

# Stakeholder perception on the Sea Turtle conservation in Gili Matra Tourism Area, Lombok- West Nusa Tenggara

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## Abstract

The conservation of sea turtle in nature-based tourism area is significant to enhance to sustainability of the sea turtle population in the wild. Small islands in Lombok Island chains – The Gili Matra- is one of the significant habitat for turtle and the island also recognized as one of the island with fastest tourism growth in Indonesia. The research aims to explore the stakeholders perspectives in sea turtle conservation in Gili Matra, Lombok. Focus Group Discussion was implemented to identify the stakeholder perspective. Literature survey was carried out to generate related data concerning sea turtle population and its habitat quality in Gili Matra. Result of this study shows that stakeholder able to identify three species of sea turtle in Gili Matra waters, namely Green Sea Turtle (*Chelonia mydas*), the Hawksbill Turtle (*Eretmochelys imbricate*), and Ridley Sea Turtle (*Lepidochelys olivacea*). Stakeholders state that between 1990 to 2017 there are reduction in population number in Gili Matra. Factor related to the decrease of population in Gili Matra includes decrease of habitat quality and human activity. Some recommendation was drawn, including increasing socialization and campaign, providing tools and facility to support conservation action, controlling unsustainable practice of fish collection, strengthening the implementation of regulation, and Providing training and technical assistance to the local community and local office.

**Keywords:** Sea turtle, stakeholder-based conservation, wildlife tourism,

## Introduction

Indonesian waters are an important habitat for sea turtle, the most threaten marine reptile in the earth. Global survey indicates that the Indonesia water contains numerous species of marine turtle. So far, six species of sea turtle found in Indonesian water, including leatherback turtle (*Dermochelys coriacea*), green turtle (*Chelonia mydas*), loggerhead turtle (*Caretta caretta*), flat back turtle (*Natator depressa*), hawksbill sea turtle (*Eretmochelys imbricate*), and olive ridley sea turtle (*Lepidochelys olivacea*). All of the population has been reported in population decreasing status. Indonesian waters play an important role as habitat and corridors movement of six species of sea turtle (Nuitja, 1992; Halim, et al., 2001; Shanker & Pilcher, 2003; Chaloupka, et al., 2004).

In developing countries, sea turtle have an important position in human culture. In many case, sea turtle has considerable economic value and in many local market in coastal area sea turtle has been sold as significant commodity. The economic value of sea turtle leads illegal poaching of species in the wild. Scholars point out that poaching was carried out by local inhabitants of nearby village in coastal area, especially in area with abundance sea turtle population. Poaching

sea turtle in developing countries has been reported as complicated problems. Sea turtle meat, eggs and shells is the main commodity in many black markets (Mack, 1983; Marquez and Rene, 1990; Barr, 2001).

Increase of sea turtle poaching has been reported contribute to the population decrease. Decrease of global population of sea turtle has been viewed as crucial issues in global biodiversity programs. Numerous studies and discussion has been conducted to evaluate the recent status of sea turtle. Most of the study confirm that comprehensive approach with stakeholder support was the important strategy in sea turtle conservation (Nuitja, 1992; Formia, et al., 2003). Sea turtle status in Indonesia is one of the focus for global conservation program. According to scholar, the combination of high level marine biodiversity and increase of demand of meat, eggs and shell very complicated. There need comprehensive research to dawn the proper strategy for sea turtle conservation. The involvement of stakeholder in sea turtle conservation has been identified crucial (Barr, 2001; Shanker & Pilcher, 2003; Suganuma, et al., 2005; Gjertsen & Niesten, 2010).

The Gili Matra waters in Lombok Island (West Nusa Tenggara) has been known as one of the sea turtle habitat (Monk, & De Fretes, 2012). These small island chains contain high biodiversity of marine creature and endowed by outstanding coastal area. Gili Matra refers to the three small island chains in western Lombok Island, consist of Gili Trawangan, Gili Meno and Gili Air. Technically, Gili Matra is an administrative area to refer single management principle of three small island into one planning and development scenarios. Considering the important role of Gili Matra as habitat of numerous marine creature and potential sites for nature recreation, Gili Matra was declared as Marine Recreation Park Area (*Taman Wisata Perairan*TWP). The objectives was to ensure the tourism in Gili Matra area was contribute to the biodiversity conservation of waters ecosystem (Kurniawan, et al., (2016).

The development of Marine Recreation Park Area in Gili Matra relevant with the increase of tourism activity in Lombok Island. Tourism in Lombok Island has been increased significantly and the economic contribution of tourism has been recorded significant to support local development. Natural resources is the ultimate resources of tourism in Lombok Island. The Island has spectacular wide and long sandy coastal, small island with abundance animal and vegetation, and mountains area in the centre of the island. Tourism has been supported by Lombok International airport to support international tourist arrivals. Lombok Island has been designated as a tourism gateway in Lesser Sunda islands (Soemodinoto & Wong, 2004; Badan Perencanaan Pembangunan Daerah Nusa Tenggara Barat, 2015; Hakim, et al., 2017).

The importance of Gili Matra as one of the crucial habitat for sea turtle nesting area lead the designation of the area as conservation are to support global sea turtle conservation program. Sea turtle has been involved in Appendix 1 of the IUCN Red List; represent the recent crucial status of the species in the future. This status in IUCN red list lead the strict status of species in trading. The consumption of sea turtle has lead sea turtle population decrease. Other factor related to the decrease of population was predator attack to sea turtle eggs and newly born turtle individual in coastal area. There are also contribution of pollution, in which it is significantly contribute to the sea turtle health in marine ecosystem (Seminoff, 2004; Wallace et al., 2011). Considering the rapid population decrease and increase of threats, Indonesian government has

released Government decree no No.7 year 1999 to declare sea turtle is one of the protected species in Indonesia territory.

The conservation and protection of sea turtle habitat has been reported success with the support of stakeholders. The position of stakeholder in sea turtle conservation was important. Stakeholder in biodiversity issues contribute to both negative and positive aspects. Threats to sea turtle often comes from political, social and economic aspects. The political aspect often related to the regulation, in which it is often influenced by party interest. The party which are benefited from sea turtle as a economic resources often support weak policy to support conservation. The socio-cultural aspect often related to the belief systems. In many indigenous communities, sea turtle was collected for traditionalceremonial purposes. In many case, sea turtle is materials for medical treatment.The economical aspect often related to the collection of sea turtle to increase household's income. In numerous studies, scholars point out that stakeholder able to support biodiversity conservation, including sea turtle and its habitat. Community participation is the key to numerous conservation program (Da Silva et al., 2010; West, 2010).

Sea turtle has gained serious attention among global community due to its population decrease. Sea turtle plays an important role in marine ecosystem. Recent thretas to sea turtle has been incresed and lead to the species extinction in the future. For many conseration programs, community and sakeholders der involvement is thecrucial problemsn, especially in developng countries. Stakeholders involveent, the process of inviting stakeholderder participation in onservation program, is essential part of the any conservation program. Schoalrs point out that few species can be conserved without stakehodlers participation. High pressure of sea turtle popualtion require the community partiipation in sea turtle conservation program . The multistakeholder approach seems to be cricial in conservation program (Kinan, & Dalzell, 2005). As far, there are few research related to the stakeholder percepton to support sea turtle conservation program in Gili Matra. The aims of the research is to identift stakeholders perspectives of sea turtle in Gili Matra nature tourism area.

## **METHODS**

Field survey was conducted at Gili Matra. Ecologically, the Gili Matra area consist of three small island, namely Trawangan, Gili Air, and Gili Meno. The waters of Gili Matra has been identified rich in term of marine creature, ranging from invertebrates to vertebrates (Ahyadi & Jupri, 2008). Located in tropical region with warm climates and abundance white sandy beach, these islands was the favorites tourist destinations. Nature-based tourism grows significantly and it is contributes significantly to provides numerous works for local people in Gili Matra area, Mataram City and other regions in Lombok.

In order to identify and describes the stakeholder perception on the sustainability of sea turtle conservation in Gili Matra Tourism Area, Focus Group Discussion and Participatory mapping of sea turtle distribution was implemented at Gili Indah Village at Pemenang Sub-Regency, Lombok Utara Regency. Field survey and discussion was implemented in August to October 2017. Prior to the FGD, authors identify related stakeholder in sea turtle conservation in Gili Matra through observation, literature study and consultation with local authority who has responsible in Gili matra waters and island management.

### ***Focus Group Discussion (FGD)***

Focus group discussion has used as an instrument to generate issues and perspective to sea turtle conservation. FGD was done through the given focus topic discussion. First step of FGD was initiated by the collection of information and participant perceptions related to the problem and opportunities in sea-turtle conservation. The participant of the FGD was natural group, means that the participant consist of local actors who has direct relationship with the Gili Matra ecosystem. Initial survey was conducted to identify potential stakeholder which has crucial position and impact in sea turtle conservation program. This survey consider 20 local community in Gili Matra are which are identified have direct interaction with sea turtle as informant. These community consist of 6 persons from Gili Trawangan, 6 persons from Gili Meno, and 6 persons from Gili Air. The composition of informants were 2 fisherman, 2 people which are involve in sea turtle conservation program in each islands, 2 diving and snorkeling guide from each islands, and 2 person from institute of BKKPN.

In this research FGD was implemented to generate sea turtle conservation-related issues in both ecological, social and economical issues in Gili Matra ecosystem. The discussion performed to identifying some crucial issues, including (1) participant knowledge about sea turtle, (2) sea turtle distribution and (3) factor related to sea turtle threats. Discussion was organized and lead by authors. FGD was implemented through systematic steps, namely (1) authors introductions and explanation of discussion mechanism, (2) introduction to the background of the study, (3) session for participant expression to the themes of particular issues delivered by facilitators, (4) general discussion and feedback, and (4) and general concussion. The general discussion was set up to drawn stakeholder and local people recommendation related to the conservation strategy in Gili Matra area. Authors document data and information which was generated from discussion.

### ***Participatory Mapping***

Participatory mapping was conducted through discussion to describes the past and recent distribution of sea turtle in Gili Matra. Participant in this participatory mapping includes fisherman, diving guides, sea turtle conservationist, and representative of local conservation office (BKKPN). Authors facilitate the participatory mapping by providing map of Gili Matra area and discussion material to describes sea turtle distribution. Each representative of discussion was invited to draw the distribution of the turtle based on informant's direct contact experience with sea turtle in Gili Matra waters. During the discussion, there are possible correction by other participant. The final map is the concusses among informant. Data was analyzed descriptively.

## **Result and Discussion**

### **Community knowledge about Sea turtle**

Four stakeholder groups in Gili Matra which are related to the sea turtle conservation program, namely; primary group of stakeholders, secondary group of stakeholdeter, tertiarty group of stakeholerd an ad external stakeholders. These classification was similar category which was proposed by Ahyadi, & Jupri, (2008) and Suana & Ahyadi, (2012). Local fishermean is one of the important primary stakeholder in sea turtle conservation. This group has been identified as a group which are plays an important role in Gili Matra ecosystem management. While fisherman has cloe relation ship to the ecosystem, socio-politically local fisherman has low position in many decission related to the managent of waters ecostem. Other group os stakeholder seem to be has highest influence in the management of sea waters. Some aspects has been identified contribute to low bargaining possition of local farmers. It is mainly related to the poor power of human resources, in which it is mainly caused by low educational levels.

Informants point out that local fishermen has low authority and power to implement punishment to actors which are identified contribute to the marine ecosystem disturbance and degradation.

### Sea turtle in Gili Matra waters

Three species of sea turtle has been identified and recognized in Gili Matra waters, including *Chelonia mydas*, *Eretmochelys imbricate* and *Lepidochelys olivacea*. Local people calls *Chelonia mydas* as *penyu hijau* (the green sea turtle). Respondents able to recognize *Chelonia mydas* from morphological feature. Local people call *Eretmochelys imbricate* as *penyu sisik* (The hawksbill sea turtle). Respondent state that both *Chelonia mydas* and *Eretmochelys imbricate* common and easily found in Gili Matra waters (Fig.1). Previous study confirms that Gili Matra waters and its surroundings sea is the harbor for numerous marine creature, ranging from invertebrates to vertebrates. In the past, it was reported that abundance coral reefs is the significant habitat to support biodiversity life is Gili Matra waters (Ali, et al., 2004; Monk & De Fretes, 2012). Respondent state that recently *Lepidochelys olivacea*, locally known as *Penyu lekang* (Olive ridley sea turtle), was rarely found. There are no information related to the decrease and locally extinct of the species in Gili Matra waters.



Fig. 1. Two species of sea turtle which area easily found by local people in Gili matra waters, *Chelonia mydas* locally called Penyu Hijau (left) and *Eretmochelys imbricata* locally called Penyu Sisik (right)

Informant point out that Sea turtle is important marine reptiles. Sea turtle was poached and sold in black market to generate household's income. Informant point out that recent attention to the survival of sea turtle in Gili Matra waters increase as a consequences of marine pollution and human consumption. Some local and international agency provides attention to the conservation of sea turtle including local NGO, local university, local government of Mataram and Agency of Marine Conservation. There are also international NGO contributes to the conservation of sea turtle. Informant point out that effort to conserve sea turtle was numerous, ranging from basic research to describes the ecological aspect of sea turtle to local community development.

### Number of sea Tartule in Gili Matra

From Focus Group Discussion, stakeholder said that number of sea turtle in Gili Matra waters decrease yearly. Based on the fisherman observation through traditional diving and snorkeling techniques, fishermen report that between 1990 – 2000 number of observed sea

turtle in Gili Matra water ranges from 10 – 25 individual per report. Between 2000 – 2010, number of observed individual was decrease to 5 – 15 individual per report. In 2010 – to recent years, the observed number was about 5 – 7 individual per report. This data shows that direct observation by fisherman confirm that sea turtle population decrease significantly in Gili Matra waters.

### **Recent threats to sea turtle**

Respondent state some human contributes to the recent threats to the sea turtle population. There are no statement related to the contribution of natural aspect to the decrease of sea turtle population in Gili Matra waters area. Informant point out that human activity in Gili Matra waters contributes to the decrease of sea turtle population. Basically, it can be classified into two aspects, the quality of sea turtle habitat in the sea and the human aspect.

#### ***Decrease of habitat***

Respondent has identified decrease of sea turtle habitat. It includes marine pollution and sandy coastal disturbance. Domestic waste is one of pollutant that was often observed occurs in Gili Matra waters. There are no chemical indication reported by informants. Respondent cannot state specifically the quality of the waters, but they believe waters has been polluted. There is many scientific evidence in the tropical water which shows that pollution has significant effect on sea turtle survivals.

In the land sites, sandy coastal area in Gili Matra has been influenced by tourism activity, in which it contributes significantly to the reproduction cycle of sea turtle. Recently, sandy coastal area in Gili Matra is the most attractive sites for coastal tourism activity. Various studies have shown that with the increase of tourism activity in coastal area, the vegetation structure of sandy beach also changes. Decrease of sandy coastal vegetation have a major role in reducing sandy soil capability to support sea turtle reproduction cycle in natural habitat.

#### ***Human impact***

Human pressure to the wild population of sea turtle comes from several aspect, but mostly it is associated to the consumptive needs. According to respondent, decrease of sea turtle in Gili Matra waters was caused by increase of human consumption. From the Focus Group Discussion, it is informed that during 1900 to 2000 there are intensive sea turtle poaching by fishermen from Bali and Flores. The collected sea turtle was transferred and sold in Bali in illegal market.

Decrease of species and number of species in Gili Matra marine tourism area was caused by increase of sea turtle consumption. Informant report that meat and eggs of sea turtle was consumed, and in many cases it was become economical marine-based commodity. There are also report for shell trading. Sea turtle catching has been reported carried out in many part in sea turtle nesting area in Indonesia. The need of meat from Bali was significant, lead to the illegal poaching of sea turtle collection from numerous area in Indonesia which are identified as spot for sea turtle population (Triwibowo, 1991; Westerlaken, 2016).

Human is the major threats to sea turtle sustainability, both in open marine and coastal areas. Statistical report confirms that sea turtle carapax export was increase in 1967

– 1993. The highest carapax export was reported occurs in 1978, in which 200.000 sea turtle was exported to Singapore, Japan, Korea, and Hong Kong.

### Distribution area of sea turtle

Sea turtle freely distribute in the open sea. In the situation where control poor, it is difficult to monitor sea turtle poaching by human. People often see sea turtle as open access resources, in which it is freely to exploit. The sea turtle black market in Tanjung Benoa, Bali provides example for complicated business which was not easy to stop.

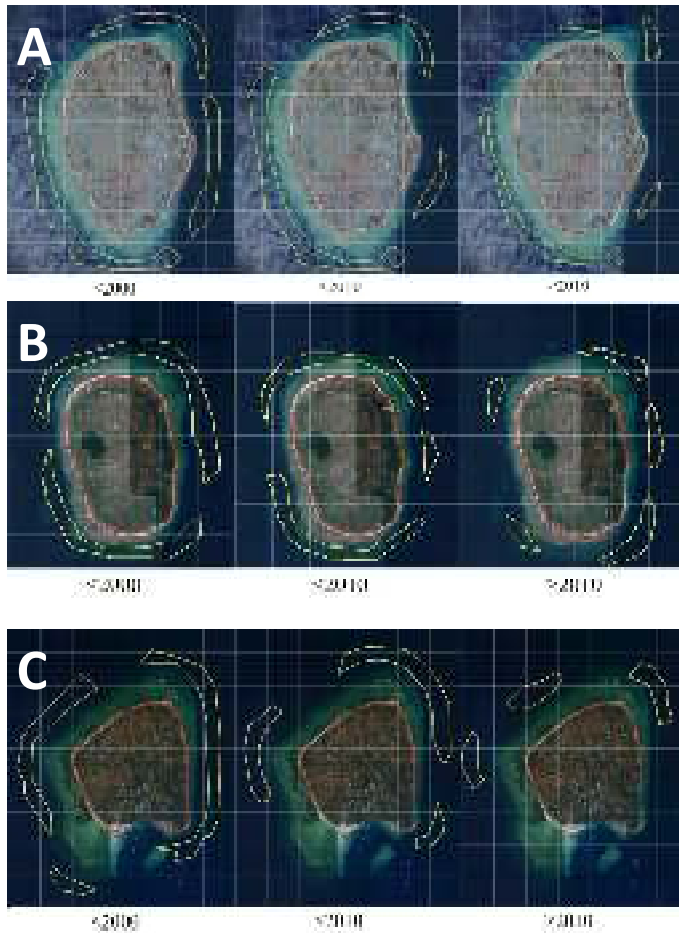


Fig.2. Habitat for sea turtle in Gili Matra area, A= Gili Trawangan Island, B, Gili Meno, and C, Gili Air.

The distribution of sea turtle in Gili Matra has been identified decrease significantly (Fig.2). In Gili Trawangan waters, it was reported and stated by informant that before 2000s sea turtle distribution was occupy an area about 17.428 m<sup>2</sup>. The distribution was reported decrease between 2000 to 2010, in which it is estimated the distribution area was about 14.884m<sup>2</sup>. Survey conducted at 2010 confirm the distribution area was about 13.713 m<sup>2</sup>. The similar trend has been found in Gili Meno waters. Between 1900 to 2000, it was reported sea turtle distribute in 12.968 m<sup>2</sup> waters area in Gili Meno. In 2010, distribution as decrease, in which sea turtle was reported at 11.321 m<sup>2</sup>. From 2010, the habitat of sea turtle was 8.158 m<sup>2</sup>.In Gili Air, before

2010, sea turtle was reported distribute in area of about 4.829 m<sup>2</sup>. The habitat was reported increase in 2010, in which sea turtle area was reported about 5.361 m<sup>2</sup>.

Nesting sites area in Gili Matra coastal area were also reported decrease. Before 2000, nesting area in Gili Trawangan was about 8,774 m<sup>2</sup>. Between 2000 to 2010, nesting area was about 6.198m<sup>2</sup>. From 2010 the nesting are was about 5.653 m<sup>2</sup>. Similar trend was also recorded in Gili Meno, In 1900-2000 are for nesting was about 8.774 m<sup>2</sup>. In 2000 to 2010, nesting area was 4.916 m<sup>2</sup>. From 2010, nesting area was about 8.158 m<sup>2</sup>. In 1900-2000 the distribution area Gili Air waters was recorded as, 10.783 m<sup>2</sup>. In 2000 to 2010, it was recorded as 3.329 m<sup>2</sup>. From 2010 the nesting area was about 2.444m<sup>2</sup>.

Rapid development oftourism in Gili Matra was mentioned as one of the critical factor for physical and social changes of Gili Matra area. Field observation found some crucial problem in Gili Matra waters, including coral reefs degradation, decrease of sandy beach aesthetics, coastal abrasion, and pollution. These environmental changes lead to the survival of marine species, including sea turtle. According to respondents, remotes beach with less tourism infrastructure facility development was preferred sites for nesting area. Sea turtle select flat beach area.

The Focus Group Discussion highlight four aspects related to the decrease of species, number of species and ares ditribution in Gili Matra. It is includes (1) illegal catching (2) decrease of nesting area, (3) land uses change, and (4) and habitat degradation.

Field survey found beach degradation in Gili Matra area. The main degradation was caused by beach abrasion.The main cause for beach abrasion was includes ocean wave and degradation of coral reefs in Gili Matra waters. In 2008, about 75% of coral reefs was degraded. The massive degradation was caused by coral exploitation, building materials, illegal fishing, El-Nino and tourism (Ahyadi & Jupri, 2008). Previous survey shows that contribution of human activity was significant (Suana, & Ahyadi, 2012). Ecologically, the degradation of coral reef contributes significantly in sea turtle population in Gili Matra waters. Scholars point out that coral reefs is the feeding area for sea turtle, and it is one of the significant place for sea turtle life cycle.

Decrease of beach contribute significantly in nesting area performance. Beach degradation changes the beach morphology, and lead to slope degree. Sea turtle prefer to select flat beach, in which it is suitable for nesting activity (Budiantoro et al., 2019). A study by Wood, & Bjorndal, 2000). Confirm that there are relation of physical attributes of beach (i.e. temperature, moisture, salinity, and slope) to the nest site selection of sea turtle, especially in loggerhead sea turtles.

According to respondent increase of tourism activity lead to the increase of transportation in waters ecosystem. Traditional boat and special boat to serve tourism increase significantly to Gili Matra area. Impact of increasing boat transportation was include waters pollution caused by oils and development of port. Previous studies by Davenport, & Davenport, (2006) point out that personal leisure transport provides significant impact to coastal ecosystem.

Fisherman activity to collect fish in coral reef also identified as threats to sea turtle population. Unsustainable harvest of marine resources contributes to the sea turtle population decrease in Gili Matra waters. Fisherman report that many sea turtle often found the area where fish abundance, and therefore increase the potentiality to catch by fisherman's nets. The use of gillnet and trawl increase to risk of sea turtle disturbance in sea waters. Some fisherman illegally use dynamites,Potassium and poisons which are dangerous to marine living system. These



increase the risk of sea turtle decrease in Gili Matra waters. In the long time, if it is continuous occurs in Gili Matra waters, the population of sea turtle will decrease.

Tourism waste has been identified as crucial factor to enhance the sustainability of small island in Gili Matra area. The abundance and poor waste management both in terrestrial and aquatic ecosystem contribute to the sea water quality, in which it is contribute to the survival of marine creature, including sea turtle. Previous research confirm that Gili Air is the area with high amount of domestic waste. It was reported that amount of waste reach 505,78 kg/day. The domestic waste product from Gili Trawangan was 317.856 kg/days, while from Gili Meno it was 177, 773 kg/hr (Hadi, et al., 2016). Marine pollutant, especially plastic, recently contribute significantly in marine ecosystem (Derraik, 2002). Plastics are non degradable materials, and in many case it is reported disturb marine creature through numerous mechanism. Without proper domestic waste management, number of plastic waste will increase significantly. It is not only contribute to the marine ecosystem, but significantly also contribute to the terrestrial habitat in Gili Matra as tourism destination area.

Tourism in Gili Matra area recently grows significantly, and numerous tourism program was promoted. Many of them area related to the sea waters and coastal ecosystem use. Recent increase of tourism industry lead intensive uses of coastal area. The main tourism facility such as cottage, restaurant, park, art shop, and others tourism amenities was established and developed in coastal area. Tourism recently is the magnet for people beyond Gili Matra come to Gili Trawangan and Gili Air to get jobs and benefits from tourism industry. This lead to the increase of people in limited space in Gili Matra area. One of the problem with abundance people in small island was increase and abundance of domestic waste. Without proper management, waste is the crucial environmental problems which area contribute to the coastal ecosystem integrity. Since 2019, the area of Gili has been declared as a national tourism destination area. The main tourism attraction in western part of Lombok was three small three islands, including Gili Trawangan, Gili Meno and Gili Air. According to provincial document, Gili Matra is the icon for sustainable tourism sites in Lombok, with sea turtle as the most interested tourism object. Increase of tourism activity in Gili Matra area influence the rapid development of tourism infrastructure and facility, especially in coastal area. The development of tourism infrastructure and facility in coastal area was potentially occurs beyond permitted area for development. Poor control and commitment to follows land uses planning and development was low, lead many cottages development disturb native area which are important for sea turtle landing and nesting.

### **Stakeholder recommendation**

From the Focus Group Discussion, some recommendation were proposed by community and stakeholders. It is basically important to support se turtle conservation rogram in Gili Matra. These recommendation includes:

1. Increasing socialization and campaign related to the role sea turtle in marine ecosystem. It is important to inform and disseminate regulation related to sea turtle conservation. There are national and local regulation related to sea turtle conservation. Stakeholder and community member who are attend in the FGD commit to support sea turtle campaign though numerous media and facility. The use of social media recently become important to promote sea turtle conservation and deliver message about the value of sea turtle and marine ecosystem conservation in Gili Matra. Gili Indah villages, has establish village regulation No 3, year 2014 about the coastal management and marine ecosystem in Gili

Indah area. Principally such village regulation propose zoning system as a spatial management to ensure the sustainable use of natural resources in Gili Indah.

2. It is important to make tools and facility to support conservation action, including sign boards and interpretation boards. Sign boards should be able to provide information related to the habitat protection. In the field, it is often observed that nesting habitat of sea turtle disturbed by tourist activity since there are no sign boards. People awareness to the crucial sites for sea turtle habitat was also identified low since there are no interpretation boards.
3. It is important to control and stop the unsustainable practice of fish collection, especially the use of gillnet and trawl, potassium and other techniques which are dangerous to sea turtle and marine creature. The coordination among police, Provincial office for fisheries, Office for nature conservation, local government, local community group and other stakeholders should be enhance to minimize illegal harvesting practices in Gili Matra area. In Chapter 5, there area declaration of catch, collect and disturb se turtle. There are also prohibited to sell and consume sea turtle, manta ray, shark and dolphins
4. Strengthening the implementation of regulation. As far, regulation was made, but poor in implementation. A commitment among stakeholders was important. The routine and scheduled meeting among stakeholders should be implemented, and any problems should be able to solve comprehensively.
5. Providing training and technical assistance to the local community and local office. One of the limitation of sea turtle and marine ecosystem conservation program in gili Matra area related to the poor human resources.

## Conclusion

Three species of sea turtle was found in TWP Gili Matra, including *Chelonia mydas*, *Eretmochelys imbricate*, and *Lepidochelys olivacea*. There are trend of sea turtle population decrease in Gili MAtra waters. Number of observed and reported sea turtle landing area decrease significantly. Some fact has been identified contributes to the decrease of population, including (1) illegal poaching (2) habitat decrease (3) environmental pollution, and (4) land uses changes. In order to support sea turtle and marine biodiversity conservation programs, some recommendation was drawn It is includes increasing socialization and campaign, providing tools and facility to support conservation action, controlling unsustainable practice of fish collection, strengthening the implementation of regulation, and providing training and technical assistance to the local community and local office.

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