

Community-Based Knowledge Transfer and the Sustainability of RSPO Certification among Independent Oil Palm Smallholder in Malaysia

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ABSTRACT

Sustainable certification schemes such as the Roundtable on Sustainable Palm Oil (RSPO) depend on continuous knowledge transfer processes to ensure meaningful compliance among smallholders. However, for independent oil palm smallholders, sustaining certification remains challenging due to limited access to technical knowledge and difficulties in translating global sustainability standards into local practices. This study examines community-based knowledge transfer processes that support the sustainability of RSPO certification among independent smallholders in Malaysia. A qualitative case study design was adopted, involving in-depth interviews with smallholders and key stakeholders, supported by field observations and document analysis. Data were analysed thematically using NVivo 14 to examine how certification knowledge is transferred, translated into locally meaningful practices and operationalized through everyday farming and administrative activities. Findings demonstrate that knowledge transfer is a socially embedded and iterative process rather than a linear flow of information. It occurs through training interactions, peer learning, experiential demonstrations and continuous translation of certification requirements into contextually meaningful practices. These processes enable gradual internalisation of sustainability standards within both farming and administrative routines. However, effectiveness is shaped by uneven participation, literacy constraints and differential access to learning opportunities. The study contributes to sustainability certification and social innovation literature by conceptualising knowledge transfer as a dynamic, relational process that bridges global governance standards and local agricultural practices.

Keyword: RSPO Certification, Knowledge Transfer, Independent Smallholders, Sustainability Certification, Community Learning

INTRODUCTION

The global palm oil industry has become a central site of sustainability governance due to increasing concerns over deforestation, biodiversity loss, climate change and social inequality associated with agricultural expansion. In response to these pressures, sustainability certification schemes have emerged as key regulatory instruments designed to improve environmental performance and strengthen accountability across global supply chains. Among these initiatives, the Roundtable on Sustainable Palm Oil (RSPO) represents one of the most influential transnational certification frameworks, establishing principles and criteria related to environmental protection, social responsibility and traceability in palm oil production. As global demand for certified sustainable palm oil continues to grow, producers are increasingly required to comply with complex standards that demand both technical capacity and institutional readiness (Aziz et al., 2021; Tey et al., 2020).

Despite the widespread adoption of certification schemes, independent oil palm smallholders continue to face persistent structural and practical challenges in meeting certification requirements. Past research consistently highlight barriers such as limited technical knowledge, inadequate documentation practices, financial constraints and weak institutional support systems (Aziz et al., 2021; Abdullah et al., 2022). These challenges are further

compounded by the complexity of certification procedures which often rely on formalized reporting systems and standardized practices that are not easily aligned with the lived realities of smallholder farming. As a result, many smallholders experience a disconnect between global sustainability standards and local agricultural practices, making long-term compliance difficult to sustain.

Within this context, knowledge transfer emerges as a critical mechanism for enabling meaningful participation in sustainability certification. However, knowledge transfer in certification systems cannot be understood as a simple one-way dissemination of technical information. Instead, it is a social learning and iterative process in which knowledge is continuously interpreted, negotiated, and adapted within specific community contexts. Smallholders do not merely receive certification knowledge. They actively reshape and operationalize it through interaction, experience and collective learning. This process is often facilitated by intermediary actors, such as community-based organisations and local coordinators, who translate formal certification requirements into practices that are meaningful and achievable at the farm level (Ahmad Rizal & Md Nordin, 2022). In this sense, knowledge transfer functions as a relational process that bridges global governance frameworks and local agricultural realities.

However, existing literature on sustainable palm oil certification has predominantly focused on adoption determinants, economic implications, and institutional governance structures (Tey et al., 2020; Aziz et al., 2021). While these studies provide important structural insights, they tend to underemphasise the micro-level processes through which certification knowledge is communicated and made operational within smallholder communities. In particular, limited attention has been given to how knowledge is socially produced, translated and embedded into everyday farming and administrative routines. This gap is significant because the sustainability of certification systems does not depend solely on formal compliance mechanisms but also on how knowledge is actively internalised and sustained through community-based learning processes.

Addressing this gap, this study examines the community-based knowledge transfer processes that support the sustainability of RSPO certification among independent oil palm smallholders in Malaysia. Specifically, it explores how certification knowledge is transmitted, interpreted, and operationalized through community interactions, and how intermediary actors facilitate the translation of global sustainability standards into locally meaningful practices. By foregrounding knowledge transfer as a relational and socially embedded process, this study contributes to sustainability certification literature and social innovation scholarship by offering a more nuanced understanding of how global sustainability governance is enacted at the grassroots level.

In this study, knowledge transfer refers to the overall process through which certification knowledge is exchanged among intermediary organisations, farmer associations and independent smallholders. Knowledge translation refers to the process of interpreting and adapting formal certification requirements into locally meaningful and understandable practices. Operationalization refers to the practical application of this translated knowledge through everyday farming and administrative activities that enable sustained certification compliance.

LITERATURE REVIEW

Sustainability Certification and Independent Smallholders

The expansion of the global palm oil industry has intensified international concerns regarding deforestation, biodiversity degradation, greenhouse gas emissions and social inequalities associated with agricultural production. In response to these concerns, sustainability certification systems have emerged as governance instruments intended to regulate production practices and improve accountability across transnational supply chains. Among these initiatives, the Roundtable on Sustainable Palm Oil (RSPO) has become one of the most influential certification frameworks in the palm oil sector, establishing environmental, social and economic standards for sustainable palm oil production. The RSPO certification system promotes principles related to environmental conservation, responsible labour practices, traceability and transparency throughout the supply chain (Aziz et al., 2021; de Vos et al., 2021).

Although sustainability certification aims to create more inclusive and sustainable agricultural systems, independent oil palm smallholders continue to face significant difficulties in achieving and maintaining certification compliance. Unlike organised or scheme smallholders who often receive institutional support from plantation companies or government agencies, independent smallholders frequently operate with limited financial resources, weak organisational structures and inadequate technical capacity. Previous studies indicate that certification systems often assume the existence of standardised administrative capabilities, record-keeping systems and technical knowledge that may not align with the realities of smallholder farming communities (Tey et al., 2022; Abdullah et al., 2022). As a result, many independent smallholders experience exclusion from certification processes due to structural and institutional constraints rather than resistance toward sustainability practices themselves.

Existing research has identified multiple barriers affecting smallholder participation in sustainability certification. Financial costs associated with audits, farm upgrades and compliance procedures remain among the primary obstacles for independent producers (Tey et al., 2022). In addition, limited literacy, poor documentation practices and restricted access to technical information further complicate the certification process. Studies also demonstrate that smallholders often struggle to interpret and operationalize certification standards because these standards are commonly communicated through formalised and bureaucratic mechanisms that are disconnected from local agricultural realities (Aziz et al., 2021; Veriasa et al., 2024).

Recent studies further suggest that the sustainability of certification initiatives cannot rely solely on regulatory enforcement or financial incentives. Instead, long-term certification compliance requires continuous learning processes that support farmers in translating abstract sustainability standards into meaningful and practical actions at the farm level. Nevertheless, much of the current literature on RSPO certification continues to focus primarily on adoption determinants, economic outcomes and institutional governance structures, while giving comparatively limited attention to the social processes through which certification knowledge is communicated, interpreted and sustained among farming communities. This limitation highlights the need for greater scholarly attention toward community-level knowledge dynamics within sustainability certification systems.

Knowledge Transfer in Agricultural Communities

Knowledge transfer refers to the processes through which information, skills, experiences and practices are communicated and shared between individuals or groups. Within agricultural communities, knowledge transfer plays a crucial role in enabling farmers to adopt new technologies, improve farming practices and respond to changing environmental and institutional demands. However, agricultural knowledge transfer is not merely a technical dissemination process. Rather, it involves complex social interactions in which knowledge is continuously interpreted, negotiated and adapted according to local realities and lived experiences (Klerkx & Rose, 2020).

In sustainability certification contexts, knowledge transfer becomes particularly significant because certification standards often contain technical, administrative and environmental requirements that are unfamiliar to independent smallholders. Formal knowledge associated with certification systems typically includes documented procedures, compliance guidelines and reporting mechanisms communicated through training programmes, manuals and workshops. Nevertheless, formalised knowledge alone is often insufficient to ensure meaningful understanding or long-term behavioural change among smallholders. Farmers frequently rely on informal learning processes, including observation, peer interaction and experiential practice, to make sense of certification requirements within their own farming environments (Degli Innocenti & Oosterveer, 2020).

Scholars commonly distinguish between explicit and tacit forms of knowledge in agricultural learning processes. Explicit knowledge refers to codified information that can be formally documented and transmitted through written materials or structured training. In contrast, tacit knowledge is experiential, context-specific and deeply embedded within everyday practices and social relationships. Tacit knowledge is often developed through repeated experience, practical observation and interpersonal interaction, making it difficult to transfer through formal instruction alone. In smallholder agricultural settings, tacit learning frequently occurs through peer discussion, collaborative activities and community engagement, allowing farmers to collectively adapt external knowledge to local conditions (Klerkx & Rose, 2020).

Peer learning and experiential learning have therefore become increasingly recognised as important dimensions of agricultural knowledge transfer. Peer learning enables farmers to exchange experiences, observe successful practices and develop confidence through interaction with other community members who share similar socio-economic and environmental contexts. Experiential learning, meanwhile, allows farmers to internalise knowledge through direct practice, experimentation and reflection. These forms of learning are particularly relevant in sustainability certification because smallholders often require continuous guidance and practical demonstration to operationalize technical standards within their daily farming routines (Degli Innocenti & Oosterveer, 2020)

Agricultural extension systems have traditionally functioned as formal mechanisms for transferring farming knowledge to rural communities. However, contemporary scholarship increasingly critiques top-down extension approaches for treating farmers as passive recipients of information rather than active participants in knowledge creation. Participatory learning approaches have consequently gained greater attention due to their emphasis on collaboration, local engagement and mutual learning. These approaches recognise that farmers actively reinterpret external knowledge according to their cultural values, environmental conditions and practical realities. As a result, knowledge transfer is better understood as a relational and socially embedded process rather than a one-way flow of information.

Within RSPO certification systems, effective knowledge transfer depends not only on the availability of technical information but also on the ability of farmers and supporting actors to translate sustainability standards into locally meaningful practices. This process involves continuous interaction, negotiation and adaptation at the community level. Consequently, understanding how certification knowledge is communicated and embedded within smallholder communities requires attention to the broader social relationships and intermediary mechanisms that facilitate learning and collective participation.

Community-Based Knowledge Intermediaries

Community-based knowledge intermediaries play an important role in making RSPO certification work in real farming settings especially among independent oil palm smallholders. In practice, certification standards are often highly technical, formal and difficult to understand if they are delivered directly from institutions to farmers. Because of this gap, intermediaries act as a bridge between the certification system and the community. They do not simply pass information from one side to another but instead help translate and reshape that knowledge so it becomes more practical and relevant to daily farming activities. In this sense, knowledge transfer is not a straight or one-way process, but something that is continuously adjusted through interaction, discussion and shared experience within the community (Klerkx & Rose, 2020).

In RSPO implementation, this translation role becomes especially important because many requirements such as record keeping, environmental monitoring and compliance documentation can feel unfamiliar or even overwhelming for smallholders. Intermediaries help break these requirements down into simpler steps and often demonstrate how they can be done using existing local practices. This makes certification feel more achievable rather than distant or purely administrative.

At the same time, these intermediaries are not only technical facilitators but also trusted community figures. Their effectiveness depends a lot on how well they are connected to the local community and how much trust they have built over time. Because they often share the same social environment as the farmers, they are able to communicate in a more relatable way and understand the real challenges that smallholders face. This helps create a more comfortable learning environment where farmers are more willing to ask questions, share difficulties, and learn from each other. In many cases, these interactions also encourage peer learning, where farmers learn not only from facilitators but also from fellow community members who are going through similar experiences. Evidence from RSPO smallholder settings shows that such localised support and continuous guidance from intermediary actors are key in helping farmers sustain certification practices in the long run (Veriasa et al., 2024). Overall, this shows that knowledge transfer in RSPO certification is not just about delivering information but about building relationships, trust and shared understanding within the community.

Conceptual Framework: Communities of Practice

This study is informed by the Communities of Practice (CoP) framework developed by Wenger (1998), which views learning as a social process that occurs through participation in shared practices and interactions within a community. Rather than treating knowledge as something that is simply transmitted from experts to recipients, the CoP perspective emphasises that knowledge is created, interpreted and sustained through collective engagement, mutual learning and shared experiences.

The framework is particularly relevant to RSPO certification among independent oil palm smallholders because certification implementation requires continuous interaction among farmers, facilitators and intermediary organisations. Through participation in training activities, peer discussions, farm visits and community meetings, smallholders gradually develop shared understandings of certification requirements and learn how to integrate sustainability practices into their daily farming routines.

From a Communities of Practice perspective, learning occurs through social participation rather than individual knowledge acquisition alone. This framework therefore provides a useful lens for understanding how certification knowledge is translated, shared and sustained within smallholder communities. It also helps explain the importance of peer learning, intermediary support and ongoing community engagement in maintaining long-term certification compliance.

METHODOLOGY

Research Design

This study employed an instrumental qualitative case study design to examine how community-based knowledge transfer supports the sustainability of RSPO certification among independent oil palm smallholders. A qualitative approach was considered appropriate because the study sought to develop an in-depth understanding of the experiences, interactions and learning processes through which certification knowledge is communicated, interpreted and sustained within a real-world community context. Rather than examining certification solely as a technical or institutional process, the study explored how knowledge is socially constructed, translated into local practice and embedded in the everyday routines of smallholders.

An instrumental case study design was adopted because the objective was not merely to describe a particular RSPO-certified community, but to generate a broader understanding of the social processes that sustain certification through community-based knowledge transfer. The selected case represents an information-rich setting in which intermediary organisations, smallholder associations and independent smallholders interact continuously throughout the certification process. Examining these interconnected actors within their natural setting enabled a contextualised understanding of how certification knowledge is transferred, interpreted, negotiated and operationalized over time.

The case study approach is particularly appropriate for investigating complex social phenomena in which the boundaries between the phenomenon and its context are not clearly evident. Since knowledge transfer within sustainability certification is shaped by social relationships, experiential learning and continuous engagement among multiple stakeholders, a case study provides the depth and contextual insight necessary to capture these dynamic processes. This approach also enabled the integration of multiple sources of evidence, including semi-structured interviews, participant observation, and document analysis, thereby strengthening the credibility and analytical rigour of the study through methodological triangulation.

Research Site

The research was conducted in an RSPO- certified independent smallholder cluster located in southern Peninsular Malaysia. The site was purposively selected because it represents an information-rich setting involving RSPO-certified independent smallholders and ongoing community-based certification activities. The area also involves collaboration between smallholder groups and supporting institutions that actively facilitate certification-related programmes and knowledge-sharing activities. This research site provides a relevant context

for examining how certification knowledge is transferred and sustained at the community level. The interaction between intermediary actors, smallholder associations and independent smallholders offers valuable insight into how sustainability knowledge is translated into practical farming and administrative practices within local communities. To maintain confidentiality and protect the identity of participants and organisations involved, the specific location and institutional affiliations are not disclosed in this study.

Informant

Data were collected from 15 informants selected through purposive sampling based on their direct involvement in RSPO certification activities and community-based knowledge transfer processes. Purposive sampling was employed to recruit participants who possessed direct experience with RSPO certification implementation and knowledge transfer activities. Participants were selected to capture multiple perspectives across the certification ecosystem, including intermediary organisations, farmer association representatives and certified independent smallholders. This variation enabled the study to examine knowledge transfer from institutional, organisational and practitioner perspectives. The informants consisted of representatives from a community-based knowledge intermediary organisation, members of a smallholder association and RSPO-certified independent smallholders. Semi-structured interviews were conducted to explore participants' experiences, perspectives and practices related to certification implementation and knowledge-sharing processes. In addition, participant observation was carried out to better understand real-time interactions, training activities, and field practices related to certification implementation. Relevant documents, including training materials, certification records, and organisational reports, were also reviewed to support data triangulation and strengthen the credibility of the findings. Using multiple sources of data allowed the researcher to gain a deeper understanding of how certification knowledge is communicated, interpreted and operationalized within the smallholder community.

Ethical Considerations

Ethical considerations were observed throughout the research process. Prior to data collection, all participants were informed about the purpose of the study, the voluntary nature of their participation and their right to withdraw from the study at any stage without consequence. Informed consent was obtained from all participants before interviews and observations were conducted. To protect participant confidentiality and organisational anonymity, pseudonyms were used during data analysis and reporting, and identifying information was removed from interview transcripts. Audio recordings, field notes and supporting documents were stored securely and accessed only by the research team. These measures were implemented to ensure that participants could share their experiences openly while maintaining their privacy and confidentiality.

Research Positionality

The lead researcher previously worked with the community-based knowledge intermediary organisation involved in this study. This prior experience provided valuable contextual understanding of the RSPO certification process and facilitated access to participants and field activities. However, the researcher acknowledges that such familiarity may introduce potential bias in data interpretation and participant interactions. To address this concern, a reflexive approach was maintained throughout the research process. Continuous reflection was undertaken to ensure that interpretations remained grounded in participants' experiences and narratives rather than the researcher's prior assumptions. Interview transcripts and emerging themes were reviewed repeatedly against the raw data to enhance analytical rigour and minimise subjective interpretation. The credibility of the study was further strengthened through data triangulation involving semi-structured interviews, participant observation and document analysis. These strategies helped ensure a balanced and trustworthy understanding of the community-based knowledge transfer processes that support the sustainability of RSPO certification among independent smallholders.

Data Analysis

All qualitative data were analysed using QSR NVivo 14 through a thematic analysis approach. The analysis involved a systematic and iterative process of coding, categorising, and developing themes from the collected data. The researcher moved repeatedly between the raw data and emerging interpretations to refine

understanding of the knowledge transfer processes occurring within the certification context. The process began with initial coding to identify meaningful segments of data related to certification learning, community interaction, facilitation, and knowledge-sharing practices. These codes were then grouped into broader categories and gradually developed into key themes that reflected the ways certification knowledge is communicated, translated, and sustained among independent smallholders. Triangulation across interviews, participant observation, and document analysis was used to enhance the trustworthiness and consistency of the findings. Overall, the analysis focused on understanding how knowledge related to RSPO certification is socially interpreted, negotiated and operationalized within the local smallholder community.

Data collection continued until thematic saturation was achieved, whereby additional interviews no longer generated substantially new codes, concepts or interpretations related to the community-based knowledge transfer process. Saturation was assessed through continuous comparison of interview transcripts during the coding process in NVivo 14. After the thirteenth interview, no substantially new themes emerged, while the remaining interviews served to confirm and strengthen the consistency of the thematic structure.

FINDINGS AND DISCUSSION

1. Translating Certification Knowledge into Local Practice

The findings reveal that RSPO certification knowledge was initially perceived by many independent oil palm smallholders as complex, technical and difficult to relate to their existing farming practices. Participants frequently described challenges in understanding certification requirements, particularly those involving documentation, record keeping, monitoring procedures and compliance-related administrative tasks. These difficulties reflect the broader challenge of implementing globally standardised sustainability frameworks within local agricultural contexts where farming practices are often guided by experience rather than formal administrative systems.

One participant explained (R1):

“Mula-mula memang susah nak faham apa yang RSPO nak sebab banyak sangat borang dan prosedur. Rasa macam jauh dari cara kita kerja biasa.” (R1)

Translation

“At first, we did not really understand what RSPO wanted because there were many forms and procedures. It felt complicated and different from how we usually manage the farm.” (R1)

This statement illustrates how certification standards may initially appear disconnected from the everyday realities of smallholder farming. Rather than viewing certification requirements as a natural extension of existing agricultural practices, participants often perceived them as external obligations that introduced unfamiliar forms of administration and monitoring. This finding is consistent with previous studies which have shown that sustainability certification schemes frequently require organisational and technical capacities that may not be readily available among independent smallholders (Aziz et al., 2021; Tey et al., 2022).

Participants further explained that understanding improved considerably when certification requirements were demonstrated through practical field-based activities rather than communicated solely through formal training sessions.

As another participant shared (R2):

“Bila dia tunjuk terus di ladang, baru kami faham. Kalau cuma dengar masa kursus, susah nak tangkap.” (R2)

Translation

“When they show it directly in the field, only then we understand. If we just listen during training, it is difficult to grasp.” (R2)

The importance of field demonstrations suggests that knowledge transfer within certification systems is not a straightforward process of information dissemination. Instead, understanding develops through active engagement with practices that allow smallholders to connect abstract sustainability requirements with familiar farming activities. Practical demonstrations helped participants visualise how certification standards could be applied within their own farms, thereby reducing uncertainty and increasing confidence in implementation.

This finding supports the argument of Klerkx and Rose (2020) that agricultural knowledge is socially situated and context dependent. Farmers do not simply absorb technical information but actively interpret and adapt knowledge according to their local circumstances and experiences. Similarly, Degli Innocenti and Oosterveer (2020) found that successful implementation of sustainability certification often depends on farmers' ability to contextualise formal requirements within everyday agricultural practices.

The findings further suggest that certification knowledge undergoes a process of translation before it can be meaningfully integrated into local farming systems. Through continuous interaction with facilitators and fellow farmers, technical requirements were gradually reinterpreted into practical actions that could be incorporated into existing routines. Activities such as record keeping, farm monitoring, and environmental management became easier to implement as participants gained familiarity through repeated practice and observation.

Theoretically, these findings demonstrate that knowledge transfer extends beyond the transmission of certification information. It involves an ongoing process of knowledge translation, through which global sustainability standards are interpreted and adapted into locally meaningful practices before being operationalized in everyday farming activities.

2. Learning through Peer Interaction and Experience

The findings indicate that peer interaction plays a significant role in shaping how independent oil palm smallholders understand, apply, and sustain RSPO certification practices. Although formal training programmes provide an initial introduction to certification requirements, participants consistently emphasised that much of their practical understanding developed through interactions with fellow farmers who shared similar experiences and challenges. Knowledge acquisition therefore occurred not only through structured learning activities but also through ongoing social engagement within the farming community.

One participant explained (R3):

“Kadang-kadang kita lebih faham bila kawan sendiri yang cerita. Dia pun hadapi masalah yang sama, jadi senang nak ikut.” (R3)

Translation

“Sometimes we understand better when our friend explains. They also face the same problems, so it is easier to follow.” (R3)

This finding highlights the importance of peer learning as a mechanism through which certification knowledge becomes more accessible and relevant. Participants often perceived fellow farmers as credible sources of information because they shared similar farming conditions, economic constraints, and practical experiences. As a result, explanations provided by peers were often considered easier to understand than information delivered through formal training sessions. Learning therefore emerged through social interaction and shared experience rather than through individual information acquisition alone.

The findings suggest that peer learning creates opportunities for farmers to collectively interpret certification requirements and exchange practical strategies for addressing implementation challenges. Through conversations, group meetings, and informal discussions, participants were able to observe how others managed documentation processes, complied with sustainability requirements, and adapted certification practices to their local contexts. Such interactions enabled the circulation of practical knowledge that might otherwise be difficult to communicate through formal instruction.

This observation is consistent with the concept of tacit knowledge, which refers to experiential knowledge that is developed through practice and is often difficult to codify or transfer through written materials alone. In agricultural settings, tacit knowledge frequently emerges through observation, participation, and interpersonal interaction (Klerkx & Rose, 2020). The findings therefore suggest that peer learning functions as an important mechanism for transferring tacit knowledge related to certification implementation.

Participants also emphasised the importance of experiential learning in strengthening their understanding of certification practices. Repeated engagement with certification-related activities gradually transformed unfamiliar procedures into routine farming practices.

One participant noted (R4):

“Dulu memang kelam-kabut nak buat rekod, tapi lama-lama jadi biasa bila dah selalu buat.” (R4)

Translation

“At first it was chaotic to do record keeping, but over time it became normal after doing it repeatedly.” (R4)

This statement demonstrates how learning occurs through continuous practice and repetition. Rather than developing understanding immediately after training, participants gradually internalised certification requirements through repeated engagement with compliance activities. Over time, practices such as record keeping, monitoring, and documentation became embedded within daily farm management routines.

The findings support previous research suggesting that experiential learning plays a critical role in facilitating behavioural change within agricultural communities (Degli Innocenti & Oosterveer, 2020). Learning is strengthened when farmers are able to experiment with new practices, observe outcomes, and reflect on their experiences. Through repeated application, certification knowledge becomes embedded within everyday behaviour rather than remaining as abstract information.

This study contributes to sustainability certification literature by demonstrating that the long-term sustainability of certification depends heavily on social learning processes occurring within farming communities. Peer interaction and experiential learning enable smallholders to operationalize translated certification knowledge through repeated practice, peer interaction and experiential learning. These findings highlight that effective knowledge transfer extends beyond training delivery and requires opportunities for collaborative learning, experience sharing, and continuous practice among community members.

Formal Certification Training	Community-based Learning
Workshops	Peer discussion
SOP	Observation
Manuals	Experience
Initial understanding	Continuous reinforcement
Explicit knowledge	Tacit knowledge

Table 1: Comparison between formal and informal learning

The findings indicate that formal certification training serves primarily as the initial mechanism for introducing RSPO requirements, whereas informal community-based learning enables knowledge to be contextualised, reinforced and sustained over time. Rather than functioning as competing approaches, both forms of learning are complementary.

3. The Role of Intermediary Actors in Facilitating Knowledge Transfer

The findings demonstrate that intermediary actors play a central role in facilitating knowledge transfer and supporting the long-term implementation of RSPO certification among independent oil palm smallholders. Participants consistently described certification as a complex process requiring continuous guidance, particularly in relation to documentation procedures, compliance requirements, and sustainability-related practices. Rather than merely disseminating information, intermediary actors actively assisted smallholders in understanding, interpreting, and applying certification knowledge within their everyday farming contexts.

One participant explained (R5):

“Kalau tak ada orang yang guide, memang kami susah nak ikut semua benda ni.” (R5)

Translation

“Without someone guiding us, it would be very difficult to follow all of this.” (R5)

This statement reflects the challenges faced by independent smallholders when engaging with sustainability certification systems that are often characterised by technical language, administrative requirements, and formal compliance mechanisms. Although training programmes provide access to certification information, participants indicated that understanding and implementing these requirements often requires ongoing support beyond formal training sessions. As a result, intermediary actors function as an essential link between certification institutions and farming communities.

The findings further reveal that intermediaries do not simply transfer information from one actor to another. Instead, they engage in a process of knowledge translation whereby certification requirements are interpreted and adapted into forms that are understandable and relevant to local realities. Participants described how facilitators provided practical explanations, assisted with documentation processes, and demonstrated how sustainability requirements could be integrated into existing farming practices. Through these activities, intermediary actors reduced the perceived complexity of certification and enabled smallholders to engage more confidently with compliance procedures.

The effectiveness of these actors was also strongly associated with trust and social proximity. Participants repeatedly emphasised that facilitators were viewed as approachable because they understood local farming conditions and shared similar social experiences.

As one participant noted (R6):

“Kami tak segan nak tanya sebab dia orang pun faham keadaan kami di kampung.” (R6)

Translation

“We are not shy to ask because they also understand our situation in the village.” (R6)

This finding suggests that trust serves as an important mechanism through which knowledge transfer occurs. Farmers were more willing to seek clarification, discuss difficulties, and admit uncertainties when interacting with facilitators who were perceived as familiar and supportive. Such interactions created a learning environment characterised by openness and mutual understanding rather than hierarchical instruction. Consequently, knowledge transfer became a relational process embedded within social relationships rather than a purely technical activity.

This observation aligns with Klerkx and Rose (2020), who argue that knowledge intermediaries play an increasingly important role in connecting diverse actors within agricultural innovation systems. Rather than acting solely as information providers, intermediaries facilitate communication, foster collaboration, and enable the co-production of knowledge among different stakeholders. Similarly, studies on sustainability certification have highlighted the importance of intermediary organisations in helping smallholders navigate institutional

complexities and translate external standards into locally relevant practices (Degli Innocenti & Oosterveer, 2020).

The findings extend this literature by demonstrating that the role of intermediaries extends beyond technical facilitation. Their contribution lies equally in building trust, sustaining engagement, and creating supportive learning environments that enable smallholders to participate meaningfully in certification processes. Knowledge transfer within RSPO certification therefore depends not only on the availability of information but also on the presence of trusted actors capable of bridging institutional requirements and community realities. This highlights the importance of community-based intermediary organisations as critical actors in sustaining certification outcomes among independent smallholders.

4. Sustaining Certification through Continuous Community Engagement

The findings indicate that sustaining RSPO certification requires ongoing community engagement beyond formal training programmes and certification audits. Participants consistently described certification as a continuous process that relies on regular interaction, collective participation, and mutual support among community members. Rather than being maintained solely through institutional monitoring, certification practices were sustained through everyday social relationships and recurring knowledge-sharing activities within the community. Continuous community engagement therefore reinforces knowledge transfer by enabling ongoing knowledge translation and repeated operationalization of certification practices during everyday farming activities.

One participant explained (R7):

“Bila selalu jumpa dan berbincang, kita ingat balik apa yang perlu buat. Kalau tak, mudah lupa.” (R7)

Translation

“When we meet and discuss regularly, we remember what needs to be done. If not, it is easy to forget.” (R7)

This statement highlights the importance of continuous interaction in reinforcing certification-related knowledge. While training programmes may introduce sustainability concepts and compliance requirements, participants suggested that long-term implementation depends on repeated engagement with these ideas through regular discussions and community activities. Certification knowledge therefore remains active not because it is permanently acquired during training sessions but because it is continuously revisited and reinforced through social interaction.

The findings further reveal that various communication platforms contribute to maintaining this process. Regular meetings, informal conversations, farm visits, and digital communication channels such as WhatsApp groups were frequently mentioned as mechanisms through which information, reminders, and experiences were shared among members. These interactions created opportunities for participants to seek clarification, discuss emerging challenges, and exchange practical solutions related to certification implementation. As a result, learning extended beyond formal training settings and became embedded within everyday community life.

Participants also described certification maintenance as a collective rather than individual responsibility. Community members frequently supported one another by sharing knowledge and reminding each other about certification requirements.

One participant stated (R8):

“Kalau ada yang lupa, kita ingatkan. Kita buat sama-sama, bukan sorang-sorang.”(R8)

Translation

“If someone forgets, we remind each other. We do it together, not alone.”(R8)

This finding suggests that community relationships function as an informal support system that reinforces compliance behaviour. Rather than relying exclusively on external monitoring mechanisms, smallholders collectively contribute to maintaining certification practices through mutual encouragement and shared accountability. Such interactions help reduce the burden of compliance on individual farmers while simultaneously strengthening collective commitment to sustainability objectives.

The findings resonate with broader discussions on social learning and collective action within rural development and sustainability initiatives. Previous studies have shown that sustainable agricultural practices are more likely to be maintained when supported by strong social networks and collaborative learning environments (Klerkx & Rose, 2020). Similarly, research on certification systems suggests that long-term compliance depends not only on technical knowledge but also on the social structures that facilitate continued learning and adaptation among participants (Veriasa et al., 2024).

Importantly, the findings suggest that certification sustainability should be understood as a social process rather than merely a regulatory outcome. While audits and compliance mechanisms remain important, the long-term continuation of certification practices appears to depend heavily on the strength of community relationships and the ongoing circulation of knowledge within local networks. Community engagement creates a form of social capital that reinforces participation, strengthens collective responsibility and supports the continuous adaptation of certification practices over time.

This study therefore contributes to sustainability certification literature by demonstrating that the endurance of certification systems is closely linked to community-based learning processes. Certification is sustained not simply through compliance with external standards but through the development of shared understanding, mutual support and collective commitment among community members. These findings highlight the importance of fostering participatory learning environments that enable knowledge to remain active and meaningful long after formal training activities have ended.

CONCLUSION

This study examined the community-based knowledge transfer processes that support the sustainability of RSPO certification among independent oil palm smallholders. The findings demonstrate that sustaining RSPO certification depends not simply on knowledge transfer, but on a continuous process in which certification knowledge is transferred through intermediary networks, translated into locally meaningful practices, and operationalized through repeated community learning and everyday farming routines. The study extends Communities of Practice theory by demonstrating that certification sustainability depends not merely on knowledge dissemination but on the continuous social reproduction of certification practices through community interaction, peer learning and intermediary facilitation. Within sustainability certification literature, the study reconceptualises knowledge transfer as a relational and iterative process that bridges global governance standards with locally embedded agricultural practices. These findings also contribute to social innovation scholarship by illustrating how intermediary organisations create new institutional arrangements that enable collective learning and long-term certification resilience.

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