
DISASTER PREPAREDNESS BASED TOURISM IN ANYER, SERANG REGENCY

Marningot Tua Natalis Situmorang¹

¹Department of Environmental Engineering, Faculty of Engineering, Universitas Sahid, Jakarta, Indonesia

Email: marningotnatalis.usahid@gmail.com

Abstract; The marine and coastal area in Anyer is a marine tourism area that has become a major tourist destination or destination in recent years. After the Mount Anak Krakatau tsunami in December 2018, the number of tourists who came to Anyer and its surroundings decreased considerably. The main cause of the decline in the number of tourists is the lack of safety guarantees if they visit this area, this is due to the lack of information about the early warning system, the lack of knowledge of tourists in disaster management and the absence of infrastructure that becomes a place of protection when a disaster occurs, such as: evacuation routes, shelters etc. The objectives and targets of this Community Service activity are: (1) providing knowledge and understanding and creating a tourist culture that is alert and adaptive to the threat of disaster; (2) reduce vulnerability and increase the capacity of tourists both individually, households and communities in dealing with and dealing with disasters; (3) prepare a draft action plan for disaster risk reduction in the tourism area of Anyer, Serang Regency. This activity uses the personal disaster-based tourism method which is carried out directly at the tourist site. In its implementation, this method begins by introducing tourist locations from the entrance to the exit, and several alternative evacuation routes, and several incidents that have occurred and may occur, lectures - discussions (questions and answers) - then practice directly on the spot. The advantage of this method is that participants can immediately practice what they hear and see, while the disadvantage is that it tends to depend on the extension agent and maybe carrying out the practice is only an obligation as a visitor. The location for the implementation of this service is the tourist area of Anyer, Serang Regency. This Community Service Activity was carried out for tourist visitors in Anyer, Serang Regency in April 2020. From the activities carried out it can be concluded that the capacity of tourists' understanding of disaster preparedness is still lacking, the infrastructure for evacuation has not been effective in the absence of adequate evacuation routes, absence disaster shelter or post, and there is no disaster evacuation indicator / sign.

Keywords: tsunami disaster, tourism, disaster preparedness

INTRODUCTION

Indonesia is located in a geographic and geodynamic position and is a trajectory of three active plates, namely Indo-Australia, Eurasia and the Pacific, placing Indonesia as a country prone to disasters. According to Sugandi in Cut, Muzar, Fithria, & Syarifah (2019) disasters in Indonesia can reach more than 1,000 times a year or up to 3 times a day. In 2019, the number of disasters in Indonesia reached 3,721 incidents with 477 fatalities, 109 missing and 3,415 injured. The impact of the disasters varies, such as damage to houses, health facilities, private facilities and educational facilities (National Disaster Management Agency, 2020).

Law Number 24 of 2007 states that a disaster is an event that threatens and disrupts people's lives and livelihoods caused by natural factors, non-natural factors and human factors that cause casualties, damage to the environment, property loss and psychological impacts. Disaster victims who survive will experience long-term psychological impacts and affect psychological well-being while carrying out daily activities (Davidson & Mcfarlane in (Dwi, Mustikasari, & Ria, 2020).

According to Chatarina (2012) victims of natural disasters will face physical problems such as disruption in meeting the needs of food and drink, shelter, health and education. Meanwhile, the psychosocial problems faced are such as deep loss of the death of family members, loss of property and sources of livelihood which causes prolonged grief felt by the victim.

Preparedness is an essential element in managing a disaster. Disaster preparedness can reduce the negative impact of disasters and can provide convenience in reducing disaster risk (Hasrul, Sri, & Arnim, 2019). Preparedness is more emphasized on the ability to carry out emergency response preparation activities quickly and accurately related to disaster management efforts (Kusno & Uci, 2019). Preparedness

also plays an important role in reducing the potential to disrupt the psychological condition of the community.

This arises from mental shock and panic when suddenly disaster strikes. Disaster victims are at risk of experiencing trauma which results in a stress disorder as much as 3.8% compared to other traumatic events, Mendatudalam (Elyusra, 2013). However, the incomplete attitude of disaster preparedness is a problem for the entire community (Ida, Putu, &Kadek, 2019).

Community and local government preparedness when facing disasters in Indonesia cannot be anticipated properly because of the lack of socialization from Government Agencies or Non-Governmental Institutions, which worsens the conditions of communities affected by disasters (Dewi, 2020). The condition of people's unpreparedness in facing disasters is caused by the lack of efforts made by the government or other parties due to the limited resources they have (Paramesti, 2011). Ramli, Sri, Sari, &Dirhamsyah (2014) argue that the large number of casualties due to disasters is due to the lack of public knowledge about disasters and readiness to anticipate disasters that occur.

The potential of marine natural resources which are abundant and attractive to tourists is also a potential threat, because it is prone to disasters. The marine and coastal area in Anyer is a marine tourism area that has become a major tourist destination or destination in recent years. Local people who become tourism actors have a sizable social and economic impact with an increase in the number of tourists who come. But after the Mount Anak Krakatau tsunami in December 2018, the number of tourists who came has decreased considerably. The main cause of the decline in the number of tourists is the absence of safety guarantees if they visit this area, this is due to a lack of information about the early warning system, a lack of public knowledge in disaster management and the absence of infrastructure that becomes a place of protection when a disaster occurs, such as: evacuation routes, shelters etc.

The objectives and targets of this Community Service activity are: (1) providing knowledge and understanding and creating a tourist culture that is alert and adaptive to the threat of disaster; (2) reduce vulnerability and increase the capacity of tourists both individually, households and communities in dealing with and dealing with disasters; (3) prepare a draft action plan for disaster risk reduction in the tourism area of Anyer, Serang Regency. In its implementation, this method begins by introducing tourist locations from the entrance to the exit, and several alternative evacuation routes, and several incidents that have occurred and may occur, lectures - discussions (questions and answers) - then practice directly on the spot. The advantage of this method is that participants can immediately practice what they hear and see, while the disadvantage is that it tends to depend on the extension agent and maybe carrying out the practice is just an obligation as a visitor. The benefits of this activity are to prepare disaster response communities, and the availability of disaster risk reduction action plans in the tourism area of Anyer, Serang Regency.

The location of the service area is in Anyer. The Anyer area is located in Anyar District, in the West End of Serang Regency, Banten Province. The main tourist attraction in this area is the long and wide coast, facing the Sunda Strait, which consists of Anyer Beach, Tanjung Tum Beach, Bojong Beach, and Sambolo Beach. These four beaches are interconnected from North to South from Anyar District with a stretch of beach reaching 25 km. Anyer Beach, Tanjung Tum Beach, and Sambolo Beach are generally beaches covered by coarse sand, fine sand and gravel. While Bojong Beach,

apart from being covered by sand and gravel, there is a lighthouse tower built in the Dutch era and used as the zero kilometer point for Jalan Raya Pos from Anyer to Panarukan. The four beaches are seen from their morphology as a wavy area with a slope of 0 - 15% with a sea depth of 0 m to 15 m, and the speed of water currents is around 24.62 m / sec.

Below is a picture of the location of Anyer and its surroundings.



Figure 1. Map of Anyer Integrated Tourism Area

METHODOLOGY

1. Method of Implementation

The method used in this research is the personal disaster-based tourism method which is carried out directly at the tourist site. The aim is to provide an example for visiting tourists to implement the disaster preparedness provided by the trainer, to understand the evacuation routes, and to be sensitive to the technology in the tourist area. With this method, it is hoped that there will be an increase in knowledge, skills, attitudes and behavior, so that they know, want, and are able to use new innovations so that if a disaster occurs they will not become victims.

In its implementation, this method begins by introducing tourist locations from the entrance to the exit, and several alternative evacuation routes, and several incidents that have occurred and may occur, lectures (questions and answers) - then practice on the spot. The advantage of this method is that participants can immediately practice what they hear and see, while the disadvantage is that it tends to depend on the extension agent and maybe carrying out the practice is just an obligation as a visitor.

Disaster preparedness is a learning process that is carried out outside of formal education both by the government and by the community with the aim of helping and guiding the community itself, in this case tourism workers who are members of a tourism awareness group in the Banten region so that they are able to make decisions in overcoming the disaster preparedness problem it faces.

Disaster preparedness is a method which in its function is a tool to achieve a goal. Disaster preparedness literally means way, in general use, disaster preparedness is also defined as a way of carrying out an activity or a way of doing work using facts and concepts systematically.

The better the disaster preparedness, the more effective it will be to achieve goals. In order to determine in advance whether a disaster preparedness can be called good, benchmarks are needed that come from several factors. The main determining

factor is the objectives to be achieved, including the objectives to be achieved in disaster preparedness, because disaster preparedness is also part of learning.

Disaster preparedness referred to in this activity is disaster preparedness which in practice is carried out directly at the venue (hotel stay / tourist area visited) and can be easily implemented indoors or outdoors.

2. Program Socialization and Strengthening

Socialization and strengthening of the program will involve stakeholders from the local government, regional stakeholders / elders, the community around the location, both formal and informal organizations in the community and partner organizations, namely Pokdarwis, the Disaster Response Tourism Village Model. At this stage, it is the process of building tourist resentment through the process of mingling the service team and gathering information about the general description of the tourist group.

3. Counseling and Discussion on Disaster Risk Management

This extension contains about the dangers that threaten the tourist area, how vulnerable and the extent to which the ability or capacity of tourists to face these dangers.

Participatory disaster risk assessment combines scientific knowledge and data as well as local wisdom based on the experiences of tourists themselves. The participatory disaster risk assessment process includes the following components: hazard assessment, vulnerability assessment, capacity assessment and tourists' perceptions of risk.

4. Disaster Risk Reduction Training

Disaster risk preparedness and reduction efforts are identified based on the results of disaster risk assessments. The most important thing is how to mobilize tourists based on their capacity.

5. Monitoring and Evaluation

Monitoring and evaluation is carried out to see whether the objectives of the activities have been achieved or not, namely whether the vulnerability in coastal areas has decreased or not. In addition, for evaluation so that it can be better in the future.

6. Parties Involved

The partner institutions involved in this activity are the Serang Regency Tourism Office, the Serang District Disaster Management Agency, and the Mangrove Protection Area Management Agency (BPDPM). In addition, other Serang Regency governments can provide data on tourist objects that are most frequently visited by visitors / tourists and which of these tourism objects are most vulnerable to disasters as evidenced by data related to several disasters that have occurred in these attractions and what are due to the disaster.

In particular, at the preliminary meeting in April 2020, the community service team asked for assistance to the community along with village officials and community leaders.

RESULTS OF ACTIVITIES AND DISCUSSIONS

The activity of assisting disaster response tourists in Anyer, Serang Regency consists of 3 stages:

1. The first stage is a review of secondary data and the results of previous research and interviews with community leaders. The results of this activity are in Table 1 below.

Table 1. Main Problems: Issues, Causes, Impacts and Alternative Treatments

CAUSE	IMPACT	ALTERNATIVE HANDLING
Issue: Environment is related to disaster		
Damage to the tourist environment		
Environmentally unfriendly activity: - Mangrove logging in Anyer - Littering - Oil spills - The number of fishing gears that damage the environment - The number of residents who erected buildings on the coastline	- Decreased catch - The destruction of marine life and coral reefs - Floods during the rainy season - The land is less fertile - The dryness of clean water during the dry season - Beach erosion and loss of natural coastal protection from tidal threats and tsunamis	- Counseling the importance of environmental conservation and waste management - There needs to be a village arrangement (spatial layout) - Formed a coastal and forest security group - Regulations regarding activities around the coastal environment - Law enforcement
Lack of public awareness of the importance of environmental sustainability - Low level of education - Lack of community participation	- Random waste disposal - Illegal logging - Pollution and marine abrasion - Welfare decreases - Lack of tourist visits - The forest's been damaged	- Mutual cooperation/community service - Making trash bins - Enforcement of rules / agreements
Issue: Village Economy and Social related to Tourism		
The handling of tourism objects is not optimal		
- Environment (sanitation) that is less supportive - Lack of transportation facilities to support tourism activities - Lack of education and community participation in the tourism sector - Damaged Coastal Potential	- The existing potential is difficult to develop - Many children drop out of school at the junior high and high school level - Relatively low quality of human resources - It's hard to get a job - The community's mindset is very limited so that it affects village development	- Conducting outreach to the community about tourist areas and sanitation - Requesting support from banks / cooperatives - Basic infrastructure development - Develop tourist attractions such as hunting, fishing, diving, mountain climbing, etc.

2. The second stage is the initial socialization and identification of target tourist groups. This activity is carried out with partners consisting of Village officials (Village Heads and staff), tourist attractions management bodies, and community leaders. This stage is carried out in April 2020 through lectures and interactive dialogue methods.

Based on the results of the pre-test and post-test, it can be concluded that most of the visitors to tourist attractions have started to recognize the potential for disasters including earthquakes and tsunamis. However, tourists still have difficulty recognizing the signs of an earthquake disaster. When viewed broadly, tourists have a high level of preparedness seen from the questions about the first thing to do in the event of an earthquake and tsunami. This is supported by the knowledge of tourists about access to evacuation sites and alternative places of refuge such as schools and places of worship. Tourists also seem to have enough access to information from electronic media, information from village government officials and based on previous experiences when a disaster occurs.

Some things that are lacking based on the test results are the absence of a sign for potential types of disasters in Anyer, Serang District, disaster preparedness posters and signs for disaster evacuation locations. This deficiency can be seen in the respondents' answers at the pretest stage which show that so far there has been no official disaster evacuation simulation or training for tourists. Based on the results of interviews with tourists who have visited Anyer tourist attractions several times, so far the manager of tourist attractions has used microphones as a medium to inform tourists about signs of disaster.

In an emergency such as in the 2018 tsunami, the distribution of tourist evacuation locations is carried out randomly by the manager of tourist attractions, youth organizations and local community leaders. In the evacuation location there were not only local people but also tourists and travel agents who were also evacuated with the community. Thus, in general it can be said that the evacuation mechanism is still not properly organized. Lack of understanding and standards for evacuation and disaster preparedness for tourists and other external parties (travel agents) is quite difficult in the evacuation mechanism when a disaster occurs.

The next activity, after the pre-test and post-test, was conducted with discussions between tourists, hamlet officials and the local community. The enthusiasm of the community increased when a question and answer session was held regarding environmental potentials that could be developed in tourism in disaster-prone areas. In connection with the readiness of the community in providing security services in the event of a natural disaster, it is therefore necessary to improve infrastructure to support disaster response tourists. Among them are the addition of signs, maps of evacuation routes, improving the quality of evacuation routes and directing the public to ensure the safety of tourists.

3. The third stage is disaster response training and preparation of disaster evacuation routes

The third phase of disaster response community service activities carried out in April 2020 in Anyer is aimed at increasing the capacity of tourists in identifying marine tourism areas through disaster preparedness education. Community service activities at this stage are carried out to assess the level of knowledge and ability of tourists in dealing with disasters. This activity serves as the basis and preparation of tourists in

making an action plan. In planning with a bottom up concept, namely by considering the capacity of tourists as the basis for comprehensive planning.

The output of this mentoring activity is in the form of:

- a. Preparation of the Anyer Disaster Evacuation Route Map for Serang Regency as a guide and guide to tourists regarding evacuation locations to improve disaster preparedness independently. In this service activity, efforts are made to collect data and identify evacuation routes as a source of information in building disaster response tourists. From the results of the field survey, it was found that almost all locations had relatively high contours and did not have a stable structure. The evacuation site is on a hill with an adequate height of about a few meters from residential areas such as in Kampung Karawang, Sukarame, Carita, Banten.

At the Anyer tourist site, Serang Regency, there are a number of tsunami evacuation routes. If a disaster occurs, the route can be used by tourists and local residents to go to higher ground.

One of the tsunami evacuation routes is located in Pegadungan Village, Anyer. Now, the condition of the tsunami evacuation route is very poor. The line was badly damaged. Based on the observation of the community service team, the route from Pegadungan Village to Jaha Village, Anyer has holes and gets flooded when it rains.

The road was damaged due to the large number of trucks passing by. Even though it has been damaged for years, the local government has not repaired it.



Figure 2 Condition of the tsunami evacuation route in Pegadungan Village, Anyer, Serang Regency (Source: merdeka.com, 2020)

- b. Increase the capacity and knowledge of disaster response tourists by recognizing disaster-related signs and how to save themselves through educational posters, pictures and videos. From the results of observations at the activity location, it was found that there was a tsunami disaster evacuation route sign system at the location of the activity, but the number was very limited, so it was difficult to find, the conditions were not suitable to continue to be used, and the sign system in the research location was made without using theory -The theory of the standard of making a good sign system. A sign system is a collection of individual signs that have been designed to identify or direct. The signs used in a sign system basically express the meaning of rules which are international standards, so that it will be easy for everyone to understand (Phill Boines, 2008; 17).



Figure 3 Signs of Disaster Evacuation Routes at Anyer Tourist Sites, Serang Regency (Source: kumparan.com, 2020)

This service activity is also carried out by socializing activities to tourists by inviting 30 selected tourists to represent local tourists. In this outreach activity, a video was shown on how to effectively deal with disasters and provided directions on disaster preparedness posters.

Concept of Anyer Development Plan for Serang Regency with Disaster Response Communities

Anyer as one of the coastal tourism destinations in Serang Regency which also has the potential as a tsunami and earthquake prone area. Disaster preparedness needs to be improved to create a disaster-responsive community without eliminating the potential for tourism, which has been the main economic source for the community. Thus, in the development of the Anyer area, Serang Regency needs to pay attention to the following main concepts:

- 1) Increased tourist participation in building environmental resilience in disaster-prone areas, such as:
 - Increased understanding of tourists' capacity to respond to disasters independently with comprehensive governance organizations
 - Willingness of tourists to be self-supporting and self-supporting in conservation activities of coral reefs and mangrove forests as a form of efforts to improve the environmental system for disaster mitigation
 - Improvement of the value system in society in the management of coastal tourism in Anyer with a paradigm shift that coastal areas are not only a gift but also a disaster
- 2) Increasing the application of science and technology in the community, in the management of coastal tourism in Anyer with a paradigm shift that disaster-prone coastal areas can become tourism potential in Anyer. This increase is also able to support the sustainability of tourism potential in the field of security and order in *Sapta Pesona*, given that tourism is the main economic source of society.
- 3) Increased community income is achieved through community participation in carrying out quality tourism practices by preserving the coastal resources of Anyer, Serang Regency, especially the mangrove, seagrass and coral reef ecosystems so that it can protect and increase tourists to come to Anyer. Furthermore, it can be developed as a coastal ecotourism by prioritizing natural tourism, cultural tourism so that it is able to change aspects of disasters to become educational for tourists.

CONCLUSION

Based on the results of these activities, it was identified that the capacity of tourists to understand disaster preparedness was good. However, the infrastructure for evacuation has not been effective in the absence of an adequate evacuation route, the absence of a shelter or post is still a disaster, and there is no disaster evacuation indicator / sign. This activity is carried out to assess the identification of tourists' readiness in facing disasters. Through the concept of disaster response tourists, not only for tourists, but the local community also to ensure the sustainability of tourism potential as a source of the economy of the people in Anyer.

Some suggestions related to community service in disaster response, including the following:

1. There needs to be an active role between stakeholders, including BNPB, district and provincial governments, hamlet and village officials, managers of tourist attractions, community organizations, the private sector (tourism industry) and the community in improving disaster preparedness.
2. In realizing a disaster preparedness system, it is necessary to collect data on potential disasters, as well as develop evacuation routes and action plans that have been prepared for this activity. The next action plan can be used as a guide and standard in realizing disaster response tourists in coastal areas both in Anyer, Serang Regency and other coastal areas.
3. Improvement of disaster evacuation infrastructure, such as repairing evacuation routes, determining the point of the evacuation location in stages, building permanent evacuation shelters to adding an early warning system (EWS)
4. Provision of disaster evacuation education media in the form of sign boards, posters that can be socialized and applied in public locations such as schools, village halls, tourism information centers, places of worship that are evenly placed in all areas in Anyer, Serang Regency.

REFERENCES

- Ashar, F., Amaratunga, D., Haigh, R. 2018. Tsunami Evacuation Routes Using Network Analysis: A case study in Padang. *Procedia Engineering*, 109–116.
- Badan Nasional Penanggulangan Bencana (BNPB). 2009. *Kajian Tentang Penanggulangan Bencana Alam Di Indonesia*.
- Chatarina, R. 2012. *Penanganan Dampak Sosial Psikologis Korban Bencana Merapi (Sosial Impact of Psychological Treatment Merapi Disaster Victims)*. *Jurnal Informasi*, 17(2).
- Cut, H., Muzar, H., Fithria., & Syarifah, R. J. 2019. Efektivitas Edukasi Mitigasi Bencana terhadap Kesiapsiagaan Bencana Gempa Bumi dan Tsunami pada Keluarga Pasien di Rumah Sakit. *Idea Nursing Journal*, X, 2087–2879
- Dewi, K. 2020. Komunikasi Mitigasi Bencana sebagai Kewaspadaan Masyarakat Menghadapi Bencana. *Jurnal Simbolika*, 6 (1), 2442–9198.
- Dwi, E., Mustikasari, & Ria, U. P. 2020. Gambaran Post Traumatic Stress Disorder Pada Korban Bencana Alam Post Erupsi Merapi Satu Dekade. *Jurnal Ilmu Keperawatan Jiwa*, 3 (2), 101–112.
- Elyusra, U. 2013. Intervensi Spiritual Emotion Freedom Technique Untuk Menurunkan Gangguan Stres Pasca Trauma Erupsi Gunung Merapi. *Journal of Educational, Health and Comunity Psychology*, 2(1), 38–57.

- Hasrul, H., Sri, A., & Arnim, S. 2019. Penguatan Kesiapsiagaan Stakeholder Dalam Pengurangan Risiko Bencana Gempabumi. *Jurnal Geodika*, 3(1), 30–40.
- Ida, A.A.L., Putu, W.K.P., & Kadek, I. A. 2019. Penerapan Pelatihan Siap Siaga Bencana (Sigana) Dalam Meningkatkan Kesiapsiagaan Bencana Pada Pecalang. *Jurnal Pengabdian Kepada Masyarakat MATAPPA*, 2(1).
- Kusno, F., & Uci, N. 2019. Efektifitas Pelatihan Penanggulangan Bencana Dengan Metode Simulasi Terhadap Perilaku Kesiapsiagaan Bencana Banjir Pada Siswa SMAN 2 Tuban. *Jurnal Kesehatan Mesencephalon*, 5 (2), 88–94.
- Manjarrez, A. J., Wickliffe, L.C. & Dean, A., eds. 2018. *Guidance on spatial technologies for disaster risk management in aquaculture. Summary Version*. Rome, FAO. 34 pp.
- Mariana, R., Fikri, H. T., Syahrina, I. A. 2020. Psikoedukasi Siaga Bencana: Membentuk Komunitas Sadar Bencana di Kawasan Wisata. *Journal of Character Education Society*, Vol. 3, No. 3, hal. 631-638.
- Moreno, J., Lara, A., Torres, M. 2019. Urban Resilience in Post-Disaster Reconstruction: Towards a Resilient Development in Sichuan, China. *International Journal of Disaster Risk Reduction*, 33, 376–384.
- Paramesti, C. A. 2011. Kesiapsiagaan Masyarakat Kawasan Teluk Pelabuhan Ratu terhadap Bencana Gempa Bumi dan Tsunami. *Jurnal Perencanaan Wilayah Dan Kota*, 22 (2), 113–128.
- Pasteur, K. 2011. *From Vulnerability to Resilience: A framework for analysis and action to build community resilience*. Practical Action Publishing.
- Peraturan Kepala Badan Nasional Penanggulangan Bencana (BNPB) Nomor 1 Tahun 2012 Tentang Pedoman Umum Kelurahan/Desa Tangguh Bencana
- Persada, C., Kesuma, Y., Rusmiat, F., dan Hardila, D. 2019. *Pendampingan Masyarakat Tanggap Bencana di Kawasan Pariwisata Teluk Lampung Kabupaten Pesawaran*. Draft Paper Pengabdian.
- Ramli, D., Sri, A.S., Sari, M., Dirhamsyah, M. 2014. Penerapan Pelatihan Siaga Bencana Dalam Meningkatkan Pengetahuan, Sikap, dan Tindakan Komunitas SMA Negeri 5 Banda Aceh. *Jurnal Ilmu Kebencanaan (JIKA)*, 1(1).
- Ride, A., Bretherton, D. 2011. *Community Resilience in Natural Disasters*. Palgrave Macmillan: United States.
- Zen, M.T, et.al (ed.). 2010. *Mengelola Resiko Bencana di Negara Maritim Indonesia: Upaya Mengurangi Resiko Bencana (jilid 3)*. LPPM ITB