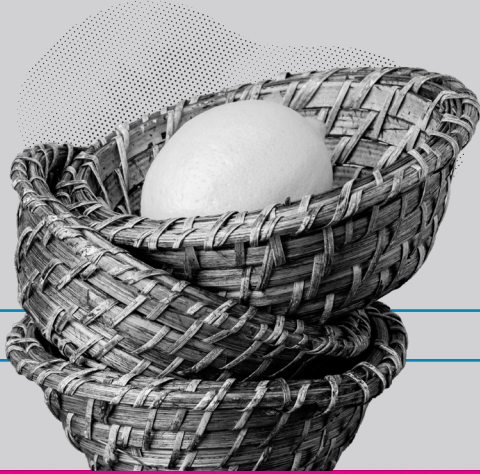


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## project facts

### Key words

Adoption, High-value products, Indonesia, PGS ROLES, Sustainable production

### Behavioral themes

Social proof, Adoption of digital tools, Perceptions regarding Participatory Guarantee Systems (PGS)

### Research design

Qualitative scoping research

### Scope

Start date: April 2023

End date: March 2023

n=24

### Location

East Kalimantan and Central Sulawesi regions in Indonesia

### Partner

Partner: NTFP-EP Indonesia

Funding: Royal Academy of Engineering (RAEng)

### Ethics approval

N/A

# How can farmers producing high-value products in Indonesia be eased into adoption of PGS ROLES and digital tools?

Indigenous forest communities in Indonesia face challenges accessing international markets for products like rattan, honey, and textiles. PGS ROLES, a local certification system that ensures sustainable production through community monitoring. This project with Busara and NTFP-EP Indonesia suggests strengthening of PGS ROLES uptake by integrating indigenous knowledge, leveraging positive producer perceptions to reinforce community collaboration, and engaging youths to drive the digitization of the system.

## Background

In Indonesia, indigenous communities that produce high-value products face significant challenges in accessing international markets. This is due to the lack of a reliable and recognizable system for guaranteeing sustainable production. Despite efforts by PGS ROLES to address this gap, its adoption has been limited due to concerns about its credibility and the perceived additional burden of its documentation process.

This project aims to inform the development of a practical, digitally-enabled system for sustainable product guarantees that will be accepted by the market overseas. By understanding the needs of these communities, identifying barriers to technology adoption, and co-designing a user-friendly system, the project aims to enhance the digitization of the current PGS ROLES process.

## Conducting the research

As part of this process we conducted in-depth interviews with 24 rattan farmers and artisans in East Kalimantan and Central Sulawesi to understand their perceptions of PGS ROLES practices, including verification, documentation, and traceability processes. We identified key barriers and opportunities for digitization, such as digital literacy and connectivity constraints. A collaborative stakeholder workshop then used a human centered design approach to map workflows and co develop practical, community led digital solutions for PGS ROLES implementation.

## Key Research Insights

- » Indigenous knowledge supports compliance with PGS ROLES standards. Traditional practices, like assessing plant readiness by stem and root color, align with PGS guidelines, reflecting sustainable production principles that can be formally integrated to strengthen implementation and monitoring.
- » Rattan producers view PGS ROLES positively, seeing it as strengthening community relationships, supporting collective forest conservation, and improving farmer groups' market bargaining power.
- » Youths are well positioned to drive PGS digitization. Tech-savvy and adaptable, they can adopt digital farming tools and train older farmers, bridging digital literacy gaps and supporting effective system adoption.

## Implications

### For practitioners:

Digital solutions must prioritize mobile accessibility. Applications should be compatible with basic feature phones, function offline, and have simple interfaces for users with limited digital skills.

Practitioners should recognize and integrate indigenous knowledge into policy and program design. Supporting traditional practices that align with PGS ROLES standards can strengthen compliance, improve sustainability outcomes, and ensure that digital systems reflect existing local practices.

### For farmers and artisans:

Community collaboration remains essential. Strengthening relationships and continuing knowledge sharing within farmer and artisan groups will support compliance with PGS ROLES standards. Collective action in sustainable forest management can also improve bargaining power and enhance access to markets.

## Recommendations for future research

Further research should assess the scalability, impact, and long-term sustainability of digital solutions in rattan farming communities. It should also explore ways to simplify emerging technologies and online platforms to ensure they are accessible and usable for farmers with limited digital literacy, supporting wider adoption and effective implementation.

## Further reading

NTFP Sustainable Harvesting and Resource Management Protocol Rattan. (n.d.). [https://ntfp.org/wp-content/uploads/2021/10/ASEAN-NTFP-Protocols\\_Rattan\\_Final101321.pdf](https://ntfp.org/wp-content/uploads/2021/10/ASEAN-NTFP-Protocols_Rattan_Final101321.pdf)

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