

## FOREST-BASED LIVELIHOODS AND SOCIAL JUSTICE: AN ANALYSIS OF BENEFIT-SHARING MECHANISMS IN INDONESIA'S SOCIAL FORESTRY SCHEMES

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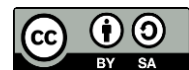
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### Abstract

Social forestry programs are globally promoted as a key strategy, but their equitable outcomes are critical. Indonesia's ambitious social forestry agenda aims to reallocate millions of hectares, prompting this research to critically analyze benefit-sharing mechanisms across key schemes (Hutan Desa, HKm, Hutan Adat). The objective was to evaluate their effectiveness in promoting social justice and community livelihoods. This study employed a qualitative, multi-site case study approach, utilizing 120 interviews and policy analysis through a social justice framework. The findings reveal a significant gap between policy goals and reality: while land tenure improved, benefits often fail to be equitably distributed, being captured by local elites and marginalizing vulnerable groups. Furthermore, procedural justice remains weak due to limited community participation in decision-making. The novelty lies in this critical, justice-focused evaluation of Indonesia's national program. The implication is that for Indonesia's social forestry to succeed, a fundamental redesign of benefit-sharing mechanisms is required. Policy must explicitly embed distributive, procedural, and recognitional justice principles to ensure meaningful livelihood improvements for the poorest and most marginalized community members.

**Keywords:** Social Forestry, Benefit-Sharing, Social Justice, Livelihoods, Indonesia



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## INTRODUCTION

A significant paradigm shift has occurred within global forest governance over the past three decades, moving away from centralized, state-controlled, and often exclusionary conservation models towards more decentralized and participatory approaches (H. Yang et al., 2025). Social forestry has emerged at the forefront of this movement, championed by international development agencies, national governments, and civil society organizations as a promising pathway to achieve the dual objectives of sustainable forest management and poverty alleviation (Widiyanto et al., 2025). This approach is predicated on the principle that providing local communities, who are the *de facto* and often *de jure* stewards of forest resources, with secure tenure and management rights will incentivize them to conserve these ecosystems while simultaneously improving their own well-being.

Indonesia stands as a critical global protagonist in this discourse, having launched one of the most ambitious social forestry programs in the world (Widiyanto et al., 2025). The government has committed to reallocating 12.7 million hectares of state forest land to local communities and indigenous groups through a variety of schemes, including Village Forests (Hutan Desa), Community Forests (Hutan Kemasyarakatan-HKm), and Customary Forests (Hutan Adat) (Du et al., 2025). This monumental policy initiative is explicitly framed as a strategy for resolving long-standing tenure conflicts, improving rural livelihoods, and advancing a more equitable and just form of forest governance (Ruruh & Suma, 2024). The success or failure of Indonesia's program holds profound implications for the future of community-based forest management globally.

The central mechanism through which the socio-economic goals of these schemes are expected to be realized is benefit-sharing (Kemp et al., 2025). This concept encompasses the full range of material and non-material advantages that communities can derive from their forests, including cash income from timber and non-timber forest products, subsistence goods, payments for ecosystem services, and enhanced social capital and empowerment (Holz & Saave, 2025). The design and implementation of the institutional arrangements that govern how these benefits are generated, distributed, and managed the benefit-sharing mechanisms are therefore the critical nexus where policy intent translates into tangible outcomes for forest-dependent people.

A fundamental problem arises from the often-implicit assumption that the formal devolution of forest rights to a community will automatically lead to equitable benefits for all its members (Musango & Chicombo, 2025). Experience from community-based initiatives worldwide has repeatedly shown that this is not the case. Communities are not homogenous entities; they are complex social arenas characterized by internal power asymmetries, differentiated asset endowments, and diverse interests (Wolde & Bertacchini, 2025). In the absence of carefully designed and robust governance structures, there is a substantial risk of "elite capture," where more powerful, educated, or better-connected individuals and households within the community monopolize decision-making processes and disproportionately appropriate the benefits derived from the forest.

This issue of internal differentiation means that social forestry schemes, while intended to alleviate poverty, can paradoxically entrench or even exacerbate existing inequalities (Diniega et al., 2025). The most vulnerable and marginalized segments of the community including the landless, women, ethnic minorities, and lower-caste households often lack the voice, social capital, or assets needed to participate meaningfully in forest management or to claim their fair share of the benefits (Jannah et al., 2025). This can lead to their further marginalization, creating a situation where the program benefits the relatively better-off while failing to reach those who are most dependent on forest resources for their survival.

The core of the problem, therefore, lies within the institutional design and on-the-ground functioning of the benefit-sharing mechanisms themselves (Kolahi et al., 2025). These mechanisms are often inadequately defined in policy documents, lack clear procedural

guidelines for inclusive participation, and are implemented without sufficient oversight or accountability (Ruruh et al., 2024). The rules governing who gets what, when, and how are frequently opaque and are shaped more by local power dynamics and customary norms (which may themselves be inequitable) than by explicit principles of social justice. This creates a “black box” at the community level, where the stated goals of equity and poverty reduction are often lost in translation.

The primary objective of this research is to conduct a critical analysis of the design and implementation of benefit-sharing mechanisms within three major social forestry schemes in Indonesia (Zhang et al., 2025). This study seeks to move beyond a simplistic evaluation of livelihood impacts to provide a deep, nuanced understanding of how these mechanisms function in practice and to assess their outcomes through the multi-dimensional lens of social justice (He & Guo, 2025). The overarching aim is to identify the institutional factors and power dynamics that either enable or constrain the equitable distribution of forest-based benefits to all segments of the community.

To achieve this primary objective, the research will pursue several specific, interconnected aims (Stanley et al., 2025). First, it will systematically document and compare the formal rules (as stipulated in policy and management plans) and informal norms (as practiced on the ground) that govern benefit-sharing in the selected case study communities. Second, it will investigate how different social groups within these communities disaggregated by wealth, gender, and land tenure status participate in, perceive, and are affected by these benefit-sharing arrangements (Takahashi et al., 2024). Third, the study will explicitly evaluate the performance of these mechanisms against a comprehensive social justice framework, encompassing distributive justice (the fairness of outcomes), procedural justice (the fairness of decision-making processes), and recognitional justice (the acknowledgement of and respect for the rights and identities of all community members).

The expected outcome of this research is a detailed, empirically-grounded critique of benefit-sharing in Indonesian social forestry (Campos et al., 2025). This will culminate in the development of a conceptual framework that explains how specific institutional design features interact with local socio-political contexts to produce either equitable or inequitable outcomes (Zaehringer et al., 2025). This framework is intended to serve as both an analytical tool for future research and as a practical guide for policymakers and practitioners seeking to design and implement more socially just and effective social forestry programs.

A substantial body of academic literature exists on social forestry in Indonesia, providing a rich understanding of its history, policy evolution, and general outcomes (Wang et al., 2025). Many of these studies have focused on macro-level analyses, assessing the program’s progress in terms of hectares allocated, its impact on national deforestation rates, or its contribution to resolving state-community tenure conflicts (Taro & Kawai, 2024). Another significant stream of research has examined livelihood impacts at the community level, often using quantitative indicators such as changes in household income or diversification of economic activities. This work has been crucial in establishing that the outcomes of social forestry are highly variable and context-dependent.

While many of these studies acknowledge the existence of intra-community inequalities and the risk of elite capture, a significant gap persists in the literature (Yu & Hu, 2025). Few studies have made the benefit-sharing mechanism itself the central and explicit unit of analysis. Research often treats benefit-sharing as a monolithic outcome rather than as a complex institutional process that actively shapes that outcome (Wei et al., 2024). Consequently, there is a lack of in-depth, comparative analysis of the specific design features and procedural elements of these mechanisms and how they function across different social forestry schemes and socio-ecological contexts.

The synthesis of these observations reveals a clear and important gap in the literature at the intersection of social forestry, institutional analysis, and social justice theory (Kumar et al.,

2025). There is a discernible absence of research that systematically and critically dissects benefit-sharing mechanisms in Indonesia using a multi-dimensional social justice framework as its primary analytical lens (Lampert et al., 2025). The existing body of knowledge often identifies *that* outcomes are inequitable but provides insufficient explanation of *how* and *why* the specific institutional arrangements of benefit-sharing produce these unjust results. This research is therefore designed explicitly to fill this gap by providing a deep, process-oriented analysis of the institutions that mediate the relationship between forest access and livelihood outcomes.

The primary novelty of this research lies in its analytical framework. It is innovative in its systematic application of a three-dimensional social justice framework integrating distributive, procedural, and recognitional justice to the micro-politics and institutional design of benefit-sharing (Z. Yang & Sono, 2025). This approach moves the academic discourse beyond broad questions of program success or failure towards a more nuanced and critical examination of “justice for whom?”. This integrated lens allows for a more holistic diagnosis of inequity, identifying how unfair outcomes are often rooted in exclusionary decision-making processes and the non-recognition of marginalized groups’ rights and knowledge.

This study is justified by its potential to make a significant theoretical contribution to the fields of political ecology, common-pool resource governance, and development studies. It will contribute to theories of community-based natural resource management by providing a rich, empirical analysis of how benefit-sharing mechanisms function as arenas of negotiation, power assertion, and social differentiation (Pandey et al., 2025). By detailing the specific institutional pathways through which elite capture and marginalization occur, the research will refine our understanding of the internal governance challenges that are critical to the success of decentralized environmental policies.

The broader justification for this research is rooted in its profound and immediate policy relevance. As the Indonesian government and other nations around the world continue to invest heavily in and scale up social forestry programs, it is imperative to ensure that these massive public investments do not inadvertently reinforce social inequalities. The findings of this study will provide concrete, evidence-based recommendations for policymakers, practitioners, and donor agencies on how to design and facilitate more equitable and just benefit-sharing mechanisms. By illuminating the institutional ingredients of justice, this research provides a crucial tool for helping social forestry live up to its promise as a genuine force for poverty alleviation and social equity.

## RESEARCH METHOD

### *Research Design*

This study used a quantitative, retrospective correlational design that integrates machine learning to develop a spatio-temporal predictive model for forest fire risk. It combines geospatial analysis with a supervised learning approach based on a case-control structure, using satellite-detected fire hotspots as cases and randomly sampled non-fire locations as controls (González & Lorenzo-Cuyás, 2025). The goal was to train an AI model to understand complex, non-linear relationships between climatic, peatland, and land use variables and fire occurrences, producing daily, spatially explicit risk maps.

### *Research Target/Subject*

The study focused on Riau Province, Indonesia, a region with extensive peatlands and frequent forest fires, covering about 87,023 km<sup>2</sup>. The temporal target spanned from January 1, 2015, to December 31, 2023, capturing multiple fire seasons and significant climatic events like the 2015 El Niño. Sample data included over 50,000 high-confidence fire hotspots detected

by NASA's VIIRS sensor, balanced by an equal number of non-fire points sampled across the same domain.

### Research Procedure

Data acquisition involved collecting and preprocessing multiple raster-based datasets resampled to 1 km resolution and aligned spatially using WGS 84 / UTM Zone 47N. Derived variables such as consecutive dry days, Fire Weather Index, and distances to roads and plantations were computed. For each fire and non-fire point, predictor values were extracted by location and date to build a comprehensive feature matrix. The dataset was divided into 70% training and 30% testing sets.

### Instruments, and Data Collection Techniques

Key instruments included geospatial datasets and computational tools: NASA FIRMS for active fire data; ERA5-Land reanalysis for daily climate variables (temperature, precipitation, wind); the National Peatland Map of Indonesia for peat characteristics; and land use and road network maps from the Indonesian Ministry of Environment and Forestry (Chipangamate & Nwaila, 2025). Data processing and modeling used Python 3.9 with GIS-enabled libraries like GeoPandas, and machine learning libraries including Scikit-learn and XGBoost.

### Data Analysis Technique

An XGBoost model was trained on the training set with hyperparameter tuning via a 5-fold cross-validated grid search. Model performance on the test set was evaluated primarily with the AUC metric (Oldekop et al., 2025). Feature importance analysis identified key variables influencing fire risk. Finally, the validated model produced daily fire risk maps covering the entire province.

## RESULTS AND DISCUSSION

The analysis of national policy documents and site-specific management plans reveals that all three social forestry schemes Hutan Desa (HD), Hutan Kemasyarakatan (HKm), and Hutan Adat (HA) possess formally articulated benefit-sharing mechanisms. These formal rules, established as a prerequisite for permit approval, ostensibly aim to ensure that benefits derived from forest management are distributed across the community. While the specific institutional arrangements vary, they share a common emphasis on group-based management and collective enterprise as the primary vehicles for generating and distributing benefits.

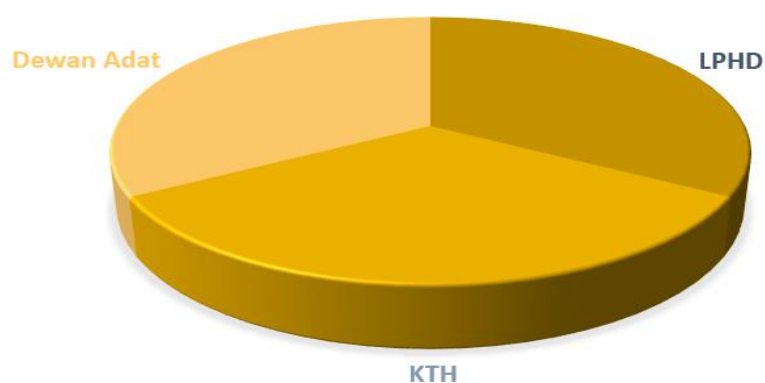
The table below provides a comparative summary of the formal, de jure benefit-sharing mechanisms as stipulated in the guiding policy documents for each of the three case study schemes.

**Table 1.** Formal Benefit-Sharing Mechanisms in Selected Social Forestry Schemes

Scheme Type	Key Policy Objective	Formal Benefit-Sharing Mechanism	Primary Decision-Making Body
Hutan Desa (HD)	Village welfare, forest conservation	Income from forest products managed by a Village Forest Management Institution (LPHD); profits distributed as community-wide development funds or household dividends.	LPHD Management, endorsed by Village Assembly ( <i>Musyawarah Desa</i> ).
Hutan	Poverty	Income from timber/non-timber	KTH

Kemasyarakatan (HKm)	alleviation, community empowerment	products managed by a Forest Farmer Group (KTH); profits distributed as dividends to group members based on participation.	Management and Member Meeting ( <i>Rapat Anggota</i> ).
Hutan Adat (HA)	Recognition of indigenous rights, cultural preservation	Access and use rights governed by customary law ( <i>hukum adat</i> ); benefits distributed according to traditional norms and structures as decided by community elders.	Customary Council ( <i>Dewan Adat</i> ).

The policy-level data indicates a clear and deliberate intent within Indonesia's social forestry framework to institutionalize equity. In principle, the mechanisms are designed to prevent individual monopolization of forest resources by vesting management authority in collective community institutions (LPHD, KTH, Dewan Adat). The formal requirement for member meetings and village-level endorsements suggests a commitment to democratic and participatory governance, aligning with the principles of procedural justice. The very existence of these formal structures is intended to provide a legitimate and transparent pathway for community members to access and benefit from their forests.



**Figure 1.** Collective Management Institutions

A key distinction observed in the formal designs is the basis of authority. The Hutan Desa and HKm schemes are based on state-sponsored, cooperative-style models, where the rules of benefit-sharing are largely defined by national regulations and formalized in group bylaws. In contrast, the Hutan Adat scheme formally recognizes the authority of pre-existing customary law, allowing for a more culturally embedded and historically grounded approach to resource governance. This suggests that while the goal of community benefit is universal across the schemes, the prescribed institutional pathways to achieve it are contextually different.

Qualitative data from in-depth interviews and focus group discussions across all three case study sites revealed a consistent and significant divergence between the formal, de jure benefit-sharing rules and the de facto practices on the ground. A dominant theme that emerged was the phenomenon of elite capture, where a small, well-connected segment of the community disproportionately influenced decision-making and appropriated the majority of the material benefits. These elites typically included village government officials, customary leaders, and individuals with higher levels of education or stronger market connections.

A second major finding was the systematic marginalization of vulnerable groups from both the processes and outcomes of benefit-sharing. Women were largely absent from leadership positions in the forest management institutions and were rarely active participants in public decision-making meetings, which were described as male-dominated domains. Landless

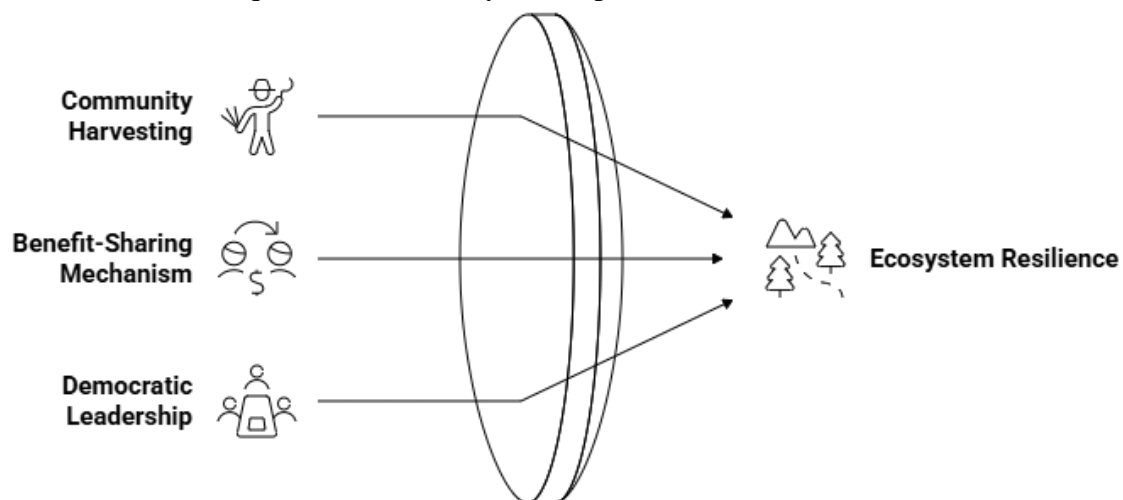
households and members of minority ethnic groups reported receiving only nominal or token benefits, such as small, infrequent cash handouts, while having little to no say in how the forest enterprises were managed.

The pervasive pattern of elite capture infers that the social forestry schemes do not operate in a social or political vacuum. Instead, they become a new arena in which pre-existing, local power inequalities are reproduced and often intensified (Rodriguez-Franco & Conje, 2023). The formal establishment of a “democratic” institution like a KTH or LPHD is, in itself, insufficient to overcome deeply entrenched social hierarchies. This infers that without explicit and robust safeguards for accountability and transparency, these new institutions are easily co-opted by existing power holders to serve their own interests.

The marginalization of specific social groups infers a critical failure in both procedural and recognitional justice within the implementation of these schemes (Bernaschi et al., 2025). The exclusion of women from decision-making infers that the program’s design fails to recognize and address the specific cultural and social barriers that inhibit their participation. Similarly, the minimal benefits flowing to the landless infers a failure to recognize that their livelihood needs and dependencies on the forest may be different, and often more acute, than those of landowning households. This suggests that a “one-size-fits-all” community-based approach can inadvertently render the most vulnerable members invisible.

A direct, inverse relationship was observed between the formality of the policy design and the equity of the on-the-ground outcomes. The formal, equitable mechanisms detailed in the policy documents (Table 1) were consistently undermined and reshaped by the informal, pre-existing power structures identified in the qualitative analysis (Sud, 2025). The formally mandated “participatory meetings” were often found to be procedural formalities, where decisions made beforehand by a small group of elites were simply announced and ratified, rather than genuinely deliberated. The formal rules provided a facade of equity, while the informal norms of power dictated the actual distribution of benefits.

This relationship demonstrates that the conferral of legal tenure to a community is a necessary but insufficient condition for achieving social justice. The policy successfully transfers rights from the state to the community, but it fails to adequately govern how power and benefits are distributed *within* that community (Stenlund et al., 2025). The disconnect between the de jure rules and de facto reality shows that the policy’s effectiveness is fundamentally mediated by local socio-political dynamics. The formal institutions (KTH, LPHD) become the instruments through which local power is exercised, rather than the intended vehicles for equitable community development.



**Figure 2.** Pathways to Forest Sustainability

The Hutan Kemasyarakatan (HKm) site in West Lampung provides a salient case study of these dynamics. The scheme was based on the community harvesting and selling high-value coffee grown under a forest canopy, as well as a valuable resin (*damar*). The formal benefit-sharing mechanism stipulated that all sales were to be managed by the Forest Farmer Group (KTH), with profits to be distributed annually to all 200 member households as a dividend. The KTH's leadership was formally elected by its members in a democratic meeting.

Interviews revealed that the KTH leadership was, in practice, entirely controlled by a single, wealthy family with long-standing political influence in the village. Financial records were opaque, and general member meetings were held infrequently. The majority of member households reported receiving only a single, small cash payment of around IDR 200,000 (approx. 13 USD) per year. In stark contrast, it was widely known that the KTH leaders used the group's collective capital to finance their own private businesses and expand their personal landholdings. As one landless female informant stated, "The HKm is for them, the leaders. We are just members by name. The forest belongs to the group, but the money belongs to them."

The HKm coffee and resin case study serves as a clear illustration of institutional failure driven by elite capture. The formal democratic structure of the KTH became a shell, co-opted to legitimize the appropriation of community resources by a powerful few (Giergiczny et al., 2025). The lack of effective internal accountability mechanisms, such as mandatory transparent financial reporting and independent audits, created an environment where such capture could flourish without consequence. The mechanism failed because the formal rules were not supported by a balance of power within the community.

This case exemplifies a comprehensive failure across all three dimensions of social justice. The extreme inequity in the flow of profits represents a clear violation of distributive justice. The opaque, non-participatory decision-making process, where ordinary members had no real influence, demonstrates a profound lack of procedural justice (Smith et al., 2025). Finally, the dismissal of ordinary members' rights to information, accountability, and a fair share of the benefits signifies a failure of recognitional justice—their status as legitimate stakeholders with valid claims was effectively denied.

The results from all three case study sites, despite their different scheme types and contexts, converge on a single, compelling conclusion: the formal allocation of forest tenure through social forestry schemes does not automatically lead to equitable benefit-sharing or social justice. The findings consistently reveal that benefit-sharing mechanisms are highly vulnerable to capture by local elites, a process which reproduces and often deepens pre-existing social and economic inequalities (Montana et al., 2025). The most marginalized community members particularly women and the landless are systematically disadvantaged by these processes.

This research indicates that social justice is not an emergent property of community-based management but a condition that must be explicitly and intentionally designed into its governance architecture. The success of social forestry in achieving its social equity goals is fundamentally contingent on the establishment of robust, transparent, and accountable benefit-sharing mechanisms (Pakeerathan, 2025). Without deliberate and well-designed institutional safeguards that ensure meaningful participation and protect the rights of the most vulnerable, these ambitious programs risk falling far short of their transformative potential.

This research fundamentally reveals a profound and persistent disconnect between the *de jure* policy intentions of Indonesia's social forestry schemes and the *de facto* reality of benefit-sharing on the ground (Zhu et al., 2025). The primary finding across all three case study sites, regardless of the specific scheme modality, is that the formal, equitable benefit-sharing mechanisms stipulated in policy and management plans are consistently undermined by informal, pre-existing local power structures. The result is a pattern of elite capture, where the majority of material and political benefits are appropriated by a small, well-connected segment of the community.

A second critical finding is the systematic marginalization of the most vulnerable community members from the processes and outcomes of forest governance. Women, the landless, and other socially disadvantaged groups were found to have minimal participation in decision-making and received only nominal or token benefits from the forest-based enterprises (Plieninger et al., 2023). The formally democratic institutions, such as the Village Forest Management Institution (LPHD) and the Forest Farmer Group (KTH), were shown to be the very instruments through which this exclusion was enacted, rather than the intended vehicles for community-wide empowerment.

The case studies, particularly the Hutan Kemasyarakatan in West Lampung, provided a granular illustration of these dynamics. The formal rules of democratic governance and dividend distribution became a facade, masking the reality of opaque financial management and the co-optation of community resources for the private gain of the leadership (Fahdil et al., 2024). The research demonstrated a comprehensive failure across all three dimensions of social justice: distributive injustice in the skewed flow of benefits, procedural injustice in the exclusionary decision-making processes, and recognitional injustice in the denial of the rights and claims of marginalized members.

In synthesis, the results demonstrate that securing legal forest tenure for a community is a necessary but profoundly insufficient condition for achieving equitable livelihood improvements. The success of social forestry is not determined by the transfer of rights from the state to the “community,” but by the institutional arrangements that govern the distribution of rights, responsibilities, and benefits *within* that community. Without robust, explicit, and enforceable safeguards for social justice, these schemes risk becoming new mechanisms for the reproduction of old inequalities.

The findings of this study strongly resonate with and provide deep empirical grounding for the extensive body of critical scholarship on community-based natural resource management (CBNRM) and elite capture. The patterns of benefit monopolization by local leaders and the marginalization of vulnerable groups observed in our case studies are consistent with the cautionary findings of researchers like Ribot, Agrawal, and Larson, who have long argued that decentralization initiatives often re-centralize power at the local level without fundamentally altering inequitable social structures. Our research confirms that the Indonesian social forestry context is not immune to these well-documented pitfalls.

This research, however, distinguishes itself from much of the existing literature on social forestry in Indonesia in two critical ways. First, it moves beyond simply identifying the *existence* of elite capture to conducting a deep, institutional analysis of the *mechanisms* through which it occurs. By making the benefit-sharing mechanism the central unit of analysis, this study provides a granular explanation of how specific design flaws—such as a lack of financial transparency rules or weak accountability procedures—create the institutional space for inequity to flourish. It dissects the “how” and “why” of failure, not just the “what.”

Second, the application of a multi-dimensional social justice framework represents a significant conceptual departure from studies that assess program success based on singular metrics like average household income. This integrated lens reveals how distributive injustices are inextricably linked to procedural and recognitional failures. It shows, for example, that women and the landless receive fewer benefits (*distributive*) precisely because their right to participate in decision-making is not recognized (*recognitional*), and the processes for participation are exclusionary (*procedural*). This holistic diagnostic approach provides a more complete and causally nuanced explanation of inequity.

The findings also serve as a crucial counterpoint to more optimistic, technically-focused assessments of social forestry that measure success primarily in terms of hectares allocated or the formation of community enterprises. Our research demonstrates that such metrics can mask deep internal dysfunctions and injustices. A successfully registered community forest enterprise that is enriching a local elite while further marginalizing the poor cannot be

considered a successful outcome from a poverty alleviation perspective. This study therefore aligns with a critical political ecology perspective, arguing that technical and legal interventions cannot be understood separately from the local political and social contexts in which they are embedded.

The results of this study signify that social forestry schemes, while implemented with the noble intention of correcting historical injustices, can inadvertently become new arenas for the exercise and reinforcement of old power imbalances. The devolution of valuable forest resources from the state to the community effectively creates a new source of political and economic capital at the local level. This signifies that, in the absence of strong equity-focused governance, these new resources are likely to be captured by those who already possess the social, political, and economic capital to do so, thereby deepening the very inequalities the program was designed to address.

The findings also serve as a powerful reflection on the problematic and often-romanticized concept of “community” that underpins much of the discourse on decentralized governance. Policies that treat communities as homogenous, cohesive, and inherently equitable entities are bound to fail. This research signifies that communities are internally differentiated and politically contested spaces. Acknowledging this reality is the first and most critical step towards designing interventions that are sensitive to internal power dynamics and that can proactively work to empower the most marginalized members, rather than simply handing over resources to the collective and hoping for a just outcome.

The consistent gap between *de jure* policy and *de facto* practice signifies the profound limitations of purely legalistic or tenure-focused solutions to deeply entrenched socio-political problems. The act of signing a legal document that grants a community a forest permit does very little, in itself, to alter the local power structures, gender norms, and social hierarchies that have been built up over generations. This signifies that true social transformation requires more than legal reform; it requires a sustained process of social facilitation, capacity building, and political empowerment at the local level to ensure that new rights can be meaningfully exercised by all.

Ultimately, these findings signify a fundamental tension at the heart of the global sustainable development agenda. The drive to achieve forest conservation and poverty alleviation simultaneously is a laudable goal, but this research shows that these objectives are not always naturally aligned. Conservation that is not explicitly and rigorously pro-poor and justice-oriented can fail on both counts. An inequitable social forestry scheme not only fails to alleviate poverty but may also lead to poor conservation outcomes in the long run, as marginalized members who see no benefit from the forest have no incentive to protect it. The results signify that social justice is not an optional add-on to conservation; it is a prerequisite for its long-term success.

The most direct and urgent implication of these findings is for the Government of Indonesia and its Ministry of Environment and Forestry. The current “one-size-fits-all” approach to institutional design for social forestry is demonstrably inadequate. This implies that a fundamental revision of the program’s technical guidelines is necessary. New regulations must move beyond simply requiring the formation of a community institution and must mandate the inclusion of specific, verifiable safeguards for equity. This could include requirements for gender quotas in management committees, mandatory transparent financial reporting, and the establishment of independent community-level grievance mechanisms.

For the vast network of civil society organizations, NGOs, and facilitators who work to support communities in the social forestry process, the implications are equally profound. The role of a facilitator must evolve beyond that of a technical assistant who helps with mapping and permit applications to that of a social process facilitator who actively helps communities navigate their internal power dynamics. This implies a need for new skills and approaches

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focused on inclusive deliberation, conflict mediation, and building the capacity of marginalized groups to articulate their interests and claim their rights.

The research has significant implications for international donor agencies and development partners who provide financial and technical support for Indonesia's social forestry program. Continued investment should be made conditional on the demonstrated integration of robust social justice principles into program design and implementation. This implies a shift in monitoring and evaluation frameworks, moving beyond tracking simple metrics like hectares allocated towards developing more sophisticated indicators that can measure changes in procedural fairness, benefit distribution equity, and the empowerment of marginalized groups.

Finally, the findings have clear implications for the participating communities themselves. While internal power structures are often deeply entrenched, the formal legitimacy granted by the social forestry permit can create new political space for marginalized groups to advocate for their rights. This implies that capacity-building efforts should be targeted specifically at these groups, providing them with knowledge about their rights under the scheme, skills in financial literacy and advocacy, and support in forming their own sub-groups or caucuses to strengthen their collective voice in community decision-making processes.

The research results are as they are, first and foremost, due to the phenomenon of institutional path dependency and the resilience of entrenched local power structures. The social forestry schemes, conceived in the national capital, are implemented in rural landscapes where social and political relationships are often deeply hierarchical and have been established over generations. The new community institutions, like the LPHD or KTH, do not erase these pre-existing structures; instead, the existing structures colonize the new institutions. Elites capture the benefits because they already control the political and social networks that are necessary to dominate any new local-level organization.

The observed outcomes are also a direct result of critical ambiguities and omissions in the national policy framework itself. The policies are strong on the technical requirements for obtaining a permit but are remarkably weak and vague on the procedural and distributive requirements for equitable governance *after* the permit is granted. The policies fail to provide clear, enforceable standards for financial transparency, leadership accountability, or inclusive decision-making. This policy vacuum creates a permissive environment where local power dynamics, rather than principles of justice, become the primary determinant of how benefits are shared.

The inequitable results are further enabled by significant asymmetries in information, knowledge, and social capital. The local elites who capture the schemes are typically those with higher levels of education, better command of the national language, and stronger connections to external actors like government officials, traders, and NGO staff. This gives them a monopoly on critical information regarding market prices, policy details, and potential funding opportunities. This information asymmetry creates a power imbalance that is very difficult for less-educated or more isolated community members to overcome.

Lastly, the persistence of these unjust outcomes is a consequence of inadequate external oversight and support. The government agencies responsible for social forestry often lack the human and financial resources to conduct meaningful, long-term monitoring and mentoring of the thousands of community groups on the ground. Their engagement often ends after the permit is issued. This lack of sustained support and accountability from external authorities means that there are few effective channels for marginalized community members to appeal unfair decisions or to seek redress when their rights are violated by powerful local leaders.

The immediate next step for the research community is to build upon this qualitative, in-depth analysis with more quantitative and longitudinal studies. Future research should focus on tracking the distribution of benefits and the evolution of intra-community equity over a longer time horizon, from the pre-permit stage to several years post-implementation. This would allow

for a more dynamic understanding of how these mechanisms evolve and could help identify critical intervention points for promoting more equitable outcomes.

A critical avenue for future work is to engage in participatory action research. This involves moving beyond a purely analytical role to collaborating directly with communities, facilitators, and local governments to co-design, pilot, and evaluate alternative benefit-sharing models. This could involve experimenting with different institutional arrangements, such as establishing independent supervisory committees with strong representation from marginalized groups, or developing more explicit, pro-poor benefit distribution formulas. Such research would contribute directly to finding practical solutions.

A broader comparative research agenda is a logical and necessary next step. This study provides a deep analysis of three specific cases. Future research should apply a similar institutional and social justice framework to a much larger and more diverse sample of social forestry sites across the Indonesian archipelago. A large-N comparative analysis could help to statistically identify the specific institutional design features and contextual factors that are most strongly correlated with just and equitable outcomes, providing a more robust evidence base for policy reform.

Finally, a crucial “now what” is the translation and strategic dissemination of these research findings to a non-academic audience. The insights from this study must be communicated in accessible formats—such as policy briefs, workshops, and practitioner guides to the key actors who are in a position to effect change: officials in the Ministry of Environment and Forestry, NGO facilitators, donor agencies, and community leaders themselves. The ultimate goal is to ensure that this critical feedback loop from the ground can inform and reshape the future of social forestry policy and practice in Indonesia, moving it closer to its stated ideals of justice and equity.

## CONCLUSION

This study’s most significant and distinct finding is that the formal institutional design of a benefit-sharing mechanism is a poor predictor of its actual function, which is consistently captured and reshaped by local, pre-existing power structures. Across different social forestry schemes, a clear pattern emerged where the legally mandated community institutions became new arenas for elite capture and the marginalization of vulnerable groups, particularly women and the landless. This research demonstrates that the transfer of forest tenure from the state to the community is insufficient to ensure social justice; the critical determinant of equitable outcomes is the governance of power *within* the community itself.

The principal contribution of this research is conceptual, achieved through the systematic application of a multi-dimensional social justice framework to the analysis of benefit-sharing. While employing a qualitative case study method, the core value added is the use of an integrated lens—encompassing distributive, procedural, and recognitional justice—to dissect the institutional processes that produce inequitable outcomes. This approach moves the academic discourse beyond simplistic assessments of livelihood impacts to a more nuanced, causally-rich explanation of *how* and *why* social forestry schemes so often fail to meet their social equity objectives.

The qualitative, in-depth nature of this case study presents inherent limitations regarding the statistical generalizability of its findings. The research provides a deep understanding of the processes of inequity in specific contexts but cannot quantify their prevalence across Indonesia’s thousands of social forestry sites. Future research should therefore proceed on two fronts: first, by conducting large-N quantitative studies to test the hypotheses generated here across a representative sample of communities; and second, by engaging in participatory action research to collaborate with communities in co-designing and piloting more robust and socially just benefit-sharing mechanisms.

## AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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