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Reconstructing Social Policy In Forest Management In Kph Ampang Plampang, Sumbawa Regency

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Abstract
This research project aimed to examine and assess the effects of forest management policy implementation, particularly regarding the role of Forest Management Units (FMUs) in managing forest zones and promoting community empowerment in Sumbawa Regency. A qualitative research approach was employed, with data collected through surveys and measured across relevant variables. Sampling was based on forest areas within Plampang, Sumbawa Regency, taking into account both forest planning and management strategies as well as local cultural contexts. Stakeholder Analysis was also applied to identify the key actors influencing the study. The findings revealed that village communities, as local institutions, are capable of collaborating and engaging with external stakeholders to strengthen institutional development. However, existing policies to support collaborative initiatives do not fully reflect current conditions. As such, sustaining collaboration requires diverse strategies and innovative approaches. These initiatives highlight the recognition of local institutions in forest governance. Empowering local communities through clearly defined design principles ensures long-term resilience and adaptability regarding environmental change. The effectiveness of community institution management is not solely dependent on the survival of the organization itself, as these local institutions have historically endured and adapted through numerous crises. This study aims to contribute to advancing jungle management policies in Indonesia by enhancing community capacity building and supporting the expansion of forested areas.
Keywords: *Reconstructing, Forest Management, Sumbawa.*

INTRODUCTION

State forest governance frequently clashes with the priorities and needs of local communities (Giessen & Sahide, 2017), (Park & Lee, 2019), (Bele et al., 2015), (Biró et al., 2022), (Ruysschaert & Hufty, 2020) and (Espinoza-Valenzuela & Hurtado, 2020). Competing claims over forest resources often result in disputes regarding property rights among different stakeholders (Beland Lindahl et al., 2023), (Fabra-Crespo & Rojas-Briales, 2015), (L'Roe et al., 2023) and (Seijo et al., 2024). While state forests are considered common resources, many parties exploit them without engaging in conservation measures. Achieving sustainable forest management requires strong institutional support. Forest Management Units (FMUs) serve as the main body accountable for executing policies on public forest management (Chowdhury et al., 2024), (Rodríguez et al., 2023) and (Edwards et al., 2022). (Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia, 2021) In accordance with Indonesian Government Regulation No. 23 of 2021 on Forestry Implementation, FMUs oversee both forest utilization and sustainability. As the implementing agency, FMUs ensure the enforcement of forest management regulations and assess the needs and interests of local communities. Moreover, FMUs enhance public access to forest resources through recognition of entitlements, licensing, partnership schemes, and/or collaborative management. They also strengthen forest governance and guide stakeholders' actions toward achieving shared objectives (Hernowo et al., 2011), (Pascoe et al., 2019), (Pascoe et al., 2019) and (Lim, 2001).

FMUs advance genuine devolution, enhance public access to forest resources as a means of resolving conflicts, and improve both investment certainty and convenience (Yang et al., 2024), (Kala, 2023), (Ulya et al., 2015), (Huo et al., 2023) and (Vacek et al., 2023). They are capable of managing areas lacking designated units, such as unlicensed forests. FMUs also play a key role in boosting the effectiveness of restoration and conservation of forests. Functioning as operational management bodies, FMUs oversee

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and regulate forest areas directly at the grassroots level while addressing the interests and needs of local communities (Ficko et al., 2019), (Ju et al., 2023) and (Gu et al., 2021). Their establishment involves a series of planning and design processes that define the core functions and allocation of forest areas to achieve proper management. FMUs are integrated into the broader national, provincial, and district forest management framework, serving as a mechanism to ensure efficient and sustainable practices (Magerl et al., 2022). Nonetheless, forest management faces major challenges, including land demands for development, high biodiversity levels (both in abundance and value), and strong economic pressures that often overshadow ecological and social functions (Cynthia Tatang et al., 2022) and (Yosefi Suryandari & Sylviani, 2012). In light of these considerations, this research seeks to analyze the influence of forest management policy implementation, particularly the role of FMUs in managing forest areas and promoting community development in Sumbawa Regency.

Following sovereignty, President Suharto (1967–1998) centralized the governance and use of natural resources, thereby consolidating the Indonesian state. Through the 1967 Basic Forestry regulation, the central government assumed authority over all collectively administered forests, disregarding conventional law (Sukarman & Sugiar, 2017), (Budiadi et al., 2023) and (Suwarno, 2015). The regulation introduced the concept of the "State Forest," encompassing over 140 million hectares, or about 75% of Indonesia's territory (Hofmann & Malkmus, 2023). This rule was reinforced by the Local Government Regulation of 1974 and the rural governance law of 1979, which expanded the national government's authority at the local level through governance decentralization, the formal establishment of villages (desa), and the marginalization of traditional authorities (Pascoe et al., 2019) and (Ulya et al., 2015).

Over the next twenty years, roughly two thirds of the State Forest area area was allocated to influential economic and political groups figures allied with the ruling government under the banner of progress (Liebal et al., 2025), (Vanegas-Cubillos et al., 2022), (John et al., 2024) and (Foster-Carter, 1976). A significant portion of this land was converted into large-scale logging concessions or industrial plantations such as timber, rubber, and oil palm backed by state bureaucratic and military support structures (Ferreira et al., 2024) and (Kasmad & Terbuka, 2018). These concessions were frequently linked to transmigration (Transmigrasi) programs that relocated around two million farmers from densely populated Java to other islands between the 1960s and 1990s, supplying labor for plantation operations. Portions of the State Forest were also designated as protected areas in collaboration together with environmental NGOs and intergovernmental organizations, particularly the FAO (Pascoe et al., 2019). Following decentralization in 1999, provincial and district governments also engaged in the exploitation of State Forests, as decentralization laws empowered them to issue smaller-scale concession permits typically 1,000 hectares at the provincial level and a few dozen hectares at the district level thereby maintaining political stability while undermining forest conservation (Aini & Retnandari, 2019).

Similar to other districts in Indonesia, Sumbawa Regency has also experienced direct impacts. Between 1985 and 2007, the regency lost approximately 23% of its forest cover, primarily caused by the spread of agriculture (Metz & Brandenberger, 2023). Environmental activists successfully persuaded the national government to designate the Plampang mangrove associated peat swamp forest as part of the Plampang Ecological System, citing its status as the area with the world's highest orangutan density (Hasnaoui & Krott, 2019), (Brukas & Sallnäs, 2012) and (Schmidt et al., 2014). This situation shifted dramatically after a powerful earthquake struck all districts in West Nusa Tenggara Province, with Sumbawa being the hardest hit, in March 2019. The disaster claimed more than 168 lives in Sumbawa. In response, the government allocated 3 billion rupiah in relief funds, leading to the creation of a reconstruction agency to manage the funds in close collaboration with the Sumbawa Regency government. Ultimately, this high-profile earthquake opened opportunities for international NGOs to engage in coastal rehabilitation efforts with local communities and motivated both the government and Sumbawa's environmental movement to cooperate in rebuilding infrastructure damaged by the disaster.

On the ground, large-scale maize farming continues without interruption. In Plampang, only about 30% of the original forest (around 16,000 ha) endured by 2008 (Isham et al., 2002) and this figure dropped to just 20% (about 11,000 ha) by the end of 2011. Drainage canals were constructed even in deep peatlands exceeding three meters, while the use of fire for land clearing was widespread, with a total of 548 peat fires documented from January 2006 to December 2024 (Puspita et al., 2020). The spread of maize cultivation reflects a broader pattern observed both in Sumbawa Regency and nationwide. By 2023, Sumbawa Island had already lost 70% of its original forest (Nopriono & Suswanta, 2019). In recent years, deforestation has reached alarming levels, with annual rates exceeding 2% (Budiningsih et al., 2016), raising projections that the forest could vanish entirely by 2030 (Foster-Carter, 1976), primarily as a result

of new agricultural land expansion (Foster-Carter, 1976). This trend persists despite Indonesia having numerous legal frameworks intended to regulate agricultural development.

In contrast to the alarming deforestation trends in Sumbawa Regency and Indonesia more broadly, environmental NGOs actively opposed the expansion of maize cultivation, successfully curbing deforestation and securing restoration efforts in Plampang. In 2024, for the first time in Sumbawa, their persistent advocacy led the government to cut maize land clearing by 605 hectares, while landowners and managers faced substantial fines and prison penalties.

This study seeks to identify the key factors that contributed to this success. The findings are expected to provide valuable insights for decision makers and stakeholders addressing similar situations in other regions of Sumbawa Regency or internationally. Accordingly, the research emphasizes evaluating and determining the effects of forest management policies, particularly through the role of Forest Regulation Units and community capacity building initiatives in Sumbawa Regency, West Nusa Tenggara Province.

LITERATURE REVIEW

Stakeholder

Each stakeholder plays a vital role in ensuring an organization's sustainability. Broadly, the term stakeholder is rendered as pemangku kepentingan (Dobrynin et al., 2025) and (Hernowo et al., 2011). Interested parties may consist of persons or organizations, whether earnings oriented or noncommercial, that have an stake in a company. They can influence the extent to which organizational objectives are achieved. Stakeholders include both internal and external parties engaged in defined interactions, and they may be categorized as exclusive or non-exclusive.

Freeman (1999), (Raum & Potter, 2015) and (Mapedza, 2007) describes stakeholders as participants who can influence or be influenced by decision-making processes. They may be persons, collectives, or platforms with an interest in and/or the ability to shape the outcomes of an activity (Haataja D, 2020). According to (Suwarno, 2015), stakeholders can be classified as exclusive or non exclusive parties who have concerns regarding an initiative and/or may decide its outcomes, whether favorable or unfavorable. (Miller, 1971) and (Friedman & Miles, 2006) further emphasized that interested parties are actors with concerns and decision-making authority. They include both persons and organizational delegates who hold authority, validity, and influence within a scheme.

(Schoenl, 2018) categorizes stakeholders divided into two groups: main and auxiliary. Primary interested parties are those with direct and vested interests in a resource, either because their livelihoods depend on it or due to their exclusive involvement in its use. (Miller, 1971) refer to these as main stakeholders; supporting stakeholders, on the other hand, are those with indirect or shared interests, often relying regarding the wealth or activities of entrepreneurs. Since stakeholders differ in their interests, needs, and perspectives, effective management of these aspects is essential to achieving organizational goals (Freeman & Phillips, 2005).

Network of actors

(Rahman & Giessen, 2017) and (Hovardas & Korfiatis, 2008) Studies on networks focus on examining sets of interconnected objects or actors. Their purpose is to analyze social collectives within certain boundaries, though in practice these boundaries are often unclear or undefined. Egocentric network studies emphasize individual actors, while inter-actor approaches explore the environments in which actors interact with one another. To sustain themselves, actors require resources and therefore form relationships with others, creating networks of ongoing communication. This perspective assumes that policies emerge from complex interactions among interdependent actors within such networks.

A policy network refers to a relationship established through coalitions involving government and business sector actors (Aini & Retnandari, 2019). These policy actors are commonly identified in the capacity of stakeholders. (Schoenl, 2018) describes stakeholder management as a method aimed at aligning stakeholder conditions through four strategies: (a) partnership, (b) consultation, (c) information sharing, and (d) control.

(Marini Govigli et al., 2021) Policy networks emerge and evolve based on the strength and dominance of interactions among the three main actors. Their development is shaped by both the level of relationship intensity and the extent to which one actor holds influence. The categories of networks of policy making include: (a) Administrative network, (b) Patron client network, (c) Tripartite network, (d). Multi-actor network. When communities take a dominant role in shaping the interaction between government and the public, four categories of networks may emerge: (a) participatory statist networks, (b) Seized networks, (c) interest-group based networks, and (d) Topic networks.

(Niedziałkowski et al., 2025) Analysis of social networks combines concepts from social science and mathematics. It draws on diverse methods and techniques from multiple disciplines to examine various forms of social networks. In SNA, social relations are represented through nodes, which symbolize actors, and edges, which signify the interactions or connections between them. Because these interactions are complex, they can be difficult to interpret and analyze. To support this process, researchers employed the Visualization of social networks (SocNetV 2.1) software, which enables the analysis of social networks by identifying the most significant network points (centrality) within the network. SocNetV 2.1 provides analytical outputs using several measures, including extent of direct connections, intermediary role in the network, measure of proximity to all other nodes, and importance in facilitating information flow (http://socnetv.org/).

Government Policy

Easton describes public policy as the legitimate authority distribution of principles across an entire community, emphasizing that solely the government holds the authority to act on behalf of the whole community. In his 1969 work, (Rusfiana & Supriatna, 2021) further defines public policy as the apportioning of authority within obligatory social structures. This means that the government has the authority to take action toward society. Such actions represent government decisions that function as both a form of governance and an distribution of values to the public (Cynthia Tatang et al., 2022).

According to (Yosefi Suryandari & Sylviani, 2012), government policy refers to what the state chooses to proceed or abstain to do, a definition that encompasses various societal problems, aspirations, and needs (Soenarko, 2003:41). (Ekawati & Ridho Nurrochmat, 2014) describe policy as a choice that can be implemented, reflecting consistent patterns of conduct and habitual actions carried out by decision makers and administrators (Budiningsih et al., 2016) further highlights multiple key concepts of government policy: (a) the state's choice to take action or refrain from acting, (b) formal state rules and agreements, and (c) collaboration between parliamentary and governmental bodies.

Carrying out Government Policy

(Ekawati et al., 2018) defines enforcement of policy as the phase of government policy situated among its formulation and the resulting impacts on the affected community. A policy may still fail if it is poorly designed, even with effective implementation, while a sound policy can also fail if implementation is inadequate. Similarly, (Yosefi Suryandari & Sylviani, 2012) explain enactment as the process of translating a project into reality following its formulation and validation, involving actions and events guided by state regulations. Implementation includes regulatory efforts that generate tangible outcomes and impacts on society. It begins once a policy has been officially enacted and involves managing inputs as well as producing outputs for the public.

Approaches to Policy Implementation

Studies on policy enforcement focus on identifying the elements that determine whether policy objectives are successfully achieved or not (Foster-Carter, 1976) highlights four key variables influencing implementation: (a) *Communication* effective carrying out demands that policy enforcers clearly comprehend the policy's actions, purposes and intentions, and convey them accurately to target groups to minimize distortion; (b) *Resources*—even when communication is clear and consistent, insufficient resources can render implementation ineffective; (c) *Disposition* this refers to the attitudes and traits of implementers, where a positive disposition encourages them to execute policies as planned; and (d) Administrative structure the organizational framework that defines division of labor, integration, coordination, job specialization, authority lines, and reporting mechanisms. Similarly, (Prayitno & Ichsan, 2021) identify four categories of factors affecting program effectiveness: contextual factors, inter administrative relationships, organizational implementation resources and attributes and capacities of implementing agents.

Forest Management

(Kuryahadi, 2023) Describes forest management as the practice of applying biological and physical principles, chemical, encompassing quantitative, managerial, economic, social, and policy aspects principles through a sequence of actions aimed at establishing or regenerating, developing, utilizing, and conserving woodlands managed to fulfill particular goals while ensuring the yield and condition of forests. Management of forest resources also encompasses the stewardship of forest aesthetics, aquatic resources such as fish and wildlife in forest streams, recreational zones, forest benefits, and roles in urban settings environments, water resources, animals, wood, non-wood forest products, and additional forest resources. Its scope includes: (a) forest governance and development of management plans, (b) forest use and land-

use planning, (c) forest restoration and reclamation, and (d) forest safeguarding and conservation of natural resources.

(Ayana et al., 2013) Forestry management operations and planning are implemented within each Forest Management Unit (FMU) across different woodland types: (1) Protection *forests*, whose main role is to preserve biodiversity and ecosystems, including nature reserves, conservation zones and game reserves; (2) Conserved *forests*, which serve to safeguard ecosystem services that support life, including water regulation cycles, avoiding floods, preventing land degradation, stopping saltwater encroachment and maintaining soil health. Within conserved forests, FMUs establish boundaries, conduct inventories, assess forest conditions, and collect socio financial and cultural information from the woodland and surrounding communities. They also divide the forest into specific zones (preservation blocks, employment blocks, and others) and carry out registration, measurement, and mapping; (3) *Production forests*, which focus on generating forest products. Management of these areas involves boundary determination, inventories of forest resources and conditions, identification of issues, division into blocks and compartments, installation of boundary markers, area maintenance, and the development of management facilities, in addition to forest registration, measurement, and mapping.

(Elomina & Pülzl, 2021) It is essential to enhance the yield of forest resources both from commercial plantations and native forests while safeguarding their long-term viability. Locally managed forests can be sustained by supplying seedlings for areas that have lately been collected. In addition, businesses and local populations utilizing woodland resources are expected to set aside timber reserves and engage in reforestation efforts. Overall, forest management must aim to prevent degradation and ensure forest preservation (Elomina & Pülzl, 2021). Community-based forestry administration initiatives impact two key dimensions: (a) the *economic aspect*, which relates to improving the welfare of communities engaged in forest management and boosting forest production, particularly timber; and (b) the *ecological aspect*, which concerns maintaining sustainable forest management and ecological roles.

Kesatuan Pengelolaan Hutan (KPH) or Forest Management Unit (FMU)

(Suwarno, 2015) Forest Management Unit operations should actively engage resident populations through inclusive approaches while addressing societal issues and disputes related topics, particularly those concerning land tenure, rights to forest resources and indigenous/customary entitlements, according to the Ministry of Forestry FMUs as management units that operate according to the primary functions and designations of forests, ensuring efficiency and sustainability. By managing forests directly at the implementation level, FMUs help prevent challenges faced by communities perceiving Forests with open access areas available for unrestricted use. Therefore, optimal and well-organized management at the field level is essential for sustainable forest governance.

To attain proficient and resourceful management of forests, it is important to distinguish between the roles of administrators and operators (Ekawati & Ridho Nurrochmat, 2014) and (Hernowo et al., 2011). Currently, both Forestry Ministry and Forestry Department perform dual roles as regulators and operators. These functions must be clearly defined, separated, distinct and open. As state administrators, the authorities should primarily separate regulatory and operational responsibilities, especially in activities that directly affect community livelihoods (Hofmann & Malkmus, 2023). Such a division prevents ensuring that regulators do not act as operators, and vice versa. From our standpoint, forest management significantly influences society welfare, given the ecological, social, and economic aspects of the forest roles (Indonesia, 2020). Accordingly, Forestry Department should be responsible for regulatory functions, while FMUs should serve as operators. Effective and efficient management, in this context, reflects proper governance of smaller forest areas.

According to state regulation No. 6 of 2007, forest regions are categorized into FMUs to promote responsible forest stewardship. FMUs foster genuine distribution of authority, expand local community rights to forest resources as a means of dispute settlement, and enhance investment certainty and convenience (Metz & Brandenberger, 2023). However, the regulation presents two key challenges. First, while the national and regional governments forest management challenges directives, their distance from actual forest resources often makes these directives less effective. Second, the designation of FMUs as the smallest administrative unit units necessitates reconsideration, since the managerial tier of the Forest Management Unit (FMU) (whether at district or provincial level) does not necessarily align with the actual managed forest area.

Overall, FMUs with smaller regions are easier to oversee compared to those covering larger territories. While large FMUs can still be managed effectively and efficiently, they demand stronger managerial

capacity to handle the complexity of wider forest areas. Thus, extensive FMUs require more advanced management skills than smaller ones.

Strengthening Community Capacity

Strengthening community capacity means broadly to enhancing human resources and capacities, enabling people to make their own choices and take action to address problems. Participation is a vital element of empowerment, as it is necessary to realize development objectives (Budiadi et al., 2023). According to (Afriansyah, 2023) strengthening community capacity can be understood in two ways: (a) Empowerment viewed as a process a transformative procedure that involves introducing innovations in ideas, products, methods, tools, or technologies. While innovations often originate from external sources, they may also develop through research, recognition, and the advancement of customs, cultural traditions, local knowledge, or native practices technologies; and (b) *E*mpowerment viewed as a process of learning.

In theory, change by means of empowerment can occur by means of compulsion, warnings, encouragement, or teaching. While force or intimidation might accelerate change within certain boundaries, empowerment as a learning process should be grounded in the actual community requirements. Moreover, enabling seeks to maximize local resources and capabilities while enhancing overall public prosperity.

Involving communities in policy-making enhances the optimal use and impact of scarce development resources through empowerment also improves the alignment among development efforts initiatives and regional contexts while reinforcing program sustainability through feeling of responsibility and accountability. However, various policy and organizational barriers hinder strengthening community capacity. In many cases, executives and decision makers show partial commitment and insufficient comprehension of the fundamentals and advantages of empowerment across different levels.

MATERIALS AND METHODS

This research employed a qualitative-verification approach rather than being guided by a clearly formulated hypothesis. Theoretical verification was not directly articulated, as the primary framework was used to interpret the measurable occurrences(Svehla, 1997), (McCann, 1998) and (Sponsor et al., 2025). As (Mackiewicz, 2018) explains, the strength of the model based on induction lies in its grounding at the most fundamental stage of inquiry. Academics commonly begin with events that are not yet represented in existing theories or social constructs. The validity of qualitative findings is inter subjective, built upon the interplay of multiple collaborative elements such as culture and individual characteristics. Consequently, what is "perceived" materializes for those who witness and encounter it, with data ultimately shaped by background and analysis.

Thus, shared understanding is viewed as a creation of knowledge assembled conducted by researchers using records that capture the meaning of social engagement (Twycross, 2004). As noted by (Bogdan & DeVault, 2016), (Tisdell, 2016) and (Yin, 2016) descriptive approaches involve research methods that generate narrative data in the form of spoken language, written texts, and observable community practices. In this study, a library research method was employed to trace the historical development of forest administration within the framework of actors shaping its concept. Furthermore, the research sought to examine how forest management influences the legal linkage between local local communities and government administered woodlands.

(KOTHAR, 2004) defines documentary research techniques as encompassing gathering, processing, analyzing, and presenting data of findings. In the initial phase, researchers carried out four main steps: (1) reviewing library sources such as literature sources such as books, journals, theses, dissertations, documents, and articles relevant to the study problem; (2) conducting relative analysis of documentary sources to filter facts and knowledge connected to the study focus and to aid explanation; (3) interpreting the analyzed data to describe the dynamics of state management in forest resource governance; and (4) compiling a time ordered account of the juridical connection among authorities and communities in the context of forest administration.

The stakeholder analysis in this study applies a descriptive approach to examine the levels of influence and interest among different parties (Huberman, 2014). Data collection will involve interviews with respondents, followed by an assessment of key stakeholders who play a role in shaping forest governance policies and local community strengthening in Sumbawa.

DISCUSSION

According to Decree No. 188.4/3710 issued by the Chief of the Forestry and Plantation Agency on

October 22, 2024, the forest area in Sumbawa Regency covers 14,191.06 hectares. This accounts for 5.86% of Yogyakarta's total land area (318,518 ha) in 2022 and represents nearly half of the total forest area in West Nusa Tenggara Province, which spans 1,068,097.78 hectares. The planning and administration of forests are integral components of forest governance as prescribed by legislation No. 41 of 1999, later revised by State Regulation No. 6 of 2007. Forest management involves the design and organization of forest administration units, grouping forest resources according to ecosystem types and their potential. Its primary objective is to ensure sustainable community benefits from forest resources. Forests are further classified divided into sections according to ecosystems, functions, categories and usage plans, while also considering management intensity and efficiency. This classification serves as the foundation for developing comprehensive forest administration plans.

(Zhao et al., 2025) The preliminary process of forest demarcation, charting and allocation was undertaken by the administration of the Dutch East Indies authorities through the Boschwezen (Forest Service) and Djatibedrift (State Forestry Company), and was completed in 1930. The forestry plan of that year established external demarcated and partitioned forest lands into parcels, Forest Management Resorts and Forest Districts. Boundary markers were installed in the form of concrete posts and access roads separating the blocks. Every ten years, the Sumbawa District FMU systematically reconstructs both internal and external boundaries while also updating forest data to strengthen the management and consolidation of forest areas.

Over the course of a decade, both external and internal forest boundaries have been delineated. The FMU has defined the outer limits of the AB (Afgeschreven Djati-Bosch) woodland zone, the Sumbawa District FMU forest area, preservation zones, as well as forest and non-forest areas within its jurisdiction. (Grima & Singh, 2019) and (Wan et al., 2025) Internally, the FMU has established boundaries for protected and production forests, Community Forest Utilization Business Permits (IUPHK), Community Plantation Forest Management Permits, Village Forest Management Permits, and Working Area Arrangements. In addition, the FMU reconstructs and maintains plot and sub-plot boundaries. In 2017, the Sumbawa District the FMU reestablished provisional demarcations between plots and sub-plots within the BDH Plampang (28,850 m) and BDH Empang (42,650 m). These activities support one of the FMU's core objectives: enhancing forest administration.

(Narita et al., 2021) The administration of forests plan encompasses designing and coordinating, implementation, evaluation, regulation and oversight. It takes into account ecological circumstances, societal aspirations, involvement, and cultural norms. In the early annum following the formation of the Ampang Plampang FMU in Sumbawa Regency, the administration strategy was guided by the Rencana Teknik Tahunan (RTT), also known as the Yearly Technical Plan. Activities such as foliage yield, cultivation, timber harvesting, and maintenance of output roads were regulated under the RTT, which includes foliage yield, cultivation, and roadway upkeep have been carried out since 2009, while logging activities began in 2013.

According to the Regulation of the Directorate General of Forestry Planning No. P.5/VII-WP3H/2012 on Technical Guidelines for Forest Management and the Formulation of Stewardship Plans for Conserved and Production Woodland Units, along with the Directorate General for the Administration of Sustainable Production Forests Regulation No. P.7/PHPL/SET/3/2016 on Guidelines for the Preparation, Evaluation, Ratification, and Reporting of Short Term Forest Management Plans, the Sumbawa FMU is required to prepare both Long-Range Forest Management Plans and Short-Range Forest Management Plans.

The Short Term Forest Management Plans of KPH Ampang Plampang Sumbawa received approval in 2014 and covers the 2014–2027 period. The Short Term Forest Management Plans serves as a framework and guideline for forest management activities, encompassing the administration, preservation, and safeguarding of forest resources in Ampang Plampang Sumbawa. It also addresses community, regional, national, and international interests. Following the ratification of the Short Term Forest Management Plans, the Short Term Forest Management Plans was developed to outline the annual implementation of the long-term plan, taking into account land capacity, woodland inventories, societal demographics, general public needs, and related factors. The Short Term Forest Management Plans is aligned with the 2014–2023 Short Term Forest Management Plans, as well as the Regional and State Budgets. Additionally, it may utilize non-binding funding sources as stipulated by the relevant laws and regulations, such as the Special Allocation Funds (DAK – Dana Alokasi Khusus), the Sumbawa entitlement fund, and others.

Utilization of forest resources within the Ampang Plampang Sumbawa Model of the Production Forest

Management Unit. Under Law No. 41 of 1990 on forest management, optimal forest administration is implemented at the most basic operational level via Forest Management Units. The vision and mission of FMUs guide forest management by promoting the sustainable use of resources within their designated areas. The Ampang Plampang Sumbawa Model of the Production Forest Administration Unit holds significant woodland capacity, which drives active forest utilization efforts. These utilization activities are carried out in line with State Regulation No. 6 of 2007, which outlines the use of forest areas, environmental services, as well as wood and non-wood products. Accordingly, the Sumbawa Model of the Production Forest Management Agency undertakes the subsequent forest use activities:

Land Exploitation

Spatial use refers to the practice of making use of development space. Its purpose is to optimize ecological, social, and economic advantages while preserving the essential functions of forests. At KPH Ampang Plampang, this practice takes the form of *Pemanfaatan Lahan di Bawah Tegakan* (PLDT), or Forest Utilization Under Stands. In Indonesia, one common method of PLDT is *tumpangsari* (multiple cropping), a system first introduced during the Dutch colonial period. Through multiple cropping, local communities are permitted to cultivate crops within state-owned forest areas, provided they plant staple crops. However, communities often prefer secondary crops (*palawija*), such as maize, cassava, groundnuts, and soya. In teak forests, agricultural workers typically apply crop diversification for about two years, but as the teak canopy grows denser, it limits sunlight for the crops. Consequently, farmers shift to cultivating shade-tolerant plants, such as medicinal spices (*empon-empon*).

Farmers in the Ampang Plampang forests of Sumbawa Regency practice multiple cropping year round. To reduce excessive shading, they regularly prune the trees. The implementation of PLDT offers significant benefits to local communities, generating extra earnings of approximately IDR 3,000,000,000. On average, the production value reaches around IDR 2 million per hectare. Moreover, PLDT provides work opportunities for about 900 people. Alongside PLDT, the Empang Plampang FMU has also undertaken teak planting initiatives.

The development of Jun teak commenced in 2016 through a collaboration with PT. Surya Silva Mataram. This collaboration was formalized under Collaboration Document Number 119/2137, which outlined establishment of teak plantations using intensive silviculture and water regulation. The agreement was set over 35 years and targeted the cultivation of 1,000 hectares of teak. Under the initial harvest arrangement, 65% of the profit was allocated to PT. Surya Silva Mataram, and 25% to the Forestry Service and the local community 10%. For the second harvest, the profit sharing scheme shifted to 50% for PT. Surya Silva Mataram, 30% for the Forestry Service, and 20% for the community, as no planting took place during the second cycle. Modified Jun teak, produced by Plampang RPH and Empang RPH, was used in subsequent plantings. With a lifetime of eight years, the initial harvest occurred in 2024. Comprehensive maintenance was carried out to ensure high quality timber. Considering its high-quality wood potential, Plampang RPH, Empang RPH, and Sumbawa RPH plan to continue cultivating jun teak in the coming years.

Exploitation of ecological benefits

Environmental service application makes use of the potential benefits of environmental resources without causing harm to the environment or diminishing the primary functions of forests (Blicharska & Van Herzele, 2015), (Lorenzini & von Jacobi, 2024) and (Niedziałkowski et al., 2025). Ampang Plampang FMU, together with Empang RPH and Sumbawa, has implemented such practices. One example is the development of Balong tourism, which began in 2015. The presence of aging pine stands with low resin productivity created an opportunity for tourism development. These pine forests offer scenic landscapes in the highland area, making Balong a promising tourist destination. The development of Balong tourism is grounded in the core values of local culture. Ampang Plampang FMU introduced the *Mataram Forest Tourism Grand Design* (Wana Wisata Mataram Grand Design), which is tailored to the region's potential. This Grand Design focuses on developing facilities within the tourist area. Since Balong lies within a protected forest zone, all supporting tourism facilities must comply with regulations. The facilities are designed to be environmentally friendly, avoid altering the natural landscape, and refrain from using permanent structures.

The success of tourism development is determined by effective performance and strong collaboration between the government and local communities (Q. M. Nguyen & Nguyen, 2022), (ABE et al., 2023), (Huttunen, 2014), (Dujka, 2025) and (Loft et al., 2022). Forest communities play an essential role in advancing tourism (Drasospolino et al., 2023), (Živojinović et al., 2025), (Daiyoub et al., 2024) and

(Cochard et al., 2023). Such development must ensure the preservation of environmental services and the protection of forest areas. Sumbawa Regency Regulation Number 7 of 2015 on Wildlife Conservation Forest Management, hereinafter detailed in Sumbawa regulation of the Governor No. 84/2016 on collaboration within conserved forests, requires that communities be represented through local institutions or cooperatives.

The Tonowo Collaborative brings together various community groups engaged in the capacity building of Balong tourism. Collaboration between the government and the cooperative is regulated under the Cooperation Agreement on Protected Forest Utilization between the Sumbawa Regency Agency of Forestry and Plantation and the Tonowo Collaborative, Agreement Number 525/00909. According to this understanding, the Tonowo Cooperative obtains 75% of the profits, while the government obtains 25%. Tourism based on environmental services makes a substantial contribution to community welfare and generates regional revenue (Blicharska et al., 2012), (Luo et al., 2016), (Paing et al., 2023) and (Sierra-Huelsz et al., 2017). Local communities benefit through business opportunities and employment within the tourism area, while the authorities gains earnings from tourism payments (Bauer et al., 2022), (Cheng et al., 2024) and (Escobedo et al., 2024). In 2024, Balong travel industry recorded a total income of IDR 179,055,000.

Exploitation of timber and non-timber forest products

The utilization of wood and non-wood forest resources ensures forest resources are extracted in the absence of degrading the natural surroundings or diminishing the essential functions of the forest (Halofsky et al., 2024), (Lavy & Zavar, 2023), (Park & Youn, 2017), (Bergquist & Keskitalo, 2016), (Baral et al., 2025) and (Elias & Maria, 2025). The Ampang Plampang FMU supplies wood to fulfill the growing requirement in Sumbawa, producing species such as teak, acacia, mahogany, sonokembang, gmelina, and johar. Among these, teak is considered high-quality to other woods. Teak forests cover 6,161 hectares, representing 39.2% of the entire production forest zone. Wood is harvested each year, with inventory assessments conducted beforehand to determine the available volume.

In terms of non-timber products, Melaleuca cajuputi serves as the primary commodity, being the raw material for cajuput oil. This species was introduced in Plampang in 1950 and later in Mount Sumbawa in 1960, with the purpose of soil and water conservation to combat severe land degradation. Currently, Melaleuca cajuputi stands extend across 4,118.1 hectares in Plampang. With a 40-year life cycle, continuous management of these stands and sustained oil production is essential.

The Ampang Plampang Sumbawa Production Forest Administration Unit, through its Forest Use Division and Forest Planning & Conservation Division, is responsible for maintaining and safeguarding Melaleuca cajuputi plantations. The Forest Use Division oversees activities such as intensification, replanting, and fertilization, while the Forest Planning and Protection Section carries out regular patrols, supports farmer groups, provides guidance to PAM Swakarsa, and supplies their operational needs. These maintenance and protection measures are intended to sustain an optimal density of stands. The standard stocking rate is 3,333 trees per hectare, with a planting distance of 4 m × 0.75 m.

The Ampang Plampang Sumbawa Production Forest Administration Unit operates four Melaleuca cajuputi processing plants: Sendangmole, Gelaran, Kediwung, and Dlingo. However, the Kediwung and Dlingo refineries were shut down due to inefficiencies in their processing procedure. These facilities relied on a basic distillation method, handled only limited quantities of Melaleuca cajuputi leaves, and required extended processing times.

Community's social and cultural life

The Ampang Plampang Unit for Managing Production Forests operates across three districts: Sumbawa, Sumbawa Barat, and Bima. The general profile of communities within the Sumbawa FMU reflects local demographic characteristics, including (a) high population density, (b) intense livelihood struggles, (c) high mobility, and (d) rich cultural traditions. The people of Sumbawa are generally (a) future-oriented, as the region serves as an educational hub; (b) guided by a noble philosophy that emphasizes harmony between people and the natural environment, and the environment, motivated by the principle of *Hammemayu Hayuning Bawono*; and (c) socially cohesive, as shown by their strong spirit of cooperation.

The Ampang Plampang Production FMU is closely connected to the social and cultural dynamics of neighboring communities. Local people gather non-timber resources jungle products, cultivate forest land under the *pesanggem* system, and engage in related activities. In terms of cultural preferences and forestry use, teak is favored for housing and infrastructure, serving as a symbol of social status in Sumbawa society.

Nevertheless, the community faces several constraints. First, these are linked to resource endowments (controlled resources) (Riggs et al., 2018), (Lin et al., 2024), (Date & Lele, 2025), (Mastrangelo et al., 2024) and (Gamba et al., 2024). Farming households around the forest generally have limited land often marginal and rocky along with insufficient capital, low levels of education, limited capacity to adopt technology, and weak access to available markets. Second, the community tends to have a short-term orientation (Thomas & Hubo, 2024), (Hiedanpää et al., 2023), (Sattraburut et al., 2024) and (Bussola et al., 2021). Third, partnerships remain underdeveloped. Resource limitations are closely tied to poverty, which is a complex issue that cannot be addressed by a single sector alone (Zhu et al., 2025), (D. Nguyen et al., 2022), (Ma et al., 2024) and (Unay-Gailhard & Bojnec, 2020).

The Ampang Plampang Unit for Managing Production Forests plays an important contribution to poverty alleviation by generating employment opportunities, raising household incomes, and strengthening food security. Poverty reduction efforts can be pursued by means of a welfare-oriented approach, such as the *pesanggem* scheme and the development of various agroforestry initiatives.

Community–forest relationships

Agricultural communities have lived throughout generations within government forest areas and remain highly dependent on natural resources (Ha et al., 2014), (Ojha et al., 2020), (Wen et al., 2025) and (Saxena et al., 2022). As a result, they rely on forest resources for their daily needs. For example, communities gather grass from the forest for livestock feed, which also serves as a source of income. They also collect firewood to produce and sell charcoal, often using fast growing woody species such as acacia. In addition, farmers cultivate forest land for agriculture, practicing intercropping or agroforestry practices.

The practice of multi-cropping approach, which combines seasonal crops (*palawija*) with perennial plants, not only boosts farmers' income particularly for those who are landless or own only small plots but also supports conservation of soil and water within forest regions. Societies further minimize erosion through land cultivation carefully and constructing basic terraces.

The Collaborative Forest Management Program (*Pengelolaan Hutan Bersama Masyarakat* / PHBM) enhances involvement of communities in forest conservation by creating possibilities such as raising farmers' earnings through farm products and enabling them to harvest perennial yields from state forests in accordance with established agreements. The Ampang Plampang Production Forest Management Unit has implemented PHBM practices, including agroforestry development and PAM Swakarsa activities. This demonstrates that communities and forests are closely interconnected, providing reciprocal benefits.

CONCLUSION

Findings indicate that village communities, as local institutions, are able to collaborate and engage with external stakeholders to strengthen their institutional role. However, policies aimed at supporting collaborative efforts do not fully reflect existing conditions. As a result, sustaining collaboration requires diverse strategies and innovations. Such collaborative efforts acknowledge the contribution of local institutions in forest administration. Empowering local communities through well defined design principles ensures long-term resilience and adaptability toward environmental changes. The effectiveness of society institutional administration is not determined solely by the continuity of the institution itself, as these institutions have historically endured and adapted through various crises over time.

This study reinforces stakeholder theory (Reed et al., 2009), which emphasizes empowering stakeholder involvement in decision-making processes and effectively managing their involvement to achieve strategic objectives. Relationships among stakeholders are dynamic, involving expressions of support or opposition that can shape strategic resilience and influence an organization's future. Stakeholders may either strengthen or disrupt organizational progress.

Institutional management plays a significant role in shaping and adjusting forestry policies. In the context of community empowerment, implementing forest management policies must demonstrate evidence of sustainable practices while ensuring long-term management continuity. Despite certain accomplishments, progress in this field remains limited. Forest management led by communities demands commitment, clear enterprise models, and a vision for long-term ecosystem sustainability.

Cooperatives represent the most aligned type of community institution, as they address intersecting concerns for example, property rights, ecological sustainability, and recognition of community

involvement and means of living security. organizational transformation in forestry administration reflects broader societal transformation encompassing shifts in regulations, ethics, and influence relations within communities and serves as a driver of sustainable natural resource management within FMUs. Recognizing community rights is therefore fundamental to effective forest governance. Moreover, programs for empowerment in forest management can be applied to FMUs beyond Sumbawa.

According to the research findings, the following recommendations are proposed:

1. Partnership models between FMUs and local communities represent the most appropriate approach to be developed, as they provide communities with access rights.
2. Legal frameworks, knowledge, confidence, and networking serve as key drivers for organizational advancement.
3. FMU leaders must foster trust among stakeholders to achieve the unit's objectives.

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