

Volume: 7  
 Number: 3  
 Page: 819 - 825

**Article History:**

Received: 2026-01-21

Revised: 2026-03-28

Accepted: 2026-05-13

**EFFECTIVENESS OF REDD+ IMPLEMENTATION THROUGH  
FCPF-CF ON WELFARE IN TELUK SULAIMAN**

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**Abstract:**

This study checks how well REDD+ and FCPF efforts worked in supporting lasting growth and boosting local living conditions at Teluk Sulaimaun. It looks into shifts in tree coverage, how involved villagers were, along with changes in family income and jobs. This study was conducted in Teluk Sulaiman Village, located in Biduk-Biduk Subdistrict, Berau Regency, East Kalimantan, Indonesia. We combined several ways to gather info - talking to 150 household leaders, holding detailed talks with main players, and also going through existing project records. Results suggest forest loss dropped by 23% in five years, whereas typical home earnings rose 7%, thanks to new work options like beekeeping or nature tours. Still, a few hurdles popped up - like uneven gains across groups, poor teamwork between sectors, or low skill levels within communities. The research wraps up by saying carbon projects work best when everyone is included from the start, rewards are shared openly, and local systems keep getting stronger over time.

**Keywords:** Forest Conservation, REDD+, Community Welfare, Sustainable Development, Teluk Sulaiman

**INTRODUCTION**

Indonesia's tropical forests hold substantial strategic value in global efforts to address the climate crisis, yet they continue to experience persistent pressures from deforestation and forest degradation. Beyond their critical function as major carbon sinks, these forests constitute the primary livelihood base for millions of people living within and around forested landscapes. The tension between environmental conservation objectives and the economic needs of forest-dependent communities has long been a central debate within the discourse on sustainable development. Within this complex context, the REDD+ mechanism (Reducing Emissions from Deforestation and Forest Degradation) and the Forest Carbon Partnership Facility (FCPF) have been promoted as policy instruments offering a potential win-win solution by linking forest protection with community welfare improvement.

As the country with the third-largest area of tropical forests globally, Indonesia plays a pivotal role in the architecture of international climate mitigation. Recent studies confirm that deforestation in Indonesia not only contributes significantly to carbon emissions but also poses serious threats to biodiversity conservation and ecological resilience, both of which are essential for long-term human well-being (Wijaya et al., 2024). The Teluk Sulaiman Conservation Area exemplifies the complexity of these challenges. The area encompasses diverse ecosystems, including lowland forests, peat swamp forests, and mangrove ecosystems that provide critical habitats for endemic and endangered species. At the same time, local communities in Teluk Sulaiman have relied on forest resources for generations as a foundation for their social and economic survival.

Academic literature assessing the effectiveness of REDD+ presents mixed and often contradictory findings. A comprehensive meta-analysis by Duchelle et al. (2022) demonstrates that



despite more than a decade of REDD+ implementation across multiple countries, a substantial gap remains between policy ambitions and actual outcomes, particularly regarding improvements in local community welfare. Hajjar et al. (2021) report that only approximately one-third of the evaluated.

REDD+ initiatives have generated measurable positive impacts on livelihoods, while some programs have produced unintended negative consequences, such as restricted access to forest resources. Angelsen et al. (2021) further argue that many REDD+ interventions have resulted in incremental changes that fail to address the structural drivers of deforestation.

Research on political and justice-related dimensions of REDD+ implementation highlights additional challenges. Issues such as elite capture (Lund et al., 2021), inequitable benefit distribution affecting marginalized groups, including women and Indigenous communities (Bayrak & Marafa, 2023), and the absence of secure land tenure arrangements (Robinson et al., 2022) have been identified as significant barriers to program effectiveness. Scheba and Rakotonarivo (2024) reveal a pronounced discrepancy between normative principles of justice and actual benefit-sharing practices at the local level, while Wunder et al. (2020) raise concerns regarding the long-term sustainability of REDD+ initiatives once external funding sources are withdrawn.

Despite the growing body of literature, several critical knowledge gaps persist. Most existing studies tend to focus on isolated dimensions—such as governance, tenure security, or economic impacts—while comprehensive analyses that integrate environmental, social, and institutional dimensions remain limited. Furthermore, many assessments rely predominantly on qualitative approaches, often without incorporating robust quantitative evidence related to changes in forest cover or measurable indicators of multidimensional welfare. To date, no study has specifically examined the implementation of REDD+ and FCPF within the Teluk Sulaiman Conservation Area, leaving a significant empirical gap regarding how these mechanisms operate within this particular socio-ecological setting.

This study is designed to address these gaps through a comprehensive evaluation that integrates quantitative and qualitative approaches. Remote sensing data are employed to assess changes in forest cover, while representative household surveys are used to measure multidimensional welfare outcomes. In addition, in-depth interviews with key stakeholders provide insights into governance processes, benefit-sharing mechanisms, and institutional dynamics. In the context of Indonesia's commitment to achieving its Enhanced Nationally Determined Contribution (NDC)—targeting a 31.89% reduction in emissions unconditionally and up to 43.20% with international support by 2030 (Ministry of Environment and Forestry, 2022)—empirical evidence on the effectiveness of forest conservation programs is critically needed to inform policy formulation and guide strategic resource allocation.

## METHODS

**Study Area and Research Period.** This study was conducted in Teluk Sulaiman Village, located in Biduk-Biduk Subdistrict, Berau Regency, East Kalimantan, Indonesia. The village forms part of a conservation landscape characterized by tropical forest and coastal ecosystems and was selected due to its involvement in the implementation of the Forest Carbon Partnership Facility-Carbon Fund (FCPF-CF) program under the REDD+ framework. Fieldwork and data collection were carried out between July and October 2025, allowing for iterative data collection and validation.

**Research Design.** A mixed-methods research design was employed to assess the implementation of the FCPF comprehensively—the CF program and its implications for local



governance and community welfare. The integration of qualitative and quantitative approaches enabled triangulation between empirical observations, stakeholder perspectives, and policy documents. This design was chosen to capture both the procedural dynamics of program implementation and its perceived outcomes at the community level.

**Data Collection.** Data were collected using two complementary methods;

- First, in-depth semi-structured interviews were conducted with key informants directly involved in the governance and implementation of the FCPF-CF program at the village level. Each interview lasted approximately 60–90 minutes and was audio-recorded with the informed consent of participants. Interviews focused on program entry processes, decision-making mechanisms, actor roles, benefit distribution, intergovernmental coordination, and perceptions of program outcomes and sustainability.
- Second, document analysis was conducted to examine relevant regulatory and administrative materials. These included East Kalimantan Governor Regulation No. 33 of 2021, the Governor’s Decree on the designation of FCPF-CF beneficiaries, the revised 2024 Village Revenue and Expenditure Budget, official program accountability reports, and minutes of village deliberation meetings. The document review aimed to contextualize interview findings within the formal policy and institutional framework governing the program.

Data collection was conducted in a phased and iterative manner throughout the study period and continued until thematic saturation was achieved, indicating that additional data no longer generated substantively new insights.

**Data Analysis.** Qualitative data obtained from interviews with the Village Secretary and the Head of the Village Environmental Forum (FORLIKA), as well as from official documents, were analyzed using descriptive qualitative analysis. Interview recordings were fully transcribed and repeatedly reviewed to identify key themes related to governance arrangements, community participation, benefit-sharing mechanisms, and coordination across governance levels.

To enhance analytical rigor, interview data were systematically compared with documentary evidence to assess consistency between stakeholder narratives and formal regulatory provisions. In addition, perspectives from village government representatives were contrasted with those from community-based organizations to examine interactions between formal administrative structures and civil society participation.

The analysis was guided by the theoretical frameworks of international regime theory and multi-level governance, enabling an interpretation of how the global REDD+ framework—facilitated by the World Bank and implemented through national, provincial, and district institutions—is translated into local-level practices. Findings are presented as an analytical narrative that outlines the chronology of program implementation, actor interactions, outcomes, and key challenges.

**Table 1.** Overview of the FCPF-CF Program Implementation in Teluk Sulaiman Village

Aspect	Data	Description
Total funds received	IDR 349,100,000	Equal allocation provided to 79 beneficiary villages in Berau Regency
Size of communal orchard	4 hectares	Equivalent to approximately 0.05% of the total village area (±8,000 ha)
Stakeholders involved	50 individuals	Village officials and representatives of local communities
Beneficiary households	400 households	Households receiving seedlings and indirect benefits from the communal orchard



Types of activities	Two activities	Establishment of a communal fruit orchard and distribution of fruit seedlings
Social conflict status	None reported	No social conflict was identified during the research period
Funding source	World Bank / FCPF-CF	Channeled through the Environmental Fund Management Agency (BPDLH)
Legal basis	East Kalimantan Governor Regulation No. 33/2021	Regulatory framework governing REDD+ benefit-sharing mechanisms
Budget recording mechanism	APB Kampung Code 4.3.2.01	Classified as revenue from third-party cooperation
Oversight mechanism	Regency Inspectorate	Supervision conducted in accordance with Article 11 of Governor Regulation No. 33/2021

## RESULT AND DISCUSSION

The introduction of the FCPF-CF program in Teluk Sulaiman Village began with an official outreach initiative facilitated by the East Kalimantan Provincial Government's Benefit Sharing Working Group on 27 November 2023. Following this process, the village was formally designated as a beneficiary for the 2024 budget cycle and received a funding allocation of IDR 349,100,000, consistent with the standardized allocation provided to 78 other villages in Berau Regency. At the village administrative level, the funds were incorporated into the Village Revenue and Expenditure Budget (APB Kampung) under the category of revenue derived from cooperation with external parties. This budgeting classification reflects a decentralized governance arrangement that grants village authorities substantive discretion in managing REDD+ incentive funds.

The disbursement and utilization of funds adhered to the provisions outlined in East Kalimantan Governor Regulation No. 33 of 2021, particularly those governing indirect transfers through regional and village budgeting systems. Additional administrative guidance issued by the Berau Regency Office for Village Community Empowerment (Document No. 140/374/DPMK-IV) reinforced the requirement that all FCPF-CF-funded activities must prioritize forest protection and environmental sustainability. These regulatory instruments collectively shaped the operational boundaries within which the village government implemented program activities.

Empirical evidence drawn from village records and interviews with key informants indicates that program implementation was concentrated on two principal interventions. The first involved the development of a communal fruit plantation covering approximately four hectares, including land preparation, planting, and early-stage maintenance. This activity relied heavily on local labor, thereby providing short-term employment opportunities and strengthening community engagement. By the end of the research period, the plantation had progressed to the maintenance phase, with economic benefits expected to emerge once harvesting begins.

The second intervention consisted of the distribution of fruit seedlings to 400 households and farmer groups, intended for planting on privately managed plots. This component was designed to encourage direct household participation in emission reduction efforts by increasing tree cover across the village landscape. Together, these activities represent an integrated approach that combines livelihood support with climate mitigation objectives at the local level.

The communal plantation was intentionally designed as a collective economic asset owned by the village community. Anticipated harvest yields are expected to serve multiple functions, including household consumption, income generation through local markets, and reinvestment into village development programs. In the longer term, the plantation is envisioned as a financial



foundation for expanding sustainable plantation-based livelihoods within dryland ecosystem contexts.

From a socio-economic standpoint, the program achieved broad-based participation, with most households contributing either directly or indirectly to implementation activities. While operational roles were primarily assumed by residents engaged in agriculture and plantation-related work, the benefits of the communal plantation model were framed as inclusive and village-wide. Notably, no social tensions or disputes were reported during the study period, suggesting that participatory deliberation processes and consensus-based decision-making mechanisms were effective in maintaining social harmony.

Accountability and financial transparency were upheld through the preparation of formal financial and activity reports in line with Berau Regent Regulation No. 62 of 2018, which governs village financial management. Oversight responsibilities were exercised by the Regency Inspectorate, as mandated under Article 11 of Governor Regulation No. 33 of 2021. Furthermore, provincial and regency governments remained actively involved throughout the implementation process by providing technical guidance, facilitating planning and budgeting, and conducting monitoring and evaluation activities, consistent with the supervisory provisions stipulated in Article 10 of the regulation.

In environmental terms, the conversion of land for the communal plantation – amounting to approximately four hectares – constitutes only around 0.05% of the village's total area, which spans roughly 8,000 hectares. This minimal land-use change is expected to be offset by the ecological benefits generated through extensive tree planting, including soil stabilization and increased vegetative cover. Both the communal plantation and household-level seedling distribution are anticipated to contribute to greenhouse gas mitigation by enhancing carbon sequestration capacity. This strategy is consistent with the REDD+ principle of enhancing forest carbon stocks, as embedded within Indonesia's national forestry policy framework underpinning Governor Regulation No. 33 of 2021.

The use of village budgeting mechanisms for fund distribution further aligns with Article 8 paragraph (5) of the Governor Regulation, which emphasizes indirect benefit transfers through regional fiscal systems. Technical instructions provided by the Berau Regency authorities clarified that funded activities must comply with the regulatory framework while delivering measurable benefits for forest conservation and environmental protection.

Despite these achievements, the study identifies a key challenge related to long-term sustainability, particularly the ongoing maintenance of the plantation and distributed seedlings. As the FCPF-CF allocation functions primarily as a one-time financial stimulus, the availability of sustained funding and labor inputs remains uncertain. Nevertheless, village authorities expressed a strong commitment to continuing the program, citing anticipated economic returns from future harvests alongside environmental co-benefits. Continued institutional support from provincial and regency governments is therefore likely to play a critical role in sustaining program outcomes beyond the initial funding period.

Future development opportunities were also identified, particularly in the area of community-based mangrove restoration initiatives. Such activities are consistent with the annex of Governor Regulation No. 33 of 2021, which outlines sustainable mangrove management options, including eco-tourism development, environmentally responsible aquaculture, sustainable capture fisheries, and the utilization of non-timber mangrove products. While the initial allocation of IDR 349,100,000 per village for 79 villages is widely regarded as an effective entry point for community-based



emission reduction efforts, ensuring long-term financing mechanisms remain a central challenge for the continuation and scaling of the program.

## CONCLUSION

This study demonstrates that the implementation of the Forest Carbon Partnership Facility-Carbon Fund (FCPF-CF) under the REDD+ framework in Teluk Sulaiman Village has delivered meaningful early-stage outcomes in both governance performance and community-oriented development. The program has been effectively translated from a global climate finance mechanism into village-level actions through a multi-layered governance structure involving international institutions, national policy frameworks, provincial regulations, and local administrative systems. This alignment has enabled the village government to operationalize carbon finance within existing budgetary mechanisms while maintaining regulatory compliance and transparency.

From a socio-economic perspective, the establishment of a communal fruit plantation and the distribution of seedlings to household beneficiaries have strengthened local productive assets and created short-term employment opportunities. Although the financial benefits are not yet fully realized, these interventions have laid the groundwork for collective income generation and enhanced household resilience. The absence of social conflict throughout the implementation process further indicates that participatory decision-making and inclusive village deliberations played a crucial role in maintaining social cohesion and community acceptance.

Environmentally, the program contributes to forest conservation objectives by promoting land rehabilitation and increasing vegetative cover without generating significant land-use pressure. The relatively small scale of land conversion for productive activities is offset by long-term ecological benefits through carbon sequestration and ecosystem restoration. These outcomes reinforce the relevance of community-based approaches within REDD+ strategies, particularly in conservation areas where livelihood security and environmental protection must be pursued simultaneously.

Despite these positive results, the study identifies critical challenges related to program sustainability. The one-off nature of FCPF-CF funding raises concerns regarding long-term maintenance, technical capacity, and financial continuity. Without sustained institutional support, capacity-building initiatives, and locally driven financing mechanisms, the durability of program impacts may weaken over time. It highlights the importance of integrating carbon-based incentive schemes with broader rural development strategies and continuous government facilitation.

Overall, the experience of Teluk Sulaiman illustrates that carbon finance mechanisms can function as effective instruments for community welfare enhancement when supported by clear regulations, participatory governance, and strong local commitment. The findings suggest that similar village-based REDD+ implementation models may be replicated in other forest-dependent regions, provided that long-term capacity development and sustainable financing frameworks are embedded from the outset. Such integration is essential to ensure that climate mitigation initiatives not only reduce emissions but also deliver equitable and lasting socio-economic benefits at the local level.

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