



# How Does the Issue of Social Forestry Affect the Knowledge of the Young Generation? Case Studies from Universities in Indonesia

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## Abstract

*Social forestry has emerged as a key agenda for the Indonesian government, aimed at reducing inequality in forest land tenure, enhancing community welfare, and minimizing conflict. Despite the many challenges of issuing social forestry management permits, specific issues, such as transdisciplinary science, regeneration, and youth engagement as drivers and actors at the site level, have yet to receive adequate attention. This study seeks to address this information gap and contribute to the limited literature available in Indonesia. Our objectives are to understand and assess the need to strengthen students' comprehension of social forestry across various disciplines at Indonesian universities and to analyze the factors that drive a deeper understanding of social forestry among students from diverse fields. Our findings reveal that while a significant portion of students understands social forestry, only a small number of students participate in social forestry activities, both on and off campus. Our statistical analysis indicates that the quality of exposure to information and knowledge about social forestry, regular campus discussions, and supportive university policies for mainstreaming social forestry issues are significant variables that substantially enhance student knowledge and understanding. We recommend bolstering university policy support, particularly within an intergenerational framework, by facilitating discussions with external practitioners and relevant stakeholders, establishing practical learning models, and fostering hands-on experiences in social forestry.*

**Keywords:** knowledge management, intergenerational, transdisciplinary science, youth engagement

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## Introduction

Since the Indonesian government's initiative to accelerate the mainstreaming of social forestry in 2016, as outlined in Minister of Environment and Forestry Regulation (*Permen LHK*) Number 83/2016, significant progress has been made, achieving over 65% of the national target for social forestry areas, totalling 12.7 million ha.<sup>1</sup> This regulation aims to empower local communities by providing legal access to forest resources (Ministry of Environment and Forestry, 2016). However, social forestry continues to face considerable challenges. These include a discrepancy between the government's pace in granting management permits to meet target land areas and the necessary support for effective post-permit management (Resosudarmo et al., 2019). It is characterized by inadequate human resources, limited program funding, and insufficient community assistance (Erbaugh, 2019; Sahide et al., 2020).

To ensure the sustainability of social forestry and its associated welfare benefits, communities must acquire the knowledge, skills, and competencies necessary for effective forest management and conservation (Agrawal & Gibson, 1999; Ragandhi et al., 2021; Kusuma et al., 2023). The goal is to enhance the role of social forestry as the primary

livelihood option for communities living in proximity to the forest (Desmiwati et al., 2021; Veriasa et al., 2023).

For this purpose, youth participation is essential for rekindling interest and fostering enthusiasm for forestry, particularly in decision-making processes of social forestry governance (Sarigumba et al., 2023). Their engagement can lead to innovative ideas and new livelihood opportunities within social forestry areas (Robson et al., 2020). However, many young individuals often perceive a career in forestry as less appealing due to the lower financial returns compared to opportunities in other sectors (KC & Race, 2019; Robson et al., 2020). The influences of capitalism and modernization have shaped individual preferences, creating a competitive landscape that can ultimately undermine intergenerational sustainability, particularly in social forestry (Shahrier et al., 2017).

Only a handful of studies have focused on the younger generation's understanding of social forestry in Indonesia. However, young people are increasingly acknowledged as influential actors, often playing a vital role in the emergence of various social movements (Hartley et al., 2021; Sloan Morgan et al., 2022). Research by Veriasa et al. (2024) indicates that immersing young individuals in intensive,

<sup>1</sup><https://gokups.menlhk.go.id>, Accessed on May 26, 2025

constructive, and innovative learning experiences can significantly enhance their skills, particularly in developing practical and impactful innovations for sustainable forest management. Furthermore, intergenerational studies reveal that students who engage with senior scientists and practitioners acquire valuable pedagogical experience (Trumpower & Goldsmith, 2004; Alcón, 2016). These interactions also provide practical experiences that foster connections and strengthen intergenerational relationships (Douglas, 2024).

Despite the considerable potential of youth, their involvement in resource management, including social forestry, remains limited (Zurba & Trimble, 2014; Msebi & Beukes, 2024). The dilemma of intergenerational sustainability presents a major obstacle to various development initiatives, including the social forestry movement (Timilsina et al., 2022). Therefore, there is an urgent need to investigate how younger generations perceive social forestry and whether they regard it as important for their personal development (Robson et al., 2020). This lack of understanding has led many institutions to underdesign regeneration activities, often reflecting the perspectives of older generations rather than addressing the needs and aspirations of young people (Timilsina et al., 2021).

This study aims to bridge the knowledge gap and contribute to the literature on integrating social forestry within Indonesia's younger generation. Our focus is on understanding the awareness of social forestry among university students. Enhancing conceptual understanding is a key objective of educational interventions and policy reforms (Bisson et al., 2016). The specific objectives of this study are to 1) assess the current level of knowledge and the need for strengthening students' understanding of social forestry across various disciplines at Indonesian universities; 2) Analyze the factors that promote a more profound comprehension of social forestry among students from diverse fields.

The primary research question is, "How does the issue of social forestry affect the knowledge of the younger generation?"

## Methods

**Study area** This study was conducted across 23 districts and

cities, covering 18 provinces: Riau, West Sumatra, Banten, DKI Jakarta, West Java, Central Java, Yogyakarta, East Java, West Kalimantan, South Kalimantan, East Kalimantan, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, West Papua, and Papua. Students from 36 universities, comprising both public and private institutions, participated in this research (Figure 1).

**Data collection** The research was conducted through a survey over 60 days from September to November 2023. A total of 301 students from 36 universities across 18 provinces and 23 districts/cities in Indonesia participated in the study. Of the 301 respondents, 198 (65.8%) were forestry students. The collected data includes SF knowledge, mainstreaming SF on campus in the forestry faculty and across disciplines, media outreach, and student exposure to SF from various sources.

Respondents were chosen through a random sampling method to capture the viewpoints of women and men from diverse academic backgrounds. Data collection was conducted via an online platform utilizing a questionnaire. It aimed to gather information regarding respondents' perceptions and demographic details, featuring open-ended and closed-ended (multiple-choice) questions (Padgett, 2009).

**Analysis** *The understanding of social forestry among cross-disciplinary university students* This analysis utilizes a descriptive qualitative approach, incorporating a binary scoring method (1 = yes and 0 = no) to evaluate respondents' understanding of social forestry. The data analysis employs case studies to elucidate and interpret the phenomena observed. Findings are presented through graphs and charts.

*The driving factors of cross-disciplinary students' understanding on social forestry* Individuals' perceptions significantly shape their behaviors and actions (Allendorf et al., 2019). Both internal and external factors play a crucial role in influencing an individual's perception. Internal factors include personal attributes such as gender, knowledge, cognitive ability, educational background, experience, family economic condition, and motivation (Twongyirwe et al., 2017). External influences encompass various stimuli,

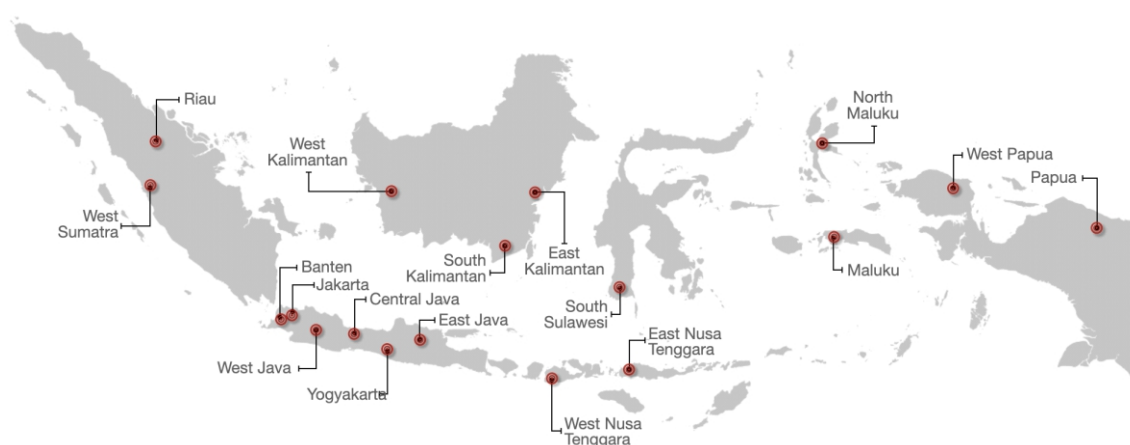


Figure 1 Study area.

including policy contexts such as university policy and management support for SF, cultural backgrounds (for example, the region of the university), past experiences related to similar events (e.g., involvement in SF activities) (Bennett, 2016), and the environmental conditions in which perceptions are formed (Lotrecchiano et al., 2016).

Differences in perception can lead to varied behaviors and actions, which enhance an individual's knowledge and understanding. Moreover, one's level of intelligence and expectations regarding the object or event can also affect these perceptions (Allendorf et al., 2018). The SF knowledge covers 1) the concept (objectives and benefits), the SF policies, the governance (area management, institutional arrangement, and economic management), mainstreaming women and youth, and transdisciplinary science issues (Figure 2).

The analysis utilizes binary logistic regression to determine the factors affecting respondents' knowledge and understanding of social forestry. The variables considered include gender, educational background, exposure, engagement, discussions, practices, media outreach, transdisciplinary issues, and university support. We include educational background and transdisciplinary variables to evaluate whether students from non-forestry disciplines exhibit interest and a basic understanding of social forestry. The equation is as shown in Equation [1].

$$\ln \left( \frac{p}{1-p} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} \quad [1]$$

note: Ln = log natural;  $p$  = the probability of SF understanding (1 = yes; 0 = no);  $X_1$  Gender;  $X_2$  Region;  $X_3$  Forest;  $X_4$  Exposure;  $X_5$  Engagement;  $X_6$  Discuss;  $X_7$  Practices;  $X_8$  Media;  $X_9$  Transdiscipline;  $X_{10}$  University;  $\beta_0$  = constant;  $\beta_1$ – $\beta_5$  = regression coefficient. Descriptions of

the variables are described in Table 1. We used  $\alpha = 0.10$  to evaluate the statistical significance (Sarstedt & Mooi, 2014).

## Results

**An overview of cross-disciplinary students' understanding on social forestry** Among the 301 respondents, a significant proportion were university students aged 17–25, with an equitable distribution of women and men. It reflects a consistent interest in social forestry issues across genders. Notably, 65.8% of the respondents were forestry students, while the remainder came from non-forestry disciplines (see Figure 3c).

The survey revealed that 62.8% of respondents had a solid understanding of social forestry, primarily informed by government agencies, educational institutions, NGOs, industry sources, and media outlets. However, the level of active participation in social forestry activities remained low, with only 23.3% of students engaged in such initiatives on and off campus (refer to Figure 3e).

Additionally, respondents viewed social forestry as a sustainable forest management approach utilized by local or indigenous communities, both within and beyond state forest boundaries. These practices aim to enhance community welfare and environmental benefits while reinforcing social and cultural capital to ensure sustainability for future generations. Key principles of social forestry management encompass community-based management, participatory decision-making, and collaboration among multiple stakeholders (Figure 4).

Figure 4 illustrates that social forestry is essential for promoting environmental and community sustainability. The respondent emphasized that the rights and access granted by the government, especially concerning state forest areas, should enhance community welfare and prioritize forest conservation for future generations. The vital role of women

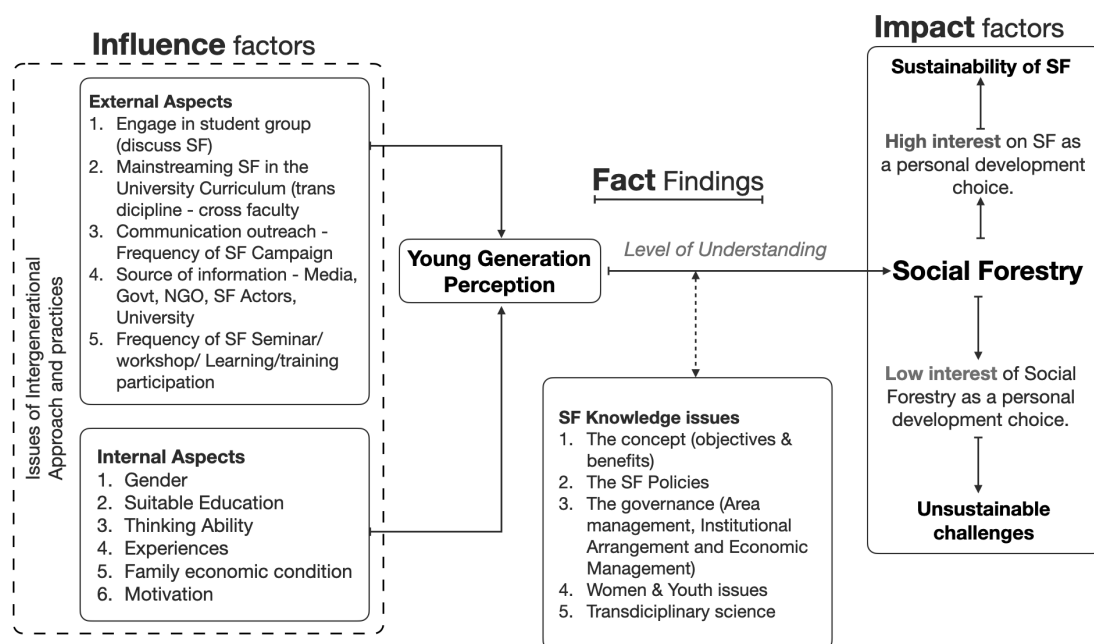


Figure 2 Study framework.

Table 1 Description of analysis variable

| Variable                        | Description                                                                                                                                                                            | Min. | Max. | <i>M</i> | <i>SD</i> |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|----------|-----------|
| Y (p)                           | The probability of cross-disciplinary students' understanding on social forestry. Using an ordinal scale, namely 1 = understand; 0 = do not understand                                 | 0.00 | 1.00 | 0.63     | 0.48      |
| X <sub>1</sub> _Gender          | Gender response on a nominal scale, namely 1 = male; 0 = female.                                                                                                                       | 0.00 | 1.00 | 0.51     | 0.50      |
| X <sub>2</sub> _Region          | Region of the university where the respondent comes from, with category 1 = West Indonesia; 2 = Central Indonesia; 3 = East Indonesia                                                  | 1.00 | 3.00 | 1.62     | 0.52      |
| X <sub>3</sub> _Forest          | Respondent education background with category 1 = forestry student; 0 = non-forestry student                                                                                           | 0.00 | 1.00 | 0.66     | 0.48      |
| X <sub>4</sub> _Exposure        | Cross-disciplinary students' exposure to SF information from various parties. The Dummy variable, namely 1= yes; 0 = no                                                                | 0.00 | 1.00 | 0.83     | 0.37      |
| X <sub>5</sub> _Engagement      | Cross-disciplinary students' involvement in SF activities both on campus and outside campus. The Dummy variable, namely 1 = yes; 0 = no                                                | 1.00 | 4.00 | 1.31     | 0.63      |
| X <sub>6</sub> _Discuss         | SF regular discussion for cross-disciplinary students, with category 1 = not important; 2 = less important; 3 = quite important; 4 = important and urgent                              | 1.00 | 4.00 | 3.51     | 0.59      |
| X <sub>7</sub> _Practices       | The level of importance of SF practice for cross-disciplinary students. The Dummy variable, namely 1 = important; 0 = not important                                                    | 0.00 | 1.00 | 0.81     | 0.39      |
| X <sub>8</sub> _Media           | The level of importance of media outreach regarding SF Information for cross-disciplinary students. Category 1 = not important; 2 = less important; 3 = quite important; 4 = important | 1.00 | 4.00 | 3.55     | 0.58      |
| X <sub>9</sub> _Transdiscipline | A multidisciplinary understanding of SF, using the dummy variable, namely 1 = yes; 0 = no                                                                                              | 0.00 | 1.00 | 0.93     | 0.26      |
| X <sub>10</sub> _University     | University policy and management support for SF. Category 1 = not important; 2 = less important; 3 = quite important; 4 = important                                                    | 1.00 | 4.00 | 2.94     | 0.98      |

$n = 301$ ; Standard error 10% ( $\alpha = 0,10$ ).

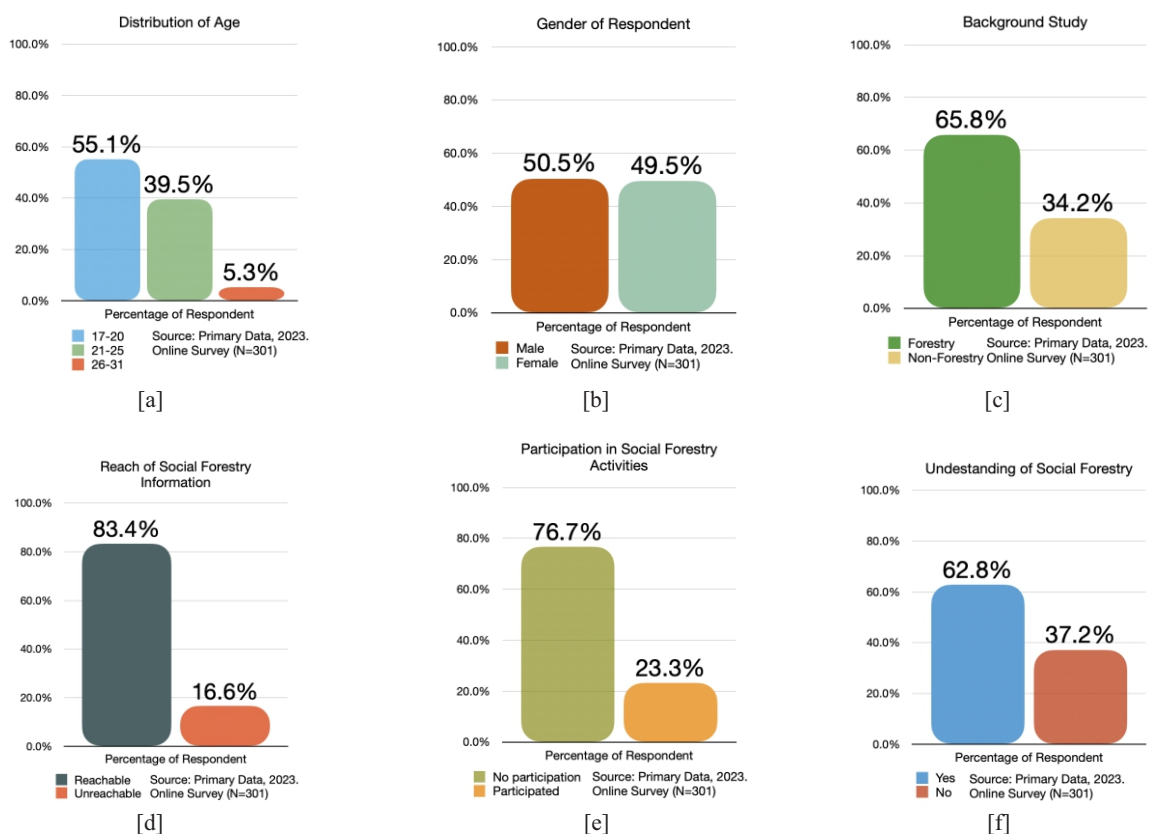


Figure 3 Characteristic of respondent

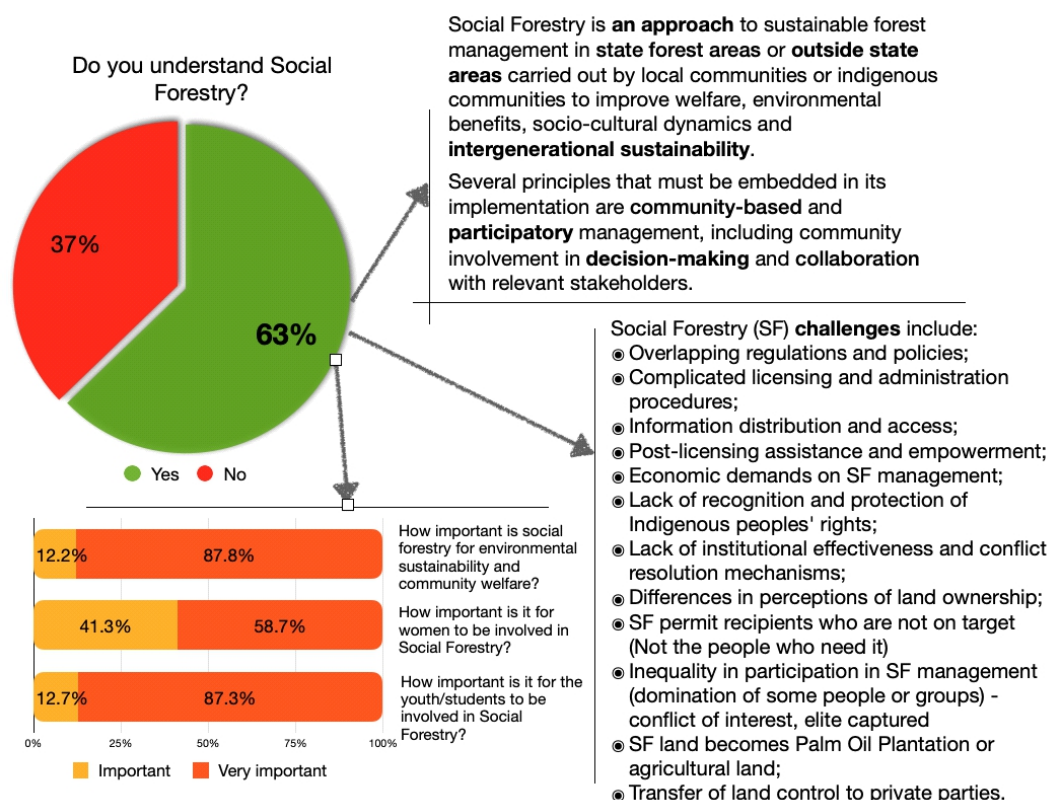


Figure 4 Student perspectives on social forestry.

in managing social forestry was also highlighted, with many respondents noting that women frequently take the lead in decision-making across various aspects of social forestry management. A study by Elias et al. (2024) reveals the implementation of various strategies aimed at tackling gender-related barriers in forestry. By empowering women's decision-making capabilities and increasing their agency, these strategies can enhance their control over resources and influence resource management governance.

Moreover, there is a strong need for active engagement from the younger generation, particularly students, from the beginning to nurture their interest in social forestry and enhance their knowledge and skills. Tackling the challenges faced in social forestry is crucial, as these issues necessitate the involvement of young people. The obstacles and challenges identified by respondents (Figure 4) are in line with the findings of Veriasa et al. (2023) concerning social forestry studies conducted on Java Island. This context also calls for a transdisciplinary approach to address and overcome these challenges effectively. Hence, integrating social forestry into campus learning activities is both essential and beneficial, particularly for the personal development of younger generations. The critical priorities for advancement at the campus level: 1) Disseminating information and enhancing knowledge acquisition; 2) Developing learning models that include discussions with external stakeholders both on and off campus; 3) Creating practical learning environments that promote hands-on experience in social forestry; 4) Leveraging social media to launch impactful campaigns; and (5) Strengthening the role

of transdisciplinary studies in advancing social forestry (Figure 5).

Currently, literacy has broadened its scope in the digital realm, proving to be an effective way for individuals to access information—especially during the COVID-19 pandemic, when everyone can widely access critical updates through social media. This growth in mass communication warrants increased focus on digital literacy education for all users. In this study, respondents identified the four most effective social media platforms for sharing information about social forestry: 1) Instagram, 2) TikTok, 3) podcasts (including YouTube and Spotify), and 4) websites. It is essential to consider the social media preferences of the younger generation when developing effective communication strategies. Ideally, information providers should tailor the content shared on these platforms to meet the knowledge and skill requirements of their audience (Figure 6).

Several appropriate practice models for students should be implemented and developed to engage this demographic effectively (Figure 7). These include 1) internship programs and community mentoring volunteer activities within practitioner organizations, such as NGOs; 2) Hands-on experience in the field (including practical settings) complemented by on-campus class activities; and 3) seminars, workshops, boot camps, training sessions, and site visits to deepen understanding and enhance skills in social forestry.

**The driving factors of cross-disciplinary university students understanding** Table 2 illustrates that the analysis

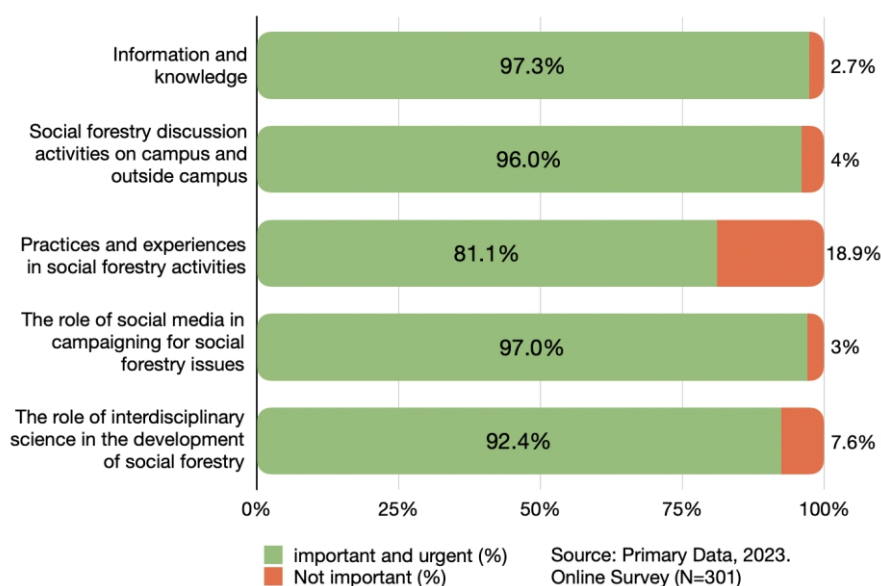


Figure 5 List of priority needs of social forestry capacity building.

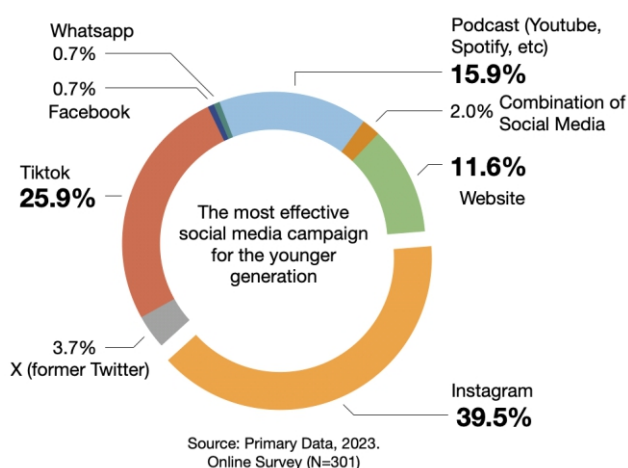


Figure 6 The most effective social media based on respondent perspective.

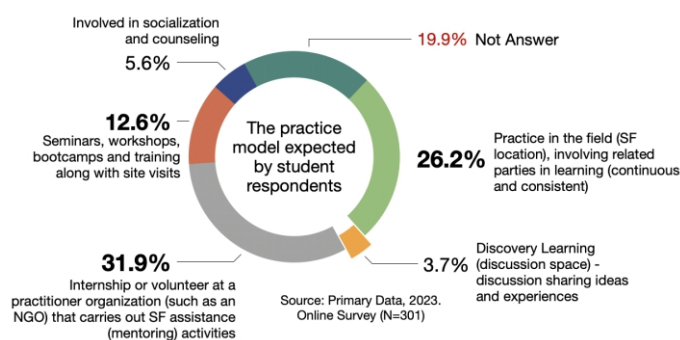


Figure 7 The practice model expected by students.

identifies three key factors significantly influencing understanding of social forestry (SF) at an alpha level of 0.10. These factors include 1) exposure to SF information from diverse sources ( $p$ -value = 0.000), 2) regular discussions about SF among students from various disciplines ( $p$ -value = 0.003), and 3) supportive university policies and management concerning SF ( $p$ -value = 0.035).

Exposure to social forestry information is the most significant variable influencing respondents' understanding of social forestry concepts. This factor enhances the likelihood of understanding SF by an astonishing 58,306 times, indicating that information from trusted sources is crucial for fostering a critical understanding of social forestry among the younger generation.

Furthermore, regular interdisciplinary discussions about SF significantly boost the likelihood of comprehension by 2,378 times. These discussions create an environment conducive to sharing knowledge and experiences related to

SF, particularly in refining skills and practices.

Supportive university policies and management contribute to a 1.4 times increase in the likelihood of understanding SF. These findings emphasize the necessity of enhancing the younger generation's understanding of SF through comprehensive university policies and management. Such frameworks should provide opportunities for interdisciplinary learning and practice, potentially through a competency-based SF curriculum.

## Discussion

In Indonesia, social forestry remains primarily within the realm of forestry science, even though the successful implementation of social forestry requires interdisciplinary contributions (Korhonen et al., 2021). Other scientific disciplines still lack sufficient information and knowledge regarding social forestry. Although it has gained attention within forestry science, some universities still do not offer

Table 2 Binary logistic results

|                        |                                   | Variables in the equation |             |               |          |             |               |                                          |
|------------------------|-----------------------------------|---------------------------|-------------|---------------|----------|-------------|---------------|------------------------------------------|
|                        |                                   | B                         | S.E.        | Wald          | d<br>f   | Sig.        | Exp(B)        | 95% C.I.<br>for<br>EXP(B)<br>Lower Upper |
| Step<br>1 <sup>a</sup> | X <sub>1</sub> _ Gender           | .208                      | .304        | .471          | 1        | .493        | 1.232         | .679 2.233                               |
|                        | X <sub>2</sub> _ Region           | -.259                     |             | .613          | 1        | .434        | .772          | .403 1.476                               |
|                        | X <sub>3</sub> _ Forest           | -.300                     | .384        | .610          | 1        | .435        | .741          | .350 1.572                               |
|                        | <b>X<sub>4</sub>_ Exposure</b>    | <b>4.066</b>              | <b>.771</b> | <b>27.832</b> | <b>1</b> | <b>.000</b> | <b>58.306</b> | <b>12.874 264.062</b>                    |
|                        | X <sub>5</sub> _ Engagement       | .034                      | .239        | .020          | 1        | .888        | 1.034         | .647 1.653                               |
|                        | <b>X<sub>6</sub>_ Discuss</b>     | <b>.866</b>               | <b>.292</b> | <b>8.793</b>  | <b>1</b> | <b>.003</b> | <b>2.378</b>  | <b>1.341 4.215</b>                       |
|                        | X <sub>7</sub> _ Practices        | .590                      | .412        | 2.055         | 1        | .152        | 1.804         | .805 4.043                               |
|                        | X <sub>8</sub> _ Media            | .044                      | .294        | .023          | 1        | .880        | 1.045         | .588 1.860                               |
|                        | X <sub>9</sub> _ Transdiscipline  | .586                      | .634        | .854          | 1        | .355        | 1.796         | .519 6.218                               |
|                        | <b>X<sub>10</sub>_ University</b> | <b>.355</b>               | <b>.168</b> | <b>4.458</b>  | <b>1</b> | <b>.035</b> | <b>1.426</b>  | <b>1.026 1.982</b>                       |
|                        | Constant                          | -7.787                    | 1.594       | 23.859        | 1        | .000        | .000          |                                          |

practical social forestry activities. In institutions that include such practices, many students express that these experiences are insufficient and require enhancement, particularly as vital components for a deeper understanding of the subject. In the context of social forestry, the nuances of social relations and forests can only be comprehensively understood through direct interaction with practitioners in the field (Kheynad et al., 2025).

Our findings suggest that majoring in forestry at university does not necessarily correlate with a robust understanding of social forestry. This research has identified trends of plagiarism related to the definition of social forestry, specifically noting that many respondents share similar narratives about social forestry, which are suspected to result from copying and pasting definitions from the internet without proper citations and explanations. When categorized by age, the respondents are primarily digital natives—those born after 1980—who have been exposed to digital technologies since childhood, including virtual or hybrid classes instituted during the transition to digitalization by the government or due to COVID-19 (Kesharwani, 2020). Despite their early exposure to the internet, virtual learning can sometimes lead to feelings of isolation, limited guidance, and lack of interaction, inhibiting their ability to fully engage with the material presented (Eaton & Christensen Hughes, 2022; Sevnarayan & Maphoto, 2024).

Moreover, consistent engagement with practicing experts is essential for enhancing learning in social forestry (Korhonen et al., 2021). These findings indicate that while the majority of respondents had been exposed to and understood the social forestry, only a small proportion actively participated in it (Figure 3). It suggests that comprehension of social forestry remains mainly implicit and is not yet robust (Kheynad et al., 2025). There is a clear need for a dynamic and effective process of intergenerational knowledge transfer from seasoned practitioners to younger generations (Cristancho & Vining, 2009; Maleknia et al., 2024), as social forestry demands meaningful practice and involvement.

Our statistical model indicates that a robust understanding, more interactive learning approaches that cater to generational shifts and differences, and policy support are

crucial elements in the intergenerational learning framework (Cristancho & Vining, 2009). This research reveals that young individuals prefer receiving information through social media campaigns, favoring four platforms: Instagram, TikTok, podcasts (such as YouTube, Spotify, and others), and websites. This preference stems from advancements in technology and enhanced access to the internet (Vitvitskaya et al., 2022). Nevertheless, face-to-face discussion spaces remain vital for knowledge and experience exchange, as they bridge the gap between reality and imagination, allowing individuals to express themselves alongside others (O'Neill & Viljoen, 2021; Tong et al., 2023). Knowledge and engagement alone cannot foster interest in sustainable resource management without comprehensive technical, financial, and policy support (Kheynad et al., 2025)—particularly university policies that facilitate intergenerational knowledge transfer.

Our study may reflect the need to embrace the limitation of the forestry sector in delivering social forestry to the youth. This can be started by breaking up the silo in the forestry sector itself through minimizing co-optation against other studies such as conservation, mining, etc. Such co-optation can lead to a resistance to sharing information, which will create an ambiguity among youth (Chua et al., 2020; Igbinenikaro et al., 2024).

## Conclusion

The majority of student respondents have been introduced to and possess a basic understanding of social forestry; however, their comprehension remains somewhat incomplete. This study identifies several key factors that can enhance young people's understanding of social forestry at universities. These factors include access to reliable information sources through effective use of social media favored by young people (exposure to SF), regular discussions that foster an environment conducive to sharing knowledge and experiences, and supportive university policies that encourage interdisciplinary learning and practice. To effectively mainstream social forestry within the university, policy and communication strategies must incorporate the findings of this study.

## Recommendation

We recommend advancing university policy development through three key strategies: 1) creating a cross-disciplinary, competency-based SF curriculum, 2) fostering collaborative learning and ongoing discussions among students, policymakers, and practitioners, and 3) enhancing knowledge and skills by utilising the "Merdeka Belajar Kampus Merdeka" (Freedom of Learning) initiative, which includes a national internship curriculum in collaboration with relevant NGOs, civil society organizations, or practitioners.

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## References

- Agrawal, A., & Gibson, C. C. (1999). Enchantment and disenchantment: The role of community in natural resource conservation. *World Development*, 27(4), 629–649. [https://doi.org/10.1016/S0305-750X\(98\)00161-2](https://doi.org/10.1016/S0305-750X(98)00161-2)
- Alcón, A. I. M. (2016). Who learns from whom? Building up intergenerational bridges through service learning. *Procedia-Social and Behavioral Sciences*, 228, 470–475. <https://doi.org/10.1016/J.SBSPRO.2016.07.072>
- Allendorf, T. D., Radeloff, V. C., & Keuler, N. S. (2019). People's perceptions of protected areas across spatial scales. *Parks*, 25(1), 25–38. <https://doi.org/10.2305/IUCN.CH.2019.PARKS-25-1TDA.en>
- Allendorf, T. D., Swe, K. K., Aung, M., & Thorsen, A. (2018). Community use and perceptions of a biodiversity corridor in Myanmar's threatened southern forests. *Global Ecology and Conservation*, 15, Article e00409. <https://doi.org/10.1016/j.gecco.2018.e00409>
- Bennett, N. J. (2016). Using perceptions as evidence to improve conservation and environmental management. *Conservation Biology*, 30(3), 582–592. <https://doi.org/10.1111/cobi.12681>
- Bisson, M. -J., Gilmore, C., Inglis, M., & Jones, I. (2016). Measuring conceptual understanding using comparative judgement. *International Journal of Research in Undergraduate Mathematics Education*, 2(2), 141–164. <https://doi.org/10.1007/s40753-016-0024-3>
- Chua, L., Harrison, M. E., Fair, H., Milne, S., Palmer, A., Rubis, J., Thung, P., Wich, S., Büscher, B., Cheyne, S. M., Puri, R. K., Schreer, V., Stępień, A., & Meijaard, E. (2020). Conservation and the social sciences: Beyond critique and co-optation. A case study from orangutan conservation. *People and Nature*, 2(1), 42–60. <https://doi.org/10.1002/pan3.10072>
- Cristancho, S., & Vining, J. (2009). Perceived intergenerational differences in the transmission of traditional ecological knowledge (TEK) in two Indigenous groups from Colombia and Guatemala. *Culture and Psychology*, 15(2), 229–254. <https://doi.org/10.1177/1354067X09102892>
- Desmiwati, D., Veriasa, T. O., Aminah, A., Safitri, A. D., Agus, K., Wisudayati, T. A., Royani, H., Dewi, K. H., & Ikfal, S. N. (2021). Contribution of agroforestry systems to farmer income in state forest areas : A case study of Parungpanjang, Indonesia. *Forest and Society*, 5(1), 109–119. <https://doi.org/10.24259/fs.v5i1.11223>
- Douglas, A. (2024). “Collaborators”, “Guides”, “Facilitators”, and “Advocates”: Using a spatial lens to understand the roles of NGO practitioners in supporting youth participation. *Journal of Applied Youth Studies*, 7, 291–308. <https://doi.org/10.1007/s43151-024-00120-7>
- Eaton, S. E., & Christensen Hughes, J. (2022). Academic integrity in Canada: Historical perspectives and current trends. In: S. E. Eaton, J. Christensen Hughes (Eds.), *Academic integrity in Canada. Ethics and integrity in educational contexts* (vol 1. pp. 3–24). Springer, Cham. [https://doi.org/10.1007/978-3-030-83255-1\\_1](https://doi.org/10.1007/978-3-030-83255-1_1)
- Elias, M., Zaremba, H., Tavenner, K., Ragasa, C., Paez Valencia, A. M., Choudhury, A., & de Haan, N. (2024). Towards gender equality in forestry, livestock, fisheries and aquaculture. *Global Food Security*, 41, Article 100761. <https://doi.org/10.1016/j.gfs.2024.100761>
- Erbaugh, J. T. (2019). Responsibilization and social forestry in Indonesia. *Forest Policy and Economics*, 109, Article 102019. <https://doi.org/10.1016/j.forpol.2019.102019>
- Hartley, J. M., Stevenson, K. T., Peterson, M. N., Busch, K. C., Carrier, S. J., DeMattia, E. A., Jambeck, J. R., Lawson, D. F., & Strnad, R. L. (2021). Intergenerational learning: A recommendation for engaging youth to address marine debris challenges. *Marine Pollution Bulletin*, 170, Article 112648. <https://doi.org/10.1016/J.MARPOLBUL.2021.112648>
- Igbinenikaro, O. P., Olugbenga, A. O., & Etukudoh, E. A. (2024). Fostering cross-disciplinary collaboration in offshore projects: Strategies and best practices. *International Journal of Management & Entrepreneurship Research*, 6(4), 1176–1189. <https://doi.org/10.51594/ijmer.v6i4.1006>
- KC, B., & Race, D. (2019). Outmigration and land-use change: A case study from the Middle Hills of Nepal. *Land*, 9(1), Article 2. <https://doi.org/10.3390/land9010002>
- Kesharwani, A. (2020). Do (how) digital natives adopt a new technology differently than digital immigrants? A

- longitudinal study. *Information & Management*, 57(2), Article 103170. <https://doi.org/10.1016/J.IM.2019.103170>
- Kheynad, Wulandari, C., Puspasari, E., & Budiono, P. (2025). Correlation of knowledge and community participation in land conservation-based agroforestry: A case study in Tanjung Agung Village, Lampung. *Jurnal Belantara*, 8(2), 217–225. <https://doi.org/10.29303/jbl.v8i2.1117>
- Korhonen, J., Miettinen, J., Kylkilahti, E., Tuppur, A., Autio, M., Lhtinen, K., Ptri, S., Pekkanen, T. L., Luhas, J., Mikkil, M., Linnanen, L., Ollikainen, M., & Toppinen, A. (2021). Development of a forest-based bioeconomy in Finland: Insights on three value networks through expert views. *Journal of Cleaner Production*, 299, Article 126867. <https://doi.org/10.1016/j.jclepro.2021.126867>
- Kusuma, A. F., Sahide, M. A. K., Purwanto, R. H., Ismariana, E., Santoso, W. B., Wulandari, E., & Maryudi, A. (2023). Emergent institutional issues from new tenure reforms and social-forestry initiatives in Indonesia: Notes from the field. *Forest and Society*, 7(2), 450–466. <https://doi.org/10.24259/fs.v7i2.28319>
- Lotrecchiano, G. R., Mallinson, T. R., Leblanc-Beaudoin, T., Schwartz, L. S., Lazar, D., & Falk-Krzesinski, H. J. (2016). Individual motivation and threat indicators of collaboration readiness in scientific knowledge producing teams: a scoping review and domain analysis. *Heliyon*, 2(5), Article e00105. <https://doi.org/10.1016/j.heliyon.2016.e00105>
- Maleknia, R., Azizi, R., & Hlliřan, A. F. (2024). Developing a specific model to exploring the determinant of individuals' attitude toward forest conservation. *Frontiers in Psychology*, 15, Article 1481087. <https://doi.org/10.3389/fpsyg.2024.1481087>
- Ministry of Environment and Forestry. (2016). *The Regulation of Minister of Environment and Forestry Republic Indonesia Number P.83 Year 2016 concerning Social Forestry*. JDIH. <https://peraturan.bpk.go.id/Details/163479/permen-lhk-no-83-tahun-2016>
- Msebi, M., & Beukes, J. W. (2024). Enhancing youth involvement in community development: A pragmatic strategy for local churches. *Verbum et Ecclesia*, 45(1), Article a2956 <https://doi.org/10.4102/ve.v45i1.2956>
- O'Neill, F., & Viljoen, J. M. (2021). Expanding 'conceptual horizons': A reflexive approach to intercultural pedagogies in higher education. *Language and Intercultural Communication*, 21(5), 572–587. <https://doi.org/10.1080/14708477.2021.1888965>
- Padgett, D. K. (2009). Qualitative and mixed methods in social work knowledge development. *Social Work*, 54(2), 101–105. <https://doi.org/10.1093/sw/54.2.101>
- Ragandhi, A., Hadna, A. H., Setiadi, S., & Maryudi, A. (2021). Why do greater forest tenure rights not enthuse local communities? An early observation on the new community forestry scheme in state forests in Indonesia. *Forest and Society*, 5(1), 159–166. <https://doi.org/10.24259/fs.v5i1.11723>
- Resosudarmo, I. A. P., Tacconi, L., Sloan, S., Hamdani, F. A. U., Subarudi, Alviya, I., & Muttaqin, M. Z. (2019). Indonesia's land reform: Implications for local livelihoods and climate change. *Forest Policy and Economics*, 108, Article 101903. <https://doi.org/10.1016/j.forpol.2019.04.007>
- Robson, J. P., Wilson, S. J., Sanchez, C. M., & Bhatt, A. (2020). Youth and the future of community forestry. *Land*, 9(11), Article 0406. <https://doi.org/10.3390/land9110406>
- Sahide, M. A. K., Fisher, M. R., Erbaugh, J. T., Intarini, D., Dharmiasih, W., Makmur, M., Faturachmat, F., Verheijen, B., & Maryudi, A. (2020). The boom of social forestry policy and the bust of social forests in Indonesia: Developing and applying an access-exclusion framework to assess policy outcomes. *Forest Policy and Economics*, 120, Article 102290. <https://doi.org/10.1016/j.forpol.2020.102290>
- Sarigumba, M. P., Soriano, M., Robson, J. P., Quiviquivi, I., & Cabrera, O. L. (2023). Understanding the role of youth in Indigenous territorial governance. *Frontiers in Environmental Science*, 11, Article 1200434. <https://doi.org/10.3389/fenvs.2023.1200434>
- Sarstedt, M., & Mooi, E. (2014). *Regression analysis. A concise guide to market research: The process, data, and methods using IBM SPSS Statistics*. Springer-Verlag Berlin Heidelberg. <https://doi.org/10.1007/978-3-642-53965-7>
- Sevnarayan, K., & Maphoto, K. B. (2024). Exploring the dark side of online distance learning: Cheating behaviours, contributing factors, and strategies to enhance the integrity of online assessment. *Journal of Academic Ethics*, 22(1), 51–70. <https://doi.org/10.1007/s10805-023-09501-8>
- Shahrier, S., Kotani, K., & Saijo, T. (2017). Intergenerational sustainability dilemma and the degree of capitalism in societies: a field experiment. *Sustainability Science*, 12(6), 957–967. <https://doi.org/10.1007/s11625-017-0447-z>
- Sloan Morgan, O. V., Thomas, K., & McNab-Coombs, L. (2022). Envisioning healthy futures: Youth perceptions of justice-oriented environments and communities in Northern British Columbia Canada. *Health & Place*, 76, Article 102817. <https://doi.org/10.1016/J.HEALTHPLACE.2022.102817>
- Timilsina, R. R., Kotani, K., Nakagawa, Y., & Saijo, T.

- (2021). Concerns for future generations in societies: A deliberative analysis of the intergenerational sustainability dilemma. *Journal of Behavioral and Experimental Economics*, 90, Article 101628. <https://doi.org/10.1016/j.socec.2020.101628>
- Timilsina, R. R., Kotani, K., Nakagawa, Y., & Saijo, T. (2022). Intragenerational deliberation and intergenerational sustainability dilemma. *European Journal of Political Economy*, 73, Article 102131. <https://doi.org/10.1016/j.ejpoleco.2021.102131>
- Tong, Y., Pang, L., Sun, M., & Han, J. (2023). Detection of multi-dimensional driving forces of public environmental concern in China: Based on spatial heterogeneity perspectives. *Chinese Geographical Science*, 33(6), 1109–1126. <https://doi.org/10.1007/s11769-023-1378-5>
- Trumpower, D. L., & Goldsmith, T. E. (2004). Structural enhancement of learning. *Contemporary Educational Psychology*, 29(4), 426–446. <https://doi.org/10.1016/J.CEDPSYCH.2004.02.001>
- Twongyirwe, R., Bithell, M., Richards, K. S., & Rees, W. G. (2017). Do livelihood typologies influence local perceptions of forest cover change? Evidence from a tropical forested and non-forested rural landscape in western Uganda. *Journal of Rural Studies*, 50, 12–29. <https://doi.org/10.1016/j.jrurstud.2016.12.009>
- Veriasa, T. O., Aliviani, A., Imron, N. A., Yulianto, F. D., & Cantika, F. S. P. (2024). *Berpikir & bertindak untuk perubahan bermakna: Menakar dampak Sekolah Sosial Forestri (SESORE)* (1st ed.). IPB Press.
- Veriasa, T. O., Daxoko, B. T., Imron, N. A., Kosar, M., & Santosa, A. (2023). Memperbaiki kinerja perhutanan sosial menuju keberlanjutan hutan jawa. *Policy Brief Pertanian, Kelautan dan Biosains Tropika*, 5(4), 17–28. <https://doi.org/10.29244/agro-maritim.5.4.17-28>
- Vitvitskaya, O., Suyu-Vega, J. A., Meneses-La-Riva, M. E., & Fernández-Bedoya, V. H. (2022). Behaviours and characteristics of digital natives throughout the teaching-learning process: A systematic review of scientific literature from 2016 to 2021. *Academic Journal of Interdisciplinary Studies*, 11(3), 38–49. <https://doi.org/10.36941/ajis-2022-0066>
- Zurba, M., & Trimble, M. (2014). Youth as the inheritors of collaboration: Crises and factors that influence participation of the next generation in natural resource management. *Environmental Science & Policy*, 42, 78–87. <https://doi.org/10.1016/J.ENVSCI.2014.05.009>