

Development of Agro-edutourism Area as an Effort to Improve Welfare: Case Study of Kebun Kelulut Sangatta PT Pertamina EP Sangatta Field CSR Program

Elis Fauziah¹, Naomi Sinta Pasila², Oscar Mudha Kusuma³

¹Head of Comrel & CID Zona 9, Indonesia

²Officer Comderl & CID Zona 9, Indonesia

³Community Development Officer PT Pertamina EP Sangatta, Indonesia

Email: elis.fauziyah@pertamina.com

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Abstract. South Sangatta Village possesses numerous potentials for development. One such potential is the presence of Trigona SP honey bee colonies that can produce honey. Honey bees are non-timber forest products with a relatively high market value. PT Pertamina EP Sangatta recognizes this as an opportunity for empowerment. In collaboration with the farmer group and Pokdarwis Trigona Reborn, PT Pertamina EP Sangatta Field, through its CRS program, seeks to develop the honey bee garden into an agro-edutourism area. This aligns with the aspirations of South Sangatta Village which aims to transform the Sangatta area into a tourism and educational hub focused on Trigona honey bees. This study aims to examine the implementation of the agro-edutourism area development program conducted by PT Pertamina EP Sangatta Field in collaboration with farmer groups and Pokdarwis Trigona Reborn. This study uses a qualitative descriptive method with a case study approach, focusing on the CSR Program of Kebun Kelulut Sangatta. Research findings indicate that the Kebun Kelulut Sangatta agro-edutourism program is a sustainable tourism initiative emphasizing local community participation. There is evidence of improved welfare, demonstrated by increased income from honey sales and tourist visits to Kebun Kelulut Sangatta. Therefore, it can be concluded that the transformation of the Kebun Kelulut into an agro-tourism site has positively impacted the economic conditions and improved the welfare of the local community.

Keywords: *Agro-Edutourism, Community Empowerment Program, Community-Based Tourism.*

A. INTRODUCTION

Community empowerment is essential for the sustainable development of rural areas. It involves improving the abilities of individuals and groups to make decisions and convert those decisions into preferred actions and outcomes (Sriyadi, et al., 2021). In rural regions, where resources are often limited, empowerment initiatives can play an important role in improving livelihoods, alleviating poverty, and fostering a sense of ownership and self-reliance among community members.

Non-timber forest products (NTFPs) offer significant potential for economic development in rural areas (Gilba et al., 2010). These products encompass a wide range of natural products, such as fruits, nuts, resins, and honey, which can be sustainably harvested from forests without damaging the ecosystem (FAO, 1995). Notably, kelulut honey, produced by stingless bees, stands out due to its high market value and health benefits. Kelulut honey is known for its unique flavor and medicinal properties (Evahelda et al., 2021), making it highly sought after in both domestic and international markets. Kelulut bee farming is relatively low-cost and environmentally friendly, providing an excellent opportunity for rural communities to capitalize on this valuable resource (Syafrizal et al., 2020). By focusing on kelulut honey production, farmers can diversify their income and reduce their dependence on traditional crops.

Apart from honey and its byproducts, honey cultivation or farming can also be developed through an agro-edutourism model. Agro-edutourism combines agricultural activities with educational and tourism experiences. This innovative approach allows visitors to learn about farming practices, engage in hands-on activities, and enjoy rural landscapes. For local communities, agrotourism can generate extra income, promote cultural exchange, and raise awareness about sustainable farming practices (Sumiasih & Ichniarsyah, 2021). Transforming *kebun kelulut* into agrotourism destinations can empower communities by providing alternative income sources and opportunities for skill development. Visitors at these sites can participate in honey farming workshops, purchase fresh honey, and learn about sustainable agriculture. This approach not only provides financial benefits to farmers but also broadens their knowledge and skills.

The concept of agro-edutourism has been widely implemented and adapted by villages in Indonesia. For example, a study titled “Development of Agro-Edutourism in Pagarawan Village, Bangka Regency Based on Community Participation” (Loziska et al., 2024), found that this program provides concrete benefits to the community, such as increased knowledge about agriculture and fisheries, as well as increased income. The development of agro-edutourism in Pagarawan Village was achieved by maximizing the village’s potential, featuring main attractions such as oyster mushroom cultivation, freshwater fish farming, mangrove crab cultivation, and hydroponics. Supporting attractions include fishing spots, culinary zones, children’s outbound areas, a stream pool, and water sports. The site can be developed into several activity spots emphasizing agriculture, fisheries, community, education, and tourism sectors. The “Development of Agro-Edutourism Areas Based on Village Unique Potential” (Case study conducted in Kalipucang Tourism Village, Tukur Subdistrict, Pasuruan Regency), is another example of a successful implementation of an agro-edutourism program. According to the study’s findings, the program has met all nine elements of the Business Model Canvas (BMC) after thorough analysis, suggesting that the implementation of this program has been effective and only requires further development (Nuzil & Dayat, 2020).

The success of agro-edutourism programs in various regions of Indonesia has motivated honey farmers in Sangatta to pursue similar goals. In South Sangatta, East Kutai Regency, farmers often depend on traditional farming practices that offer limited income potential. This economic dependence restricts their ability to invest in new technologies or diversify their income sources. Therefore, there is an urgent need to explore alternative income-generating avenues (CARE LPPM IPB, 2022). Although there is a high market demand for *kelulut* honey, the potential of existing *kebun kelulut* remains underutilized. Factors such as lack of awareness, inadequate marketing strategies, and limited access to resources have hindered the full exploitation of this valuable asset. Addressing these challenges could open up significant economic opportunities for the community (Pertamina Community Development, 2023).

Sustainable development programs are essential for increasing community self-reliance and resilience. These programs should focus on utilizing local resources, promoting environmentally friendly practices, and ensuring long-term economic sustainability (Ahmad et al., 2023). *Kebun Kelulut Sangatta Program*, which focuses on non-timber forest products and agrotourism, aligns well with these objectives. This study aims to investigate the implementation of the community empowerment program through agro-edutourism at *Kebun Kelulut Sangatta* initiated by CSR PT Pertamina EP Sangatta Field. Furthermore, it also aims to serve as a foundation for transforming *kebun kelulut* into dynamic agro-edutourism destinations. This includes developing infrastructure, creating educational materials, and designing engaging visitor experiences. By attracting tourists and educational groups, this program not only helps sell honey farming products but also generates regional income through tourist visits and promotes sustainable tourism in the region.

Lastly, this study aims to analyze the economic impact of the Kebun Kelulut Sangatta CSR program initiated by PT Pertamina EP Sangatta Field on the surrounding community. This will include an assessment of changes in income levels for farmer groups at Kebun Kelulut Sangatta, both through honey sales and tourist visits. By providing empirical evidence of the program's benefits, this study will support the case for improving similar initiatives in other rural areas.

B. METHOD

To understand the implementation of the CSR Program at Kebun Kelulut Sangatta, which has transformed into an agro-edutourism, this study uses a descriptive qualitative paradigm with a case study approach. According to John W. Creswell (Cresswell & Poth, 2016), descriptive qualitative research involves collecting data without any intervention or manipulation of variables. This type of research aims to systematically and accurately depict the current condition of a group, object, or phenomenon being investigated. The study was conducted at the Tourism Awareness Group (Pokdarwis) of Kebun Kelulut Sangatta, located within the operational area of PT Pertamina EP Sangatta Field. Kebun Kelulut Sangatta is one of the CSR programs initiated by the community development division of PT Pertamina EP Sangatta Field. This study aims to analyze the implementation of the CSR program that has been conducted. The data sources for this research consist of both primary and secondary data sources obtained from company documents, such as social mapping documents.

C. RESULTS AND DISCUSSION

1. Mapping Results of the Region of South Sangatta Village

South Sangatta is one of the villages located in the Sangatta sub-district, within the East Kutai Regency of East Kalimantan Province. This village falls within the Ring 1 area of the PT Pertamina EP Sangatta Field, which specializes in oil and gas exploration and production. PT Pertamina EP is committed to fulfilling its Corporate Social Responsibility (CSR) towards the local communities around its operational areas. The obligation to uphold social and environmental responsibilities for companies operating in natural resource sectors is mandated by Law No. 40 of 2007. This CSR initiative aims to create harmonious relationships between the company, local government, and the local community, ensuring that corporate performance growth is accompanied by improvements in the community's welfare and self-reliance. The implementation of CSR programs starts with social mapping in the villages near the operational areas, involving stakeholders in focus group discussions, and then moving on to program execution. Social mapping is carried out to determine the distribution of potential, strengths, and challenges in South Sangatta Village. The findings of the social mapping highlight various potentials in South Sangatta Village, as recommended in the social mapping document (insert citation, social mapping document of PT Pertamina EP Sangatta Field).

Table 1. Community Empowerment Program Recommendations for South Sangatta Village

Field	Target	Problems and Potential
<i>Empowerment</i>	Pokdarwis <i>Trigona</i> Reborn	<ol style="list-style-type: none"> Growing of kelulut honey cultivation agribusiness in South Sangatta Village The existence of Pokdarwis (Tourism Awareness Group) to foster agro-edutourism through partnerships with various parties

		<ol style="list-style-type: none"> 3. Initiative to establish kelulut honey agro-edutourism as a primary tourism product of South Sangatta Village 4. Support from the South Sangatta Village government
<i>Capacity Building</i>	Bumi Rejo Waste Bank	<ol style="list-style-type: none"> 1. Waste bank operations are ongoing. 2. Waste management processes are currently suboptimal, focusing solely on inorganic waste. 3. There is a considerable potential to expand the waste bank's customer base.
Empowerment	Salak Farmer Group	<ol style="list-style-type: none"> 1. The presence of several salak (snake fruit) farmers in South Sangatta Village 2. The District Government intends to promote salak as a primary commodity 3. Salak productivity is declining because the trees are over 20 years old. 4. The fresh salak fruit is being sold at low prices. 5. Support from the Village Government and Agricultural Office
Empowerment	Mina Rejo Fishery Group	<ol style="list-style-type: none"> 1. The growing of freshwater aquaculture in South Sangatta Village 2. Support from the village government and relevant agencies 3. The group's innovation in tackling feed-related challenges 4. Potential integration between fish farming groups and waste banks to utilize organic waste as feed 5. The market for fishery products remains wide-open

Following a thorough analysis, the priority program to be developed through the Corporate Social Responsibility (CSR) initiative of PT Pertamina EP Sangatta Field is to support the Kebun Kelulut Sangatta agro-edutourism program. The main consideration is that there is already a tourism awareness group (Pokdarwis) called *Trigona Reborn* in South Sangatta Village. The cultivation of kelulut bees, which started in 2017, was initially a small-scale operation by a handful of individuals. In the same year, the *Trigona Reborn* farming group was formed with 25 members (Amini et al., 2022). The group's aspirations go beyond honey production; they aim to develop their cultivation garden into a tourist destination. As a result, the Pokdarwis *Trigona Reborn* was established to develop the Kebun Kelulut in South Sangatta. This group is currently working to develop the kelulut bee agro-edutourism garden into a leading tourist attraction in South Sangatta Village. Another aspect that sets this program apart is that Pokdarwis *Trigona Reborn* is registered with the East Kutai Regency Tourism Office. The group has received multiple awards from various organizations and established numerous partnerships. However, the Pokdarwis *Trigona Reborn* still faces challenges in improving infrastructure to make the tourist site more accessible.

Therefore, PT Pertamina EP Sangatta is committed to providing empowerment facilities for the Pokdarwis *Trigona Reborn*. The core principle of the company's CSR program

is the understanding that community empowerment is an effort to strengthen or empower marginalized community groups (Novaria & Afifatur, 2017). In the effort to empower the Pokdarwis Trigona Reborn through Kebun Kelulut Sangatta, PT Pertamina Sangatta Field collaborates with the local village government and other relevant stakeholders to establish effective partnerships for program implementation. This aligns with Community-Based Tourism (CBT) principles, which highlight three key components in community-based tourism development: the government, represented by the South Sangatta Village Government and the Sangatta Regency Tourism Office; the private sector, represented by PT Pertamina EP Sangatta Field; and the community, particularly Pokdarwis Trigona Reborn, the focus of these development efforts.

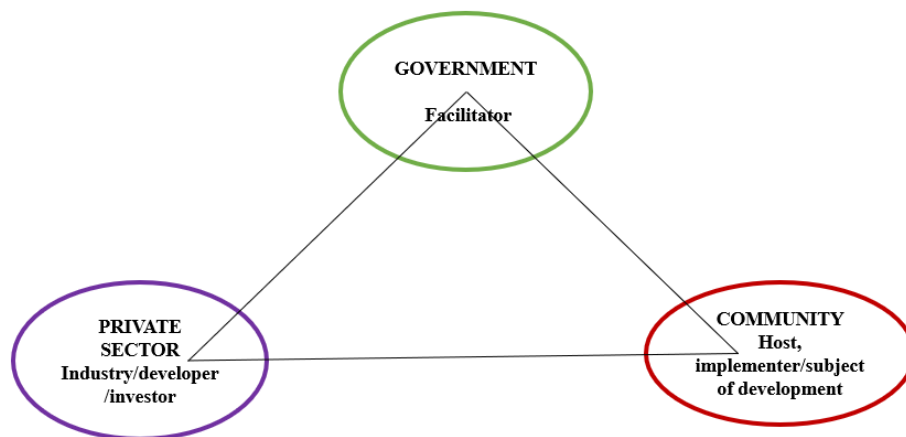


Figure 1 Three Components of Tourism Development

Source: (Sunaryo, 2013)

Sunaryo (in Novaria & Afifatur, 2017) argues that in order to foster effective tourism development, it is essential to provide ample opportunities for local communities to actively participate in both the implementation and development of tourism programs. Local communities hold an equally important position as stakeholders in tourism development, alongside the government and private industry. Therefore, the Pokdarwis Trigona Reborn becomes an active agent in generating ideas for the agro-edutourism initiative at the Kebun Kelulut Sangatta. Meanwhile, the village government and PT Pertamina EP Sangatta Field serve as facilitators and supporters of the program.

2. Kebun Kelulut Sangatta Agrotourism as an Alternative for Community-Based Tourism Development

The agrotourism concept implemented by Pokdarwis Trigona Reborn in developing Kebun Kelulut Sangatta is quite interesting to study. The concept of “agro-edutourism,” or agro-educational tourism, has emerged as a promising approach to harness this potential, providing an in-depth learning experience for tourists while supporting local communities and sustainable development (Sulaiman et al., 2019).

The transformation of Kebun Kelulut Sangatta into an agro-edutourism destination is rooted in the principles of community-based tourism. This model emphasizes the involvement and empowerment of local communities (Kabu & Tandilino, 2020). The initiative, which is driven by the Corporate Social Responsibility (CSR) program of PT Pertamina EP Sangatta Field, is designed not merely as an economic venture but as a holistic approach to community development. By understanding the unique characteristics and needs of the local population, this program aims to create a sustainable and inclusive tourism model that aligns with the community’s long-term values and aspirations. (CARE LPPM IPB, 2022).

The Sangatta area is well-suited for community-based tourism due to its abundance of local knowledge, traditions, and natural resources that have been underutilized by the community (CARE LPPM IPB, 2022). By involving the local community in the development and management of agro-edutourism, the program aims to ensure the fair distribution of tourism benefits. This participatory approach is expected to create a sense of ownership and pride among community members towards Kebun Kelulut Sangatta, as they are actively engaged in decision-making processes from the planning stage to the day-to-day operations of tourism activities.

The decision to create agro-edutourism within a community-based tourism framework is driven by several factors. Firstly, this model uses the community's deep knowledge of local resources (Adikampana et al., 2019), such as kelulut honey cultivation, which serves as both an economic asset and a cultural heritage. Secondly, it offers opportunities for the community to share their knowledge with visitors, thereby increasing the educational value of the tourism experience (Sanam et al., 2021). Lastly, this model aligns with the broader goal of sustainable development by promoting environmentally friendly practices and enhancing economic resilience (Choi & Sirakaya, 2006).

The CSR program of Kebun Kelulut Sangatta has successfully improved the welfare of the community in the South Sangatta Village area, as reported in the program implementation documents owned by PT Pertamina EP Sangatta Field. The program aims to improve the community's capacity, economic income, and self-reliance by promoting the cultivation of kelulut bees for honey production. This is in line with the potential of natural and human resources that support kelulut bee farming in the Kutai Regency area, particularly in the South Sangatta Subdistrict. The bee farming/cultivation activities have also contributed to environmental conservation through the planting of flowers and fruit trees around the kelulut bee hives to serve as a food source for bee feed. This initiative has transformed Kebun Kelulut Sangatta into an agro-educational tourism destination.

The benefits of agro-tourism for local communities are diverse. Empirical studies in Yunnan, China, indicate that agro-tourism can offer extra income and new employment opportunities for rural residents, thereby improving their overall economic well-being (Yang, 2012). Similarly, the case of Ben Tre Province in Vietnam demonstrates how agro-tourism can serve as a "new livelihood option" for communities, helping to boost rural economies and increase resilience against the impacts of climate change on agriculture (Ngan, 2021).

One of the most significant achievements of the Kebun Sangatta Kelulut program is its impact on poverty alleviation. The program has helped alleviate poverty in South Sangatta Village through the active participation of the community in the Trigona Reborn farming group, a partner supported by the program. Three members of the group - Sabil, Sugiman, and Jumrik - were previously registered as beneficiaries of the Family Hope Program (PKH) and the South Sangatta Village Contribution Assistance Program, out of a total of 149 recipients. Through this program, the poverty alleviation rate in the village has reached 2.013% (Pertamina Community Development, 2023).

This success can be attributed to the diverse income sources generated by the agro-edutourism model, which is rooted in community-based tourism principles. Through this approach, local farmers have been able to increase their traditional income from agriculture with revenue from honey sales, tourism-related activities, and educational services. The integration of the community into the development and management of the agro-edu-tourism destination has enabled local residents to actively participate and benefit from the program, leading to improved living standards and greater financial stability (Jumiyati & Friawati, 2023).

The increase in income among the members of the target group provides further proof of the program's success, which is based on community-based tourism principles. By actively

involving local communities in the development and management of agro-edutourism, the program has created numerous opportunities for direct participation in tourism activities. The local community has not only taken on roles as honey farmers but also as tour guides and sellers of honey products. This has ultimately boosted their daily income, which previously relied solely on the sale of crops, with the additional income from increased tourist visits. (Pertamina Community Development, 2023).

Group income before the program	= Rp 3,000,000/month
Group income after the program	= Rp 4,000,000 - Rp 8,000,000/month
Income increase of	= Rp 3,000,000 - 5,000,000/month
% income increase	= 100%

Figure 2. Breakdown of Income Increase After Program Implementation

Source: Pertamina Community Development, 2023

The integration of the community has greatly improved the local economy. Previously, farmers relied solely on agriculture, but now they are benefiting from multiple income sources. Consequently, their livelihoods have become more resilient to market fluctuations and environmental challenges, leading to improved living standards and greater financial stability for the target population.

The Kebun Kelulut Sangatta Program has successfully integrated into various government policies, thanks to its community-based tourism approach, which actively involves the local community in the development of agro-edutourism. By adhering to this principle, collaboration with both local and central governments has become more effective, as the program is designed to align with local needs and potentials. Community involvement ensures that infrastructure development, marketing, and capacity-building initiatives not only receive government support but are also aligned with the aspirations of the local community (Binswanger-Mkhize et al., 2010).

This synergy creates a strong framework for the long-term success of agro-edu-tourism in Sangatta, as all stakeholders, including the community, private sector, and government, share a common interest in their commitment to the program's sustainability and the achievement of regional development goals. The locally contextualized implementation also ensures that the program's outcomes are more relevant and directly beneficial to the involved communities.

Table 2. Implementation of Kebun Kelulut Sangatta Program

No	Implementation	Achievement (%)
1	Creation of information and educational media for Kebun Kelulut Sangatta Tourism	100%
2	Expansion of the kelulut beekeeping space	100%
3	Kelulut honey soap-making training	100%
4	One Person One Tree Movement (SARAH)	100%
5	Bee farming producing honey and honey byproducts	100%
6	Simple patent innovation of a honey moisture reduction tool	100%
7	Promotion and Expo of Kebun Kelulut Sangatta	100%

Source: Pertamina Community Development (2023)

The implementation of the agro-edutourism model as a form of community-based tourism is consistent with the principles of bottom-up empowerment. It emphasizes the independence and autonomy of local communities (Ginancar, 2023). By providing farmers with

the opportunity to lead the development process, this program ensures that the outcomes are not only economically beneficial but also socially and culturally significant. This empowerment is evident in how farmers have embraced their roles as the keeper of their natural resources and cultural heritage, sharing them with visitors in an authentic and sustainable manner (Tian et al., 2016).

Agro-edu-tourism also offers a unique opportunity for visitors to engage meaningfully with local culture and traditions. Instead of passively observing, tourists become active participants in farming practices and the daily lives of farmers (Jumiyati & Friawati, 2023; Phan, 2021). These immersive experiences are designed to educate visitors about sustainable farming practices, the importance of non-timber forest products, such as kelulut honey, and the socio-cultural significance of these practices within the local context. These interactions promote mutual understanding and respect between visitors and the local community, contributing to the social sustainability of the initiative.

The creation of agro-edutourism in the form of community-based tourism is more than just an economic effort; it is a holistic approach to rural development that integrates economic, social, and environmental objectives (Jumiyati & Friawati, 2023). The bottom-up empowerment process ensures that the community is not merely a beneficiary of development but also an active participant and leader in its own transformation. This approach not only boosts the community's economic resilience but also strengthens its social order, ensuring that the benefits of development are distributed fairly and managed sustainably.

In conclusion, the agro-tourism initiative at Kebun Kelulut Sangatta demonstrates the potential of community-based tourism as a tool for community empowerment. With the active involvement of local farmers and the strategic support of PT Pertamina EP Sangatta Field, this program has successfully transformed traditional farming practices into a dynamic and sustainable tourism model. As a form of bottom-up empowerment, this project demonstrates how rural communities can utilize their resources and knowledge to achieve sustainable development, which in turn leads to greater economic self-sufficiency and community resilience.

3. Challenges and Expectations

Indonesia's vast archipelago and diverse natural resources offer significant potential for the development of agrotourism and community empowerment initiatives (Kusuma, 2022). Agrotourism, which integrates agricultural activities with tourism, can create economic opportunities and improve the welfare of rural communities (Dasipah, Erviany, & Gartini, 2021). Likewise, community empowerment programs aim to involve local communities in the management and decision-making processes related to tourism development (Rachmawati, 2020).

However, implementing these programs in Indonesia presents several challenges. One of the main challenges is the unequal distribution of benefits within the community (Rachmawati, 2020). Research suggests that the economic and social benefits of tourism development are not evenly distributed, leading to some community members benefiting more than others (Rachmawati, 2020). This inequality can create tensions and conflicts within the local community, ultimately hindering the overall success of the programs (Rachmawati, 2020).

Kebun Kelulut Sangatta CSR program, supported by PT Pertamina EP Sangatta Field, has indeed proven to bring positive impacts to the community. However, upon closer examination, the economic benefits seem to be limited to members of the Trigona Reborn group. To reach a broader audience, specifically the residents of South Sangatta Village, more optimal efforts are still needed. The regeneration of the Trigona Reborn group is also necessary

to create new groups that can later serve as a platform to support a more extensive village economy.

In 2024, this program will be in its fourth year of implementation. The self-reliance of the fostered groups has become an important aspect to examine. The agro-edutourism program chosen by the Trigona Reborn group is an excellent idea with great potential for further development. Agro-edutourism is a community-based tourism approach that uses empowerment strategies and involves the community as key actors within the context of the new sustainable development paradigm. The concept of community-based tourism presents an opportunity to mobilize the full potential and dynamics of the community, balancing the role of large-scale tourism business actors (Novaria & Afifatur, 2017). Community-based tourism should not be viewed merely as a small, localized effort but rather needs to be placed in the context of global community cooperation (Novaria & Afifatur, 2017). It can be concluded that community-based tourism is a form of tourism where local residents or communities play a crucial and primary role in decision-making, influencing, and benefiting their lives and environment. Therefore, community self-reliance in generating ideas, implementing programs, and developing them is something that needs to be carefully considered.

Supporting indicators of sustainable tourism ensures that development is not solely focused on general physical infrastructure (Dawyer and Kim, 2003, as cited in Budiani et al., 2018), but also on human resource development. Thus, human resource development through training sessions, conducting comparative studies with more advanced tourism groups to exchange experiences, and engaging in other activities relevant to capacity building. Furthermore, program sustainability often becomes a concern, as currently, the program still heavily relies on external funding and support. Without a strong emphasis on capacity building and the development of local ownership and leadership, the long-term sustainability of these initiatives may be at risk (Rachmawati, 2020; Sulaiman et al., 2019). Monitoring and evaluation programs need to be implemented to analyze how decisions and policies should be made.

D. CONCLUSIONS

The two main leading programs in the CSR activities of PT Pertamina EP Sangatta Field in the area of South Sangatta Village are the cultivation of stingless bees (*kelulut*) and the Kebun Kelulut Sangatta (Sangatta Stingless Bee Garden) Agro-edutourism. These two programs are an inseparable unit. Overall, the implemented programs have had a tangible impact on the community of South Sangatta Village. There has been an increase in economic activity, indicating that the income diversification process targeted by the Farmer Group and *Trigona* Reborn Tourism Awareness Group (Pokdarwis) has been successfully achieved. However, further exploration is needed, as certain aspects of the implementation have yet to reach their full potential.

The concept of Kebun Kelulut Sangatta (Sangatta Stingless Bee Garden) agro-edutourism, initiated by Pokdarwis Trigona Reborn in partnership with PT Pertamina EP Sangatta Field, represents a sustainable tourism concept that emphasizes local community participation. To optimize the management of the Kebun Kelulut Sangatta agro-edutourism in South Sangatta Village, various aspects need to be addressed, particularly human resource development (HRD), and directed to support community-based tourism. These aspects include improving services and accommodations, promoting the site, developing the local honey industry and agriculture along with its byproducts, and enhancing supporting infrastructure and facilities.

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