



SYURA: JOURNAL OF LAW

<https://ejournal.staiduba.ac.id/index.php/syura>

E-ISSN: 2986-5670

Assessing the Regulatory Impact of Community-Based Forest Management on Ecosystem Sustainability and Community Livelihoods

Sukirno

Universitas Nahdlatul Ulama Purwokerto, Indonesia

sukirnounupwt@gmail.com

Abstract

Keywords: Community-Based Forest Management (CBFM), regulatory impact, ecosystem sustainability, community livelihoods

This study addresses the problem of whether the Community-Based Forest Management (CBFM) program effectively integrates ecosystem conservation with improving the welfare of local communities. Despite its participatory approach, challenges remain in governance, transparency, and policy coordination. The objective of this research is to evaluate the effectiveness of CBFM implementation in achieving ecosystem balance while enhancing community livelihoods. The study employs a qualitative case study design with a descriptive-analytical approach. Data were collected through in-depth interviews, field observations, and documentation to obtain comprehensive insights into program implementation. The findings reveal that CBFM has contributed significantly to increasing vegetation cover, maintaining water resource stability, and reducing illegal logging practices. In addition, the program has improved local incomes, particularly in the Purwokerto area, through diversification of livelihoods based on non-timber forest products and agroforestry systems. However, its effectiveness is constrained by limited participatory governance, unequal benefit distribution, and weak cross-sectoral policy integration. This study contributes to the development of legal and policy frameworks by emphasizing the need for strengthened governance, transparency, and integrated policies to ensure sustainable forest management and equitable community welfare.

Abstrak

Kata Kunci: *Penelitian ini membahas permasalahan efektivitas program Community-Based Forest Management (CBFM) dalam mengintegrasikan konservasi ekosistem dengan peningkatan kesejahteraan masyarakat lokal. Meskipun berbasis partisipasi, program ini masih menghadapi tantangan dalam tata kelola, transparansi, dan koordinasi kebijakan. Tujuan penelitian ini adalah mengevaluasi sejauh mana implementasi CBFM mampu mencapai keseimbangan ekosistem sekaligus meningkatkan taraf hidup masyarakat di sekitar hutan. Metode yang digunakan adalah studi kasus kualitatif dengan pendekatan deskriptif-analitis. Data diperoleh melalui wawancara mendalam, observasi lapangan, dan dokumentasi. Hasil penelitian menunjukkan bahwa CBFM efektif dalam meningkatkan tutupan vegetasi, menjaga stabilitas sumber daya air, serta menekan praktik eksploitasi hutan ilegal. Selain itu, program ini juga berkontribusi pada peningkatan pendapatan masyarakat, khususnya di wilayah Purwokerto, melalui diversifikasi usaha berbasis hasil hutan bukan kayu dan sistem agroforestri. Namun, efektivitasnya masih terkendala oleh lemahnya tata kelola partisipatif, ketimpangan distribusi manfaat, serta belum optimalnya integrasi kebijakan lintas sektor. Penelitian ini berkontribusi pada penguatan kerangka hukum dan kebijakan guna mewujudkan pengelolaan hutan yang berkelanjutan dan berkeadilan.*

Received: 08-03-2026, Revised: 23-04-2026, Accepted: 25-04-2026

© Syura: Journal of Law
Sekolah Tinggi Agama Islam Darul Ulum
Banyuwang Pamekasan, Indonesia

Doi: <https://doi.org/10.58223/syura.v4i1.798>



This is an open access article under
licensed [Creative Commons Attribution
NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/)

Introduction

Forests are a pillar of sustainable community life, serving ecological, economic, and social functions (Hansmann, 2024). The high level of community dependence on forests has led to various issues in forest management, including land degradation, conflicts over forest resource use, and unequal economic

access for communities living near forests (Duguma et al., 2019; Kumar et al., 2018; Pratama, 2019). This situation requires special management and treatment of forest areas, involving communities surrounding the forests to ensure that forests provide maximum

benefits while maintaining ecological sustainability.

In an effort to ensure forest sustainability, the government has appointed institutions authorized to manage forests, namely Perum Perhutani and Inhutani. Based on Law Number 41 of 1999 concerning Forestry and Government Regulation Number 72 of 2010, most recently amended by Government Regulation Number 23 of 2021 concerning State Forestry Public Companies (Perum), Perhutani is authorized to plan, manage, utilize, and protect state forest areas assigned to it in a sustainable manner on the island of Java (Indrajaya et al., 2022; Yudono et al., 2023). Meanwhile, Inhutani is a Limited Liability Company focused on managing plantation forests, utilizing timber and non-timber forest products, and restoring ecosystems, all in accordance with official government permits.

In carrying out its duties and responsibilities, Perum Perhutani manages forests by establishing forest boundaries, distinguishing

forest areas by function, and establishing forest boundaries, down to forest area boundaries, forest sections, which are characterized by the smallest units, namely forest plots, forest management resorts, Forest Unit Sections (BKPH), and Forest Management Unit (KPH) areas, which are divided into three Regional Divisions: the East Java Regional Division, the Central Java Regional Division, and the West Java and Banten Regional Divisions. Inhutani's management outside Java tends to focus on industrial plantations, and its forests are less well organized than those on Java.

To safeguard forest ecosystems, Perum Perhutani, in collaboration with communities, has developed the Community-Based Forest Management (CBFM) model, a collaborative framework for forest management between the state and forest village communities (Komalawati et al., 2023; Muttaqin et al., 2019). This program aims to increase community participation in forest management, maintain ecosystem sustainability, and

promote improved local community welfare through a mechanism for sharing roles and benefits (Fajar, Nugraha Cahya, 2019). CBFM positions communities as strategic partners through the establishment of Forest Village Community Institutions (LMDH), which are involved in conservation, forest protection, and the limited, sustainable use of forest products.

Perum Perhutani has implemented one form of community involvement in forest management in Banyumas Regency, particularly around Purwokerto. This area has strong interactions between the community and Perum Perhutani under the CBFM scheme. The implementation of CBFM in this area is not only about conservation, but also involves local economic transformation, changes in livelihood patterns, and institutional relations between communities and forest managers. Although it has been in place for quite some time, this interaction between Perum Perhutani and the community still requires further study. Several

studies have shown that equitable increases in community welfare do not always accompany ecological success, and the level of community participation in forest management decision-making varies (Arts & Koning, 2017).

Research related to CBFM, while focusing on institutional aspects and community participation, has generally not addressed the link between ecosystem sustainability and community welfare, particularly in Banyumas. Yet, socio-ecological relationships are crucial and can serve as benchmarks for the program's success. Therefore, this study aims to analyze the success of CBFM in achieving ecosystem balance and simultaneously increasing community well-being in Banyumas, particularly around Purwokerto. This study assesses the effectiveness of a community-based forest management program using ecosystem balance indicators, including land cover, biodiversity, and environmental quality. It also assesses local community well-

being, as indicated by increased income, access to resources, and economic resilience. Specifically, this study examines the relationship between ecological indicator performance and improved community well-being to examine their interrelationship in Purwokerto. The results are expected to contribute to the development of a model of the relationship between communities and sustainable forest management in efforts to improve community welfare.

Method

This qualitative research uses a case study to examine the effectiveness of the Community-Based Forest Management (CBFM) program in local communities in Banyumas, particularly around Purwokerto. This approach was chosen because it allows us to explore the complex social, institutional, and ecological dynamics involved in program implementation at the local level. The location was purposively selected in areas that have

implemented CBFM and have significant community involvement.

Informants in this study included program managers, members of forest farmer groups, community leaders, and representatives from the state-owned forestry company Perum Perhutani, which serves as a forest policymaker. Data collection techniques included in-depth interviews, participant observation, and documentation studies of program reports and community socio-economic statistics. A total of 60 informants participated in this study: 10 administrators of the Forest Village Community Institution (LMDH) (16.7%), 35 active CBFM members (58.3%), 10 non-member villagers (16.7%), and 5 Perhutani officers (8.3%). The majority of respondents work as sharecroppers with an average private landholding of only 0.32 hectares. This limited land ownership makes access to CBFM land a crucial additional economic resource for the sustainability of community households.

The collected data were analyzed qualitatively using interactive analysis techniques, including data reduction, data presentation, and conclusion drawing (Miles, 2014). To enhance validity, this study employed triangulation of sources and methods. The analysis of program effectiveness was based on indicators of ecosystem balance (such as vegetation cover, water source stability, and reduced land degradation) and community welfare indicators (income increase, business diversification, food security, and strengthening local institutions). This approach enabled a comprehensive evaluation of program achievements from both ecological and socio-economic perspectives.

Result and Discussion

Implementation and Effectiveness of the CBFM Program in Maintaining Ecosystems in the Purwokerto Region

Forest management on the island of Java has a long history.

Initially, management adopted a police approach (security approach), but in line with changes in the social environment, it shifted to a welfare approach (propriety approach). Perum Perhutani's forest management began in 1974 with a welfare approach through the Mantri Lurah program. In 1982, it evolved into the Forest Village Community Development Program (PMDH), and in 1986, Social Forestry was established.

In line with rapid population growth and political, cultural, and social reforms, Perum Perhutani modified and refined its forest resource management model. The paradigm shift was implemented from Timber Management and State-Based Management to Community-Based Forest Management. As a manifestation of this change, Perum Perhutani adopted the Community-Based Forest Management (CBFM) approach in 2001. CBFM is a forest resource management system by Perum Perhutani involving forest village communities and/or other parties, implemented with a spirit of

sharing to achieve optimal and proportional sustainability of forest resource functions and benefits.

Community involvement in forest management is based on several laws and regulations, ranging from statutes to decrees issued by the Head of the Perum Perhutani unit. The primary legal framework for forest management is Law Number 41 of 1999 concerning Forestry and Government Regulation Number 72 of 2010 concerning the State Forestry Public Company (Perum). These regulations serve as the primary framework for forest management.

Technically, these two regulations are elaborated in various policies. These include the Minister of Forestry Regulation Number 01/Menhut-II/2004 concerning Empowerment of Local Communities in and/or around Forests, and the Minister of Forestry Instruction Number Ins. 01/Menhut-II/2004 concerning Joint Forest Management with the Community (PHBM) in Java. Internally, Perum Perhutani, as the institution

authorized to manage forests on the island of Java, also issued Supervisory Board Decree No. 136/Kpts/Dir/2001 concerning Joint Community Forest Resource Management and Board of Directors Decree No. 001/Kpts/Dir/2002 concerning Forest Product Sharing Guidelines. These provisions serve as technical guidelines for Forest Management Unit officials across several regions, regulating management mechanisms and profit-sharing schemes.

To strengthen the legal basis for joint community forest management around forests in Central Java, the Governor of Central Java has also issued several related regulations. These regulations include Central Java Governor Decree No. 24 of 2001 concerning Joint Community Forest Resource Management in Central Java Province, Central Java Governor Decree No. 522/21/2002 concerning the Establishment of the Central Java Province PHBM Communication Forum, and Decree of the Head of Perum Perhutani Unit I Central Java No. 2142/Kpts/I/2002

concerning Guidelines for PHBM Implementation in Unit I Central Java. These policies serve as the legal basis for local governments to implement and support community-led forest management at the local level.

The implementation of the CBFM Program in the Purwokerto area is part of Perum Perhutani's collaborative forest management policy, carried out through the East Banyumas Forest Management Unit (KPH). This program is designed as a partnership-based forest management approach that involves forest village communities as key actors in protecting, utilizing, and rehabilitating production forest areas. Three villages in the Purwokerto area were selected for study due to their high CBFM intensity: Melung Village, Karangsalam Village, and Baseh Village. All three villages directly border production forest areas and have a significant economic dependence on forest resources.

Forests must have ecological, social, and economic functions

(Addas, 2023; Agung et al., 2025). Based on this, the CBFM program is expected to have ecological, social, and economic impacts (Baral et al., 2025). Ecological impacts include maintaining ecological balance, promoting environmental conservation in damaged forests, reducing erosion, landslides, and flooding, and promoting sustainable forestry and water security (Mishra et al., 2021; Zhang et al., 2024). Social impacts include reducing forest vulnerability, improving the well-being of forest village communities through the sharing of forest products (such as tapping, logging, and tourism), and creating employment (Kyere-boateng & Marek, 2021; Toumbourou et al., 2025). Economic impacts, such as productive businesses, additional food crops (planting under trees such as coffee and herbs), and financial resources, revolve around forest village communities (Arce, 2019; Herwanti et al., 2019; Sudomo et al., 2023).

Within the CBFM program, Perum Perhutani and the Forest

Village Community (MDH) have their respective rights and responsibilities. Perum Perhutani and stakeholders have the right to develop CBFM plans, implement them, monitor, and evaluate the benefits of the activities, in accordance with the value and proportion of the contributed production factors. Meanwhile, MDH, together with Perum Perhutani and stakeholders, is obligated to protect and preserve the forest and its benefits by contributing production factors in line with their capabilities. Perum Perhutani has an obligation to the Forest Village Community Institution (LMDH) to facilitate and fulfill wage payments for the work/contributions agreed upon in the PHBM. Perum Perhutani, together with MDH, established the LMDH as its working partner. They also established forest villages for communities living around the forest, based on the nearest plots and within their respective forest management resort areas.

Empirical data show that CBFM significantly improves the ecological condition of forest areas. According to the Banyumas Forest Management Unit (KPH) report for the 2018–2024 period, vegetation cover increased from 72% to 84%, a 12% increase. During the same period, the area of critical land decreased from 145 hectares to 92 hectares (a 36.5% decrease), while illegal logging cases decreased from 18 to 6 cases per year. This ecological improvement is particularly evident in the forest areas around Melung and Karangsalam Villages, which previously experienced significant land use pressure. The rehabilitation program involves planting hardwood trees combined with agroforestry or intercropping systems.

83% of respondents were involved in tree planting activities, and 76% in forestry tree maintenance. This high level of involvement demonstrates that communities are no longer positioned as policy objects but rather as conservation actors with a

direct stake in forest success. Community-based monitoring is also a crucial factor. Approximately 61% of respondents reported participating in informal forest patrols. The geographic and social proximity of communities to forest areas makes this monitoring system more responsive than purely administrative oversight. The significant reduction in illegal logging cases demonstrates the effectiveness of the participatory monitoring model.

In addition to physical ecological indicators, changes are also evident in the community's level of environmental awareness. Interviews with residents of Baseh Village indicate a shift in perceptions of forests. While previously viewed solely as a freely exploitable economic resource, people are now beginning to understand their ecological functions, such as supporting water systems and protecting agricultural crops. However, participation in conservation training activities remains relatively low, at around

54%. This indicates that community ecological awareness remains strongly correlated with the economic benefits received; in other words, conservation motivation tends to be pragmatic-economic, not fully based on intrinsic ecological awareness.

This low participation may be due to several factors, including limited access to training (in terms of information, time, and cost), suboptimal program design that integrates economic needs with ecological education, and the influence of local norms that still view forests as a primary source of livelihood. Furthermore, a less participatory outreach approach also has the potential to prevent communities from feeling full ownership of the program.

The implication for the effectiveness of CBFM is that the program's sustainability remains vulnerable if economic incentives are reduced. Reliance on economic motivations can limit the internalization of long-term conservation values, preventing

efforts to maintain ecosystem balance from being fully rooted in collective consciousness. Therefore, strengthening empowerment strategies that focus not only on economic benefits but also on capacity building, access to training, and the formation of ecological values and norms at the community level is necessary.

The Impact of CBFM on the Welfare of Local Communities

Community-Based Forest Management (CBFM) is a forest resource governance approach that positions local communities as key actors in the planning, utilization, monitoring, and conservation of forests (Frimadani, 2020). Within the framework of sustainable development, CBFM aims not only to maintain ecosystem sustainability but also to improve the well-being of communities living around forest areas (Mengie, 2025). In this context, well-being is not defined solely by increased income but encompasses economic, social, institutional, ecological, and even psychological and cultural dimensions. Therefore,

the impact of CBFM on local community well-being must be understood holistically and multidimensionally.

The implementation of CBFM has been proven to significantly improve the economic well-being of forest village communities. Economically, CBFM provides communities with legal access to manage and utilize forest resources in a planned and sustainable manner (Mengie & Szemethy, 2025). This access opens up opportunities for household income diversification through the development of non-timber forest products such as honey, sap, medicinal plants, and forest fruits, as well as through agroforestry practices that combine forestry plants with food crops or horticulture. This diversification reduces community dependence on a single source of income and increases family economic resilience. When communities have multiple sources of income, the economic risks of crop failure or market price fluctuations can be minimized.

Before participating in the program, the average household income of respondents was IDR 1,270,000 per month. After participating in the CBFM, this income increased to IDR 2,400,000 per month, an increase of approximately 88.9%. This increase came from several primary sources: the intercropping system provided an average additional income of IDR 850,000 per month, while the utilization of non-timber forest products increased from IDR 120,000 to IDR 310,000 per month. Seventy-two percent of respondents stated that CBFM was their primary source of income during the agricultural lean season. This finding suggests that the program serves as an economic protection mechanism for rural communities vulnerable to seasonal fluctuations in agricultural production.

One of the key findings of this study is the reciprocal relationship between economic well-being and the success of forest conservation. Analysis showed that respondents who received an additional income

of at least IDR 800,000 per month had a 85% conservation participation rate, while those with low economic benefits achieved only 49%. These findings demonstrate that ecological sustainability is inseparable from the socioeconomic well-being of communities. CBFM works effectively because it creates a direct link between economic benefits and ecological responsibility.

Despite its positive achievements, the study identified several major obstacles to CBFM implementation:

Table 1:
Obstacles to CBFM implementation

Challenges	Percentage of Respondents
Unstable agricultural product prices	63%
Limited market access	58%
Unequal land distribution	47%
Low women's involvement	41%

Source: Author's analysis, 2026

Dependence on seasonal agricultural commodities means that community incomes are unstable throughout the year. Furthermore, 56% of respondents stated that strategic decisions are still dominated by forest managers, resulting in unequal community participation. This situation indicates that CBFM is still in the transition phase from a top-down approach to a fully collaborative partnership.

From a social perspective, CBFM strengthens community cohesion and solidarity (Marnelly et al., 2025; Riyanto et al., 2025). CBFM requires deliberation, role allocation, and collective responsibility (Ghimire & Lamichhane, 2020; Setiahadhi et al., 2017). This process revitalizes the value of cooperation (gotong royong) and strengthens social capital, which is a crucial foundation for long-term well-being. When communities work together to plant, maintain, and monitor forests, relationships between individuals become stronger and mutual trust increases. Strong social capital

makes it easier for communities to collectively face crises, whether economic crises or natural disasters.

CBFM also contributes to reducing social conflicts that often arise from struggles over access to land and resources (Nugroho, 2021). 81% of respondents reported increased social cooperation among communities through collective forest management activities. With mutually agreed-upon rules and clear benefit-sharing mechanisms, the potential for conflict between communities and forest managers or between communities can be reduced. Certainty of access rights and the distribution of benefits create a sense of justice and reduce social tension. This social stability is a crucial component of well-being, as prolonged conflict often hampers economic activity and undermines the social fabric of communities.

The impact of CBFM on well-being is also closely linked to ecological conditions. Well-maintained forests serve as a buffer for life systems, particularly in maintaining water availability,

preventing erosion, and reducing the risk of flooding or landslides. The stability of water sources significantly impacts agricultural productivity and domestic needs. When forests are managed sustainably, river flow becomes more stable, soil quality is maintained, and the risk of land degradation is reduced.

Conclusion

This study generally concludes that the Community-Based Forest Management (CBFM) program, which involves active community involvement in forest management, monitoring, and maintenance, is effective in improving ecosystem balance and community welfare. CBFM ecologically contributes to increased forest cover, erosion control, water resource sustainability, and the prevention of illegal forest exploitation. From a socio-economic perspective, the CBFM program can improve family economic resilience by diversifying income sources through the utilization of non-timber forest products. CBFM can also foster a

sense of ownership of forest resources and strengthen social capital. The synergy between community economic needs and forest conservation shows that forest environmental preservation can occur simultaneously with improved welfare for communities surrounding the forest. However, to ensure the sustainability of CBFM as a model for forest conservation and improved community welfare, this must be achieved through stronger governance, consistent policies, enhanced human resource capacity, and financial support. In addition, local community institutions must be strengthened, transparency increased, and cross-sectoral policy integration must be carried out.

References

- Addas, A. (2023). Impact of forestry on environment and human health: an evidence-based investigation. *Frontier in Public Health*, 11.
- Agung, A., Sudiana, K. T., Putu, N., Suharyanti, N., & Fitrat, U. (2025). Assessing the Government's Commitment to Achieving Ecological Justice for Society. *Journal of Human Rights, Culture and Legal System*, 5(1), 91-122.
- Arce, J. J. C. (2019). *Forests , inclusive and sustainable economic growth and employment*.
- Arts, B. A. S., & Koning, J. D. E. (2017). Community Forest Management: An Assessment and Explanation of its Performance Through QCA. *World Development*, xx. <https://doi.org/10.1016/j.worlddev.2017.03.014>
- Baral, S., Subedi, S., Ford, R., Rai, R. K., Khanal, B. B., Ojha, S., Tiwari, K. R., Kafle, G., Puri, L., & Rai, D. (2025). Trees , Forests and People Resilience pathways through community- based forest management for navigating the triple planetary crisis. *Trees, Forests and People*, 22(August), 100972. <https://doi.org/10.1016/j.tfp.2025.100972>
- Duguma, L. A., Atela, J., Minang, P. A., Ayana, A. N., Gizachew, B., Nzyoka, J. M., & Bernard, F. (2019). Deforestation and Forest Degradation as an Environmental Behavior : Unpacking Realities Shaping Community Actions. *Land*, 8(2), 1-17. <https://doi.org/10.3390/land8020026>
- Fajar, Nugraha Cahya, J. K. (2019). The Impact of Community-Based Forest Management on Local People around the Forest : Case Study in Forest Management Unit. *Journal of Forest and Environmental Science*, 35(2), 102-114.
- Frimadani, M. R. (2020). The implementation of community-based forest management (CBFM) schemes within the

- protection forest management unit (PFMU) Sijunjung, Indonesia. *Earth and Environmental Science*, 1-10. <https://doi.org/10.1088/1755-1315/583/1/012035>
- Ghimire, P., & Lamichhane, U. (2020). Community Based Forest Management in Nepal: Current Status, Successes and Challenges. *Grassroots Journal of Natural Resources*, 3(2).
- Hansmann, R. (2024). Social, Ecological and Economic Synergies of Forests for Sustainability Contradict Projects Involving Large-Scale Deforestation for Energy Production. *Ecological Civilization*, 1(4).
- Herwanti, S., Febryano, I. G., & Zulfiani, D. (2019). Economic Value Analysis Of Community Forest Food Products In Ngarip Village, Ulu Belu Subdistrict, Tanggamus Regency (A Case From Indonesia). *Forestry Ideas*, 25(2), 314-328.
- Indrajaya, Y., Yuwati, T. W., Lestari, S., Winarno, B., Narendra, B. H., Yudono, H., Hadi, S., Rachmanadi, D., Turjaman, M., Nugroho, N. P., Cahyono, S. A., Wahyuningtyas, R. S., & Prayudyaningsih, R. (2022). Tropical Forest Landscape Restoration in Indonesia: A Review. *Land*, 11(3), 1-37.
- Komalawati, K., Hidayat, S., Praptana, R. H., Pertiwi, M. D., Romdon, A. S., Hidayat, Y., Yuniati, D., Syahyuti, S., Ramadhan, R. P., Saptana, S., & Indrawanto, C. (2023). Community-government, and private partnership (CGPP): revisiting the concept of community-based forest management. *International Forestry Review*, 25(3), 310-326.
- Kumar, M., Nisha, S., & Singh, H. (2018). The role of communities in sustainable land and forest management. In *Forest Resources Resilience and Conflicts* (pp. 305-318).
- Kyere-boateng, R., & Marek, M. V. (2021). Analysis of the Social-Ecological Causes of Deforestation and Forest

- Degradation in Ghana : Application of the DPSIR Framework. *Forests*, 12(4), 1–29.
- Marnelly, T. R., Anggreta, D. K., Yoza, D., & Resdati, R. (2025). Environmental Governance of Community Forests Among Indigenous Communities in Petapahan. *ISEEP*, 05003, 1–8.
- Mengie, T. (2025). The Practice of Community-Based Forest Management in Northwest Ethiopia. *Land*, 14(7), 1–17.
- Mengie, T., & Szemethy, L. (2025). Outcomes of Community-Based Forest Management for Biodiversity Conservation in Northwest Ethiopia. *Forests*, 16(9), 1–19.
- Miles, M. B. and H. A. M. (2014). *Qualitative Data Analysis A Methods Sourcebook*. Arizona State University.
- Mishra, B. K., Kumar, P., Saraswat, C., Chakraborty, S., & Gautam, A. (2021). Water Security in a Changing Environment : Concept . *Water*, 13(4), 1–21.
- Muttaqin, M. Z., Alviya, I., Lugina, M., Almuhayat, F., & Hamdani, U. (2019). Forest Policy and Economics Developing community-based forest ecosystem service management to reduce emissions from deforestation and forest degradation ☆. *Forest Policy and Economics*, 108(May), 101938. <https://doi.org/10.1016/j.forpol.2019.05.024>
- Nugroho, A. W. (2021). Community-Based Forest Management in Indonesia as a Forest Fire Mitigation Strategy in the Threat of Climate Change. *Advances in Biological Sciences Research*, 11, 65–72.
- Pratama, A. A. (2019). Lessons Learned from Social Forestry Policy in Java Forest : Shaping the Way Forward for New Forest Status in ex-Perhutani Forest Area. *Jurnal Ilmu Kehutanan*, 136, 127–136.
- Riyanto, S., Ismail, M. H., & Bidin, S. (2025). Review of Social Capital in The Sustainable Forest Management. *Indonesian Journal of Forestry Research*, 12(2), 233–253.

<https://doi.org/10.59465/ijfr.2025.12.2.233-253>

- Setiahadi, R., Pratiwi, D., & Ratnaningtyas, D. (2017). Deliberation Process Analysis of Community Based Forest Management Policies Implementation in Indonesia. *International Journal on Advanced Science Engineering Information Technology*, 7(3), 1076–1082.
- Sudomo, A., Leksono, B., Tata, H. L., Apriliani, A., Rahayu, D., Umroni, A., Rianawati, H., Setyayudi, A., Mandira, M., Utomo, B., Augusta, L., Pieter, G., Wresta, A., Indrajaya, Y., Rahman, S. A., & Baral, H. (2023). Can Agroforestry Contribute to Food and Livelihood Security for Indonesia ' s Smallholders in the Climate Change Era? *Agriculture*, 13(10), 1–25.
- Toumbourou, T. D., Dunphy, M. B., Mulyani, L., Auwalin, I., Annisa, R., Hartoto, S., Bayu, G., Mandira, M., Utomo, B., Auliya, N., Yasmita, A., Azmal, F., Pitaloka, F., Yasmin, A., Afriyani, A. A., Arisanti, D., Tjawikrama, D., Friedman, R. S., & Rawluk, A. (2025). Social forestry for a good life? The uneven well- - being benefits of Indonesia ' s social forestry scheme. *People and Nature Published*, 7(6), 1443–1463. <https://doi.org/10.1002/pan3.70042>
- Yudono, H., Hadi, S., Indrajaya, Y., Astana, S., Suharti, S., Basuki, T. M., Yuwati, T. W., Putra, P. B., Narendra, B. H., Abdulah, L., Setyawati, T., Krisnawati, H., Saputra, M. H., Lisnawati, Y., Garsetiasih, R., Sawitri, R., Ardie, I., Liannawatty, S., Putri, P., ... Rahmila, Y. I. (2023). A Chronicle of Indonesia ' s Forest Management: A Long Step towards Environmental Sustainability and Community Welfare. *Land*, 12(6), 1–62.
- Zhang, S., Luo, Y., Xiong, K., Yu, Y., He, C., & Zhang, S. (2024). Research Progress on Ecological Carrying Capacity and Ecological Security , and Its

Inspiration on the Forest
Ecosystem in the Karst
Desertification Control. *Forests*,
15, 1-21.