermore, access to capital as a resource (Coleman) is heavily mediated by the power positions of individuals and groups in the local context. However, it is important to critically acknowledge that an emphasis on the benefits of social capital must be tempered with an awareness of its 'dark side' (Portes, 2000). Very strong communal bonds, for example, can encourage conformity, suppress dissent, and systematically exclude more vulnerable groups. Although the studies we reviewed do not explicitly address these negative dynamics, the findings on inequalities in access (Theme 2) suggest that these risks are real. This analysis encourages social capital theory to move beyond apolitical conceptions and acknowledge its role as an arena for power struggles and resource allocation. Furthermore, this review highlights the importance of an intersectional approach in understanding the dynamics of empowerment. A rights-based approach that focuses solely on granting tenure rights to "communities" as a single entity has proven inadequate, as within communities themselves, access to rights and benefits is mediated by multiple identity slices such as gender, social class, and age (Colfer et al., 2015; Maharani et al., 2019). This confirms that true empowerment (Theme 5) must acknowledge and address inequalities within communities.

Based on these findings, practical and policy recommendations should focus on consciously strengthening community networks. Policies need to grant permission and actively invest in facilitation to build all three forms of social

capital (bonding, bridging, and linking) in a balanced manner. These facilitation processes should be designed critically, with full awareness of the potential 'dark side' of social capital, to ensure that interventions do not inadvertently strengthen local elites or further marginalize the most disempowered. Governments (both central and local) and NGOs should move from tokenistic consultation to genuine partnership by recognizing and involving local leadership (Theme 3) throughout the program cycle, from planning to monitoring and evaluation. Success also requires coordinated cross-sectoral policies to address complex structural barriers (Theme 4). When it comes to replicating successful models in the ASEAN region, the most promising strategy is not to copy a program's blueprint but to adapt its core principles—such as strengthening local institutions, ensuring equitable and inclusive access, flexibility in policy design, and integrating local ecological knowledge—to suit the socio-political and ecological contexts of the target country. This is key to true empowerment and ecological sustainability, as outlined in Theme 5.

It is important to acknowledge several limitations of this review. The overwhelming regional focus on Indonesia limits the ability to generalise the findings across Southeast Asia. There is also potential publication bias as the review is based on English-language journals indexed in Scopus, which risks missing important findings that may be published in local languages or in "grey literature" (e.g. NGO reports, working papers, local theses). Finally, the paucity of multivariate quantitative studies in the region suggests a need for future research that can statistically test causal relationships between variables, which would complement the in-depth understanding provided by the currently dominant qualitative studies. Such future research should ideally not only measure the positive impacts of social capital, but also explicitly test its potential negative impacts–such as increased exclusion–and model the complex interactions between the power of formal state institutions and local social capital in achieving equitable and sustainable socio-ecological outcomes.

Conclusion

This systematic review concludes that social capital—encompassing bonding, bridging, and linking—plays a decisive role in shaping the effectiveness, legitimacy, and equity of social forestry in Southeast Asia, particularly in Indonesia. Social capital functions not only as a social resource but also as cultural, political, and economic capital that underpins community empowerment, governance legitimacy, and access to resources. At the same time, the review highlights that social capital is not inherently benign, as it can also reinforce power imbalances and exclusion of vulnerable groups. These findings underscore the need for social forestry policies to move beyond administrative devolution toward genuine empowerment through deliberate investment in inclusive social capital and multi-level networks. While the synthesis offers important insights, its geographic concentration calls for future comparative, longitudinal, and mixed-method studies across Southeast Asia to better understand the causal relationships between social capital, empowerment, and sustainability outcomes.

Acknowledgement

I would like to express my deepest gratitude to my promoter. I would also like to express my appreciation to Universitas Gadjah Mada for the academic and institutional support that has been given.

References

Agrawal, A., Chhatre, A., & Hardin, R. (2008). Changing governance of the world's forests. *Science*, *320*(5882), 1460–1462. https://doi.org/10.1126/science.1155369

Ambayoen, M. A., Hidayat, K., Yuliati, Y., & Cahyono, E. D. (2025). The roots of resilience: Strengthening agricultural sustainability in Tengger, Indonesia through social capital. *Sustainability*, *17*(1), Article 192. https://doi.org/10.3390/su17010192

Aryono, W. B., Suhendang, E., Jaya, I. N. S., & Purnomo, H. (2018). Typology of tropical forest transition model in several watershed, Sumatera Island. *Jurnal Manajemen Hutan Tropika*, *24*(3), 126–135. https://doi.org/10.7226/jtfm.24.3.126

Asmin, F., Darusman, D., Ichwandi, I., & Suharjito, D. (2019). Mainstreaming community-based forest management in west sumatra: Social forestry arguments, support, and implementation. *Forest and Society*, *3*(1), 77–96. https://doi.org/10.24259/fs.v3i1.4047

Ayaz-Shah, A. A., Hussain, S., & Knight, S. R. (2018). Do clinical trials reflect reality? A systematic review of inclusion/exclusion criteria in trials of renal transplant immunosuppression. *Transplant International*, *31*(4), 353–360. https://doi.org/10.1111/tri.13109

Borg, R., Toikka, A., & Primmer, E. (2015). Social capital and governance: A social network analysis of forest biodiversity collaboration in Central Finland. *Forest Policy and Economics*, *50*, 90–97. https://doi.org/10.1016/j.forpol.2014.06.008

Budi, B., Kartodihardjo, H., Nugroho, B., & Mardiana, R. (2021). Implementation of social forestry policy: A review of community access. *Forest and Society*, *5*. https://doi.org/10.24259/fs.v5i1.9859

Buenavista, D., & Purnobasuki, H. (2023). People and mangroves: Biocultural utilization of mangrove forest ecosystem in Southeast Asia. *Journal of Marine and Island Cultures*, 12(2), 95–115. https://doi.org/10.21463/jmic.2023.12.2.07

Cagalanan, D. (2015). Governance challenges in community-based forest management in the Philippines. *Society and Natural Resources*, 28(6), 609–624. https://doi.org/10.1080/08941920.2014.948242

Cleaver, F. (2005). The inequality of social capital and the reproduction of chronic poverty. *World Development*,

33(6), 893–906. https://doi.org/10.1016/j.worlddev.2004.09.015

Cleaver, F. (2017). *Development through bricolage: Rethinking institutions for natural resource management*. Routledge. https://doi.org/10.4324/9781315094915

Colfer, C. J. P., Achdiawan, R., Roshetko, J. M., Mulyoutami, E., Yuliani, E. L., Mulyana, A., Moeliono, M., Adnan, H., & Erni. (2015). The balance of power in household decision-making: Encouraging nws on gender in Southern Sulawesi. *World Development*, *76*, 147–164. https://doi.org/10.1016/j.worlddev.2015.06.008

Cooke, B., & Kothari, U. (2001). *Participation: The new tyranny?* Zed Books.

Djamhuri, T. L. (2008). Community participation in a social forestry program in Central Java, Indonesia: The effect of incentive structure and social capital. *Agroforestry Systems*, *74*(1), 83–96. https://doi.org/10.1007/s10457-008-9150-5

Erbaugh, J. T. (2019). Responsibilisation and social forestry in Indonesia. *Forest Policy and Economics*, 109, Article 102019. https://doi.org/10.1016/j.forpol.2019.102019

Food and Agriculture Organization. (2020). *Global forest resources sssessment 2020: Main report.* Rome. https://doi.org/10.4060/ca9825en

Global Forest Watch. (2023). *Forest monitoring, deforestation alerts, and analysis across Southeast Asia.* World Resources Institute. Retrieved from https://www.globalforestwatch.org

Górriz-Mifsud, E., Secco, L., & Pisani, E. (2016). Exploring the interlinkages between governance and social capital: A dynamic model for forestry. *Forest Policy and Economics*, *65*, 25–36. https://doi.org/10.1016/j.forpol.2016.01.006

Gregersen, H. M., Contreras-Hermosilla, A., White, A., & Phillips, L. (2004). *Forest governance in federal systems: An overview of experiences and implications for decentralisation*. Bogor: Center for International Forestry Research.

Hák, T., Janoušková, S., & Moldan, B. (2016). Sustainable development goals: A need for relevant indicators. *Ecological Indicators*, *60*, 565–573. https://doi.org/10.1016/j.ecolind.2015.08.003

Harbi, J., Cao, Y., Erbaugh, J. T., Widagdo, F. R. A., Mauri, J., Supriyanto, & Milantara, N. (2020). Three generations of forest peoples' empowerment in Indonesia: Process towards sustainable and equitable forest management. *Jurnal Manajemen Hutan Tropika*, *26*(2), 91–104. https://doi.org/10.7226/jtfm.26.2.91

Keung, E. Z., McElroy, L. M., Ladner, D. P., & Grubbs, E. G. (2020). Defining the study cohort: Inclusion and exclusion criteria. In T. M. Pawlik & J. A. Sosa (Eds.), *Clinical trials* (pp. 47–58). Springer International Publishing. https://doi.org/10.1007/978-3-030-35488-6_5

Kurniasih, H., Ford, R. M., Keenan, R. J., & King, B. (2021). The evolution of community forestry through the growth of interlinked community institutions in Java, Indonesia. In *World Development*, 139, Article 105319. https://doi.org/10.1016/j.worlddev.2020.105319

Larson, A. M., Barry, D., & Dahal, G. R. (2010). Tenure change in the global South. In A. M. Larson, D. Barry, G. R. Dahal (Eds.), *Forests for people* (pp. 3–18). Routledge.

Larson, A. M., & Dahal, G. R. (2012). Forest tenure reform: New resource rights for forest-based communities? *Conservation and Society*, *10*(2), 77–90. https://doi.org/10.4103/0972-4923.97478

Lawasi, M. A. (2024). Unveiling the shortcomings of social forestry programs in Indonesia: A critical analysis of farmer empowerment initiatives. *Jurnal Sylva Lestari*, *12*(3), 866–889. https://doi.org/10.23960/jsl.v12i3.945

Lee, Y., Rianti, I. P., & Park, M. S. (2017). Measuring social capital in Indonesian community forest management. *Forest Science and Technology*, *13*(3), 133–141. https://doi.org/10.1080/21580103.2017.1355335

Maharani, C. D., Moeliono, M., Wong, G. Y., Brockhaus, M., Carmenta, R., & Kallio, M. (2019). Development and equity: A gendered inquiry in a swidden landscape. *Forest Policy and Economics*, *101*, 120–128. https://doi.org/10.1016/j.forpol.2018.11.002

Maryudi, A., Acheampong, E., Rutt, R. L., Myers, R., & McDermott, C. L. (2020). "A level playing field"? – What an environmental justice lens can tell us about who gets leveled in the forest law enforcement, governance and trade action plan. *Society & Natural Resources*, *33*(7), 859–875. https://doi.org/10.1080/08941920.2020.1725201

Moeliono, M., Thuy, P. T., Bong, I. W., Wong, G. Y., & Brockhaus, M. (2017). Social forestry-why and for whom? A comparison of policies in Vietnam and Indonesia. *Forest and Society*, *1*(2), 78–97. https://doi.org/10.24259/fs.v1i2.2484

Mulyani, M., & Jepson, P. (2015). Social learning through a REDD+ "village agreement": Insights from the KFCP in Indonesia. *Asia Pacific Viewpoint*, 56(1), 79–95. https://doi.org/10.1111/apv.12083

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge

University Press.

Pareira, M. H. Y., Kartodihardjo, H., & Bahruni. (2020). Ecosystem restoration policy in production forest and its implementation in Indonesia. *Jurnal Manajemen Hutan Tropika*, *26*(3), 201–211. https://doi.org/10.7226/jtfm.26.3.201

Patino, C. M., & Ferreira, J. C. (2018). Inclusion and exclusion criteria in research studies: Definitions and why they matter. *Jornal Brasileiro de Pneumologia*, *44*, 84–84. https://doi.org/10.1590/S1806-37562018000000088

Pauly, D., & Zeller, D. (2019). Agreeing with FAO: Comments on SOFIA 2018. *Marine Policy*, *100*, 332–333. https://doi.org/10.1016/j.marpol.2018.12.009

Pedersen, C. S. (2018). The UN sustainable development goals (SDGs) are a areat gift to business! *Procedia CIRP*, *69*, 21–24. https://doi.org/10.1016/j.procir.2018.01.003

Peluso, N. L. (1992). The political ecology of extraction and extractive reserves in East Kalimantan, Indonesia. *Development and Change*, *23*(4), 49–74. https://doi.org/10.1111/j.1467-7660.1992.tb00469.x

Persson, J., & Prowse, M. (2017). Collective action on forest governance: An institutional analysis of the Cambodian community forest system. *Forest Policy and Economics*, *83*, 70–79. https://doi.org/10.1016/j.forpol.2017.06.008

Portes, A. (2000). The two meanings of social capital. *Sociological Forum*, *15*(1), 1–12. https://doi.org/10.1023/A:1007537902813

Pretty, J. (2012). *The earth only endures. On reconnecting with nature and our place in it*. Routledge. https://doi.org/10.4324/9781849772969

Pretty, J., & Bharucha, Z. P. (2014). Sustainable intensification in agricultural systems. *Annals of Botany*, *114*(8), 1571–1596. https://doi.org/10.1093/aob/mcu205

Rakatama, A., & Pandit, R. (2020). Reviewing social forestry schemes in Indonesia: Opportunities and challenges. *Forest Policy and Economics*, *111*, Article 102052. https://doi.org/10.1016/j.forpol.2019.102052

Sahide, M. A. K., Fisher, M. R., Erbaugh, J. T., Intarini, D., Dharmiasih, W., Makmur, M., Faturachmat, F., Verheijen, B., & Maryudi, A. (2020). The boom of social forestry policy and the bust of social forests in Indonesia: Developing and applying an access-exclusion framework to assess policy outcomes. *Forest Policy and Economics*, *120*, Article 102290. https://doi.org/10.1016/j.forpol.2020.102290

Sandström, C., Lindahl, K. B., & Sténs, A. (2017). Comparing forest governance models. *Forest Policy and Economics*, *77*, 1–5. https://doi.org/10.1016/j.forpol.2016.10.007

Spielman, D. J., & Pandya-Lorch, R. (Eds). (2010). *Proven successes in agricultural development: A technical compendium to millions fed*. International Food Policy Research Institute.

Stubenrauch, J., Ekardt, F., Hagemann, K., & Garske, B. (2022). *Forest governance: Overcoming trade-offs between land-use pressures, climate and biodiversity protection*. Springer International Publishing. https://doi.org/10.1007/978-3-030-99184-5

Tando, C. E., Sudarmo, & Haryanti, R. H. (2022). Collaborative governance effort to manage forest in Kalimantan Island: Literature review. *Jurnal Manajemen Hutan Tropika*, *28*(1), 15–21. https://doi.org/10.7226/jtfm.28.1.15

Toumbourou, T. D., Dunphy, M. B., Mulyani, L., Auwalin, I., Rumayya, Hartoto, A. S., Aji, G. B., Utomo, M. M. B., Amin, N. A., Yaman, Y., Fakhrani, F. A., Yasmin, P. A., Afriyani, A. A., Masri, Arisanti, D., Tjawikrama, D., Friedman, R. S., & Rawluk, A. (2025). Social forestry for a good life? The uneven well-being benefits of Indonesia's social forestry scheme. *People and Nature*, *7*(6), 1443–1463. https://doi.org/10.1002/pan3.70042

Wijaya, P. A., Saleh, M. B., & Tiryana, T. (2015). Spatial model of deforestation in Jambi Province for the period 1990–2011. *Jurnal Manajemen Hutan Tropika*, *21*(3), 128–137. https://doi.org/10.7226/jtfm.21.3.128

Wong, G. Y., Moeliono, M., Bong, I. W., Pham, T. T., Sahide, M. A. K., Naito, D., & Brockhaus, M. (2020). Social forestry in Southeast Asia: Evolving interests, discourses and the many notions of equity. *Geoforum*, *117*, 246–258. https://doi.org/10.1016/j.geoforum.2020.10.010

Zakari, A., Khan, I., Tan, D., Alvarado, R., & Dagar, V. (2022). Energy efficiency and sustainable development goals (SDGs). *Energy*, *239*, Article 122365. https://doi.org/10.1016/j.energy.2021.122365