Transforming rural communities: The innovative approach of The One Village One CEO Program to sustainable business development in Central Kalimantan

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Abstract. The development of Village-Owned Enterprises (BUMDes) is a critical pathway to fostering rural economic sustainability in Indonesia, yet many remain hampered by limited organizational capacity and fragmented resource utilization. This paper examines the implementation of the One Village One CEO (OVOC) program—a collaborative initiative between IPB University and PT Maruwai Coal—targeting four BUMDes in Murung Raya Regency, Central Kalimantan. Employing qualitative methods, including participatory field observation, focus group discussions, and hands-on community engagement, the study highlights the transformation of BUMDes Batu Batuah in Batu Tojah Village, particularly in revitalizing the local patchouli-based business ecosystem. Key interventions ranged from cultivation training, SOP-based post-harvest improvements, and organic fertilization techniques to digital branding and irrigation management. These activities, led by interdisciplinary student teams under expert supervision, not only increased patchouli productivity and oil quality but also strengthened local ownership and institutional resilience. The findings demonstrate how structured mentorship, stakeholder co-creation, and context-based innovation can synergize to create sustainable, community-driven business ecosystems in tropical rural areas. The OVOC model thus offers a replicable framework for integrating education, enterprise development, and empowerment to drive inclusive rural transformation.

1 Introduction

Rural areas are essential drivers of national development in Indonesia, particularly in managing tropical bioresources and enhancing local economic systems[1]. Villages are not merely administrative entities, but dynamic centers of natural resource potential and human capital that, if effectively governed, can significantly contribute to sustainable growth [2]. To tap into this potential, the Government of Indonesia has promoted Village-Owned Enterprises

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(BUMDes) as institutions that drive rural entrepreneurship and community welfare improvement. BUMDes are envisioned to stimulate local innovation, generate employment, and catalyze inclusive business ecosystems based on village-specific assets [1].

Despite this vision, many BUMDes in practice suffer from structural and strategic deficiencies. In Central Kalimantan Province, where there are 596 registered BUMDes (including 8 in Murung Raya Regency), several face sustainability challenges due to limited managerial capacity, lack of business clarity, and disconnection between village potential and enterprise activities [3]. These gaps hinder BUMDes from achieving their intended socio-economic impact. Addressing these challenges requires synergistic collaboration among stakeholders. One such initiative is the "Sustainable and Resilient BUMDes Business Innovation Based on Exotic Superior Products," a joint program of IPB University and PT Maruwai Coal. The program engages four selected BUMDes with high-value local commodities: Batu Batuah (patchouli), Bolum Boju (honey), Anto Sama (stingless bee honey and BSF feed), and Usaha Mandiri Baloi (coffee). These BUMDes were chosen based on their strategic potential to develop village-branded niche products with scalable market value [4].

One of the key obstacles identified is the lack of organizational maturity and business model clarity. Without structured frameworks and roadmaps, many BUMDes operate inefficiently or fail to mobilize local resources effectively [5]. The program therefore emphasizes tailored capacity building, mentorship, and the use of participatory approaches to improve governance and resource mobilization.Moreover, optimal utilization of natural and socio-economic assets remains underexplored. Many BUMDes do not recognize or capitalize on the uniqueness of their ecosystems. To address this, a comprehensive resource mapping and business planning process was conducted, aligning BUMDes strategies with available assets, stakeholder input, and market.

Beyond internal reinforcement, the program also works to establish sustainable village-level business ecosystems by connecting BUMDes with cooperatives, MSMEs, and government support systems. These linkages enable better integration of production, marketing, and value-added processing, thereby fostering local resilience and sustainability. The One Village One CEO (OVOC) program itself is a village business ecosystem development model that integrates superior village products from upstream to downstream, structured in three progressive stages: One Village One Product (identification and prioritization of village's strategic commodities), One Village One Innovation (enhancement of quality, value addition, and application of appropriate technologies), and One Village One Exporter (branding and facilitation of access to broader markets, including export opportunities) [6, 7]. This innovation-driven framework is designed not only to empower BUMDes and local communities but also to enhance institutional capacity, promote participatory innovation, and build resilient, market-oriented rural enterprises. Prior applications of OVOC in various contexts—such as in pineapple communities in Bengkalis and Goatthai (planting media) ecosystem business in Garut—have demonstrated its relevance and adaptability to different commodities and socio-ecological landscapes [6, 7] This paper analyzes the implementation of the OVOC program within this broader initiative, focusing on its impact in Batu Tojah Village through participatory engagement, technical innovation, and ecosystem development.

2 Methodology

The FGD sessions utilized a semi-structured guideline instrument comprising key themes, including resource mapping, organizational challenges, community participation, and potential innovations for improving the village enterprise ecosystem. Instruments for semi-structured interviews and field observations were designed to capture both factual and

contextual information, ensuring alignment with research objectives. Students from IPB University were embedded as facilitators and co-researchers, working alongside village stakeholders under the supervision of faculty mentors, which enabled experiential learning and iterative feedback during the project implementation.

Qualitative data were analyzed using a thematic coding, approach, whereby field notes and interview transcripts were grouped into thematic categories such as agricultural practices, post-harvest handling, institutional governance, and marketing constraints. This process allowed the researchers to synthesize diverse data sources into coherent themes that reflect community priorities and challenges. The use of triangulation across methods, participants, and researchers enhanced the credibility and robustness of the findings. This approach aligns with best practices in community-based development research [3], emphasizing inclusivity, contextual relevance, and participatory knowledge production.

3 Result and discussion

3.1 Field observation and resource mapping

Initial field visits to Batu Tojah Village enabled participatory mapping of natural and institutional resources. The village spans approximately 120 km² and is characterized by fertile agricultural land and production forests. Through interviews with village officials, BUMDes administrators, and local residents, the OVOC team identified patchouli (Pogostemon cablin) as the most viable commodity for agroforestry-based enterprise development. The BUMDes Batu Batuah had already been cultivating patchouli on 4 hectares of land, producing approximately 30 kilograms of oil per month.

However, several systemic issues were identified: (1) improper post-harvest practices that caused high contamination rates and degraded oil quality, (2) lack of irrigation systems leading to waterlogging on sloped areas and seedling mortality, and (3) limited branding and market access that restricted buyer acceptance. One notable incident involved the death of approximately 1,300 patchouli seedlings due to excessive rainwater pooling, underscoring the urgent need for water management infrastructure.

These findings underscore the relevance of participatory rural appraisal (PRA) approaches, which prioritize stakeholder engagement and contextual resource assessment in rural planning [8]. Similar challenges of inadequate infrastructure, poor post-harvest practices, and disconnected market linkages have been reported in prior OVOC applications in other regions, such as Goatthai development in Garut [7]. In those cases, early identification of constraints during participatory mapping was critical to designing targeted interventions.

The poor oil quality observed prior to intervention was largely due to mixing of stems, weeds, and poorly dried leaves in the distillation process, leading to low alcohol solubility—a key buyer requirement. Moreover, the absence of structured procurement and post-harvest protocols led to inconsistent supply and unstable monthly production levels. These conditions are typical of underdeveloped BUMDes ecosystems where managerial frameworks and production standards are weakly institutionalized.

To summarize the key field findings and provide a clear overview, Table 1 presents a comparison of baseline conditions (before intervention, inferred from field narratives) and current status (after OVOC program implementation).

Table 1. Key results before and after OVOC Program implementation.

Indicator	Before OVOC Program	After OVOC Program
Patchouli yield	~10–15 kg/month (unstable)	30 kg/month (stable, improved quality)
Drying time	7 days	3 days
Seedling mortality	1,300 seedlings lost (notable event)	Reduced significantly due to irrigation improvement
Structured procurement	No structured system; ad hoc transactions	Rp 2,000/kg fresh patchouli; structured procurement from farmers
Market acceptance	Low due to poor oil quality (contamination and insolubility)	Improved; meeting buyer standards for solubility and quality

These results highlight that the main constraints before intervention were rooted in both technical and institutional factors. The application of participatory assessment methods facilitated a clearer understanding of these issues, which enabled the formulation of context-specific solutions. This reflects lessons from similar OVOC implementations where careful field mapping and stakeholder engagement are essential prerequisites for building sustainable village business ecosystems [6, 7].

3.2 Community-based implementation

Following field analysis, the OVOC team implemented multi-faceted interventions tailored to the local context. SOPs were developed and socialized to standardize harvesting, drying, and distillation of patchouli. For example, the drying period was reduced from seven to three days, and sorting protocols were introduced to prevent inclusion of stems and weeds that degrade oil quality. These refinements improved the alcohol solubility of patchouli oil—a key indicator of quality demanded by buyers. The establishment of clear SOPs contributed to more predictable product quality and consistency, a factor highlighted in rural enterprise studies as critical for improving value chain integration [9].

The BUMDes also initiated structured procurement from community farmers at a rate of Rp 2,000/kg fresh patchouli, ensuring regular inflow of raw material and providing farmers with an additional income stream. This addressed the absence of procurement standards before intervention and reflects the principle that formalizing procurement mechanisms reduces transaction costs and increases trust between producers and processors [10].

In parallel, the OVOC team conducted hands-on training in composting and local microorganism (MOL) production using banana stems, brown sugar, and rice water. These bio-inputs promoted sustainable soil fertility management at low cost, consistent with frugal innovation approaches that emphasize locally appropriate, resource-efficient solutions to agricultural problems in marginalized communities [11]. This strategy also facilitated community acceptance, as input materials were readily available and culturally familiar.

Students collaborated with Satu Atap Junior High School to involve youth and parents, which not only expanded participation but also built intergenerational knowledge sharing—a key factor in sustaining community-based initiatives [12]. This aligns with findings from other participatory programs where youth engagement ensures longer-term sustainability of innovation adoption.

Additional innovations included fabrication of manual planting tools and fertilizer applicators adapted to patchouli's root system and local soil conditions. These tools reduced labor time and improved planting precision, demonstrating that simple technological improvements can have disproportionately large impacts on efficiency when tailored to local contexts. Finally, simple irrigation channels were constructed to address slope-induced

flooding, a problem that had previously resulted in significant seedling mortality. The decision to implement low-cost irrigation reflects evidence from smallholder farming contexts where incremental infrastructure improvements can substantially reduce production risk and enhance resilience to climate variability [13].

Overall, these community-based interventions demonstrate that localized technical assistance, combined with participatory training and embedded facilitation by university students, can overcome technical and organizational challenges typical of rural enterprise development. The approach resonates with literature emphasizing that success factors in rural business innovation include not only technology transfer but also institutional support, stakeholder trust, and social learning processes [10, 11].

3.3 Outcomes and lessons learned

The interventions had demonstrable outcomes across technical, institutional, and economic dimensions:

3.3.1 Increased production and quality

Patchouli oil yield stabilized at around 30 kg per month with improved purity. The shortened drying time and better sorting raised acceptance rates among buyers. This improvement reflects the importance of post-harvest quality control and process standardization as key drivers of smallholder integration into higher-value markets [9].

3.3.2 Community participation and income

Farmers selling fresh patchouli gained consistent income, while the use of local inputs lowered production costs and increased sustainability. The structured procurement system also enhanced trust between producers and the BUMDes as aggregator, consistent with transaction cost economics theory [10].

3.3.3 Institutional strengthening

BUMDes Batu Batuah developed internal SOPs and began documenting activities through digital platforms (e.g., blogspot and social media) to improve transparency and market visibility. This mirrors findings from rural entrepreneurship studies that highlight the role of digital tools in expanding market reach and institutional legitimacy [14].

3.3.4 Capacity-building and knowledge transfer

IPB students acted as embedded co-facilitators, enabling experiential learning and fostering local ownership of innovations. This aligns with the engaged scholarship model where collaboration between academic actors and communities enhances mutual learning and empowers community agency [5]. The involvement of youth through collaboration with Satu Atap Junior High School also contributed to intergenerational knowledge transfer, an essential component of sustaining rural innovation [12].

These outcomes demonstrate that the integration of technical interventions, participatory facilitation, and institutional reform can generate synergies that strengthen rural business ecosystems. Similar lessons have been observed in other OVOC applications (e.g., Bengkalis and Garut) where aligning interventions with local contexts and resources has proven effective [6, 7]. Nonetheless, some challenges remain, particularly the limited access to

broader markets beyond the immediate region and the need for ongoing technical support to maintain production standards.

Overall, the OVOC approach reinforces key insights from rural innovation studies: successful interventions require not only technical solutions but also mechanisms for participatory governance, institutional learning, and market linkages [1, 9, 11, 14]. By embedding students as co-facilitators and applying frugal, context-sensitive innovations, the program in Batu Tojah has contributed to building a more resilient, inclusive, and locally owned business ecosystem.

4 Conclussion

The implementation of the One Village One CEO (OVOC) program in Murung Raya Regency illustrates a promising model for revitalizing Village-Owned Enterprises (BUMDes) through participatory, contextual, and innovation-driven approaches. In Batu Tojah Village, the program led to measurable improvements in patchouli productivity, oil quality, and local income, supported by interventions such as SOP-based harvesting, organic fertilization, and localized technology development. Furthermore, the initiative contributed to institutional strengthening through digital branding and enhanced community involvement in sustainable agricultural practices. The program's embedded facilitation model—linking university students with village institutions—proved effective in fostering co-learning, adaptive planning, and grassroots innovation. These results reinforce the significance of collaborative rural development that aligns technical solutions with local capabilities and aspirations. The OVOC program offers a replicable framework for other rural regions aiming to establish sustainable business ecosystems, especially in tropical and forested areas with underutilized biophysical resources.

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