



Marine tourism development strategy in Morotai Island Regency

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Abstract. Morotai Island is the outermost region of Indonesia which has natural beauty and has the potential to be developed as a world-class marine tourism destination. The purpose of this research was to develop a marine tourism development strategy in Morotai Island Regency. This research used SWOT analysis, TOWS matrix and QSPM to develop alternative strategies and priority strategies for marine tourism development in Morotai. The data collection was carried out through observation, interview, and literature study. The results showed that the priority strategies for developing marine tourism in Morotai are human resource development; development of a portfolio of marine tourism destinations; infrastructure development; environmental management and disaster mitigation; positive image building; investor gathering; building of a clean and environmentally friendly culture; and transportation and accommodation services development.

Key Words: Morotai, marine tourism, QSPM, SWOT, TOWS matrix.

Introduction. Morotai Island Regency is the outermost area of Indonesia. Indonesia is the largest archipelago country in the world with 17,504 islands (KKP 2018). The location of Morotai Island Regency is far from the center of government and business center in Indonesia, namely the capital city of Jakarta where is located on the Java Island. This causes the development of Morotai Island Regency to be relatively slow. Furthermore, there has been a change in development orientation in Indonesia, which the outermost areas received priority development in the era of President Joko Widodo administration (Soleman & Noer 2017). Joko Widodo is Indonesia's 7th president who was inaugurated on 20 October 2014. This policy resulted in accelerated development in Morotai Island Regency. Morotai Island Regency, with its administrative area is Morotai Island and several small islands around it, was formed in 2008 based on Law No. 53 of 2008. Morotai Island Regency is a district resulting from the division of North Halmahera Regency. Morotai Island Regency has 33 islands (26 uninhabited islands) with the largest island being Morotai Island (BPS-Statistics Morotai Island Regency 2020).

The success of development is influenced by the effectiveness of the strategies (Gaby & Theodore 2017; Medeiros & van der Zwet 2020). Therefore, the Morotai Island Regency Government needs to develop an effective strategy in developing its territory. With its natural conditions, the utilization of coastal and marine resources can become the 'backbone' of the Morotai Island Regency economy, including marine tourism. The vision of Morotai Island Regency prioritizes marine and tourism development (Morotai Island Regency Regional Regulation Number 01 of 2018). Therefore, it is important to design a marine tourism development strategy in Morotai Island Regency.

Morotai Island Regency has several alternative marine tourism destinations, including small white sand islands, underwater beauty and fishing sport locations. Marine tourism development needs to be done comprehensively (Wijayanto et al 2019). The natural beauty alone is not enough to make Morotai Island and the small islands around it become a mainstay tourist destination. Therefore, it is necessary to prepare a marine tourism development strategy for economic growth and to increase the welfare of the

Morotai people. The purpose of this research was to make a marine tourism development strategy in Morotai Island Regency.

Material and Method

Location and time of research. The research location is in Morotai Island Regency at the position of 2°00' to 2°40' north latitude and 128°15' to 129°08' east longitude (Figure 1). Geographically, Morotai Island Regency is located between the Pacific Ocean and Halmahera Island. The land area of Morotai Island Regency is 2,337.15 km² (BPS-Statistics Morotai Island Regency 2020). The study was conducted from October to December 2020.



Figure 1. Map of Morotai Island Regency.

Data collection. This study used primary and secondary data. This research used observation, interview, and literature study to collect the data. The objects of observation were several tourism destination and infrastructures that support tourism activities. The discussions were conducted with key persons, including government, businessman and community leaders. The literature study used statistical data, regional publication and related journals.

SWOT analysis, TOWS matrix and QSPM. This study used SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) and TOWS (Threats, Opportunities, Weaknesses, Strengths) matrix to develop alternative strategies. QSPM (Quantitative Strategic Planning Matrix) was used to determine strategic priorities. The determination of the weight of the key factors (in QSPM) used the paired comparison method. Several researchers used SWOT analysis, TOWS matrix and QSPM in making development strategies, including: Harisudin (2016), Wijayanto et al (2019), and Kurohman et al (2020). According to Goranczewski & Puciato (2010), the internal factors analyzed in

developing tourist destinations include: destination uniqueness (natural and artificial), tourism infrastructure, human resources, brands, and capital capabilities. Meanwhile, the external factors that are taken into account include political, legal, economic conditions, tourism markets, sources of funding, regional conditions and unforeseen conditions (including terrorism, natural disasters and war).

Results and Discussion

General description. Indonesia as the largest archipelago country in the world should pay attention to the coastal economy. Indonesia has more coastal cities or regencies (including Morotai Island Regency) than non-coastal cities or regencies, namely 327 coastal cities or regencies and 187 non-coastal cities or regencies (KKP 2018). According to Lumaksono et al (2012), the tourism sector plays an important role in the Indonesian economy, both as a source of foreign exchange earnings, job creation and business opportunities.

The GRDP (gross regional domestic products) of Morotai Island Regency in 2019 was IDR 1.53 trillion. The combination of the agriculture, forestry and fishery sectors is the largest contributor to the GRDP of Morotai Island Regency (45.05%). Fishermen and farmers is the main profession of Morotai Island people and its surroundings. Some of the population have dual professions, namely as farmer and fishermen. Employment in the formal sector is still underdeveloped in Morotai Island Regency. Even though it has many attractive natural tourist destinations, but the tourism industry in Morotai Island Regency has not developed yet. As an illustration, there are only 17 lodgings that provide 229 rooms and employ 82 employees with the majority of high school education (BPS-Statistics Morotai Island Regency 2020). In 2014, there were only 586 foreign tourists visiting and 311 national visiting tourists (Agency for Regional Development of Morotai Island Regency 2015). According to Soleman & Noer (2017), development in border areas (including in Morotai Island Regency) can increase competitiveness, prosperity and welfare of people in border areas. Development of border areas can also accelerate equitable and justice development.

Strengths. The factor of natural beauty is the main strength of tourism in Morotai Island Regency related. The following is an explanation of some of the strengths of tourism in Morotai Island Regency.

1. The natural beauty of the beach, sea and coral reefs (Code: S1). Morotai Island Regency has small islands with clear sea water and white sandy beaches (Figure 2), including Dodola, Zum-Zum, Galo-Galo, Mitita, Kokoya, Kolorai, Tabailenge and Batu Hapo. Morotai Island Regency also has 28 diving locations, including in the waters of Ngele Ngele Besar, Ngele Ngele Kecil, Lungu Lungu and Mitita (Figure 3). Apart from diving, tourists can also do swimming and snorkeling activities. Diving and snorkeling activities need to be accompanied by guides who are trained and understand the site conditions. Surfing activities can also be done in several locations with big waves, including in the waters of Sopi. Mangrove tourism can be done in Daruba and Wayabula. The area of the mangrove ecosystem on Morotai Island reaches 1,456.88 hectares. Fishing activities can also be carried out in many alternative waters of Morotai Island Regency which are rich in fish resources. The location of the fishing spot must be in accordance with the zoning of the marine conservation area. Morotai Island Regency has a marine conservation area in Rao Island waters. In general, Indonesia is known as a country that has many alternative tourist locations with natural beauty that deserve to be a leading natural tourist destination. Regarding the natural and cultural resources aspects of tourism, Indonesia is ranked 18th in the world from 140 countries surveyed (WEF 2019).



Figure 2. Several small islands in Morotai Island Regency (Source: KKP 2017).

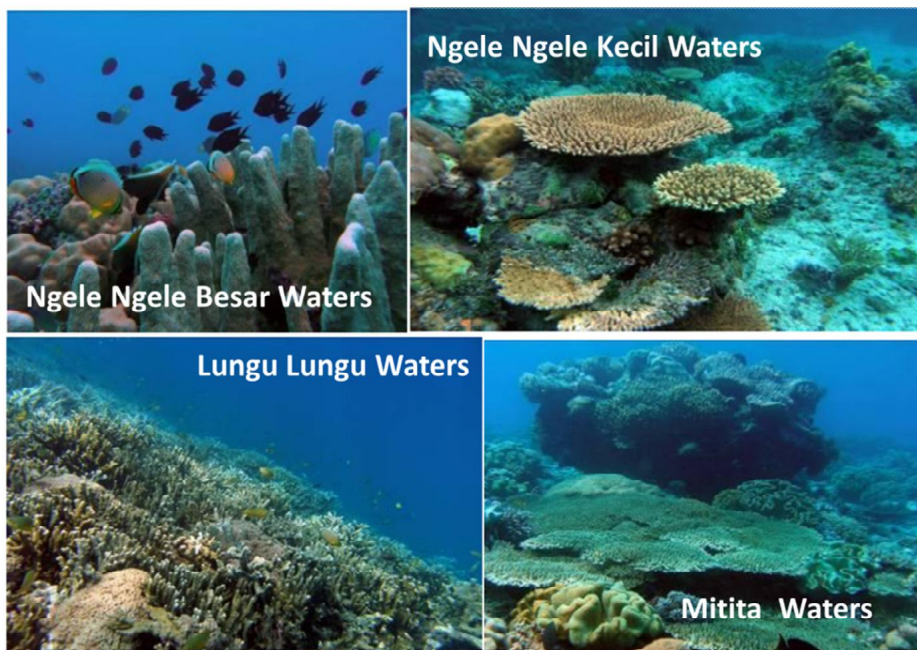


Figure 3. Several coral reef sites in Morotai Island Regency (Source: KKP 2017).

2. Historical site (Code: S2). There are historical sites in Morotai Island Regency, both world and national historical sites. Morotai Island was once a military base that was contested between Japan and the United States in World War II. The remnants of weapons used in World War II still exist, including in the form of pistols, aircraft and amphibious tanks (Figure 4a). Zum-Zum Island was once used as the command center for American troops led by General Douglas Mc Arthur, so that the Mc Arthur Monument was built on the island. Zum-Zum Island was also the hiding place for Teruo Nakamura, a Japanese soldier (Taiwanese nationality) who was left behind when Japanese troops fled from Morotai. Nakamura hid and exiled himself, even for 30 years on Zum-Zum Island (1944 to 1974) because he thought World War II was not over yet. Finally, Nakamura was picked up from the forest in 1974 and extradited to Taiwan. To commemorate Nakamura, Nakamura Monument was also built on the Zum-Zum Island. Morotai was also chosen as the base for the Indonesian National Army in the 'Trihora' operation to seize West Papua which was still colonized by the Dutch, so that the Trihora Monument was built in Morotai in 2012.

3. Culture (Code: S3). Its cultural uniqueness can also be a tourist attraction in Morotai to support the development of marine tourism in Morotai Island Regency. Morotai culture is part of the culture of the Halmahera Islands. Morotai Island has no indigenous people. The majority of the people of Morotai Island come from the Tobelo Tribe and the Galela Tribe from Halmahera Island. The two tribes migrated to Morotai Island due to the volcanic disaster on Halmahera Island. The people living on Morotai Island today come from vary ethnic groups in Indonesia. The majority of residents of Morotai Island and its surroundings are Muslims and Christians. The traditional house on Morotai Island follows the traditional house in the Halmahera area (Figure 4b). Traditional houses need to be preserved. Tide-Tide Dance and Cakalele Dance are traditional Morotai dances.



a. World War II amphibious tank.

b. Traditional house.

Figure 4. Historical site and traditional houses of Halmahera Islands (including in Morotai) (Source for the image on the left: <https://www.pulaumorotai.kab.go.id/>; source for the image on the right: KKP 2017).

4. Wealth of fish resources (Code: S4). The waters around Morotai Island have a wealth of fish resources. In the management of Indonesian fish resources, Morotai waters have access to three fisheries management areas (FMA), namely FMA 715, FMA 716 and FMA 717. An overview of the potential fish resources in each FMA can be seen in Table 1. The potential of these fish resources can be optimized for the development of coastal culinary and fishing sports tourism.

Table 1

Potential fish resources

<i>Fish resources</i>	<i>FMA 715 (tons)</i>	<i>FMA 716 (tons)</i>	<i>FMA 717 (tons)</i>
Big pelagic	51,394	154,329	56,067
Small pelagic	378,743	222,946	391,126
Demersal	114,005	34,650	111,619
Coral fishes	69,975	54,194	32,376
Shrimps	6,089	8,465	8,669
Lobster	710	686	1,065
Crab	490	1,969	620
Blue swimmer crab	643	424	22
Squids	9,664	1,103	2,124

Source: BPS-Statistics Morotai Island Regency (2020).

5. Typical animal (Code: S5). On Morotai Island (Halmahera Islands), there are several unique animals, including *Semioptera wallacii* (Figure 5). *S. wallacii* has become the mascot at the Sail Morotai event in 2012. *S. wallacii* is endemic bird and protected in the Halmahera Islands region, including Morotai Island (Source: <https://travel.kompas.com>).



Figure 5. Standardwing bird-of-paradise (*Semioptera wallacii*)
(Source: www.liputan6.com).

Weaknesses. Human resources and infrastructure are the main weaknesses in the development of marine tourism in Morotai Island Regency. The following is an explanation of some of the weaknesses of tourism in Morotai Island Regency.

1. Transportation (Code: W1). Transportation services on Morotai Island have not supported the realization of Morotai Island as a world-class tourist destination, both land (local), sea and air transportation. The airport and seaport are the gateways to Morotai that need attention. The frequency of flights to Morotai is still relatively low. Leo Wattimena Airport was a former military base during World War II. Leo Wattimena Airport has a runway 2,400 m long and 30 m wide. However, other facilities as an airport still need to be improved, including the capacity and completeness of facilities at the passenger terminal. Daruba Port is the main port in Morotai. The condition of the dock and terminal at Daruba Port has not supported the competitiveness of Morotai Island to become a world-class tourist destination yet. Some of the road conditions on Morotai Island are also in damaged condition. In general, Indonesia is ranked 38 in the world for the competitiveness of air transportation as a support for tourism and rank 66 in the world for ground and port infrastructure (WEF 2019).
2. Tourism supporting infrastructure (Code: W2). The infrastructure to support tourism in Morotai Island Regency still needs to be developed to increase tourism competitiveness. The main source of electricity in the Morotai Island area is supplied by Diesel Power Plant (DPP) which has not been able to supply 24-hour electricity throughout the Morotai Island area and its surroundings. The quantity of clean water services in Morotai by Regional Water-Supply Company (RWSC) is still low, namely less than 10% of the total population of Morotai who can access clean water from RWSC. Many Morotai Island people still rely on rain water, river water and wells to meet their water needs. The communication network and internet in Morotai Island and its surroundings are still not satisfactory. In certain locations, there is no signal for communication. In Morotai Island, there are hospitals and supporting health facilities, including village maternity post, health clinic and public health center. However, it is still necessary to develop more sophisticated health facilities to increase the competitiveness of tourism. In Morotai Island Regency, there are 17 generalist doctors and 7 dentists, but no specialist doctor is available yet (BPS-Statistics Morotai Island Regency 2020). In general, the condition of tourism infrastructure in Indonesia in global tourism is ranked 98 in the world (WEF 2019).
3. Human resources (HR) readiness (Code: W3). Tourism competitiveness requires a comfortable and friendly social environment for tourists. This is related to the attitudes, behavior, insights and language skills of tourism business actors. Tourists want environmental safety. The local people who can speak English is still very limited. The mean years schooling (MYS) for Morotai residents is only 7.1 years (BPS-Statistics Morotai Island Regency 2020), meaning that the majority of Morotai residents only graduate from basic education. The culture of environment clean care still needs to be improved. There is still the people's behavior throw garbage on the

beach and sea. In 2019, the percentage of households that had family toilet was 49.45 percent, while households who using communal toilet were 50.55 percent (BPS-Statistics Morotai Island Regency 2020). Regarding the culture of cleanliness in the competitiveness of global tourism, Indonesia's ranking is only in the 100th ranking (WEF 2019).

4. Brand (Code: W4). Although the promotion of Morotai tourism has been conducted, but the Morotai tourism brand is not strong yet. Morotai is still far less famous than Bali, Lombok, Raja Ampat and Yogya as national and world tourist destinations.
5. Local entrepreneur capital (Code: W5). The capital capacity of local Morotai entrepreneurs is still limited. The development of hotels and restaurants with good facilities, tourist destinations and other tourism facilities requires relatively large capital. However, these weaknesses can be found for solutions by inviting national and international investors, although local investors should be expected not only as 'spectators' in the development of Morotai tourism.

Opportunities. Economic, politic-policy and technology factors are opportunities in the development of marine tourism in Morotai Island Regency. The following is an explanation of some of these opportunities.

1. Increased demand for national tourism (Code: O1). The development of social media encourages increased tourism activities. The tourism economic trend in Indonesia tends to increase if there are no negative extra ordinary events (including the Covid-19 outbreak). According to the Ministry of Tourism and Creative Economy (2020), national tourist visits to tourism objects in Indonesia were 256 million visits in 2015 and increased to 290 million visits in 2019.
2. Increased demand for world tourism (Code: O2). Tourism activity in the world also tends to increase. According to the Ministry of Tourism and Creative Economy (2020), there were 10 million international tourist visits to Indonesia in 2015 and increased to 16 million visits in 2019. Indonesia is also considered a cheap world tourist destination. According to WEF (2019), Indonesia has a competitiveness ranking in the 6th position in the world (price competitiveness).
3. Increased purchasing power (Code: O3). The higher the purchasing power has positive impact to the ability to spend on tourism. Conversely, tourism also has a positive impact on economic growth (Ohlan 2017). According to BPS-Statistics Indonesia (2020), GDP based on constant Indonesian prices has increased from IDR. 9,434,613.40 billion in 2016 to IDR. 10,949,244.00 billion in 2019 with growth of around 5% per year. Meanwhile, Indonesia's per capita income in 2015 was IDR. 4,362 thousand and increased to IDR. 57,298 thousand in 2019.
4. Development of information technology and internet (Code: O4). The surging use of social media is also driving up tourism demand. Some tourists make planning and decision making in traveling using social media as a source of information (Živković et al 2014; Ly & Ly 2020). Information technology can be used as a massive promotional media. Unfortunately, Indonesia's ICT (information and communication technology) readiness regarding the competitiveness of world tourism is ranked 67th in the world (WEF 2019).
5. Political and policy support (Code: O5). The development of tourism in Morotai Island Regency benefited by the policies of the Indonesian government, both national and regional level policies. Tourism development has become a priority in the mid-term plan of Morotai Island Regency in accordance with Morotai Island Regency Regulation Number 01 of 2018. Morotai Island has also been included in the list of National Tourism Strategic Areas according to Government Regulation of the Republic of Indonesia Number 50 of 2011. According to WEF (2019), Indonesia ranked 10th in the world tourism in the aspect of prioritization of travel and tourism.

Threats. The tourism industry competition factors and natural disaster are threat factors that need to be anticipated in the development of marine tourism in Morotai Island Regency. The following is an explanation of some of these threats.

1. National tourism industry competition (Code: T1). Competition in the tourism industry between regions in Indonesia is relatively high. The island of Bali is still the main tourist destination in Indonesia. Each region has developed a tourist destination. For marine tourism, there are many alternative destinations in Indonesia, including the Lombok Islands, Raja Ampat (Papua), Bunaken Islands, Derawan Islands, Karimunjawa Islands and Wakatobi Islands. For cultural and historical tourism, Indonesia also has a variety of alternative destinations, including Borobudur Temple, Yogyakarta, Tana Toraja, Toba and Mentawai. The number of ethnic groups in Indonesia reaches 1,340 ethnic groups who are rich in customs.
2. International tourism industry competition (Code: T2). Competition in the tourism industry at the global level is also very tight. Many island countries in Asia-Pacific also offer marine tourism. Indonesia has a ranking of 40 from 140 countries in the TTCI (Travel & Tourism Competitiveness Index). Indonesia is the least competitive in environmental sustainability, which is ranked 135th in the world (WEF 2019).
3. Threat of natural disasters (Code: T3). Morotai Island and its surroundings are prone to natural disasters in the form of tsunami, earthquake and storm. Indonesia is traversed by the Asia Pacific volcanic route (ring of fire), including in Morotai (BNPB 2016). This causes the potential for an earthquake and tsunami to be anticipated by the government and residents of Morotai. Apart from that, landslides, fires and flash floods also need to be anticipated.
4. The Covid-19 pandemic (Code: T4). The Covid-19 outbreak has caused a decrease in human travel traffic, including tourism. The travel and tourism industry is one of the sectors most negatively affected by Covid-19. The transportation and hotel industries are suffering from travel restrictions imposed in almost all countries around the world (www.unwto.org).
5. IUU fishing (Code: T5). The government and Morotai residents need to anticipate the threat of illegal, unreported and unregulated (IUU) fishing. IUU fishing is vulnerable to over-exploited fish resources. The use of non-environmentally friendly fishing gear can also threaten the sustainability and beauty of coral reefs in Morotai Island Regency.

TOWS matrix and strategy alternatives. Based on the results of the SWOT analysis, an alternative strategy can be developed using the TOWS matrix (Table 2). These alternative strategies include developing tourist destinations, transportation and accommodation services, infrastructure, human resources, promotion, disaster mitigation and investor gathering.

Table 2

TOWS matrix

	<i>Strengths</i>	<i>Weaknesses</i>
Opportunities	SO 1: Development of a marine tourism destination portfolio (S1, S2, S3, S4, S5, O1, O2, O3, O4, O5).	WO 1: Development of transportation and accommodation services (W1, W2, O1, O2, O3); WO 2: Development of supporting infrastructures (W2, O1, O2, O5); WO 3: Positive image building (W4, O4); WO 4: Investor gathering (W5, O1, O2, O4, O5).
Threats	ST 1: Management of security, environment and disaster mitigation (S5, T3, T4, T5).	WT 1: Human resources (HR) development (W3, T1, T2, T3, T4, T5); WT 2: Building of a clean and environmentally friendly culture (W3, T1, T2, T4, T5).

1. SO1 Strategy (development of a marine tourism destination portfolio). Marine tourism stakeholders in Morotai Island Regency need to aggressively develop a diversity of tourist destinations. As a comparison, if tourists visit Bali Island, they can enjoy a wide variety of destinations, both beautiful beach, coral reef, lake, forest, mangrove, mountain, culture, culinary, shopping, water sport, wild life, zoo park, amusement park and hangout places at night. If Morotai only rely on the beauty of beaches and

coral reefs, then the tourist attraction of Morotai Island will be inferior to Bali Island and other tourist locations. Types of marine tourism that can be developed on Morotai Island and its surroundings include the beauty of white sand beaches, diving, snorkeling, surfing, mangroves and fishing sports. Facilities that add to the comfort of tourists need to be built at tourist sites. There are at least 15 coastal tourism locations in Morotai Island Regency, including Dodola Island, Zum-Zum Island, Galo-Galo Island, Mitita Island, Kokoya Island, Kolorai Island, Ngele-Ngele Island, Nunuhu Island, and Tabailenge Island. For nature-based tourism, it is necessary to calculate the carrying capacity of the environment, related to physical carrying capacity, tourist comfort and social acceptance. Historical tourism, culture (traditional houses, customs and traditional dances) and the wild on the mainland can complement the marine tourism portfolio in Morotai Island Regency. *S. wallacii* bird can be used as an alternative tourist icon on Morotai Island. There are at least 3 waterfall locations and 5 cave locations that can be developed as an addition to the tourism portfolio in Morotai (BPS Morotai Island Regency 2020). Waste management at tourist sites and completeness of public facilities (including shelters, toilets, tourism information centers, evacuation routes and assembly points in the event of a disaster) need to be considered by tourism business actors in Morotai. Culinary tourism development needs to be prepared to increase the attractiveness of Morotai tourism, both local culinary specialties and international culinary delights (Western food and Asian food). Local culinary can be developed from local ingredients, especially from the wealth of fish resources in Morotai waters. Typical souvenirs from Morotai also need to be developed using local materials. Hangout spots at night also need to be developed in Morotai, but they should not conflict with local wisdom. According to Ginaya et al (2019), community-based tourism development and based on the values of local wisdom can create a balanced community welfare between physically and mentally.

2. WO1 Strategy (development of transportation and accommodation services). Airports and seaports as gateways to Morotai need to be developed. According to Page & Ge (2009), transportation is a fundamental factor of tourism industry development. This is because transportation is a prerequisite for tourism-related travel. Therefore, the quality of airport and port facilities in Morotai needs to be improved so that they are suitable as world-class tourist destinations. Its capacity needs to be increased to anticipate an increase in the number of tourists, both national and international tourist. Leo Wattimena Airport needs to complete adequate facilities for passengers, related to waiting room, air conditioning, internet, jet-bridge, immigration office, restaurant, souvenir center, mini market, toilet, money changer, ATM (automated teller machine) center, smoking room, locker, health service, parking lot, ambulance and fire-fighting facilities. The facility completeness of the Daruba Port needs to be improved and maintained, both in relation to basic facilities (including shipping lane, port pool, breakwaters and mooring buoy) and supporting facilities (including dock, warehouse, terminal and road). The existence of world-class hotels and restaurants needs to be prepared. Therefore, attracting investors is needed to overcome the capital weaknesses of the local people. Absorption of the tourism workforce should prioritize local workers with increased quality of competence to reduce the risk of social jealousy. At the present, there are only 17 lodging with 229 rooms, and 37 restaurants with 1049 chairs and 230 tables (BPS-Statistics Morotai Island Regency 2020). However, the quality of service still needs to be improved to support world class tourism. The implementation of local transportation also needs to be developed, both public transportation and rental services, both motorbike, car, boat and fishing vessel rental services.
3. WO2 Strategy (development of tourism supporting infrastructure). The availability of electricity, clean water, communication networks and the internet (both in quantity and quality) affects the level of welfare of the local people and the level of tourist satisfaction. The completeness of health facilities also affects the sense of security and comfort, both for local people and tourists. According to Williams (1998), infrastructure is very important in tourism development, including accommodation, transportation services, electricity, water supply and other public amenities.

Electricity in Morotai are supplied by the State Electricity Company (PT. PLN) through 10 unit of Diesel Power Plants with a total installed capacity of 3,536 KWh. Electricity development in Morotai has been included in the State Electricity Company Business Plan in 2019 to 2028 (PLN 2019). The Morotai Island Regency Government can also increase the diversification of electricity supply by utilizing solar panels and wind power plants for Morotai residents. Clean water supply services are served by Regional Water-Supply Company (RWSC) in Daruba and Bere-Bere. The water source from RWSC in Daruba is a bore well with a water flow of 10 liters per second, while the water source from RWSC in Bere-Bere has a water flow of 100 liters per second. The development of clean water service capacity can refer to SNI No. 19-6728.1-2002, including the need for clean water for rural residents is 60 liters per person per day and 120 liters per person per day for urban residents. The demand for water also needs to take into account the need for water in schools, offices, airport, seaports, terminals, farms, agriculture, hotels, restaurants, hospitals and others by referring to SNI No. 19-6728.1-2002. The sources of clean water in Morotai come from rivers, wells and springs. The Morotai Island Regency Government can also use desalination technology to supply water for residents and tourists. Telecommunication services in Morotai are provided by PT. Telkom. The number of telecommunication service providers and their service capacity still needs to be increased to meet the needs of local communities and tourists. The existence of an international standard polyclinic or hospital also needs efforts to support Morotai to become a world-class tourist destination.

4. WO Strategy 3 (positive image building). Introducing Morotai as a global tourist destination requires intensive promotion. According to Wijayanto et al (2019), promotion, personal marketing, advertising and public relations can increase the interest toward tourist location. Events such as Sail Morotai can be conducted periodically. Promotion with websites and social media needs to be done intensively to boost Morotai's brand awareness as a leading tourist destination. *S. wallacii* bird or coral biota can be used as a tourism icon in Morotai.
5. WO Strategy 3 (investor gathering). It is necessary to attract investors, both national and international, to intensify tourism investment in Morotai, both for the development of tourist sites, hotels, restaurants, tourism service bureaus and transportation services (land, sea and air). To protect local investors, it is necessary to set investment arrangements that are allowed for international and national investors. Small and medium scale businesses such as providing souvenirs, tour guide services, mini markets, and boat rental services are prioritized for local investor.
6. ST Strategy 1 (security-environment management and disaster mitigation). Disaster mitigation and accident management in tourist destinations need to be prepared by tourism stakeholders in Morotai. Evacuation routes, assembly points and simulation training in the event of a disaster need to be prepared, whether related to the risk of earthquake, tsunami, storm, flood and fire. Security guarantees and patrols need to be carried out at tourist sites, hotels, restaurants, seaports, airport and other public tourism supporting facilities. Insurance guarantees also need to be prepared by the tourism business actors. Cooperation between the tourism business actors and the hospital is needed for excellent and fast handling in the event of an accident at a tourist location. Waste management needs to be improved so that waste does not pollute nature and damage the beauty of Morotai Island. Environmental security management and disaster mitigation are expected to increase the competitiveness of Morotai tourism, where Indonesia ranks only in the 80th position in the world in terms of safety and security (WEF 2019).
7. WT Strategy 1 (HR development). Human resource development for tourism businesses is the key to the success of marine tourism development in Morotai. HR actors need to have soft skills (including friendliness, initiative, and responsibility) and hard skills (including English and technical skills) needed to serve tourists well. The creativity and innovation of tourism entrepreneurs in Morotai also need to be trained to create a variety of tourism services, culinaries and souvenirs in Morotai. Human resources is the main asset in tourism development because the high quality

human resources can accelerate innovation and make excellence of competitiveness in tourism (Wijayanto et al 2019).

8. WT Strategy 2 (building of a clean and environmentally friendly culture). A clean, healthy and environmentally friendly lifestyle also needs to be campaigned for Morotai residents. The use of plastic needs to be reduced. The use of environmentally friendly energy needs to be encouraged intensively. Campaigns, outreach and assistance to the local community regarding a clean and environmentally friendly culture are expected to eliminate destructive behavior such as throwing garbage in the sea and destroying coral reefs.

QSPM. The results of paired comparison analysis to determine the weight of the key factors resulted that the Covid-19 pandemic problem had the greatest effect (Table 3), namely a negative effect. However, these problems are temporary, that if vaccination and treatment against Covid-19 are successful, the Covid-19 blow to the tourism industry will be eliminated. The second most decisive key factor is the natural beauty of the beach, sea and coral reefs as the basic capital for tourism development in Morotai.

Table 3

Weights of key factors

<i>Key internal factors</i>	<i>Weight</i>	<i>Key external factors</i>	<i>Weight</i>
S1	6.19%	O1	5.00%
S2	5.40%	O2	4.87%
S3	5.27%	O3	4.87%
S4	4.44%	O4	5.27%
S5	4.74%	O5	4.74%
W1	5.00%	T1	4.87%
W2	4.20%	T2	4.61%
W3	5.40%	T3	4.74%
W4	4.74%	T4	6.98%
W5	3.80%	T5	4.87%

The results of the QSPM analysis can be seen in Table 4. Human resource development is the most decisive strategy in the success of marine tourism development in Morotai. This is because the human resource factor is mostly related to key factors, both related to activities to preserve natural beauty, care for historical sites, maintain local culture, conserve fisheries resources and unique animal, develop infrastructure, develop tourism services, build images, use information technology, set policies, conduct disaster mitigation and create tourism competitiveness.

Table 4

Strategy priority

<i>Priorities</i>	<i>Strategies</i>	<i>Scores</i>
1	HR development (WT1)	4.087
2	Development of a marine tourism destination portfolio (SO1)	4.025
3	Development of supporting infrastructures (WO2)	3.925
4	Management of security, environment and disaster mitigation (ST1)	3.913
5	Positive image building (WO3)	3.838
6	Investor gathering (WO4)	3.690
7	Building of a clean and environmentally friendly culture (WT2)	3.641
8	Development of transportation and accommodation services (WO1)	3.504

Strategic planning originates from the concept of military science, which was later adopted by management, economics and regional sciences, including tourism development (Gaby & Theodore 2017). Strategic management is the art and science through the process of formulating, implementing and evaluating in cross-functional decisions to achieve some objectives, including in tourism development (David 2011; Harisudin 2016). The use of a comprehensive and accurate SWOT analysis can produce a

reliable tourism strategy that is important in the tourism development planning process (Goranczewski & Puciato 2010). Regencies who concern to sustainable strategic plan, are proven can develop their areas. The development can be strengthened through the active involvement of all stakeholders in the implementation of their strategies (Medeiros & van der Zwet 2020). According to Williams (1998), tourism is an industry that relies on natural resources that depend heavily on natural beauty and cultural attractions. Natural beauty is a physical attribute, including landscapes, flora and fauna. Culture and culinary can attract tourists to enjoy something different from their place of origin. So, development tourism must be approached in a comprehensive manner. All of the alternative strategies developed in the SWOT analysis and the TOWS matrix are complementary. All of these strategies need to be implemented simultaneously. A marine tourism development strategy needs to be included in planning and policy documents to strengthen the execution of tourism development based on an effective strategy, both in medium-long term development plans, land zoning, marine zoning and government budgeting.

Conclusions. Based on this research, the strategic priorities in developing marine tourism in Morotai Island Regency are (1) human resource development, (2) marine tourism portfolio development, (3) tourism supporting infrastructure development, (4) security-environment management and disaster mitigation, (5) building a positive image, (6) attracting investors, (7) building a clean and environmentally friendly culture and (8) developing transportation and accommodation services. All of these strategic alternatives are complementary. In developing marine tourism, it is better to take into account the carrying capacity of the environment, both related to the physical aspects of the environment, the comfort of tourists and the social community acceptance.

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