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Gumgum Gumilar

Universitas Padjadjaran, gumgum.gumilar@unpad.ac.id

Engkus Kuswarno

Universitas Padjadjaran, engkus.kuswarno@unpad.ac.id

Herlina Agustin

Universitas Padjadjaran, h.agustin@unpad.ac.id

Nik Norma Nik Hasan

Universiti Sains Malaysia, niknorma@usm.my

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Digital Communication Media: Resources and Distribution Channels on Forest and Land Fires Information in Riau Province of Indonesia During Covid-19 Pandemic Period

GUMGUM GUMILAR,

Universitas Padjadjaran, gumgum.gumilar@unpad.ac.id

ENGKUS KUSWARNO,

Universitas Padjadjaran, engkus.kuswarno@unpad.ac.id

HERLINA AGUSTIN,

Universitas Padjadjaran, h.agustin@unpad.ac.id

NIK NORMA NIK HASAN,

Universiti Sains Malaysia, nikhnorma@usm.my

ABSTRACT

The control towards Indonesian forest and land fires in 2020 is deemed more complicated due to the Covid-19 outbreak. Its rapid dissemination encourages the central and regional government officials to focus the Covid-19 risk reduction through some policies, such as health protocol, social activity and large-scale meeting restrictions as well as independent regional quarantine, causing the controlling process towards the fires to be implemented by collaborating a direct method in disaster-vulnerable areas through digital communication media.

The research is purposed to recognize the use of communication technology in controlling Indonesian forest and land fires during the Covid-19 pandemic period, comprising of qualitative research using data collection through interviews, observation, literature study, and online data searching.

It results the significance of digital communication media for information resources as well as the channel of the fires' information dissemination for internal task force and externals used by The Riau Province's Task Force of Forest and Land Fire Control. The digital media are based on android system and website, such as Sipongi application, Info BMKG, LAPAN-Fire Hotspot, and Lancang Kuning Dashboard, while the others used for disseminating the information are Zoom meeting, Whatsapp, Instagram, Twitter, Facebook, and Youtube.

Keywords: Forest Fire, Covid-19, Digital Communication Media, Social Media, Information Resources, Information Dissemination

INTRODUCTION

The activity to control Indonesian forest and land fires in 2020 faces more challenges due to Covid-19 outbreak. Since January 2020, some of Indonesian regions, which particularly have experienced two-time dry season, such as Riau and Aceh provinces, have encountered them.

On March 2, 2020, The Indonesian Government officially announced the first case of Covid-19 in Jakarta, and since then it has been transmitting to all Indonesian regions. Covid-19 transmission eventually is stated as National Disaster according to the Presidential Decree No. 12/2020 regarding some considerations, such as the surge of Covid-19 impacted people and greater Covid-19 transmission to all of the regions. Certainly, this pandemic has created various negative impacts for all societies, mainly in social and economy aspects. Furthermore, on March 11, 2020 World Health Organization (WHO) stated Covid-19 as Global Pandemic. (Setkab.go.id, 2020)

In accordance with the data of The Indonesian Ministry of Health and Covid-19 Task Force, the confirmed of Covid-19 positive has reached 410,088 cases up to October 31, 2020. The survivors number lists 337,801 people, while the death does so around 13,869 people. 34 Indonesian provinces are recorded to be infected by the virus with total 497 cities/regencies (Covid19.go.id, 2020).

At the same time the Covid-19 spreads more, some of provinces in Indonesia start to meet dry season, making the activities of controlling forest and land fires more intense to do. The provinces of Riau and Aceh have encountered them since the beginning of the year, added by some other provinces, such as Sumatera, Kalimantan, and Sulawesi since February 2020.

Meteorology, Climatology, and Geophysical Agency (BMKG) forecasts the dry season in 2020 will not be as critical as the one in 2019 despite the large potential of forest and land fires with their health impacts added with the current health risk due to Covid 19. Therefore, this situation doubles the impacts towards the areas with the fires potential and Covid-19 impacted.

In dealing with the prevention of the uncontrolled forest and land fires in the pandemic period with their negative impacts as the ones in 2019, some of the fires-vulnerable provinces have stated their forest and land fires emergency status. The province of Riau has conducted it for 264 days since February 11 up to October 31, 2020. (Mediacenter.riau.go.id, 2020)

Data of Information System of Forest and Land Fires from Ministry of Environment and Forestry (SiPongi-KLHK) record the area coverage of the fires in Indonesia up to September 30, 2020, reaching 274,375 hectares. Riau's itself reaches 15,442 hectares (Sipongi.menlhk.go.id, 2020). In spite of less extensiveness than the ones in the areas of Nusa Tenggara and Papua, the fires in Riau are more difficult to be recovered, taking longer time due to the condition of the peatlands. In Nusa Tenggara and Papua, the recovery takes smoother anticipations due to the condition of mineral-content lands.

The National Agency for Disaster Management (BNPB) mentions 6 issues for controlling the forest and land fires in the Covid-19 period, as follows: Land clearing by burning; ineffective early warning system for forest and land fires; limited capacity of management and budgets; limited resources; collaboration issue; and commando system issue from national to regional levels (Antaranews.com, 2020)

Another concern occurs when the forest and land fires generate great smog leading to a negative impact to double when exposing Covid-19 suspected-positive people or the ones with the symptoms due to its disturbance towards human's breathing system.

In order to control forest fires in Riau Province, the forest fires task force was formed based on a Governor's Decree, with the operational commander directly held by the Governor of Riau Province. The government created the organization; it consisted of various authorities, organizations, and also groups. It involves The Regional Agency for Disaster Management in Riau (BPBD-Riau), Military Command of Wirabima (Korem-Indonesian Army), Police Force of Riau, KLHK's Forest Fire Control Brigade named Manggala Agni (Operating regions in Pekanbaru, Siak, Dumai, Rengat), Anti-Fire Community (MPA) in several vulnerable areas. In addition, their works are supported by the regional government, private companies, mass media, education institutions, and the rural government.

Covid-19 results the policy to conduct an independent quarantine towards the forest-land-fire vulnerable areas in Riau by the restriction of newcomers to enter, delaying all of the Task force's activities to conduct the patrol, socializations, and campaigns to prevent forest and land fires. Furthermore, the Covid-19 massive transmission switches the focus of the disaster prevention to the work of the pandemic risk reduction, which directly engages BPBD-Riau, Korem Wirabima, and the Police, previously working as the task force units for fire prevention.

During Covid-19 pandemic, the control of forest and land fires relies its implementation on some adjustments towards applicable health protocols, such as wearing a mask, reducing direct meetings with societies, creating alternative campaign works, socialization, and interaction among the task force units through the optimization of information technology and communication utilization as well as the reduction of direct or face to face coordination meetings. Digital communication technology becomes reliable and significant media in terms of the prevention of forest and lands fires in the pandemic period.

Methods

The research applies qualitative method. According to Neuman (Neuman, 2013)), Creswell (Creswell, 2015) mentions that it has some characteristics as follows : working in natural environment where researchers are the important instruments to collect data, focusing on interactive process and events, prioritizing authenticity, producing thorough situations and explicitness. They should maintain their focus to study how all participants comprehend a certain problem or issue, and qualitative research applies various methods comprising of types of data. Denzin and Lincoln (2009), this type of research quests the answers towards the questions with the highlight of social experience appearance as well as its comprehension results.

The research collects the data through a series of interviews, Field observations, and online data review. The interviews are conducted for The Riau Province's Task Force of Forest and Land Fires Control, particularly the Deputy of Task Force Commander, the Heads of Operating Regions and Public Relation of Manggala Agni Pekanbaru, Siak, and Dumai, Anti-Fire Community, and some of leading figures in the societies.

Direct observation is conducted towards the application of digital communication media by the Task Force's Units through commonly used devices, such as smartphones and

computers as well as the investigation of digital communication media used by the Units to disseminate any information about the forest and land fires, such as zoom meeting, access to sources of the information, and social media for the dissemination. The researchers are a part of the activities of socialization, discussion, and meeting as participants as well as observers.

Online data Review is conducted by accessing information sources and media to figure out any type of accessible and disseminated information as well as collecting relevant data of the news, socialization records, discussions, and seminars published on relevant websites and social media to the use of digital communication media in the forms of texts, pictures, and videos addressing the control of the forest and land fires.

Related Literature Review

Specific studies associated with the use of digital communication media to control the forest and land fires are rarely discovered regardless the ones of highlighting strategies to anticipate and to overcome the fires in Riau Province (Sabrina, 2015), their effectiveness (Nurdin, Badri, & Sukartik, 2018), and the societies' participation (Yuliani, 2013). Other relevant studies are correlated with the impact of forest fires towards the societies' income distribution (Ulya & Yunardy, 2006), Hazy Days: Forest Fires and the Politics of Environmental Security in Indonesia (Adam & Heiduk, 2015), The Handling of Great Smog due to Forest Fires on the Indonesian Border Areas (Suryani, 2012)

The studies in association with peatlands are significant in terms of the control of forest and land fires, particularly in Riau with the most extensive peatlands in Indonesia approximately 4.360.740 hectares. Mubekti (2011), continued with the study of controlling forest and land fires in peatlands ecosystem (Yuliani, 2018), the Use of Eco-Technology as One of Strategies to Overcome Forest and Land Fires (Saktioto, Defrianto, Syech, Syahril, & Risanto, 2018), Forest and land fires in Pelalawan District, Riau, Indonesia: Drivers, pressures, impacts and responses (Tata, Narendra, & Mawazin, 2018), Beyond Fires and Deforestation: Tackling Land Subsidence in Peatland Areas, a Case Study from Riau, Indonesia (Saputra, 2019), the Improvement of Societies' Roles through Community Empowerment and Forest and Land Fires Mitigation as An Important Part in Peatlands Restoration Method (Yuliani & Rahman, 2018), Sustainable Use of Peatlands Swamp Areas through Community Empowerment (Lubis, 2012), Community Empowerment Program in Peatlands Areas (Arifudin, Nasrul, & Maswadi, 2013).

Correlating to communication subject, another relevant study is conducted through news analysis for forest and land fires information in Riau Province in 2017 (Khotimah, 2017) by Badri, Susanto, Lubis, and Suharjito. It shows early warning communication patterns applicable to some levels, from the decision makers up to local societies. The study emphasizes the significance of Whatsapp as digital communication media for the early warning communication method besides its use for interpersonal and group communication (Badri, Lubis, Susanto, & Suharjito, 2018)

Other relevant studies with the emphasis of digital communication technology use, mainly about communication satellite benefits, can be seen from Anticipation of Impacts of Forest and Land Fires to Support Disaster Mitigation through the Use of Landsat 8 Satellite's Images (Anggoro & Setyawan, 2017), Detection of Forest and Land Fires Smog through

Himawari 8, a New Generation of Weather Satellite (Pandjaitan & Panjaitan, 2015), (Wulandari, Dewi, & Swastiko, 2017).

To address the implementation of the activities to control Indonesian forest and land fires during the Covid-19 period, the Ministry of Environment and Forestry (KLHK) conducts some prevention actions, such as improving effective communication between Head of Operating Areas of Manggala Agni and the Task force of Forest and Land Fires, improving active participation from all parts to prevent forest and land fires, maintaining both independent and integrated work Patrols in Sumatera and Kalimantan, Campaign and Publication of Ground Work as the Control of Forest and Land Fires, SMS Blast Service for Early Warning of Forest and Land Fires in collaboration with the Ministry of Communication and Information and Cellular phone operators, Capacity Building for Manggala Agni and Role Improvement for Anti-Fire Community (MPA) as Fire Brigade in Vulnerable Areas, the Use of Thermal CCTV Thermal to Early Detect the Forest Fires by Online, the availability of work accommodation for Unreachable Remote Areas by Manggala Agni and other Taskforce's Members, the Development of Website-based Application to Strengthen Integrated Work Patrol, and the Monitoring Activities of Forestry Business through Online Report System. (Sugardiman, 2020)

Furthermore, KLHK conducts the monitoring activities for forest and land fires in the period of the pandemic, such as hotspot monitoring, hotspot groundcheck to follow up the monitoring and societies' reports, early system of land-based fire extinguishment both independent and inter-agencies, air-based fire extinguishment for remote areas unreachable by land task force team, Weather Modification Technology implementation (TMC), taskforce' members health control, monitoring applicable law enforcement for forest and land fires actors, restoration and rehabilitation of post-fire and land fires . (Sugardiman, 2020)

Result and Discussion

The prevention works to stop forest and land fires in Indonesian forestry areas during Covid-19 pandemic period are still running by conducting the WHO-recommended health protocols appointed by the Indonesian Government.

The Task Force integrates the above-mentioned works with the prevention against the Covid-19 spread by applying weather modification technology in drought-vulnerable areas, particularly peatlands, conducting direct anticipation works in fire areas as well as the vulnerable ones added with the applicable strict health protocols, and optimizing the use of communication technology to disseminate Indonesian forest and land fires information.

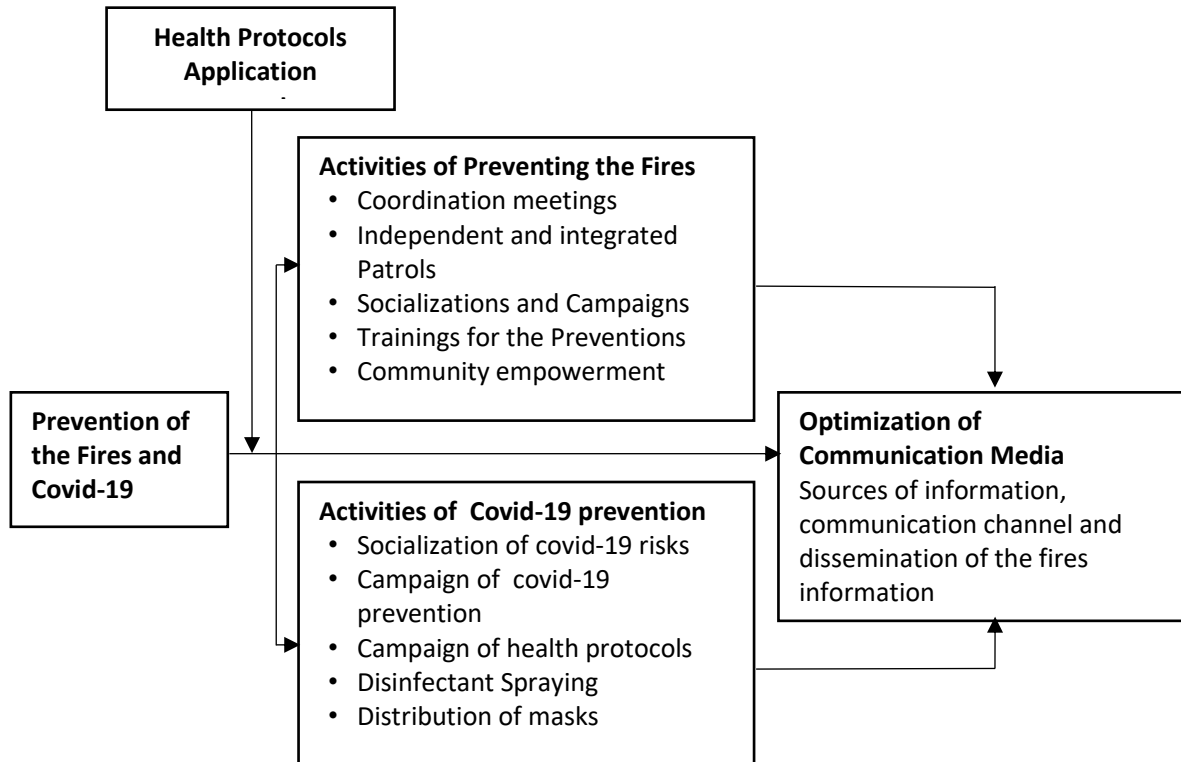


Figure 1. Flow of Prevention of Forest and Land Fires in the Covid-19 pandemic period

The activities cover all coordination meetings with all the Task force members, the independent (the Task force) as well as integrated (the Task force and other relevant parties) team patrols, socializations and campaigns for preventing the fires and their impacts, trainings for the prevention for Anti-Fire Community (MPA) and other societies to improve early warning system, and the improvement of societies' active roles as well as their empowerment.

In addition to the prevention works against the fires, The Task force promotes the works for Covid-19 prevention through socializations and campaigns of Covid-19 risks and its preventions, applicable health protocols, disinfectant spraying, and distribution of masks.

As a result of the Covid-19 prevention, all of the prevention activities in terms of forest and land fires apply the strictly recommended health protocols as the Taskforce's standardized regulations for their works, comprising of wearing masks, preventing the meetings in large numbers of participants, and avoiding the closed-room meetings.

Covid-19 has resulted various restrictions in conducting plenty of activities, affecting the Task Force's works to prevent the forest and land fires to end with some visible obstacles, such as Large Scale Social Restriction as well as the Small Scale one, independent quarantine in fire-vulnerable areas preventing the Taskforce's intervention, and the reduction of direct meetings due to the strictly recommended health protocols. As a consequence, the Task Force arranges specific scenarios to consistently conduct every work of socializations and campaigns of the forest and land fires prevention based on the health protocols regardless the delay of the process.

Another obstacle appears as the regions lack ground personnel as the front guards addressing the forest and land fires prevention. BPBD, Indonesian Army and Police forces whose works are integrated with Manggala Agni and MPA switch their priority to promote the Covid-19 prevention by a direct engagement in the treatment and recovery process in certain appointed hospitals for Covid-19, direct socialization and security, and in inter-region borders to prevent the virus spread, even inter-cities and districts-sub-districts areas as well as provinces.

The optimization of communication media provides a significant role in each of the works as a source of forest and land fires information and Covid-19 as well as the information dissemination in order to enable the coordination and communication process among all of the Task force members. It is conducted to strengthen the existing communication media applied by the members for communicating with the externals. Hence, communication media becomes the main supporting channel to prevent the forest and land fires in the Covid-19 pandemic period.

The Use of Digital Communication Media in the Covid-19 Pandemic Period

Online Meeting Application

The Task Force of Forest and Land Fires in Riau Province applies Zoom Meeting to conduct several activities, such as coordination meetings, consolidations, socializations, campaigns, and discussions, comprising of National Coordination Meeting, The Task Force's Coordination Meeting in Riau Province, Discussion of Controlling Forest and Land Fires by Directorate of Control of Climate Change of Ministry of Forestry and Environment (PPIKLH) of Sumatera region, Discussion of Preventing Forest and Land Fires towards Land Opening without Burning by KLHK, Discussion and Seminar of Controlling Forest and Land Fires in the Pandemic Period by KLHK, Sharing of Experience in Controlling Forest Fires in some Regions of Sumatera and Sulawesi, Media Briefing towards the Prevention Works of Forest and Land Fires in the Pandemic Period by KLHK and Ministry of Communication and Information.

Some positive things upon the use of online meeting media can be highlighted, such as the continuity of coordination for preventing forest and land fires under restrictions towards various sectors in the pandemic period, the solution towards various area distances, the engagement of more participants in distant areas, and the recording process for all of the activities, enabling the participants to re-watch when required or to disseminate through other media, such as Youtube.

On the contrary, some challenges for all the online activities occur, for example less intense interaction among the team members, more delayed relation improvement, unstable internet connection in some certain areas to cause the disturbance upon the meetings, uncomplete information to deliver due to the internet connection issue, technical issue in the meetings, such as unmute participants' microphones to cause a problem for the resource persons, and unfocused participants during the meeting duration.

The Utilization of Information System of Forest and Land Fires as Source of Information

The availability of accessible source of information encourages the solid participation of relevant stakeholders, from the Government in central, provincial, regional levels up to

community regarding the controlling of Indonesian forest and land fires. The Ministry of Forestry and Environment (KLHK), Meteorology, Climatology, and Geophysical Agency (BMKG), National Institute of Aeronautics and Space (LAPAN), and The Police Force of Riau (Polda Riau) provide the accessible source through website, android-based mobile application, supported by social media for easy access.

SiPongi - Karhutla Monitoring System

Developed by KLHK, SiPongi is an early warning and detection system of forest and land fires, accessible through <http://sipongi.menlhk.go.id>, as well as SiPongi Mobile Application, supported by social media. It synergizes relevant data and information about the fires in collaboration with other relevant stakeholders, such as BMKG for climate and weather information, LAPAN for hotspot areas, and the Ministry of Communication and Information to outreach remote areas due to internet inaccessibility by SMS blasts.

SiPongi provides complete information addressing the monitoring of the fires potentials. The coordinator of Manggala Agni of Sumatera region, Edwin Putra, mentioned :

“SiPongi is the main source of information for controlling Indonesian forest and land fires, particularly addressing the early detection in the prevention stage. All Manggala Agni’s members are able to observe spread of hotspots through it. It covers complete data and information, supported by the field crosscheck to ensure the occurrence of the fires or not”. (Edwin Putra, Personal Interview, 2019)

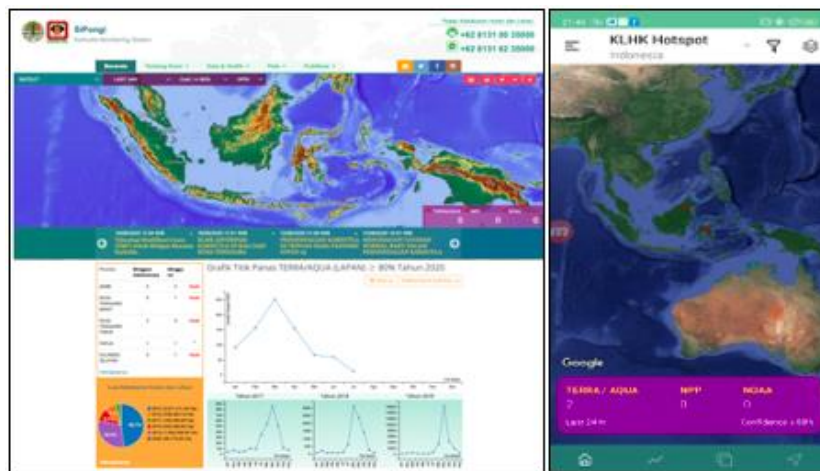


Figure 2. SiPongi KLHK Application

The accessible information through SiPongi uncovers spread of hotspots, Fire Danger Rating System (FDRS), wind directions, fires-vulnerable areas, air pollution information, report of the fires, groundcheck direction, publication and documentation of controlling activities towards forest and land fires, relevant laws and regulations, and daily reports of controlling activities of the fires.

Info of BMKG

BMKG is the government agency with the availability of data, information and meteorology services as well as climatology, air quality, and geophysics with high level of accuracy and punctuality in accordance with their users’ requests and requirements. One of the services

provides weather and climate information data to support the forest and land fires monitoring system of SiPongi-KLHK. Info of BMKG is accessible through <http://bmkg.go.id> and Info BMKG Mobile Application.

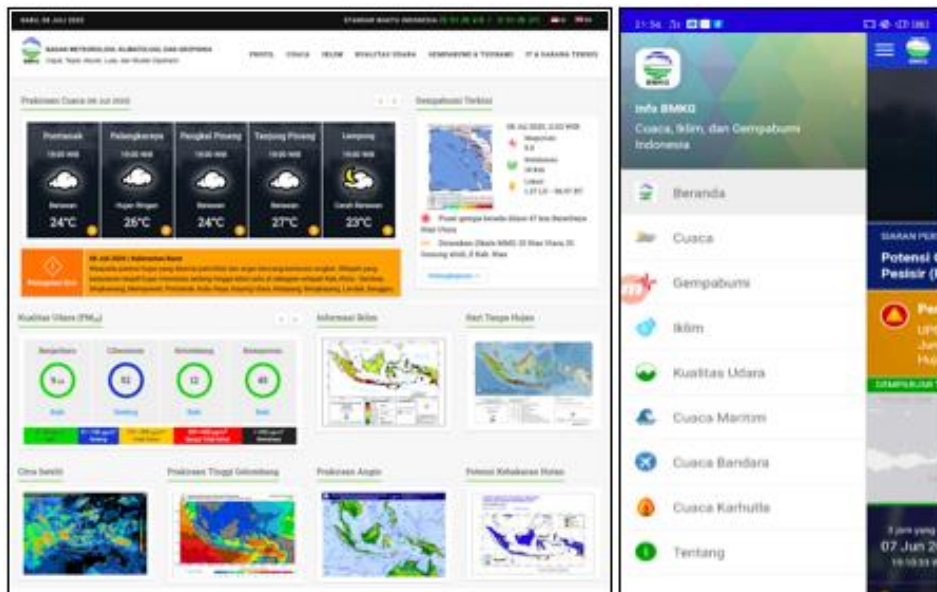


Figure 3. BMKG's Info Application

In addition to supplying the data and information for SiPongi, Info of BMKG shares weather and climate data and information to use for controlling forest and land fires, as examples: early warning of climate drought, prediction of dry season, air quality, non-raining days, and analysis of monthly rain. Another feature of Weather of Forest and Land Fires is added as well regarding the information of spread of hotspots, potentials of forest and land fires based on temperature anomaly, image of smog spread, and reports of daily and monthly fires potentials.

The Deputy of Climatology Division in BMKG, Herizal, emphasizes the importance of making an accessible information system through mobile phones to enable societies to gain relevant information about climate and weather. Due to most societies' attachment on their gadgets, he underlines easy access to Info of BMKG available on its application and downloadable on Play store as well as easily installed on smart phones. Some of available information on this application, as an example, is the data of spread of hotspots as the result of observation of Himawari Satellite as well as the information of air quality (Herizal, 2020)

LAPAN-Fire Hotspot

National Aeronautical and Space Institution (LAPAN) provides relevant information with the control of forest and land fires. By the utilization of remote sensing technology, the institution develops a real-time monitoring system of fire hotspot with its accessible results through <http://modis-catalog.lapan.go.id> and LAPAN-Fire Hotspot Mobile Application, downloadable on Play Store

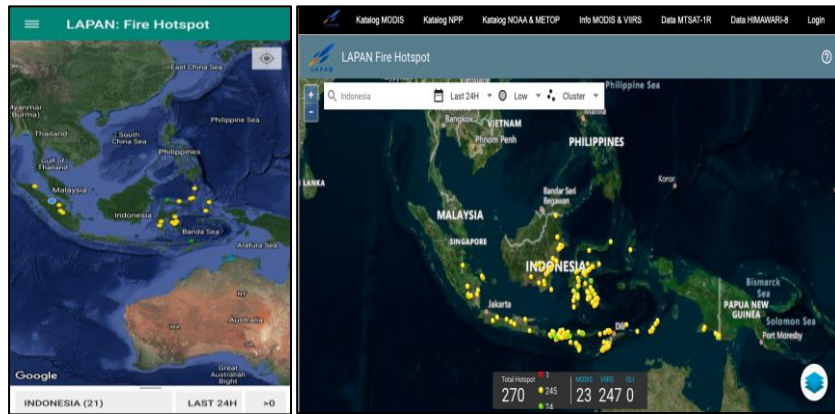


Figure 4. LAPAN-Fire Hotspot Application

This application performs the hotspot observation through LAPAN's satellites in all over Indonesian regions in the latest 24 hours, added with the data of details of hotspot-observed regions to determine the work of groundcheck afterwards.

In general, LAPAN supplies information as an outcome of the observation through its satellites of TERRA/AQUA, NOAA, NPP, and Himawari-8. The outcome displays the data of spread of hotspots through the application as well as their dissemination to other relevant stakeholders, such as SiPongi-KLHK, Dabsboard Lancang Kuning, and other institutions on their request of the data.

Dashboard Lancang Kuning

Dashboard Lancang Kuning is developed by the Regional Police of Riau Province (Polda Riau)

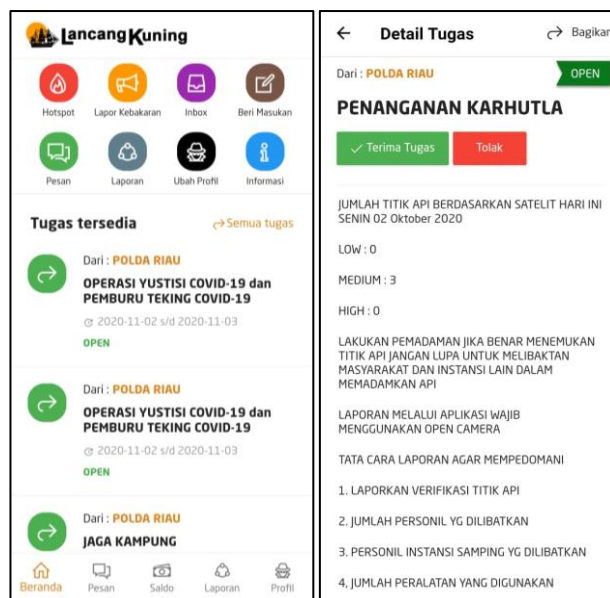


Figure 5. Dabsboard Lancang Kuning

According to the Head of Polda Riau, Irjen Agung Setya Imam Effendi, this application integrates technology, human resources, and financial allocation in order to detect fire hotspots rapidly as an indicator of land fires. Furthermore, it can detect some of on-duty officials in the closest fire hotspot locations to assist the fire extinguishment. The reporting of the hotspot

groundcheck as well as the extinguishment can be conducted directly from the detected locations, supported by on-location activity photos.

Figure 6 displays the flow of the Task force members and relevant stakeholders in Riau Province to access the information of forest and land fires through the applications of Sipongi, Lapan-Fire Hotspot, Info BMKG, and Dashboard Lancang Kuning

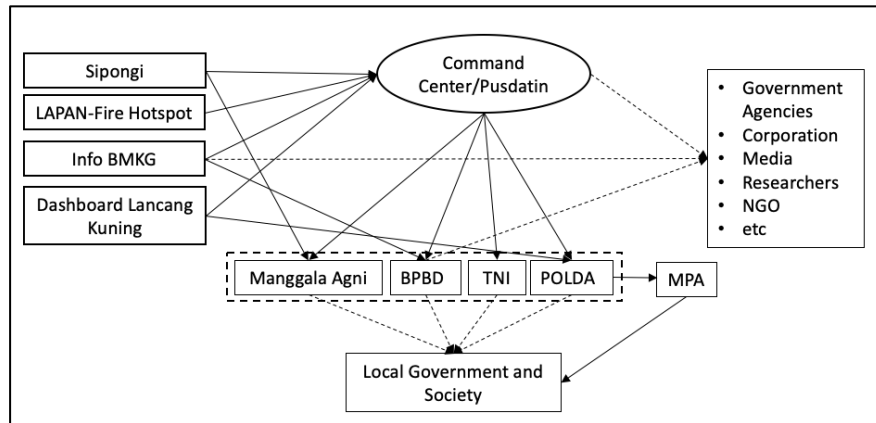


Figure 6. Flow of access of information sources for forest and land fires

The Command Center of Taskforce of Forest and Land Fires Control gains the important information through the direct access either by the relevant applications or by other channels, such as email and Whatsapp. The officials of the Center of Data and Information (PUSDATIN) in BPBD Riau Province process and analyze the accepted data and convey them to the group of task force members. Each of the task force teams (Manggala Agni, TNI, BPBD, Polri) disseminates the information to their members on the field as well as to MPA, while later to do so to the regional government and societies.

PUSDATIN manages a responsibility for disseminating the information to other relevant stakeholders as well, such as government institutions, private companies, mass media, NGO, researchers, and so on. Despite the accessibility of all information through the applications on smart phones and website, PUSDATIN has a profound capability of processing and analyzing all relevant data. As a result, the Command Center utilizes the analysis in order to have the on-duty-location task force members check, anticipate, and extinguish the fires when required.

What is more imperative to be concerned about by the task force relies on the different accessibility of information system in each fire-vulnerable regions. Consequently, it is likely to halt the accomplishment of the information dissemination purpose following the current condition of direct meeting restriction due to Covid-19 pandemic.

The above situation occurs as a result of a high digital and communication gap in some of the vulnerable areas in Riau Province, such as inaccessibility of the relevant information about the fires in sub district of Rokan Hilir and city of Dumai due to MPA’s members’ cellular phone unavailability as well as insufficient fund to spend for internet connection, inadequate telecommunication technology in the areas, unavailable or totally lousy internet connection (if available) in vulnerable remote areas. Other supporting factors to halt the accomplishment lie on most people’s absence towards environmental issues embracing the fires with their impacts

and anticipating works and people's dissimilar capacity to understand the information from the sources, resulting in the media literacy advocacy through direct communication by the task force members or credible ones during the pandemic period.

The Utilization of Social Media as Source and Dissemination of Information of Forest and Land Fires

The Task Force of Forest and Land Fires in Riau Province importantly utilizes the existence of social media to disseminate relevant information about the fire control, particularly during the Covid-19 pandemic period. The applicable restriction against direct meetings during the virus outbreak encourages the team to opt the media in terms of information dissemination for prevention level.

Whatsapp

All the task force members in Riau Province use Whatsapp as a chatting application to share important information about Indonesian forest and land fires. It is used as a main medium of the Task force's internal communication, particularly for interpersonal communication, groups, and organization.

To activate good communication and coordination among all the task force members of an institution or inter-institutions, they set up Whatsapp group and so do Manggala Agni, TNI, Polda Riau, and BPBP. Specifically, the inter-institutions' Task Force Whatsapp groups comprise of groups of the city/sub-districts' task force, the province's, task force management, and integrated patrol team. The Deputy of Commander for Task Force of Forest and Land Fires in Riau Province elaborates the use of Whatsapp for the works:

“It is not difficult to develop the communication among all of the inter-institution task force members due to all of our similar purpose in our work supported by technology. At this time, all of the members have their own smartphones installed with Whatsapp as a media to communicate. It can be used to share relevant data and information. Through this, it is easier to outreach all by organizing Whatsapp groups, from the levels of on-duty officials to the management” (Edwar Sanger, Personal Interview, 2019)

Most of shared information through Whatsapp underlines documentation of policies of Indonesian forest and land fires, their extinguishment activities, socializations and campaigns of the fires prevention, independent and integrated patrols, trainings and community empowerment by the Task Force, hotspot information, the Task Force's work division, the coordination for the extinguishments, and daily report of the fires controlling activities. This platform eases other more personal information sharing in order to make more attachments among the personnel, such as information of the members' illness, condolences, and birthdays.

As a main communication media for all the Task force's members, Whatsapp is considered proper due to the easy installation, direct integration to the available phone number contacts, supporting features to support the Taskforce's activities, such as WhatsApp group organization, messenger with additional functions to send file attachment, video, documents with no risks of pop-up advertisement.

The Commander of Manggala Agni on Operation Area in Dumai, Welly, emphasized that Whatsapp is a light application with the ability to send the message under inconsistent

internet connection. Delay to send messages might occur under no internet connection at all and will be resent under the normal connection. (Welly, Personal Interview, 2019)

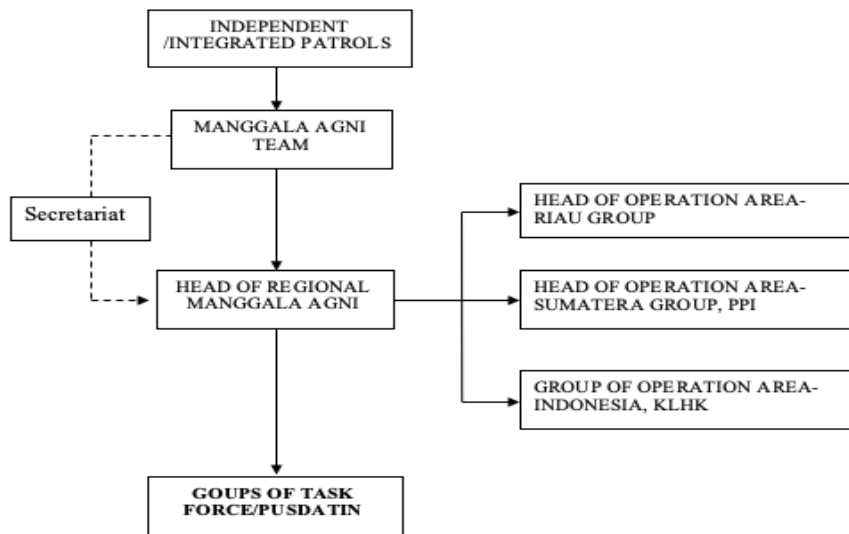


Figure 7. Flow of Information via Whatsapp in Manggala Agni

Figure 7 illustrates the flow of information and reporting through Whatsapp among all members of Manggala Agni in Riau Province. All information from both independent and integrated patrol teams with BPBD, TNI, Polda, and MPA will be delivered to the Commander, then afterward be passed to the Head of Regional Operation (Kadaops) indirectly or through the Secretariat. The incoming information of the patrol teams conducting the monitoring or the on-ground extinguishment is accepted by Kadaops then compiled by the Secretariat. All of the processed information is shared to the WhatsApp groups of all Indonesian Kadaops, PPI, and KLHK. In addition, the information is passed to the Task Force Command Center through Pusdatin of BPBD of Riau Province. The similar pattern of conveying the information is conducted by TNI, Polda, and BPBD as well with an adjustment based on the applicable hierarchy in each institution.

The Utilization of Instagram, Facebook, Twitter, and Youtube

Apart from Whatsapp, other social media utilized by the Task Force consist of Facebook, Twitter, and Youtube. The consideration of using all of them derives from their accessibility by anyone for their disseminated information.

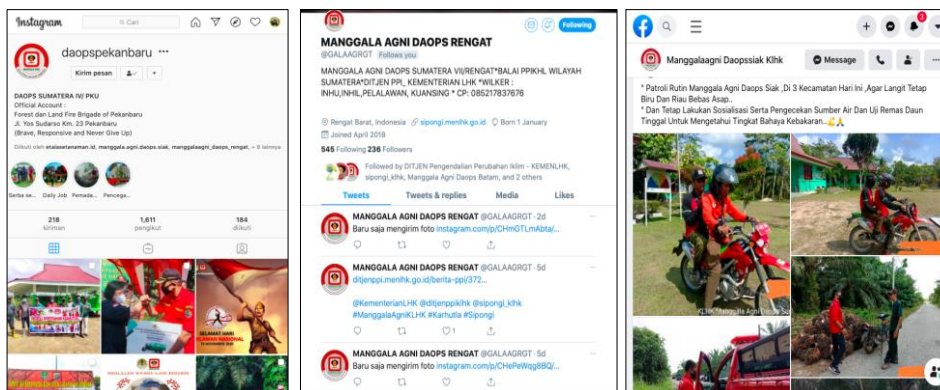


Figure 8. Utilization of Social Media

Those social media present the relevant information for preventing the fires, such as socialization of the fires prevention, documentation of the fires extinguishment activities, supporting activities for personnel and equipment preparation, community empowerment training to produce wood vinegar to reduce the fire risks, personnel’s capacity and competency development program.

By observing the use of social media by Manggala Agni and BPBD results the optimization of social media to share the fires information in Riau Province. Mangala Agni is the specific force to control the fires established by KLH, underlying the profound relevance of their disseminated information to the prevention of the fires in Riau Province. On the other side, BPBD is in charge of anticipating all disasters in Riau Province, including forest fire, meanwhile, TNI and Polda have no relation to the controlling activities against the fires. As a consequence, both of the latter institutions’ social media present less-relevant information of the fire controlling process.

Table 1. Data of Media Social Utilization by Manggala Agni and BPBD
(up to November 2020)

INSTITUTION	INSTAGRAM	FACEBOOK	TWITTER	YOUTUBE
Manggala Agni Daops Pekanbaru	@daopspekanbaru 1606 followers, 220 posts	@ManggalaAgni DaopsPekanbaru 3293 friends	@daopspekanbaru 60 followers 74 tweets	@DaopsPKU 10 subs, 3 videos
Manggala Agni Daops Siak	@manggala.agni.daops.siak 1046 followers, 1897 posts	Manggalaagni Daopssiak 4948 friends	@daopssiak 208 followers 90 tweets	Manggala Agni daops Siak 1 subs, 3 videos
Manggala Agni Daops Rengat	@manggalaagni.daops.rengat 1323 followers, 792 posts	ManggalaAgni Daops Rengat 3735 friends	@Gallagrgt 239 followers 893 tweets	Manggala Agni KLHK Daops Rengatideo 4 subs, 2 videos
Manggala Agni Daops Dumai	@daops_dumai 381 followers, 299 posts	Manggala Agni Daops Dumai 16 friends		Manggala Agni KLHK Daops Dumai 1 video
BPBD Pov. Riau	@bpbdr_riau 1041 followers, 92 posts	BPBD Riau Province 1768 friends		BPBD Riau Province 1 video

Data of table 1 show that all Manggala Agni and BPBD members use Instagram, Facebook, and Youtube, meanwhile Manggala Agni Daops Dumai and BPBD do not use Twitter. Facebook and Instagram are the most followed social media due to their ability to perform all information converged into texts, photos, and video formats. On the contrary, the utilization of social media as a channel of the fires information dissemination is not maximized equally. The improvement towards this issue requires more numbers of followers as well as more information posting about the fires and their prevention actions.

We Are Social records 160 million active social media users in Indonesia, highlighting Youtube (87%), Whatsapp (85%), Facebook (82%), Instagram (79%), and Twitter (56%) as the most actively used. (Kemp, 2020). Obviously, the data point out the large potential of social media as a channel of information dissemination, particularly addressing forest and land fires.

It is suggested that Manggala Agni, BPBD, and other relevant stakeholders of disasters for forest and land fires improve the use of those media. With that high percentage above, Youtube is the most actively used despite the minimum optimization of the media platform to disseminate the fire information as well as that of Twitter.

It requires some integrated steps to introduce every institution's social media and to improve their followers as well as to enlarge societies' active roles, particularly for forest and land fires issue, as follows : regular information postings added with attractive captions on their videos and photos, packaging the information of the fires based on target of audiences, using popular or special #hashtag, collaborating with local/regional media to make all of the posts reposted, retweeted, and reshared, for example by using @infoduri, @infopku, and @info siak with a great number of followers, inviting youth influencers to be volunteers to socialize and to campaign the control of the forest on social media, expecting to raise more popularity and followers.

Abie Besman, a journalist and social media observer, mentioned some considerable things to improve social media roles addressing the issue of controlling forest and land fires:

“Issues Management is important to ensure the accessibility of strategic information about forest and land fires by followers, emphasizing important and close issues to reach netizens' cognition. Then, it might improve their curiosity to higher level of affection in hope that they will be a bouncing ball by retweeting, reposting, and resharing all posted relevant information of the fires. Last but not least, it is important to develop their physical engagement, not only through online but also through real work on the ground, making the Taskforce feel togetherness in conducting their duty.”
(Abi Besman, Personal Interview, 2020)

Conclusion

The information availability and accessibility through the applications of Sipongi-KLHK, Info BMKG, LAPAN-Fire Hotspot, and Dashboard Lancang Kuning should be balanced with the societies' capacity to access their information understanding and applicable technology. Furthermore, the dissemination of information of forest and land fires through social media is supposed to be supported with proper issues management, producing the dissemination for the right target and characteristics of diverse audiences as well as attractive information packaging.

Digital communication media has a significant position as a source and channel of disseminating information on the forest fire control control in Riau Province of Indonesia, mainly during the Covid-19 pandemic period. On the other hand, it is admitted that direct communication through face-to face meetings is irreplaceable by technology which in the present time strongly supports as well as complements the communication method under the restriction and delay during the pandemic period.

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