

## Marine Tourism Profile from the Perspective of Ecotourism and Marine Conservation in the Manswar Archipelago, Gam Island and the South Waigeo Coastal Area, Raja Ampat, Southwest Papua

Absalom Solossa<sup>1</sup>, Selvi Tebaiy<sup>2</sup>, A. Hamid Toha<sup>3</sup>, Yuanike Kaber<sup>4\*</sup>  
Papua University

**Corresponding Author:** Yuanike Kaber; [y.kaber@unipa.ac.id](mailto:y.kaber@unipa.ac.id)

### ARTICLE INFO

### ABSTRACT

*Keywords: Raja Ampat, Ecotourism, Marine Tourism, Marine Conservation, Southwest Papua*

*Received : 5 November*

*Revised : 23 December*

*Accepted: 23 January*

©2026 Solossa, Tebaiy, Toha, Kaber:  
This is an open-access article distributed  
under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



Raja Ampat is one of the areas with the highest marine biodiversity in the world and is a leading tourism destination in Indonesia. This research focuses on several locations in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area, Raja Ampat, Papua. The objectives of this study are to identify the potential for natural and cultural tourism in Mansuar, Gam, and South Waigeo, assess the problems and challenges of community-based tourism management, and develop a participatory action plan for sustainable tourism development. This study will also analyze the tourism profile of Raja Ampat through a qualitative descriptive approach, covering natural potential, tourism activities, socio-cultural aspects, accessibility, and conservation dynamics. This study uses the PRA (Participatory Rural Appraisal) method, which is an approach and collection of participatory techniques used to involve local communities in the process of problem identification, potential analysis, program planning, and decision-making, especially in rural areas or local communities (including small islands such as Mansuar, Gam, and South Waigeo). The results of the study indicate that Raja Ampat tourism is highly dependent on the sustainability of marine ecosystems, so ecotourism-based management is a primary strategy. Despite its significant contribution to the local economy, tourism development also faces challenges in the form of environmental pressures and the need for sustainable regulation

## **INTRODUCTION**

Raja Ampat, located in Southwest Papua Province, consists of four main islands – Waigeo, Misool, Salawati, and Batanta – and more than 1,500 smaller islands. This area is part of the Coral Triangle, known as a global center of marine biodiversity (Allen, 2008). The unique karst landscape, the quality of the marine ecosystem, and the local cultural heritage make Raja Ampat one of the most important tourism destinations in Indonesia. Tourism development in this region has increased since the early 2000s in line with growing interest in marine tourism and conservation. However, this growth must be balanced with efforts to maintain the sustainability of the ecosystem. This research will provide a tourism profile of Raja Ampat to support the development of data-driven and conservation policies.

In 2024, total tourist visits to Raja Ampat are expected to reach approximately 33,277 people. Based on this data, 24,934 of these visitors were international tourists, while 8,343 were domestic tourists. According to a Greenpeace report, this increase is equivalent to approximately 68% compared to the previous year (2023). The Ministry of Tourism noted that tourist visits from the United States were significantly higher than those from other countries. In the January–November 2024 period, 384,835 US tourist visits to Indonesia (not just Raja Ampat) were recorded, a significant increase compared to the previous period. The Ministry of Tourism also expressed optimism that international tourist visits to Raja Ampat would exceed pre-pandemic figures (457,832). Manswar is the most developed tourism area in Raja Ampat. Infrastructure is relatively better than other areas, with numerous homestays, dive centers, and tourist transportation boats. The Manswar Archipelago includes popular tourist islands such as Mansuar, Kri, and Arborek. This area is one of the centers of marine tourism in Raja Ampat and is a world-class diving spot with excellent coral reef health. Cape Kri, Sardine Reef, and Blue Magic are favorites for international divers due to the nutrient-rich currents that attract a variety of large pelagic fish species. The Arborek Tourism Village is renowned for its community-based tourism. Homestays and cultural activities, such as local traditional dances, are attractions that enrich the tourist experience. The Manswar coastline boasts fine white sand, clear water, and a shallow coral ecosystem ideal for snorkeling. The presence of manta rays in several spots makes this area unique. Gam Island, located near Manswar and Waigeo, is a key tourist destination combining land and sea ecotourism. Birdwatching is a popular tourist attraction, especially among tourists.

## **LITERATURE REVIEW**

Gam Island is a prime location for viewing Red Birds-of-Paradise and Wilson's Birds-of-Paradise in the wild, particularly in Sawinggrai and Yenwaupnor Villages. Tourists can embark on morning treks to birdwatching locations. The mangrove and lagoon ecosystems are also popular destinations. The shallow waters around Gam contain small lagoons with rich mangrove ecosystems. Kayaking through the mangroves is a popular activity. The waters around Gam Island are ideal for snorkeling and diving, as Gam boasts healthy coral reefs and relatively calm currents. Snorkeling spots like Friwen Wall are

renowned for their vertical coral walls and rich marine biodiversity. This area offers a calmer atmosphere than the Manswar Islands. Local communities provide simple, environmentally friendly homestays, and tourism activities are managed through a participatory approach.

This research aims to identify the potential for natural and cultural tourism in the Mansuar Islands, Gam, and the coastal areas of South Waigeo. The research also assesses the issues and challenges of community-based tourism management and develops a participatory action plan for sustainable tourism development. The southern coastal region of Waigeo encompasses the areas around Waisai, Saonek, Saporkren, and Kabui Bay. This area serves as the main gateway to the Raja Ampat islands. Popular tourist destinations include Kabui Bay and Batu Pensil. This area is known for its karst landscape of small islands rising from the sea surface, similar to Piaynemo on a smaller scale. Batu Pensil is iconic for its thin, vertical karst pillars. The area also boasts Coastal Karst Caves. Several karst caves with stalactites and stalagmites can be reached by small boat. Some caves feature prehistoric Papuan paintings. Marine tourism in and around Saonek is also a prime destination. Saonek Village boasts a tourist harbor, white sand, and snorkeling spots with crystal-clear water. This area is often used as a starting point for island hopping trips.

## METHODOLOGY

This research was conducted using the PRA method, a participatory approach to collecting, analyzing, and utilizing local information by the community itself, so that they become subjects in development planning and decision-making, including natural resource management and tourism. The characteristics of this research are: Participatory: the community plays an active role; Local knowledge-based: local experience is the primary source of information; Adaptive and flexible: learning and adjustment processes are carried out together with the community; and Empowering: increasing community capacity. Data collection focused on several locations in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area, Raja Ampat, Papua. Data collection techniques included:

1. Social Mapping: mapping communities and facilities.
2. Resource Mapping: mapping natural resources and tourist locations.
3. Transect Walk: direct field observation.
4. Seasonal Calendar: seasonal patterns, ocean currents, and economic activity.
5. Venn Diagram: identifying institutions and stakeholders.
6. Ranking & Scoring: prioritizing problems and potentials.
7. Problem Tree: mapping the root of the problem and its impact.
8. FGD (Focus Group Discussion): group discussion to reach consensus.

This research was conducted by collecting and compiling secondary data from various sources, namely:

1. Government Documents: Regional Tourism Development Master Plan (RIPPDA) for Papua and West Papua, Annual Report of the Raja Ampat

- Regency Tourism Office, Statistics Indonesia (BPS) (data on tourists, regional income, and tourism sector workforce).
2. Academic Publications: Research journals on ecotourism and community-based tourism in Papua, Theses, or dissertations from local and national universities discussing Papuan tourism.
    - NGO Reports: WWF Indonesia, Conservation International, and the Nusantara Nature Conservation Foundation (reports on ecotourism and conservation in Papua).
    - Community assistance documents from local NGOs.
  3. Mass Media & Online Articles
    - News on tourism development in Papua from national media (Kompas, Tempo, Antara).
    - Official tourism portals such as Indonesia Travel or Wonderful Indonesia.
  4. Global Statistical Data
    - UNWTO (United Nations World Tourism Organization) for sustainable tourism trends.
    - World Bank or ADB for development data in Papua.

Secondary data was collected and compiled through the following methods:

- Triangulation: Comparing data from government, academic, and NGO sources to ensure validity.
- Trend analysis: Using statistical data (number of tourists, revenue) to see year-over-year developments.
- Contextualization: Combining with primary data (community interviews) to enrich and enhance relevance.

The analysis was conducted using thematic categorization techniques to identify key aspects of tourism, namely natural potential, tourist attractions, accessibility, socio-cultural aspects, and conservation.

Primary data collection was conducted through interviews with local communities and stakeholders relevant to the research objectives. Respondent data collection was conducted intentionally and obtained from key informant sources, namely:

#### **Local Communities**

- Traditional leaders, village heads, or tribal elders.
- Direct actors such as tour guides, homestay owners, artisans, fishermen, or farmers involved in tourism activities.

#### **Local Government**

- Regency/city tourism offices (e.g., the Sarmi, Mimika, or Raja Ampat district tourism offices).
- Village officials who regulate local tourism regulations.

#### **Supporting Organizations**

- NGOs working in conservation and community empowerment (e.g., WWF Indonesia, the Nusantara Nature Conservation Foundation, or Conservation International).
- Universities and researchers

#### **Tourism Industry Players**

- Local tour operators.

- Tour guide associations or tourism awareness groups (Pokdarwis).

**Tourists**

- Tourist experiences and perceptions can be additional sources of information for assessing the success of community-based management.

**RESULTS AND DISCUSSION**

*Biodiversity and Natural Potential*

Raja Ampat is one of the most productive marine ecosystems in the world. More than 550 coral species and 1,500 fish species have been recorded (Veron et al., 2009). This makes Raja Ampat an international center for marine biodiversity research. Spots like Cape Kri and Manta Sandy are not only popular with divers but also serve as indicators of ecosystem health.

The unique geomorphology of the karst formations in Piaynemo and Wayag also provides a major visual attraction. The diversity of endemic flora and fauna in the coastal forests, such as the Bird of Paradise, enhances the value of land-based ecotourism.

*Tourism Activities and Development*

Dominant tourism activities include diving, snorkeling, liveboarding, birdwatching, sea kayaking, and nature photography. The growth of the tourism industry is dominated by local businesses such as community-based homestays, tour guides, and diving equipment rentals.

Despite its positive economic impact, intensive tourism activities also increase the potential for environmental degradation, such as damage to coral reefs due to ship anchors and pressure on certain species. Therefore, strict regulations and tourist education are necessary to maintain the sustainability of tourism activities.

Table 1. Profile of Tourism Areas in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area, Raja Ampat, Southwest Papua

Kawasan	Karakteristik Utama	Aktivitas Wisata Utama
Manswar Islands	The busiest marine tourism center, the best diving spot	Diving, snorkeling, homestay, manta
Gam Island	Natural and cultural ecotourism, bird watching	Bird watching, trekking, snorkeling, mangrove kayaking
South Coast of Waigeo	Tourist gateway, karst landscape, complete facilities	Island hopping, Kabui Bay, local culture

*Accessibility and Infrastructure*

Access to Raja Ampat is via Domine Eduard Osok Airport (Sorong), followed by a sea journey to Waisai. Although transportation access is relatively easy, supporting infrastructure such as healthcare facilities, waste management, and logistics distribution remains a challenge. The local government has developed several strategic facilities, but service capacity remains limited compared to the growth in tourist visits.

### ***Socio-Cultural Status of the Local Community***

The Raja Ampat community has strong maritime traditions, with Melanesian culture as a key identity. Local wisdom such as *sasi* – a prohibition on fishing or harvesting certain resources during a specific period – serves as a traditional conservation mechanism (Pattiselanno & Loma, 2018). Tourist interactions with local communities serve as both an economic resource and a medium for cultural preservation. However, lifestyle changes and economic pressures can give rise to value conflicts if not managed properly.

Cultural traditions, such as *sasi*, are a cultural profile of the indigenous Raja Ampat community in preserving resources passed down through generations and persist to this day. *Sasi* is a tradition of indigenous people in Papua and the Eastern Indonesian region which is a temporary ban on taking natural resources (sea/forest) in a certain area to give time for resources to recover and be sustainable. This tradition is not merely a technical rule, but a form of local knowledge passed down through generations within indigenous communities (Mentansan et al., 2023).

*Sasi*, as a traditional practice of managing and protecting marine resources, plays a role as cultural capital in sustainable tourism development, demonstrating that a strong local culture not only conserves the environment but also serves as a socio-cultural attraction that enhances the tourist experience (Mentansan et al., 2023).

The socio-cultural aspects of local traditional values (including architecture, customs, and traditional practices) influence the sustainability and tourism experience in Raja Ampat. This aspect demonstrates that cultural uniqueness provides an authentic experience, which positively impacts tourist perceptions (Budarma et al., 2024).

Social capital within kinship systems, such as those of the Biak tribe, serves as a model for community-based tourism management (homestays). Local communities with strong kinship ties form business networks that attract tourists due to their social and cultural authenticity. This is also found in the Papuan community in Raja Ampat, where homestays are managed (Ilmawan et al., 2023).

### ***Conservation and Ecological Challenges***

The Raja Ampat area has been designated a Regional Marine Conservation Area (KKLD) with joint management by the government and international conservation organizations. Species monitoring, marine patrols, and environmental education programs have successfully reduced destructive activities such as blast fishing. Muntasib, Yulianda, and Fahrudin (2018) emphasize that marine ecotourism management in Raja Ampat must be conservation-based to maintain the sustainability of the marine ecosystem.

Nevertheless, threats such as climate change, rising sea temperatures, and microplastic pollution remain important issues. The implementation of ecotourism-based tourism is a long-term strategy that must be strengthened. Yulianda, Fahrudin, and Adrianto (2017) state that marine ecotourism development must consider the suitability and carrying capacity of the area. Sustainable marine tourism development in Raja Ampat must integrate conservation, social, and economic aspects (WWF Indonesia, 2016).

*Community-Based Tourism Profile in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area*  
*Tourist Profile in the Raja Ampat Marine Protected Area*

The number of tourists visiting the Raja Ampat Tourism Area has been increasing year after year. The graph presented in Figure 1 shows a significant increase during the pandemic period, from 2022 to 2025, although the number of visits in 2025 was lower than in 2024

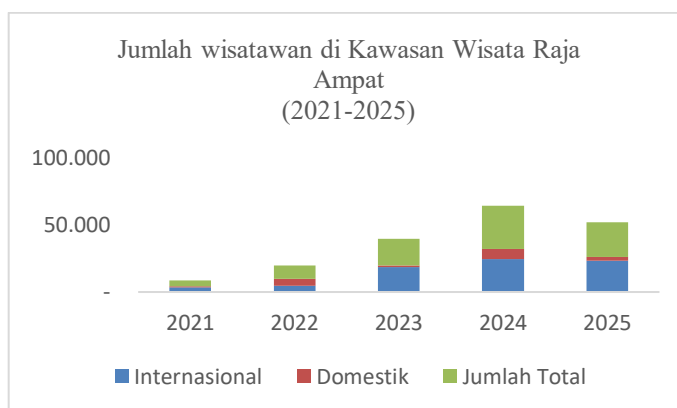


Figure 1. Development of the number of tourists in the Raja Ampat Tourism Area (2021-2025)

Based on data obtained from the Regional Public Service Agency (BLUD) of the Raja Ampat Marine Conservation Area, 100 countries of origin were identified for tourists visiting the Raja Ampat Tourism Area, with a total of 32,147 tourists throughout 2024, consisting of 24,443 international tourists and 7,704 domestic tourists.

Table 2. Names of Countries of Origin of Tourists Visiting the Raja Ampat Tourism Area with a Total of >500 Tourists/Year (2024 Data)

No.	Country Name	Number of Tourists
1	Perancis	2719
2	Amerika (USA)	2160
3	Jerman	2108
4	Australia	1241
5	Italia	1187
6	Spanyol	1100
7	Belanda	941
8	Swiss	786
9	China	665
10	Inggris	578
11	Polandia	536

Table 1 shows the 11 countries of origin with more than 500 tourists throughout 2024. The data shows that European tourists dominate the list. These European tourists come from France, Germany, Italy, Spain, the Netherlands,

Switzerland, the United Kingdom, and Poland. French tourists rank highest, followed by tourists from the United States and Germany, with more than 2,000 tourists visiting throughout 2024.

Table 3. Comparison of Characteristics of Domestic and International Tourists

Aspek	Wisatawan Domestik	Wisatawan Mancanegara
Main motivation	Recreation and national pride	Diving & ekowisata
Dominant activity	Snorkeling, photos, island hopping	Diving, liveaboard, penelitian
Length of stay	Short	Length
Price sensitivity	high	Low
Conservation focus	Currently	High
Visiting patterns	Popular spots	Remote location

Table 2 presents a comparative description of domestic and international tourists based on primary motivation, dominant activity, length of stay, tourism price considerations, conservation focus, and visit patterns. Domestic tourists typically stay in tourist areas for shorter periods than international tourists, typically 2–4 days. Travel costs are often a consideration (price sensitive), and tourist activities tend to be in popular and easily accessible locations.

International tourists generally stay longer (7–14 days), with higher expenditure per visitor. Compared to domestic tourists, international tourists have a higher level of environmental awareness and understanding of regional regulations.

***Potential for Community-Based Tourism in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area, Raja Ampat***

Fitriana and Adi (2019) explain that the primary motivations for tourists in Raja Ampat relate to natural beauty, marine tourism activities, and ecotourism experiences. The tourist areas in the Manswar Archipelago, Gam Island, and the South Waigeo Coastal Area in Raja Ampat are largely managed by the community. In general, most tourists to the Raja Ampat Tourism Area are very diverse and can be grouped into the following main objectives:

**Nature Tourism and Landscape Beauty**

- Enjoying panoramic views of karst islands, lagoons, white-sand beaches, and crystal-clear blue waters
- Visiting tourist icons such as Piaynemo, Wayag, Arborek, and Misool

**Marine Tourism**

- Snorkeling and diving to see coral reefs, reef fish, manta rays, and world-class marine biodiversity
- Underwater photography

**Ecotourism and Conservation**

- Observing marine and coastal biodiversity (coral reefs, mangroves, seagrass)

- Supporting conservation-based and sustainable tourism
- Participating in environmental education and marine conservation activities

#### **Cultural and Social Tourism**

- Learning about local community life and Papuan customs
- Interacting with the local community in tourist villages (homestays, crafts, local cuisine)
- Observing local wisdom in resource management Marine tourism (e.g., the marine sasi system)

#### **Adventure Tourism**

- Island hopping and exploration of small islands
- Trekking to the top of karst hills to enjoy the views
- Kayaking and non-motorized marine tourism

#### **Relaxation and Special Interest Tourism**

- Enjoying the tranquility and relatively untouched natural surroundings
- Special interest tourism such as birdwatching (birds of paradise) and nature photography

#### **Research, Education, and Science**

- Marine and coastal biodiversity research
- Field education activities for students and researchers
- Monitoring of marine ecosystems and conservation areas

The Raja Ampat tourist area is not only a tourist destination, but also a natural laboratory, a center for marine ecotourism, and a symbol of world-class marine conservation.

#### ***Issues and Challenges in Community-Based Tourism Management***

Community-based tourism (CBT) faces major challenges, including limited management capacity, lack of coordination among stakeholders, and threats to environmental and cultural sustainability. This indicates that without proper management, it will hamper the economic and social potential of communities. Community-based tourism has significant potential to boost local economies, strengthen social cohesion, and preserve culture. However, challenges such as limited management, coordination, and sustainability must be addressed with inclusive and long-term strategies.

The following are key challenges in Community-Based Tourism Management:

- Limited managerial capacity: Many local communities lack skills in tourism management, marketing, and tourist services.
- Lack of coordination among stakeholders: The government, communities, and the private sector often operate independently, resulting in a lack of synchronization and harmonization of programs among stakeholders.
- Limited funding: Initial capital for infrastructure, promotion, and training is often difficult to obtain.
- Dependence on external parties: Dependence on investors or the government weakens community independence.
- Threats to culture and the environment: Uncontrolled tourism can damage local traditions and ecosystems.

#### ***Participatory Action Plan for Sustainable Tourism Development***

Some participatory action plans for sustainable tourism development are:

1. Innovation and Technology: Utilizing digital technology for promotion and marketing can help increase tourist visits and expand market reach.
2. Institutional and Human Resource Capacity Building: Developing and strengthening community institutions (tourism villages, traditional villages, customary land rights). Human resource capacity building and development can be carried out through ongoing training programs, where local communities can develop the skills necessary to effectively manage tourist destinations.
3. Cross-sector and multi-sector collaboration: Better coordination between the government, the private sector, and local communities to address challenges and...
4. Funding and Investment: Providing funding and financial support from the government and the private sector can accelerate the development of community-based tourism.
5. Policy implications for sustainable development, supporting community tourism. Supportive policies from local governments should include regulations that encourage participation in optimally utilizing opportunities. Resource management is carried out by utilizing natural and cultural resources that must be carried out in accordance with sustainable principles to maintain environmental sustainability and cultural heritage. These include budget allocations for community empowerment programs, and incentives for investors committed to sustainability principles. Furthermore, the regulatory framework must ensure that benefits from tourism are distributed fairly and equitably and do not create inequality and social disparities.

## **CONCLUSIONS AND RECOMMENDATIONS**

Raja Ampat is a strategic destination with significant potential for ecotourism-based marine tourism. With its rich marine ecosystem and unique coastal culture, the region holds significant scientific, ecological, and economic value. However, successful tourism development depends on effective conservation management, tourist education, and local community empowerment. Synergy between the government, local communities, and other stakeholders is crucial to maintaining the region's sustainability. Based on the research results, the following conclusions can be drawn:

1. The potential for natural and cultural tourism in the Mansuar Islands, Gam, and the coastal area of South Waigeo includes diving, snorkeling, homestays, manta rays, birdwatching, trekking, mangroves, kayaking, island hopping, Kabui Bay, and local culture.
2. The Raja Ampat tourism area can be grouped into the following main destinations: Nature and Landscape Beauty, Marine Tourism, Ecotourism and Conservation, Cultural and Social Tourism, Adventure Tourism, Relaxation and Special Interest Tourism, Research, Education and Science.
3. The Raja Ampat tourism area can serve as a natural laboratory, a center for marine ecotourism, and a world-class symbol of marine conservation.

4. Problems and challenges in managing community-based tourism include: limited managerial capacity, lack of coordination among stakeholders, limited funding, dependence on external parties, and threats to culture and the environment.
5. Participatory action plans for sustainable tourism development include: innovation and technology, increasing institutional capacity and human resources: developing and strengthening community institutions (tourism villages, traditional villages, customary land rights), cross-sector and multi-sector collaboration, sustainable funding and investment.

### **FURTHER STUDY**

This research still has limitations, so it is necessary to conduct further research related to the topic of Marine Tourism Profile from the Perspective of Ecotourism and Marine Conservation in the Manswar Archipelago, Gam Island and the South Waigeo Coastal Area, Raja Ampat, Southwest Papua in order to perfect this research and increase insight for readers.

### **REFERENCES**

- Allen, G. R. (2008). Conservation hotspots of biodiversity and endemism for Indo-Pacific coral reef fishes. *Aquatic Conservation*, 18, 541–556.
- Badan Pusat Statistik Kabupaten Raja Ampat. (2023). Statistik pariwisata Kabupaten Raja Ampat tahun 2022. Badan Pusat Statistik Kabupaten Raja Ampat.
- Budarma, I. K., Erawati, N. M. R., & Suarja, I. K. (2024). The Impacts of Traditional Values in Sustainable Tourism: Case Study in Raja Ampat Papua. *Journal of Tourism and Interdisciplinary Studies*, 4(1), 76–85. <https://doi.org/10.51713/jotis.2024.416>
- Conservation International Indonesia. (2020). Raja Ampat Marine Tourism and Conservation Report. Conservation International Indonesia.
- Fitriana, R., & Adi, S. (2019). Karakteristik dan motivasi wisatawan dalam pengembangan ekowisata bahari di Raja Ampat. *Jurnal Pariwisata Pesisir*, 4(2), 45–58.
- Ilmawan, K. F. & Prasetyo, A. Y. (2023). Family Kinship in Community-Based Tourism Businesses in Homestay Entrepreneurs Organization in Raja Ampat. *International Journal of Entrepreneurship and Tourism*, 1(1), 42–55. <https://doi.org/10.57203/ijent.v1i1.2023.42-55>
- Kementerian Pariwisata dan Ekonomi Kreatif Republik Indonesia. (2021). Rencana pengembangan destinasi pariwisata Raja Ampat. Kementerian Pariwisata dan Ekonomi Kreatif RI.

- Muntasib, E. K. S. H., Yulianda, F., & Fahrudin, A. (2018). Pengelolaan ekowisata bahari berbasis konservasi di Raja Ampat. *Jurnal Manajemen Hutan Tropika*, 24(3), 181–192. <https://doi.org/10.7226/jtfm.24.3.181>
- Mentansan, G., Nauw, M., Awom, R., Ayorbaba, M., Lumi, J., & Reeve, D. (2023). Sasi local wisdom as a cultural capital for sustainable tourism development in Raja Ampat Regency, West Papua. *International Journal of Green Tourism Research and Applications*, 5(1), 52–59. <https://doi.org/10.31940/ijogtra.v5i1.52-59>
- Pattiselanno, F., & Loma, T. (2018). Sasi as a customary management for marine conservation in eastern Indonesia. *Journal of Marine Policy*, 95, 98–104.
- Veron, J. E. N., DeVantier, L. M., Turak, E., Green, A. L., & Kininmonth, S. (2009). Delineating the coral triangle. *Galaxea Journal of Coral Reef Studies*, 11(2), 91–100.
- WWF Indonesia. (2016). *Sustainable Marine Tourism in Raja Ampat*. WWF Indonesia.
- Yulianda, F., Fahrudin, A., & Adrianto, L. (2017). *Ekowisata bahari: Konsep, kesesuaian, dan daya dukung*. IPB Press.