

# Communication management on forest and land fires mitigation awareness based on community

*Achmad Isya Alfassa*<sup>1\*</sup> and *Asri Dewi*<sup>2,3</sup>

<sup>1</sup> Majoring in Doctoral Population Studies, Universitas Gadjah Mada, Indonesia

<sup>2</sup> Majoring in Magister Communication, University of Riau, Indonesia

<sup>3</sup> PT Kilang Pertamina Internasional RU II Sungai Pakning, Indonesia

**Abstract.** Forest and land fires are disasters that occur quite frequently in Riau Province and have an impact on the destruction of various sources of community livelihoods, land quality, and public health in general. Efforts to deal with forest and land fires disasters have been carried out by various parties through various prevention activities to recovery, but broad community participation from various stratifications has an important role in managing forest and land fires disasters in a sustainable manner. Community Concerned Disasters (MPB) is a volunteer organization that acts as the front guard in efforts to deal with forest and land fires. This study aims to identify MPB communication management in forest and land fire disaster management activities in Sukajadi Village, Bukit Batu District, Bengkalis Regency, Riau Province. This research used a participatory approach and in-depth interviews with local residents, communities and government. This study found that in efforts to deal with forest and land fires disasters in Sukajadi Village, MPB has a strong role in involving stakeholders to preserve the environment, improving infrastructure and equipment, and increasing community capacity in forest and land fires disaster management.

## 1 Introduction

One of the provinces on Sumatra Island, Riau Province borders the provinces of North Sumatra, West Sumatra, Jambi, and the Riau Islands directly. One of the provinces with an abundance of natural resources is Riau, which offers mining, plantation, and agricultural products. One of the provinces with a sizable amount of forest area is Riau, particularly in its peat forest regions. Land and forest fires are one of the main concerns in a location with a lot of forests. Anywhere that has forests, especially peat forests like those in the Province of Riau, is always at risk from forest and land fires. Whether they are started by humans or occur naturally, forest and land fires, also known as Karhutla, are incidents of burning forests or land. These forest and land fires have a significant negative influence on the environment, the economy, society, culture, and politics. Natural catastrophes include land and forest fires. catastrophes can be classified into three categories based on the nature of event: (1) Natural Disasters, (2) Non-Natural Disasters, and (3) Social Disasters. To find out the condition of a

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\* Corresponding author: [achmadisyaalfassa@gmail.com](mailto:achmadisyaalfassa@gmail.com)

land regarding forest and land fire disasters, it can be seen through hotspot points either by regional category or by cluster [1].

One type of forest and land fire is forest and peatland fires, where these fires occur on the ground surface where the fire burns flammable materials on the surface such as dry leaves, twigs, etc. Then the fire spreads erratically slowly below the surface (ground fire) burning organic material through the pores of the peat and through the roots of shrubs, causing the fire to spread quickly in all directions of the land. The deterioration of natural conditions, human health, and socioeconomic factors are among the effects of forest and land fires. Human activity is the primary source of forest and land fires, whether through deliberate fire lighting or careless fire management. The majority of peatlands in Indonesia have been transformed into plantation forests for pulp manufacture and agricultural land for the cultivation of estate crops throughout the past 20 years [2]. Although there are short-term economic benefits to this conversion, there are also significant environmental and financial hazards, such as the potential to cause biodiversity loss, forest land fires, and flooding due to land subsidence. In addition, smoke catastrophes impair public health, and peat or smoke burns cause financial losses. The majority of Bengkalis Regency is made up of peatland, particularly in Bukit Batu Subdistrict, which is extremely prone to fire [3].

This means that awareness and understanding is important for the community, especially for people who live in forest areas, to understand the importance of protecting nature and caring for forests. to avoid natural disasters, especially forest and land fires. In the dry season, forest and land fires are always a major threat because the lack of rainfall results in the intensity of the sun's heat becoming higher which makes the land dry so that it becomes very flammable and spreads to various locations.

To support our vigilance as living creatures in preparing ourselves to face forest and land fires, Disaster Care Community Volunteers are needed who have been trained and have high enthusiasm and knowledge regarding disaster concerns, especially forest and land fire disasters in peat areas. On the other hand, communication management skills also have a vital role in implementing forest and land fire disaster management activities. Smooth coordination and communication will speed up the success of extinguishing, so systematic communication management is needed in this activity.

Sukajadi Village is one of the villages located in Bukit Batu District, Bengkalis Regency. This village has a history of many community lands being burned several years ago and the Disaster Care Community carried out various handling and collaboration activities to overcome this problem. The Sukajadi Village Disaster Care Community (Masyarakat Peduli Bencana) has a different system in terms of organizational and administrative governance, so that it also influences communication patterns in disaster management activities as well as increasing collective awareness of the importance of protecting the environment.

A notion of economic development known as "community empowerment" integrates social ideals with the goal of improving not just the economy but also prestige, dignity, self-confidence, and self-esteem [4].

## **2 Method**

This research uses empirical methods and literature studies using data that has been obtained both secondary and primary. The analysis was carried out comparatively using qualitative analysis with narrative explanations and event phenomena. The empirical method is a research approach used to describe conditions seen in the field as they are. An empirical approach will also provide a framework for proof or testing to ensure a truth. Literature study is a series of activities related to methods of collecting library data, reading and taking notes, and managing research materials. Literature study is a required activity in research, especially academic research whose main aim is to develop theoretical aspects as well as aspects of

practical benefit. Literature studies are carried out by each researcher with the main aim of finding a basis for obtaining and building a theoretical basis, a framework for thinking, and determining temporary assumptions or also called research hypotheses.

Qualitative research is research that is descriptive in nature, tends to use analysis and makes the meaning process more visible. Qualitative research aims to gain a general understanding of social reality and participant perspectives. Researchers use data collection techniques in the form of observation and document study, which is a process of collecting data such as documents, papers, office reports and private documents such as diaries, letters and emails [5]. The qualitative data analysis method is a method of in-depth data processing using data from observations, interviews and literature. Techniques for analyzing qualitative data by summarizing, categorizing and interpreting. Qualitative Analysis, is an analysis method using interviews and observations by answering questions such as what, why or how.

### **3 Results and discussion**

Management activities in communication create a more neatly structured process. Communication management is an activity that aims to ensure success in a communication process. Goerge R. Terry in [6] who implements the main function of management into communication management, based on the stages in the management process, namely Planning, Organizing, Actuating and Controlling which will be explained as following:

#### **3.1 Planning**

Aims to create a roadmap and summary of the goals the company wants to achieve in the communication process. This process plays an important role in ensuring that the activities carried out are in accordance with the planned path to achieve the communication objectives. Cooperation gets to be a basic portion of accomplishing the objectives set. The process began with problem identification [7]. In forest and land fire disaster mitigation activities in Sukajadi village, the Disaster Care Community holds annual routine meetings involving various parties such as the village government and companies to develop activities so that they have a wider impact on the community. Through this meeting, an activity plan for land distribution was prepared, as well as outreach to the community to prevent land fires.

#### **3.2 Organizing**

It is an activity to classify the activities and resources needed to achieve these goals. The Sukajadi Village Disaster Care Community has a clear organizational structure with the existence of a Village Decree. From this organizational structure, the duties of each member were re-determined in terms of land patrol and outreach, as well as various other development activities such as firefighting training, joint training, environmentally friendly agriculture and fisheries cultivation.

#### **3.3 Actuating**

The implementation stage is an activity carried out to ensure that all elements in the company carry out their responsibilities in accordance with the planned objectives in communications management. This stage can be said to be the most important stage, because planning and organizing will not be successful if there is no implementation. In forest and land fire mitigation activities, implementation is carried out through the implementation of prevention activities, up to emergency response to protect the environment. From a disaster perspective,

the implementation stages of disaster response are classified into 5 stages, namely prevention, preparedness, mitigation, emergency response and recovery.

### 3.4 Evaluation

This is the final stage carried out to monitor communication activities that are running according to the plans carried out. Evaluation activities are carried out to obtain recommendations so that improvements can be made in subsequent communication management.

Stakeholders:

- Bukit Batu Districts Government (Government)
- Manggala Agni Of Riau Province (Government)
- Sukajadi Village’s Government (Government)
- Police Departement Of Bukit Batu District (Government)
- Military Of Bukit Batu District (Government)
- Masyarakat Peduli Bencana (Community)
- KPI RU II Sungai Pakning (Corporation)
- Universities (Community)

**Table 1.** Disaster management stages.

No	Disaster Management Stages	Stakeholder Engagement Forum	Medium	Stakeholder
1.	Prevention	Stakeholder Meeting	Discussion Forum	Bukit Batu Districts Government, Sukajadi Village’s Government, Police Departement Of Bukit Batu District, Military Of Bukit Batu District, Masyarakat Peduli Bencana.
		Scientific Information Dissemination	Discussion Forums, Scientific Articles	Universitas Riau, Corporate, Masyarakat Peduli Bencana
2.	Mitigation	Daily Coordination	Grup Whatsapp, Phone Call, HT	Manggala Agni, Bukit Batu Districts Government, Sukajadi Village’s Government, Police Departement Of Bukit Batu District, Military Of Bukit Batu District, Masyarakat Peduli Bencana, Corporate.
3.	Preparedness	Disaster Response Training	Discussion Forum, Whatsapp, HT	Manggala Agni, Bukit Batu Districts Government, Sukajadi Village’s Government, Masyarakat Peduli Bencana, Corporate
4.	Emergency Response	Forest And Fire Extinguishing	Discussion Forum, Whatsapp, HT	Manggala Agni, Bukit Batu Districts Government, Sukajadi Village’s Government, Masyarakat Peduli Bencana, Corporate.
		Ministration	Discussion Forum	Corporate
5.	Recovery	Processing Burned Peatlands Into Agriculture	Discussion Forum	Farmers Community, Corporate

### 3.5 Disaster mitigation based on community

Disaster care communities have their own methods of communicating environmental conservation messages to the community. MPB carries out outreach, patrols, and first responders as to strengthening MPB's capacity in handling forest and land fires disasters will increase effectiveness and efficiency in extinguishing activities. KPI RU II Sungai Pakning, through a community empowerment program, provides assistance to MPB in the Districts of Bukit Batu, Siak Kecil, and Bandar Laksamana. Mitigation activities are organized more efficiently through the division of job desks, namely teams divided into monitoring teams and equipment preparation teams as well as strengthening socialization within the community. MPB together with the Regional Government carry out outreach to the community regarding regulations governing sanctions for parties who burn land and the impact of losses from this disaster. Apart from verbal outreach, there is also a leaflet distributed to every resident's house, accompanied by regulations and MPB contact persons, making it easier for the public to provide information if there are hot spots. Therefore, people who are not members of the MPB also participate in patrol and reporting functions.

When a hotspot is found, the MPB team immediately reports it to the authorities and carries out initial extinguishing activities. The team was divided into 2, the monitoring team went straight to the location of the land fire and mapped out what extinguishing equipment was needed and the most effective extinguishing route. On the other hand, the equipment preparation team brings equipment as directed by the monitoring team so that extinguishing activities run more effectively.

Other assistance includes providing extinguishing facilities such as peat nozzles, water pump machines, canal blocks, reservoirs, and personal protective equipment (PPE). MPB capacity building activities in extinguishing activities were also carried out through extinguishing training, joint exercises, and MPB Fast Agile Competitions, after which KPI RU II Production Sungai Pakning provided a Professional Certification program for MPB members to become certified experts in the fields of safetyman and fireman, welder, security, and emergency response. The collaboration between stakeholders has succeeded in creating a zero fire area since 2018 for Bukit Batu District.

This program was then scaled up again through activities to increase the capacity of MPB members in First Aid for Accidents (P3K). Activities to extinguish forest and land fires, especially on peatlands, have many risks, such as burns, attacks by wild animals, and other risks that may occur on peatlands.

## 4 Conclusion

Communication process contribution in achieving organizational goals has an important role. The same goes for environmental conservation activities and forest and land fire disaster management. Good communication will streamline the activities of an organization, the same goes for disaster management activities, with systematic communication it can improve coordination and save the environment with a wider impact.

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