Impact of the COVID-19 Pandemic on Marine Tourism
Derawan Island, Berau Regency, East Kalimantan Province

O R Simarangkir1,2*, F Tawang3, I Irwan1, P B Utami4, N Nani5, Ricky6, T Kodiran7

1Study Program of Marine Science, East Kutai School of Agriculture, Indonesia
2Scientific Diving Laboratory East Kutai School of Agriculture, Indonesia
3Mobula Project Indonesia, Indonesia
4Study Program of Aquatic Resource Management, Tanjungpura University, Indonesia
5Department of Marine Affairs and Fisheries of East Kalimantan Province, Indonesia
6Center of Management for Coastal and Marine Resources Pontianak, Ministry of Marine Affairs and Fisheries, Indonesia
7Study Program of Aquatic Resource Management, Bogor Agricultural University, Indonesia

*omega.raya8@gmail.com

Abstract. The COVID-19 pandemic has had a tremendous impact on various aspects of life today. The tourism sector is one of the sectors affected by COVID-19, especially by the policy of social restrictions and foreign tourist visits. Derawan Island is one of the leading tourist destinations in East Kalimantan which has been affected by the COVID-19 infectious disease. The purpose of this research is to find out the impact of the COVID-19 pandemic on marine tourism on Derawan Island. The research was conducted in December 2020 – March 2021, using survey methods based on primary and secondary data. COVID-19 causes changes in habits, visit patterns, and the number of visits to Derawan Island marine tourism. The number of tourist visits decreased by 58% from the previous year, even as of December 2020, diving tourism actors are the parties most affected by COVID-19 due to the absence of diving tourists since the reopening of the leading tourist destination Derawan Island. The decline in tourist arrivals causes a decrease in income in the tourism sector, especially the income of tourism actors on Derawan Island.

1. Introduction

The COVID-19 pandemic has an impact on various sectors of life today, the tourism sector is no exception. The impact of COVID-19 is being felt in the tourism sector, mainly due to the policy of social restrictions and foreign tourist visits by the Government of Indonesia [1; 2]. This policy has an impact on the number of tourist visits in Indonesia, especially foreign tourists, which is 88.82% compared to last year in 2020 [3].

One of the marine tourism destinations in Indonesia that has been affected by COVID-19 is Derawan Island, which is one of the leading tourism destinations in East Kalimantan. As an effort to prevent the spread of COVID-19, for the time being, Kampung Derawan imposed restrictions on entering the village with strict supervision for other residents. This has been in effect since March 18 with the Decree of the Regent of Berau No. 187 of 2020 concerning the Determination of Emergency Alert Status for Disease Outbreaks due to Corona Disease-19 [4], and the circular letter of the Head of the Culture and Berau...
Regency Tourism Office No. 556/133/Budpar-3/III/2020 regarding the temporary closure of tourist attractions and entertainment venues in Berau Regency [5]. These social restrictions certainly have an impact on tourist activities, causing no tourist visits on Derawan Island until the reopening of tourist attractions. The purpose of this research is to find out the impact of the COVID-19 pandemic on marine tourism on Derawan Island.

2. Methodology
This research is survey research. The research was conducted in December 2020-March 2021, using descriptive methods based on primary and secondary data. The survey was conducted through in-depth interviews with the local communities and tourism businesses (restaurants, homestays, and dive centers). Additional information was obtained from interviews with the Kampung Derawan Island government, Berau Regency Tourism Office, and the East Kalimantan Provincial Tourism Office. Research literature was conducted to obtain an overview of supporting data, especially related to policies issued by local governments and other related parties in dealing with COVID-19. The collected data is then analyzed using descriptive analysis and presented in the form of images, graphs, and tables.

3. Result and discussion
3.1. Overview of marine tourism Derawan Island
Derawan Island is one of the leading natural tourist destinations in East Kalimantan Province. Derawan Island is located in the world's coral triangle area which is famous for its high biodiversity [6]. This high biodiversity is the main attraction for marine tourism on Derawan Island. Derawan Island and its surroundings are included in the Berau Tourism Development Area with the theme of marine tourism, special interests, nature/ecotourism, and culture [7].

The beauty of the underwater view and the presence of unique biota on Derawan Island and the surrounding islands are the main attraction for tourists. Marine tourism objects that are an attraction in the waters of Derawan Island include coral reefs, seagrass beds, anemones, green turtles (*Chelonia mydas*), hawksbill turtles (*Eretmochelys imbricata*), whale sharks (*Rhincodon typus*), eagle rays (*Aetobatus ocellatus*), and bumphead parrotfish (*Bolbometopon muricatum*). This tourist attraction invites tourist visits both domestic tourists and foreign tourists. Some of the tourist objects that become marine tourism attractions are presented in Figure 1.

![Figure 1. Some marine tourism objects on Derawan Island](image_url)
Kalimantan Province). The increase in visits can be estimated from data from the Provincial Tourism Office. East Kalimantan, which is presented in Figure 2, is related to the increase in tourist arrivals in Berau Regency before the occurrence of COVID-19, namely in 2016 – 2019. Although there is no data on specific tourist visits on Derawan Island, the data in Figure 2 can be used as an estimation reference, because the Island of Derawan is one of the leading tourist destinations in Berau Regency.

Based on information obtained from the Berau Regency Tourism Office (2021), domestic tourists visit from various parts of the archipelago, whiles the dominant foreign tourist visits come from Japan, China, Germany, Taiwan, and Malaysia. In general, the duration of visits by foreign tourists is longer than domestic tourists for about 3 days. Based on the pattern of visits, the most visits by domestic tourists occurred during school holidays and Eid holidays, while the most visits by foreign tourists occurred during summer and winter holidays. Domestic tourists tend to travel in groups/groups, while foreign tourists tend to travel in pairs and groups/small groups.

Restrictions on the number of tourists on Derawan Island have not been carried out, even when there is a surge in tourist visits during the peak season. No matter how many tourists visit Derawan Island, they are always accommodated by using residents’ houses as lodging. Thus, the development of lodging on Derawan Island, especially lodging on the water, is increasing to meet the demand for accommodation, especially during the peak season. Although there is an increase in visits during the holiday period, the use of natural resources which are the main tourist attractions has not been limited/regulated. Marine tourism activities that are often carried out by tourists on Derawan Island are diving and snorkeling. Diving activities are mostly carried out by foreign tourists compared to domestic tourists. Domestic tourists mostly do snorkeling and island hopping (around the island in the Derawan Islands group).

3.2. Impact of the COVID-19 pandemic on marine tourism Derawan Island
Derawan Island is one of the tourist destinations affected by COVID-19. As an effort to prevent the spread of COVID-19, for the time being, Kampung Derawan imposed restrictions on entering the village with strict supervision for other residents. This has been in effect since March 18 with the Decree of the Regent of Berau No. 187 of 2020 concerning the Determination of Emergency Alert Status for Disease Outbreaks due to Corona Disease-19 and the circular letter of the Head of the Culture and Berau Regency Tourism Office No. 556/133/Budpar-3/III/2020 regarding the temporary closure of tourist attractions and entertainment venues in Berau Regency.

The social restrictions caused no tourist visits on Derawan Island until the reopening of tourist attractions. The policy of temporarily closing tourist destinations causes a decreasing income. Thus, based on the report of the District Tourism Office. Berau Regency In 2020, the estimated loss due to the temporary closure of tourist destinations with natural tourist attractions is 95% [8]. The COVID-19 pandemic has also had an impact on changing habits. Various parties without exception, who play a role in the tourism sector are forced to adapt to new habits such as 1) wearing masks when interacting with other people; 2) stay away from crowds by keeping a distance; 3) increase endurance; 4) avoid physical contact; 5) maintain personal hygiene and environmental sustainability.

The impact of COVID-19 on the tourism sector is social restrictions, travel restrictions, and a decrease in the number of visits [9]. In 2020, tourist visits to Derawan Island decreased by 58% from the previous year. Lockdown policies in several countries caused a drastic decline in foreign tourist arrivals by 97%. Based on information from the dive center in Derawan as far as December 2020 there were no tourist visits doing diving activities. Diving tourism businesses are the parties most affected by the COVID-19 pandemic, with an estimated 97% decrease in foreign tourist arrivals from the previous year (Figure 2). In fact, COVID-19 has not only disrupted diving tourism on Derawan Island but also in various other dive tourism areas [10]. It is estimated that even after COVID-19, the number of visits may remain low, social distancing will be maintained [11].
The decline in tourist arrivals affects the income of tourism business actors such as income from transportation, accommodation, culinary, diving, and snorkeling guides. The lack of income causes a reduction in employees in various tourism businesses. Termination of employment and salary cuts is one of the strategies to overcome business [12]. The decline in foreign tourist arrivals provides opportunities for domestic tourism by adjusting accommodation [13] and transportation. Some tourism businesses have turned back to being fishermen and looking for other alternative jobs to meet their daily needs, while others survive by using savings or loans.

3.3. Mitigation policy for the impact of the COVID-19 pandemic

The initial effort made by the Berau Regency Government to revive the economy in the tourism sector during the COVID-19 pandemic was the reopening of tourist attractions and entertainment venues in Berau Regency in August 2020, based on the Berau Regent's circular letter No. 556/169/Budpar-I/2020 on July 16, 2020, in stages: 1) starting in August 2020 – Domestic tourists from the Provinces of East Kalimantan and North Kalimantan; 2) starting October 2020 – Domestic tourists from all provinces in Indonesia [14]. The opening was accompanied by the implementation of standard operating procedures for the health protocol to prevent the transmission of COVID-19 in the tourism sector of Berau Regency issued by the Berau Regency Tourism Office in 2020. Even before the New Year's holiday, the Berau Regency Tourism Office together with the Ministry of Tourism and Creative Economy held socialization of the implementation of CHSE (Cleanliness, Health, Safety, and Environment Sustainability) in tourist destinations to prepare for the reception of visits during the holiday period.

Especially in the tourism sector, recovery efforts have been carried out in various ways including virtual promotions, capacity building for tourism business actors, socialization of the implementation of CHSE in the tourism sector, and the distribution of various aids. Control strategies in the tourism sector are very necessary related to the impact of high-risk virus exposure [15]. Some of the efforts to implement and socialize the CHSE protocol in Derawan Island can be seen in Figure 3. Communities and tourism businesses (restaurants, homestays, and dive centers) complete handwashing facilities independently to adapt to tourism in the new normal. Tourist business actors use masks when interacting with other people, as well as tourists. Cleaning using disinfectants and providing hand sanitizer has also been carried out in Derawan. Changes in habits during the new normal have not been 100% implemented. The implementation of controlled health protocols such as accepting one-stop tourist visits for body temperature checks and visitor health documents only runs to August 2020. Limited funding causes the application of one-stop controlled health protocols to be abolished and then technically transferred to each business actor.
In addition to changes in habits, the initial opening of tourist destinations with new normal adaptations on Derawan Island was accompanied by changes in visiting patterns. Tourists tend to choose to visit on weekdays rather than weekends. Tourists prefer to travel with small groups or private trips compared to traveling with large groups.

Since the opening of the new normal tour from August 2020 to December 2020, diving tourism activities have not been running. Thus, the dive tourism business actors are most affected by the COVID-19 pandemic. The reason is, there are no foreign tourist visits due to the lockdown policies of several countries to prevent the transmission of COVID-19, even though diving tourism activities are dominantly carried out by foreign tourists. Tourist visits are still dominated by domestic tourists with a tendency for small groups or private trips. Marine tourism activities carried out by domestic tourists are Snorkeling and hopping islands.

The economy in the tourism sector has not yet recovered. Based on the data presented in Figure 2, it is known that in 2020 there was a decrease in tourist visits by 58% from the number of visits in the previous year. The decline in tourist visits was due to: 1) local and central government policies related to the temporary closure of tourist destinations as an effort to prevent the transmission of COVID-19; 2) the concerns of some tourists in traveling during the COVID-19 pandemic; 3) the existence of social restrictions to break the chain of transmission of COVID-19; 4) priority needs when the economy is less stable due to the COVID-19 pandemic.

The decline in tourist arrivals has an impact on the income of tourism business actors, namely a decline and even some of them turn back to being fishermen to meet their daily needs. Entrepreneurs engaged in the tourism sector were forced to reduce the number of employees. Based on data from the East Kalimantan Provincial Tourism Office 2021, it is known that to February 2021 there is no CHSE-certified tourism business on Derawan Island (Table 1). This is allegedly constrained by the business license which is one of the requirements for the CHSE certification application.

Table 1. Data on CHSE certified tourism businesses in Berau Regency

| No | Name of business            | Location       | Sector     |
|----|-----------------------------|----------------|------------|
| 1  | Paratasaiba Resort          | Maratua Island | Hospitality|
| 2  | Grand Nirvana Resort        | Maratua Island | Hospitality|
| 3  | Maratua Dive Centre Dive & Lodge | Maratua Island | Hospitality|
| 4  | Labuan Cermin               | Biduk-biduk    | Destination|

Source: Department of Tourism of East Kalimantan Province, 2021

To restore the number of tourist visits, one of them is implementing the CHSE protocol and even CHSE certification to foster tourist confidence in carrying out tourist activities in the new normal period. The widespread economic damage to the tourism sector caused by the pandemic still has a chance to recover if a systematic approach is taken to all those involved in the tourism sector [16]. To recover
from the economic crisis caused by the COVID-19 pandemic, a coordinated non-sectoral approach and multi-level governance strategy are necessary [17].

4. Conclusion
Based on the analysis above, the COVID-19 pandemic had an impact on the decline in the number of tourists on Derawan Island by 58% from the previous year. The decrease in the number of visits greatly affects the income of tourism business actors on Derawan Island. Diving tourism businesses are the parties most affected by the COVID-19 pandemic, with an estimated 97% decrease in visits from the previous year.

Acknowledgements
Special thanks to the Margaret A. Cargill Philanthropies, Conservation Strategy Fund Indonesia and Faculty of Fisheries and Marine Sciences IPB University for supporting this collaborative research and all parties who have been involved in this research for the Derawan village government, Departement of Tourism Berau regency, Departement of Tourism Kalimantan Timur Province, Department of Marine Affairs and Fisheries Kalimantan Timur Province, Center of Management for Coastal and Marine Resources Pontianak, Ministry of Marine Affairs and Fisheries, and Scientific Diving Laboratory East Kutai School of Agriculture.

References
[1] BPS 2020 Badan Pusat Statistik Jakarta
[2] Keputusan Menteri Kesehatan Republik Indonesia No.HK 01.07/MENKES/382/2020
[3] BPS 2021 Badan Pusat Statistik Jakarta
[4] Keputusan Bupati Berau No. 187 Tahun 2020
[5] Surat Edaran No. 556/133/Budpar-3/III/
[6] Wiryawan B, Khazali M, & Knight M 2005 Program Bersama Kelautan Berau TNC-WWF-Mitra Pesisir/CRMP II (Jakarta: USAID).
[7] Peraturan Daerah Kabupaten Berau No. 3 Tahun 2018
[8] DISBUDPAR Berau 2020 DISBUDPAR Kabupaten Berau: Berau.
[9] Bascha U F, Witaningrum A M, Sumardiko D S, dan Reindrawati D Y 2021 TJAB (The International Journal of Applied Business) 5:1:60-70
[10] Aygün Y and Tüfekçi S 2020Cogent Social Sciences 6 1809805
[11] Spalding M, Burke L, and Alan F 2021 Covid-19: implications for nature and tourism, Anatolia 32(1):126-127
[12] Menhat M, Zaideen I M M, Yusuf Y, Salleh N H M, Zamri M A, and Jeevan J 2019 Int. J. Environ. Res. Public Health 18 1859
[13] Moreno-Luna L, Robina-Ramírez R, Sánchez M S-O and Castro-Serrano J 2021 Int. J. Environ. Res. Public Health 18 1859
[14] Surat Edaran No 556/169/BUDPAR-II.1/2020
[15] Hakim L 2020 Journal of Marine and Island Cultures 9(1):130-141
[16] King C, Iba W and Clifton J 2021 Current Issues in Tourism 1-17
[17] Pedroza-Gutiérrez C, Vidal-Hernández L and Rivera-Arriaga E 2021 Ocean & Coastal Management 212 105814.