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## Business Models and Strategies for Managing Indigenous-based Natural Tourism in and around Danau Sentarum National Park (Ecotourism Meliau Hamlet)

*Model Bisnis dan Strategi Pengelolaan Ekowisata Berbasis Masyarakat Adat di dalam dan sekitar Taman Nasional Danau Sentarum (Ekowisata Dusun Meliau)*

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### RESEARCH ARTICLE

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### KATA KUNCI

*Taman Nasional Danau Sentarum, pengelolaan ekowisata, Business Canvas Model, metode Quantitative Strategic Planning Matrix, Dusun Meliau*

### ABSTRACT

Danau Sentarum National Park (DSNP), situated in West Kalimantan's Kapuas Hulu region, stands out as a unique destination. Meliau Hamlet, located within and around DSNP, serves as a settlement for the Dayak Iban tribe, preserving their distinct customs. The surrounding area boasts captivating landscapes, including lakes, swamps, rivers, and hills, drawing both domestic and international tourists. Recognizing this potential, the Melemba Village government established KPP Kaban Mayas, an ecotourism initiative. However, challenges such as limited human resources, insufficient infrastructure, and management issues hindered Meliau Hamlet's ecotourism operations. This research aimed to assess ecotourism development feasibility, economic viability, and community engagement. It also outlined the ecotourism management's business model and strategies. Data was gathered through field visits, interviews, and surveys. Analysis encompassed scoring tourist attractions, evaluating stakeholders, financial assessments, and community capital. The Business Model Canvas (BMC) described the business model, while strategies were formulated using SWOT analysis, Quantitative Strategic Planning Matrix (QSPM), and Blue Ocean Strategy (BOS). Results underscored natural resources as vital assets for ecotourism. Meliau Hamlet's ecotourism could thrive by focusing on value proposition, key resources, key activities, and key partnerships.

### INTISARI

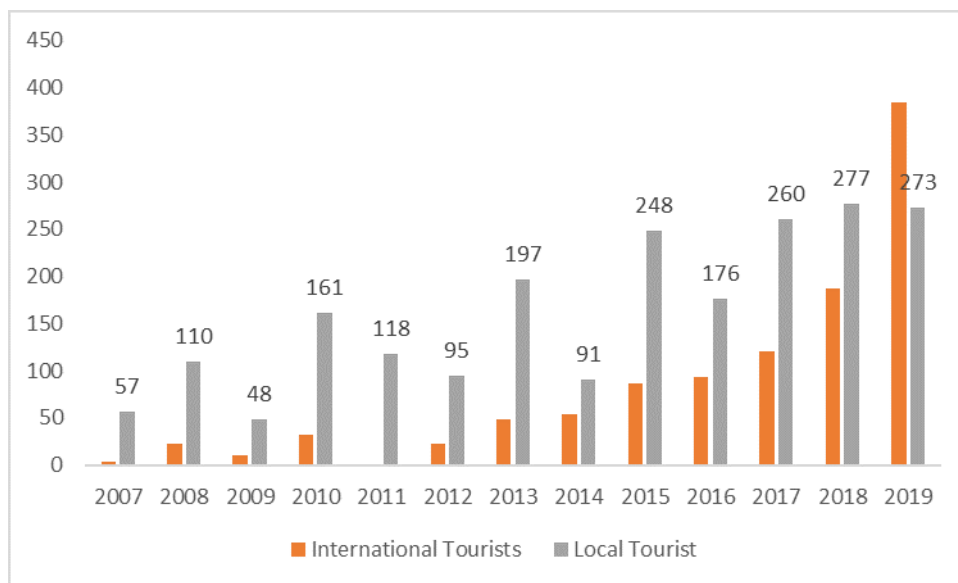
Taman Nasional Danau Sentarum yang berlokasi di wilayah Kapuas Hulu Kalimantan Barat memiliki keunikan tersendiri. Dusun Meliau adalah salah satu daerah yang berada di dalam dan sekitar taman nasional karena sebagian wilayahnya masuk dalam zona pemanfaatan tradisional dan penduduknya masyarakat adat Dayak Iban. Dusun Meliau menarik perhatian warga lokal dan mancanegara karena budaya, kearifan lokal, danau, rawa, sungai, dan perbukitan yang ada di sana, sehingga dibentuk lembaga ekowisata di bawah pemerintahan Desa Melemba yang bernama KPP Kaban Mayas. Namun, dalam prosesnya, masih terdapat kendala pada sumber daya manusia, sarana dan prasarana, serta pengelolaan usaha ekowisata. Penelitian ini bertujuan untuk mengetahui kelayakan pengembangan ekowisata, ekonomi dan modal masyarakat, serta mendeskripsikan model bisnis, dan strategi pengelolaan ekowisata. Data dikumpulkan melalui kunjungan lapangan, wawancara, dan kuesioner. Data dianalisis menggunakan skoring objek daya tarik wisata alam, analisis stakeholder, finansial, dan modal masyarakat. Selain itu, model bisnis digambarkan dengan business model canvas dan dibuat strategi menggunakan SWOT (Strengths, Weakness, Opportunity, Threats), analisis QSPM (Quantitative Strategic Planning Matrix), dan blue ocean strategy. Hasil analisis menunjukkan ekowisata dapat dikembangkan dan sumber aset utama adalah sumber daya alam. Enam strategi utama pada blok value proposition, key resources, key activities, dan key partnership yang diterapkan untuk ekowisata Dusun Meliau.

## Introduction

Danau Sentarum National Park (DSNP), which is located in the Kapuas Hulu region of West Kalimantan offers a distinctive allure due to several seasonal lakes. These unique and diverse ecosystems give rise to rich biodiversity and provide important environmental services: (Siswanto 2017) Furthermore, the neighboring community exhibit a wealth of indigenous traditions and local knowledge. Local knowledge resides in and growing up in local culture and reflects the way of life of society (Hafid et al. 2015). One hamlet within the Danau Sentarum National Park area is Meliau, located in Melemba Village, Batang Lupar Sub-district, Kapuas Hulu Regency, West Kalimantan. The residents of Meliau Hamlet belong to the indigenous Dayak Iban group. Indigenous peoples, also known as native or tribal communities, refer to groups of people residing in a specific area who maintain their own traditions, customs, and lifestyles. Indigenous peoples often have a close relationship with the natural environment and the surrounding ecosystem. They possess deep local knowledge about plants, animals, and the ecosystem in the regions where they live (World Bank 2016). The Meliau Hamlet takes pride in its local wisdom, unique biodiversity, and valuable forest resources, making it an appealing destination for local and global tourists, leading to the establishment of the Tourism Management Group (KPP) named Kaban Mayas in

2015, officially recognized as a Community Empowerment Institution (LKM) through Decree No. 8 of 2015. The tourism-based approach aims to capacitate the community by enhancing its capacity, quality, and well-being through community empowerment. Involving the local community is essential for identifying appropriate management strategies and ecotourism operational processes. This engagement enables the assessment of environmental features and ecological conditions, allowing for evaluations to be conducted (Ekawati et al. 2019). This research explored the engagement of the indigenous community in ecotourism management, incorporating local wisdom to supervise ecotourism activities in a manner that aligns natural resource preservation and cultural heritage with traditional norms and customs. Furthermore, a portion of the Meliau Hamlet area falls within the traditional utilization zone of Danau Sentarum National Park.

According to the regulations outlined in Law No. 33 of 2009, which addresses the Guidelines for Regional Ecotourism Development, the concept of ecotourism pertains to responsible tourism activities based on nature. These activities prioritize sustainability and incorporate education, awareness, and active participation to preserve natural resources. Additionally, these activities were adapted to suit local circumstances. Effective planning, relevant policies, the entities responsible for implementation, and



**Figure 1.** Number of Tourists to Meliau Hamlet Ecotourism (Source: KPP Kaban Mayas 2019)

educational training for those in managerial roles became the priorities. The most crucial and overarching consideration is the impact of ecotourism itself, which encompasses ecological, socio-cultural, and economic ramifications (Arjana 2016). The opinions and considerations of indigenous peoples are an important part of this (Rapanna 2016).

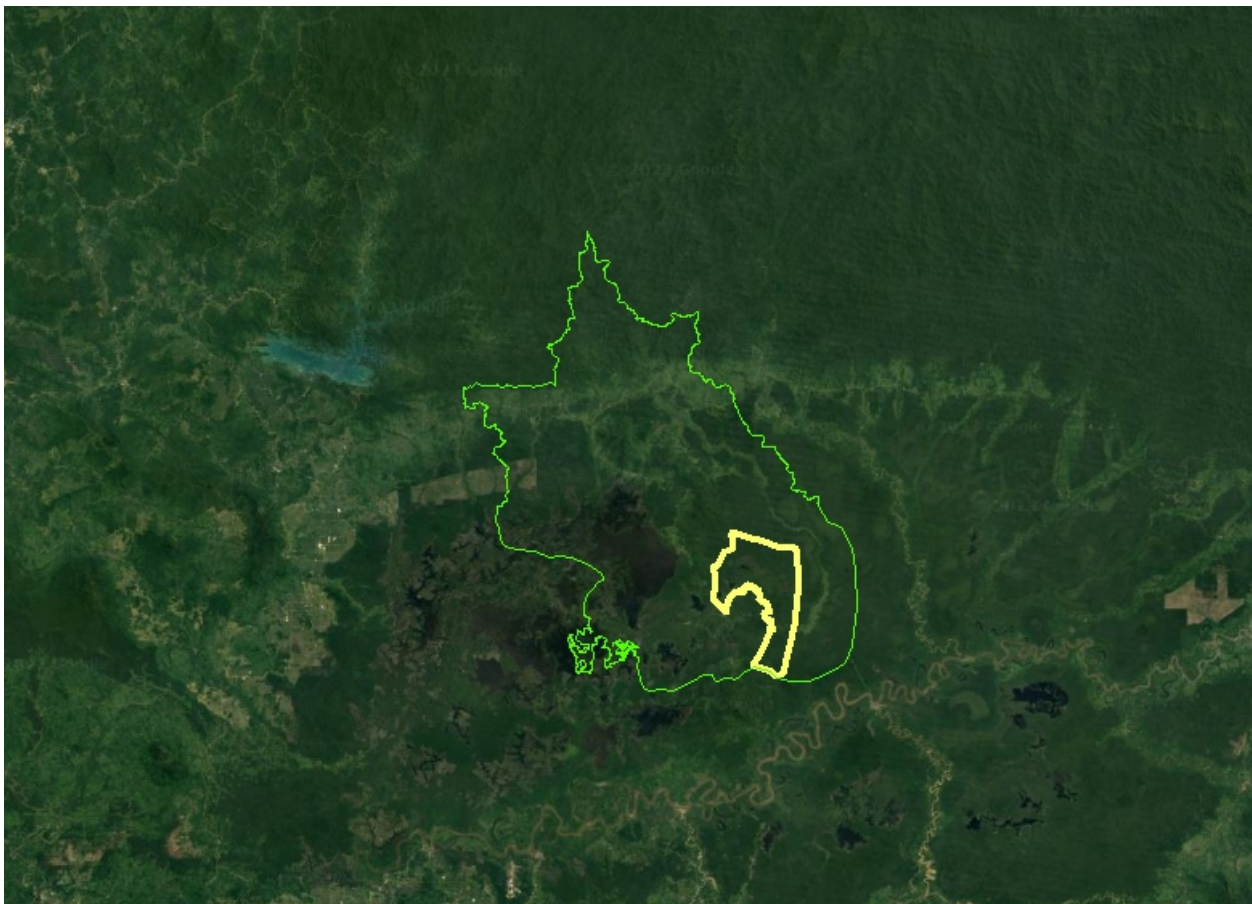
Based on the KPP Kaban Mayas information, the tourist visits to Meliau Hamlet fluctuated between 2007 and 2019 (Figure 1). Following the establishment of KPP Kaban Mayas in 2015, there was a significant increase in the influx of local and international tourists. However, the Focus Group Discussions (FGDs) conducted within the Village Ecotourism Management (WKE) Program by DSNP revealed that inoptimal infrastructures, human resources, and institutions challenged the ecotourism management in Meliau Hamlet from 2016 to the present. This research aimed to analyze the feasibility of ecotourism development, assess the economic aspects and social capital, formulate a suitable business model for

Meliau Hamlet, and determine strategies for ecotourism management in the area. This research analyzed the feasibility of ecotourism development, assessed the economic aspects and community resources, formulated a suitable business model for Meliau Hamlet, and determined strategies for ecotourism management in the area.

## Materials and Methods

### Location and Time

Data was collected from 30 May 2022 to 26 June 2022 in Meliau Hamlet, Melemba Village, Batang Lupar Sub-district, Kapuas Hulu Regency, West Kalimantan. Some parts of the hamlet fell within the Traditional Zone, Section V Selimbau National Park Management Area of DSNP. Geographically, this hamlet was situated at coordinates  $0^{\circ}53'31.1''$  N and  $112^{\circ}20'55.4''$  E, covering 9,083.74 hectares (Figure 2), with a population size of approximately 139 people (BPS 2022).



**Figure 2.** Meliau Hamlet Boundary Map  
(Source: tanahairindonesia.go.id 2019)

### Data, Sampling, and Analysis

This research used primary data obtained through field visits, interviews, and surveys using questionnaires (Table 1). Secondary data obtained through literature search included various documents, journals, articles, and other references. This research used primary data obtained through field visits, interviews, and surveys using questionnaires (Table 1). Secondary data obtained through literature search included various documents, journals, articles, and other references. The sampling method employed for interviews was the census method, targeting 59 individuals aged 20 to 65 years with direct interests and influence on the ecotourism of Meliau Hamlet. Similarly, the census sampling method was employed for the survey with questionnaires to target nine KPP Kaban Mayas management personnel for the questionnaire. The accidental sampling method was conducted for 12 visitors to Meliau Hamlet ecotourism in June 2022.

### Results and Discussion

#### Feasibility Analysis of Ecotourism Development

Table 2 shows a comprehensive feasibility analysis of ecotourism development, undertaken by examining 15 aspects of assessment from the ODTWA (Object of Tourism Destination and Area).

The feasibility analysis score for the ecotourism development in Meliau Hamlet was 70%. According to the ODTWA assessment guidelines by the Directorate General of PHKA (Natural Resources and Ecosystem Conservation) in 2003, the ecotourism of Meliau Hamlet was feasible for development. The elements related to accessibility, accommodation, and market potential exhibited moderate and low potential levels due to the limited number of accommodations around the ecotourism area, with only 15 rooms. The potential market calculation was based only on local tourist visits, while the interview results suggested that

**Table 1.** Methods of Data Collection and Analysis

	Feasibility of Ecotourism Development	Institutional	Indigenous People Capital	Financial	Business Model	Strategy
<b>Data Type</b>	Primary	Primary and Secondary	Primary	Primary and Secondary	Secondary	Primary and Secondary
<b>Data Collection Method</b>	Observations, Interviews, and Questionnaires	Interviews, Questionnaires, and Literature Research	Interview and Questionnaire	Interview		Interview and Questionnaire
<b>Data Source</b>	Field, KPP Management of KPP Kaban Mayas, and visitors	Management of KPP Kaban Mayas, Village Institutions, Customary Institutions, and DSNP	Management of KPP Kaban Mayas, Village Institutions, Customary Institutions, and Communities	Management of KPP Kaban Mayas	Feasibility analysis of development, institutional, community capital, and financial	Management of KPP Kaban Mayas, Village Institutions, Customary Institutions, Communities, and DSNP
<b>Data Analysis</b>	ODTWA ( <i>Objek Daya Tarik Wisata Alam</i> ) Scoring and Analysis	Stakeholder Analysis	Multicriteria Analysis (MCA)	Financial Feasibility Analysis (NPV (Net Present Value), B/C (Benefit Cost Ratio) IRR (Internal Rate of Return), and PP (Payback Periode))	BMC (Business Model Canvas) and SWOT (Strengths, Weakness, Opportunity, Threats)	QSPM (Quantitative Strategic Planning Matrix) and BOS (Blue Ocean Strategy)
<b>References</b>	(Dirjen PHKA ,2003)	(Abbas, 2015)	(Oktalina et al., 2016)	(Kadariah et al., 1999; CFI Team, 2023; Fernando, 2022)	(Osterwalder and Pigneur, 2010; Benzaghta et al., 2021)	(Alamanda et al., 2019; Randall ,2015)



**Table 2.** Feasibility Value of Ecotourism Development in Meliau Hamlet

No	Element	Score	Percentage	Potential
1	Tourist attraction	1200	83%	High
2	Area Conditions	800	89%	High
3	Climate	360	75%	High
4	Clean Water Availability	780	87%	High
5	Accessibility	180	33,33%	Moderate
6	Supporting Facilities and Infrastructure	300	100%	High
7	Accommodation	30	33,33%	Moderate
8	Visitor Safety	255	95%	High
9	Carrying capacity	575	94%	High
10	Visitor Settings	75	83%	High
11	Relations with Other Tourism Objects	100	100%	High
12	Marketing	100	83%	High
13	Market Potential	255	26%	Low
14	Market Share	255	94%	High
15	Management and Service	440	70,5%	High
	Total	5705		
	Max Score	8130		
	<b>Percentage</b>	<b>70%</b>	<b>Feasible to Develop</b>	

(Source: Dirjen PHKA 2003; Data analysis 2022)

**Table 3.** Community Capital Score in Ecotourism Management

Capital/Assets	Score	Classification
Natural resources	147,25	3 (Moderate)
Human Resources	243,33	5 (Very High)
Financial	86,66	2 (Low)
Physical	128,67	3 (Moderate)
Social	194,67	4 (High)

(Source: Oktalina et al. 2016; Data analysis 2022)

international tourists dominated the visits to the Meliau Hamlet ecotourism. While the distance from the provincial and regency capitals to the hamlet was relatively considerable, the road conditions were commendable. International tourists benefited from a shorter distance than their local counterparts due to the Badau State Border Post (PLBN) presence near the Meliau Hamlet.

### Analysis of Community Capital in Ecotourism

Dayak Iban community capital measurement in the Meliau Hamlet used five types of sustainable capital (Table 3). Natural resources, such as lakes, rivers, hills, and biodiversity, became the primary capital for ecotourism management in the Meliau Hamlet. They were relatively undisturbed and accessible as tourist attractions. The community regularly monitored its natural resources to maintain the Meliau Hamlet ecotourism area. This dedication found its roots in the Dayak Iban customary norms that regulate the utilization, preservation, and management of natural resources. Social capital or

local wisdom is a strong foundation for conservation and sustainable environmental management. Apart from that, local wisdom is also used as a strategy in dealing with the problems of living with limited resources owned (Kasih & Nurhasana 2021). Virtually all members of the community engaged directly or indirectly in ecotourism endeavors. Participation included roles such as speedboat drivers, cooks, lodging providers, guides, and suppliers of local products, including woven baskets and dried fish. The community's level of trust in the ecotourism institution managers was high, as the KPP Kaban Mayas held regular meetings with the community to allocate schedules and tasks in ecotourism management.

### Financial Feasibility Analysis

The calculation of the Benefit-Cost (B/C) ratio, Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period (PP) indicated the feasibility (Table 4) of ecotourism development in the Meliau Hamlet (Kadariah et al. 1999).

**Table 4.** Community Capital Score in Ecotourism Management

Parameter	Score	Feasibility	Description
IRR	10,85%	Feasible	>df (Interest Rate 10%)
PP	16,93	Feasible	< Project Age
NPV	Rp 7.934.473	Feasible	> 0
B/CR	1,06	Feasible	> 1

(Source: Kadariah et al. 1999; Data analysis 2022)

**Existing Business Model Canvas (BMC)**

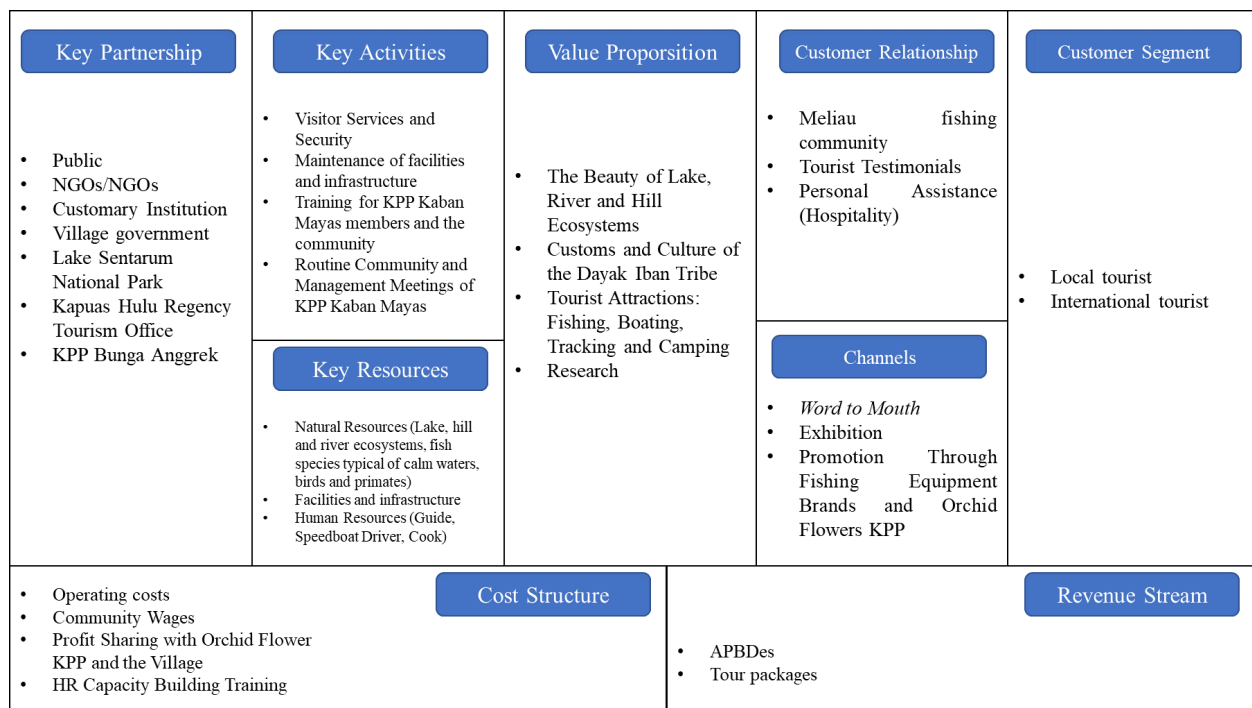
The existing BMC (Figure 4) described various value propositions of Meliau Hamlet Ecotourism, such as the natural beauty of mountains and rivers, cultural heritage, tourist attractions, and research potential. The identified primary resources included the bountiful natural resources, the potential of human resources, and the existing facilities and infrastructure. Therefore, the core activities revolved around providing services for visitors, maintaining ecotourism facilities, providing training for community members, and maintaining regular engagement with village authorities and cultural institutions.

Key partnerships involved the participation of local communities, village governments, cultural institutions, DSNP, NGOs, and the KPP Kaban Mayas.

The customer segments encompassed domestic and international tourists, with information dissemination accomplished through diverse channels. These included the continuous use of promotional approaches by KPP Kaban Mayas, such as word of mouth, exhibitions, collaborations with travel agencies, and fishing equipment brand promotion. KPP Kaban Mayas maintained their interaction and relationships with visitors by developing a fishing community and a platform for tourists to provide testimonials. The sale of tour packages became the primary income stream, while operations, community remuneration, training initiatives, and profit-sharing arrangements became the main costs for the ecotourism Meliau Hamlet.

**SWOT Analysis – BMC**

A subsequent SWOT analysis provided insights into the strengths, weaknesses, opportunities, and



**Figure 3.** Existing BMC of Meliau Hamlet Ecotourism (Source: Data analysis 2022)

threats of the ecotourism venture in Meliau Hamlet, managed by KPP Kaban Mayas, after identifying the nine business elements using the BMC analysis. Combining the BMC and SWOT analyses (Table 5) facilitated a focused appraisal and evaluation of the organizational business model and its building block,

comprised of the nine elements (Solihah et al. 2014).

### QSPM Analysis

The value in each category in Table 6 has meaning as a result of scoring from the QSPM analysis, where the greater the value, the more priority the strategy that must be implemented. The QSPM results

**Table 5.** SWOT Analysis of Meliau Hamlet Ecotourism

No	Aspect	Strength	Weakness	Opportunity	Threat
1	<b>Key Partner</b>	There were various ecotourism management partnerships from the government, traditional institutions, communities, and NGOs	Ecotourism financial management and administration are inadequate	The opening of opportunities for collaboration from many parties and fields	Conflict of Interest
2	<b>Key Activities</b>	The guide already had an eco guide certificate which comprised customary regulations and fishermen in ecotourism	There was no business license yet. Besides, care, maintenance, and services were not optimal due to poor management of waste	The community played an active role in ecotourism activities	Low level of trust between some communities and nature tourism agencies
3	<b>Value Proposition</b>	High biodiversity potential and worth developing, free from pollution and city bustle	Tour tickets were still relatively expensive, with limited accommodation and transportation	There were no competitors with similar potential and activity	Floods, low tide, and weather
4	<b>Customer Relationship</b>	Good relations with partners, as well as other agencies	Promotional activities cannot use information and Communication Technology optimally due to power and signal constraints	Testimonials and promotions from tourists, travel agencies, and fishing gear brands	The intention of tourists to visit decreased
5	<b>Customer Segment</b>	Tourists were attracted by the unique natural resources in Meliau Hamlet	The manager implemented the same system for domestic and foreign tourists	The tourist segment was diverse, with increased foreign tourist visits	Local tourist visits decreased
6	<b>Key Resources</b>	Biodiversity was diverse and still well maintained because there were customary rules and human resources, which came from local communities	Human resources, specifically in service, language, and readiness, received inadequate visitors. There was no adequate technology in the form of communication radio, with limited facilities and infrastructure	Advances in technology and information	Natural disasters
7	<b>Channels</b>	Collaborating with travel agents and fishing gear brands, and active promotion through exhibitions	Promotion through social media as well as websites was undeveloped	It had good ratings from tourists, travel agents, and fishing brands	Tourists switch to other types of tourism
8	<b>Cost structure</b>	Costs for community salaries were met, and financial analysis was feasible	Operational and training costs were high, with inefficient fund management and bookkeeping due to a lack of business license	Savings on promotional costs through collaboration with travel agents and fishing gear brands	The unstable village's economic and political conditions
9	<b>Revenue Stream</b>	Sources of income vary	Financial management was not yet optimal, and there was no good bookkeeping	New sources of income were opened from donors	The trust of donors in the donations given decreased

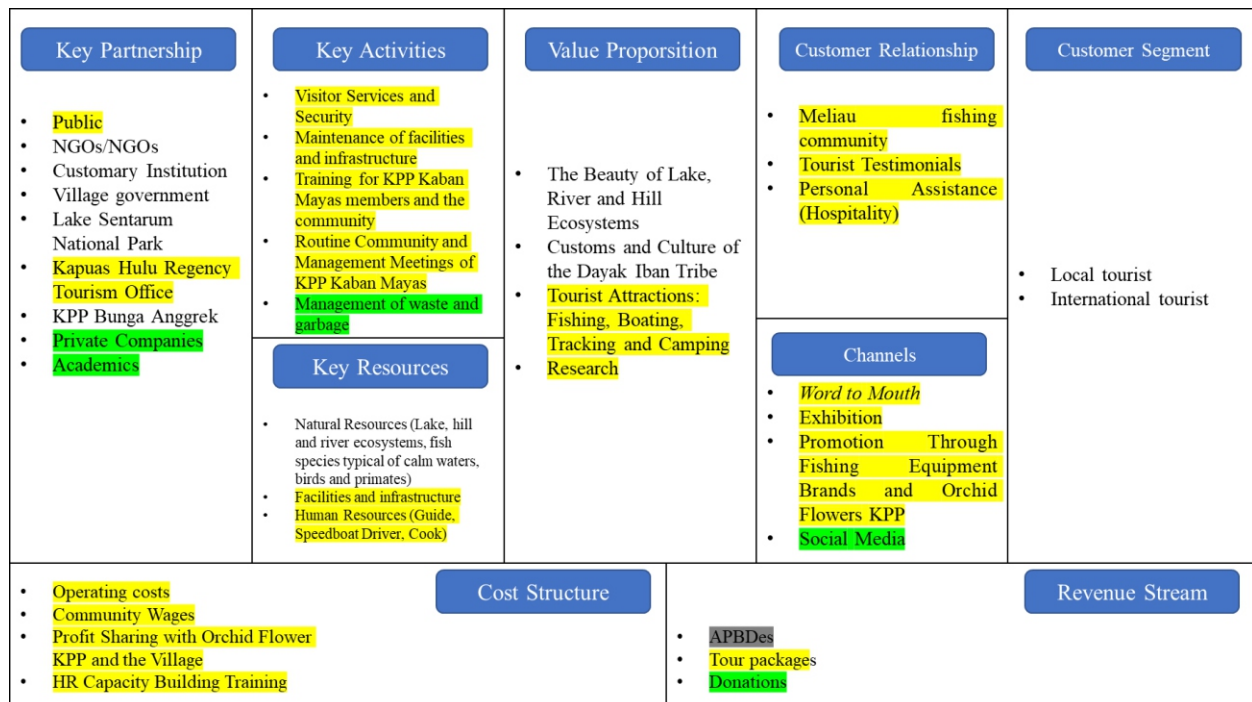
(Source: Observation and data analysis 2022)

indicated that the Set W-O (Weakness Opportunity) strategy became the priority to address weaknesses by capitalizing on available opportunities (Table 6) because it has the highest score. Among the six prioritized alternative strategies of W-O, the top three

in ascending order were strategies 1, 2, and 3, with values of 4.60, 4.38, and 4.21, respectively. These included training for community capacity building, proposing cooperation to partners or donors through the CSR program approach for developing

**Table 6.** QSPM Analysis of Meliau Hamlet Ecotourism

<p>S-O Strategy (3,15)</p> <ol style="list-style-type: none"> <li>Maintaining good relations between stakeholders or key managers, partners, and tourists (3,89)</li> <li>Trying to introduce existing tourism potential as a new tourist attraction (2,71)</li> </ol>	<p>W-O Strategy (3,18)</p> <ol style="list-style-type: none"> <li>Conducting community capacity building training ranging from service, language, finance, administration, and cooking local food for tourists (4,60)</li> <li>Proposing cooperation proposals to partners or donors for the development of infrastructure, communication radio, and improving accessibility through the CSR program approach (4,38)</li> <li>Asking for help in managing PB PJWA (4,21)</li> <li>Determining various ticket prices for local and foreign tourists (3,72)</li> <li>Submitting proposals for funding to the government related to electricity infrastructure and telephone and internet signals (3,46)</li> <li>Conducting regular customary meetings with the whole community to ensure transparency in ecotourism management and keeping the environment clean (2,62)</li> </ol>
<p>S-T Strategy (3,10)</p> <ol style="list-style-type: none"> <li>Submitting funds and programs for building garbage and household waste (3,05)</li> <li>Dividing the tasks and functions of each party that manages ecotourism and not receiving the same program from one partner to another (2,65)</li> <li>Conducting periodic monitoring to prevent damage and natural disturbances (2,83)</li> <li>Conducting regular meetings between the Village Government, Ecotourism Institutions, and the community regarding transparency of village activities and finances (2,06)</li> </ol>	<p>W-T Strategy (3,13)</p> <ol style="list-style-type: none"> <li>Returning the habit of gathering for the division of shift schedules for the community in charge of ecotourism activities (2,06)</li> <li>Customary institutions could overshadow waste and its management mechanisms (1,93)</li> </ol>



**Figure 4.** Future BMC of Meliau Hamlet Ecotourism



infrastructure, communication radio, improving accessibility, and asking for help managing Business Licensing for Natural Tourism Environmental Services (PB-PJWA). Several strategies were also needed, including seeking assistance from relevant parties and conducting socialization to ensure a smooth process to obtain permits and licenses, setting varied ticket prices for local and international tourists, and improving the electricity supply and communication. Others included regular meetings involving the entire community to ensure transparency in ecotourism management and maintain environmental cleanliness.

#### Future BMC of the Meliau Hamlet Ecotourism

A comprehensive Blue Ocean Strategy (BOS) analysis used adding, creating, reducing, and eliminating framework approaches. These four approaches were established based on insights from QSPM analysis, which bridged the gap between the existing and future BMC (Figure 4). The results suggested that the prioritized strategies incorporated and developed components within Key Activities, Key Resources, Value Propositions, and Key Partnerships to influence cascading effects on the elements of other building blocks. In the revenue stream block, the Village Budget Allocation (APBDes) decreased due to increased tour packages, donation collections, and the acquisition of business permits.

### Conclusion

In conclusion, the development of Meliau Hamlet ecotourism was feasible with a score of 70%, financially feasible, and high community capital, primarily through utilizing natural resources. Six strategies became the priorities to enhance Meliau Hamlet's ecotourism. These included training for community capacity building, proposing cooperation to partners or donors through the CSR program approach for developing infrastructure, communication radio, improving accessibility, and asking for help managing PB-PJWA. Several strategies were also needed, including seeking assistance from relevant parties and conducting socialization to ensure a smooth process to obtain permits and licenses, setting varied ticket prices for local and international tourists, and improving the electricity supply and communication. Others included regular meetings involving the entire community to ensure

transparency in ecotourism management and maintain environmental cleanliness. With an eye on the future BMC, the prioritized strategies incorporated and developed components within Key Activities, Key Resources, Value Propositions, and Key Partnerships to influence cascading effects on the elements of other building blocks.

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