

CASE STUDY: RISK AND COMMUNICATION COVERAGE LIMITATIONS IN PROTECTED AREAS

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Abstract

This research was conducted to identify the risk and the telecommunication problem at the tropical rainforest in Taman Negara Gunung Ledang, Johor National Park. This research involved the management team of Taman Negara Gunung Ledang, which included the National Park Manager, Former National Park Manager and a Certified Guide for outdoor recreation activities here. Qualitative method had been used via semi structured interviews for data collection. The interviews were conducted separately to avoid the data influence from each interviewee. The findings of this research had identified that some telecommunication system failure exists in Taman Negara Gunung Ledang and this had caused difficulties and it became more critical during rescuing operations involving individuals hiking to the hill top. Besides, telecommunication services were halted in the deep forest and they were unable to make a call and unable to be contacted. In conclusion, communication is a serious issue in the protected forest especially in the national park and an alternative is needed in order to improve the communication system in the national park.

Keywords: Limitation, National Park, Telecommunication Coverage

Introduction

National Park is a conservation area of treasured natural resources consisting of many flora and fauna. The richness of these biodiversity treasures is preserved in a variety of uniqueness that includes flora and fauna that are almost non-existent in the typical forest area. This is due to the sustainable ecosystem restoration factors that have been created for the purpose of protecting this precious national ecosystem treasure. Usually, the location of this national park is conventionally located in an area further away from the developing city and located in the non-developmental project area. This is done in order to maintain the quality and sustainability of this ecosystem for the restoration and preservation of the country's natural resources. Gunung Ledang National Park is one of the richest biodiversity tropical rain forests in Malaysia, located at the state of Johor (Hamid & Him, 2014).

The general public knows that telecommunication network coverage systems are only available in rapidly developing areas. In order to ensure that the conditions of these natural treasures are maintained and preserved, there is no planned physical development in and around the area near the national park including any development of communication network systems. The lack of development of this infrastructure is to ensure that the natural resources and biodiversity in this national park area will not be negatively affected by the development. However, the lack of communication network is creating communication problems to the management department of the National Park as well as visitors carrying out recreational activities in this protected area.

Communication networks in reclusive forest areas are indeed poorly functioning and limited (Calvet-Mir, Maestre-Andrés, Molina, & Van den Bergh, 2015). Communication in the

cloistered areas of this national park is very limited and also makes it difficult for the management to communicate especially in channeling information while in the thick layered forest with the topographic factors also blocking the communication network in this area. This causes difficulties during an emergency situation, especially when assistance is needed by injured mountain climbers but could not be provided immediately due to these communication interruptions. Communication is very important and very helpful in the rescue mission (Palm & Törnqvist, 2008).

Communication network systems in forest reserves are not developed because the value of the landscape and forest ecosystems are seen as more valuable (Jung Jin, Jorgensen, Swanwick, & Selman, 2007). This view contributes to the lack of a reliable network of communication systems in this thick forest area, especially in national parks, state parks and even forest reserves, especially those involving thick layered forests located in remote areas inland far from development. In addition to avoiding and dealing with the risk of accidents, communication risk is also an element that needs to be considered in risk management in protected areas (Genovese & Przulski, 2013).

Communication Network in Forest Reserve

The studies of emergency situations and the importance of communication in sheltered areas such as forest reserves are very significant (Worley, 2011). His study emphasizes the concept of communication technology development in forest reserves which is very important to be implemented in order to deal with emergencies and critical situations. Communication network systems limitations in rural areas are common, especially in forest reserves such as national parks, state parks, and even recreational forests in Malaysia. With the disconnection of this communication line, it is very difficult to communicate while in the thick forest. Mobile phone network systems also lack consistencies in coverage and often lack communication coverage.

The absence of this communication network system has caused those who are in the cloistered area of this national park to lose the ability to communicate. Communication is disrupted due to lack of proper communication network. They were unable to contact the outside world and they cannot be reached. This also poses a problem to the management of the national park because the lack of communication network system causes them to lose contact between the operating office and the staff who carries out field work and also the tour guide who brings extreme sports recreation activists such as mountain climbers and campers into the thick forest area. It becomes more critical, in the event of an emergency that requires immediate assistance while in the thick forest such as a fallen climber involving severe injuries and in need of emergency assistance from the operating office. Common injuries experienced on high-altitude in extreme ecotourism areas are muscle injuries and injuries that are frequently experienced during hiking activities (Musa, Higham, & Carr, 2015).

Looking closely in terms of the administration of the national park management, they also face difficulties in communication issues. As an alternative measure, the management communicates using the 'walkie talkie', the two-way radio equipment, as the communication medium in thick forest reserve areas like this. However, the communication using this 'walkie talkie' also has its limitations where it could only be used up to a certain distance and will also be disconnected due to the problem of poor communication network in this area. The use of these walkie-talkies is also limited to a certain distance (Saba & Rosa, 2005).

It is clear that although there is a 'walkie talkie' as a two-way radio equipment, but the communication coverage area is still limited and people still are not able to communicate perfectly when in a location that is too far in the thick layered forest. Apart from the topographic factors, the thickness of the forest with large trees also disrupts this network. As a result, communication problems are still a major concern in thick forest areas such as in

national parks, state parks and even some of the country's major recreational areas.

Materials and Methods

Study Area

This study was conducted at Gunung Ledang National Park, Johor in February 2018 involving Johor Gunung Ledang National Park Manager, former Johor National Park manager and also a tour guide who is in charge as a climbing guide in this national park. This study looks into this issue based on the stakeholder's point of views as the management team at the Gunung Ledang National Park. This study examines the risk of the national park management team in providing the best service to visitors who carry out extreme recreational activities in Gunung Ledang National Park. Among the constraints faced by national park administrators here are the extremely limited communication network system limitations and also make it difficult for them to provide the best service towards the visitors of the country, especially in emergencies during accidents and injuries to extreme sports players in the jungle over here.

The study used qualitative methods in collecting data for this study. Semi-structured interviews were used in this study site at the Johor National Park covering Gunung Ledang National Park for the tropical rainforest category. Data were collected from semi structured interviews with the National Park Manager, former Johor National Park Manager and also an accredited guide who works here to carry out outdoor recreational activities, especially for extreme activities in the Johor National Park area here. Purposive Sampling had been used in this case study in collecting the data with the interviewees. The audio data of this study recorded all the interview conversations with all the interviewees. The recorded data obtained were transcribed and then processed and analyzed using Nvivo10 as software to process the data of this study.

Results and Discussion

Based on the data collected and processed, the following are the main issues found from this study which include telecommunication issues that are problematic in both categories of this National park.

In Gunung Ledang National Park, the problem of limited telecommunication coverage is common there. Here is a statement from Interviewee 1:

Communication problem. Certified guides will communicate with the management of Gunung Ledang using a 'walkie-talkie' to inform any issues or problems that arise during mountain climbing activities due to the problem of very limited mobile phone telecommunication network. The problem is, the 'walkie-talkie' (two-way radio equipment) communication coverage is also limited and cannot be communicated in some areas in the thick layered forest" (Interviewee 1)

This clearly shows that communication problem is the first thing stated by Interviewee 1. Interviewee 1 informed that the telecommunication network coverage is indeed a problem in this area so they have to use 'walkie-talkie' as the two-way radio equipment instrument to communicate during their hike. Walkie-talkie is the main equipment that is used by the management of Gunung Ledang National Park to communicate with the guides who carry out outdoor recreational activities here. To make matters worse, the walkie-talkie network coverage service is also disrupted and could not be reached in some areas of this thick forest may be caused by the topographic factors of this tropical rainforest which is still rich with large trees and its location.

The effects of this limited telecommunication network coverage are disastrous and risky in

the event of an emergency situation. For example, accidents while climbing, such as falling or slipping which may result in serious injuries would require immediate rescue *mission*. The following is a statement from Interviewee 2:

If encountered with an accident, this is very problematic and risky because they cannot be contacted and also cannot make calls while in the thick forest. The communication network is very limited” (Interviewee 2).

The interviewee stressed on the issue of telecommunication problems which is considered direful. This is because in deeper locations in the thick forest, they cannot be contacted and they also cannot make calls. This is a problem that can cause greater risk factors in emergency situations, because if the victim fails to get immediate assistance, it could lead to the death of the victim due to a delayed rescue mission. The development of communication systems in remote areas is important (Marvin & Johnson, 1995). Communication is a basic need that should not be underestimated because communication is important in all situations. The limitations of this telecommunication system network coverage had caused various problems and are a risk factor in this tropical rainforest, especially in Gunung Ledang National Park. This is clear when the emergency situation is also emphasized by Interviewee 3 as below:

This very limited telecommunication coverage is a communication risk here because tour guides need to solve the problem of accidents, especially in seeking rescue assistance for injured victims. But this very limited telecommunication coverage hinders rescue operations during emergencies situations” (Interviewee 3).

Interviewee 3 also gave an insight into the risks when applying for emergency assistance. This emergency situation involves lives. This is a serious matter that needs to be an issue to be highlighted and addressed to help the injured victims while carrying out extreme mountaineering activities here. Slippery, undulating surface and climbing factors also increase the potential for accidents in this area. This rescue task is a fundamental rights in international law to protect and save human lives (Papanicolopulu, 2016).

In addition, the frequency of limited telecommunication coverage issues is also a repeated matter in this research and has also been mentioned several times by all interviewees. This shows that this issue is a serious matter and it had been consistently being discussed by all interviewees. The level of anxiety of the interviewee on this issue became the main topic of their conversations because this is the issue and also the risk they face while carrying out these outdoor activities in this national park. The condition of this thick and layered forest topography has caused the telecommunication network coverage to be very weak, not only for mobile line coverage, but also the ‘walkie-talkie’ network coverage (Shivakoti, Pradhan, & Helmi, 2016).

It will be very problematic if they were to face any emergency situation while in the forest and if there are bad things that might happen along the climbing path or the forest trail. The problem of communication networks in the protected areas needs to be address as it poses risks and might become worse during emergencies. This needs to be addressed as a measure of improvement in risk management on communication issues as well as related elements (Jayathurathnage, Alphones, & Vilathgamuwa, 2017). The use of mobile satellite phones is also very suitable as one of the ways to address the telecommunication issues in this protected areas (Jaff, Pillai, & Hu, 2015).

Conclusion

It is well known that the forest reserve in the National Park is a ferocious natural virgin forest without any interruption of development projects to maintain its preservation. This includes development of telecommunication networks in the area. As a result, telecommunication network coverage in this forest reserve area is very limited not only for mobile phone services, but also for walkie-talkie. This becomes more critical in emergency situations that require immediate assistance in reaching the victims during a search and rescue mission in this forest reserve. The limited coverage of these telecommunication networks is a risk factor for severe incidents due to the delays in receiving information for aid missions during emergency situations. This complication poses a risk not only to extreme recreational activists in reclusive forests but it will also complicate the administrative and management work in national parks. Alternative actions in overcoming communication problems in this protected area is needed so that the risk to visitors visiting the National Park can be controlled and assistance during critical situations can be provided more efficiently. Mobile satellite phone usage is also important to be implemented in all protected areas.

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Conflict of interests

Authors hereby declares that there is no conflict of interests with any organization or financial body for supporting this research.

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