

CHAPTER V. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

1. This study highlights the vital role of provisioning and regulating services in sustaining Batang Toru farmers' livelihoods. Agroforestry stands out as a sustainable practice to monoculture, but its potential requires targeted interventions to optimize ES and promote sustainable agriculture.
2. The Total Economic Value (TEV) of ES in this study is estimated at IDR 12,990,971,000, highlighting the significant economic impact of agroforest-based activities compared to monoculture. This higher TEV underscores the economic and sustainability advantages of diversified agroforestry. However, this sample-based estimate reflects only the provision and regulating services analyzed and does not capture the full TEV of the Batang Toru ecosystem, including cultural, supporting services, and the broader landscape and community, requiring further comprehensive evaluation.
3. The study reveals that forest engagement, education, and cultivation practices significantly influence farmers' willingness to pay (WTP) for ES, with regular forest visits and higher education strongly enhancing WTP. Agroforestry practitioners show greater WTP, aligning diversified farming systems with conservation goals. These findings emphasize the need for tailored education programs, support for agroforestry transitions, and efforts to address socio-economic disparities to create inclusive and effective PES programs.
4. The study emphasizes the critical role of Indigenous PES (IPES) in forest conservation and livelihood support in Simardangiang and Simarelong. Integrating IPES with mainstream PES programs, such as carbon payments and certification schemes, could enhance financial sustainability while addressing socio-economic challenges. Success depends on aligning PES programs with local cultural contexts, ensuring transparent benefit-sharing, and engaging community leaders in co-design processes. Strengthening markets and processing capacities for non-timber forest products like benzoin and sugar palm further incentivizes conservation, underscoring the importance of participatory governance and indigenous knowledge in achieving sustainable development.

5.2 Recommendations

1. Promote agroforestry practices for enhanced sustainability and ecological resilience. Tailor strategies to optimize regulating services based on the specific challenges of monoculture and agroforestry in different contexts.
2. Encourage diversified agroforestry practices to maximize economic and sustainability benefits. Incorporate collective preferences into ecosystem service-related decision-making to align policies with community priorities.
3. Support educational initiatives to increase awareness of ES and enhance WTP. Engage frequent forest visitors to engage in conservation programs.
4. Integrate IPES with mainstream PES programs to strengthen conservation efforts and community livelihoods. Foster active community participation in decision-making to incorporate traditional knowledge and ensure inclusive conservation strategies.

