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Smoke Haze Trigger Factors in the Malaysia Indonesian Border

Factores desencadenantes de la neblina de humo en la frontera de Malasia e Indonesia

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ABSTRACT

The purpose of this study was to analyze the haze incidence and trigger factors at the border between Indonesia and Malaysia. The results of the study reveal that the Biggest Factor Triggering the Haze Disaster is that forest and land fires are mostly caused by human behavior, whether intentional or as a result of negligence. Only a small part is caused by nature (lightning or volcanic lava). In the event of forest fires and natural disasters, 99% of incidents in Indonesia are caused by human factors, either intentionally or negligently.

Keywords: Fog, smoke, dan triggers, human Factors.

RESUMEN

El propósito de este estudio fue analizar la incidencia de la neblina y los factores desencadenantes en la frontera entre Indonesia y Malasia. Los resultados del estudio revelan que el factor más importante que desencadena el desastre de la neblina es que los incendios forestales y terrestres son causados principalmente por el comportamiento humano, ya sea intencional o como resultado de negligencia. Solo una pequeña parte es causada por la naturaleza (rayos o lava volcánica). En caso de incendios forestales y desastres naturales, el 99% de los incidentes en Indonesia son causados por factores humanos, ya sea intencionalmente o por negligencia.

Palabras clave: Niebla, humo, disparadores de dan, factores humanos.

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INTRODUCTION

Transboundary haze pollution is smoke haze pollution from a country whose effects reach another country; usually, it is difficult to distinguish where the source is. The impact caused by this haze includes a security threat, where the security threats included are the resource and environmental problems which reduce the quality of life and result in increased tension and tension among groups of countries (Forsyth: 2014, pp. 76-86; Novita et al.: 2020). The annual haze generated by the burning of forests and land in Indonesia results in pollution that crosses national borders. On the one hand, for Indonesia, this incident was caused more by natural and cultural factors of the community, which resulted in losses to the ecosystem around the burning forest area. The haze that often blankets the Southeast Asia region comes from the burning of forests in Sumatra and Kalimantan. Since the forest fires and haze in Southeast Asia, countries in the region have created consultation groups to improve their management effectiveness (Fitriany: 2017; Arlitasari: 2017; Bencana: 2016).

Two years ago, Malaysians felt the smog from forest and land fires in Sumatra firsthand, so Malaysian Prime Minister Najib Razak demanded that Indonesia take the matter seriously. Indonesia's reaction at that time, as stated by President Joko Widodo, was that it was "a problem that cannot be resolved quickly." President Jokowi then believes that the haze problem will decrease along with the improvement in handling and law enforcement aspects. Two years later, still related to the haze, on the sidelines of the 12th annual Indonesia-Malaysia consultation in Luching, Malaysia, Wednesday (22/11), Malaysian Prime Minister Najib Razak expressed gratitude to President Joko Widodo. "I thank the kingdom (government) of the Indonesian republic. "It has been two years that Malaysia has not experienced a rheumatic problem," said Najib. Jerebu is Malay for haze (Arnakim & Shabrina: 2019; Novita et al.: 2020). Malaysia also played a part in causing fires in Indonesia. In the forest fires that occurred in Riau recently, approximately 8 (eight) Malaysian-owned companies were suspected of being involved in burning forests and land. The eight Malaysian investor companies that contributed to the smoke were PT. Multi Peat Industry, PT. Udaya Loh Dinawi, PT. Adei Plantation, PT. Jatim Jaya Perkasa, PT. Mustika Agro Lestari, PT. Bmi rekza Sejati, PT. Tunggal Mitra Plantation, PT. The core style of Hiberida. One of the eight companies was declared involved, namely PT Adei Plantation (Arnakim & Shabrina: 2019; Bencana: 2017).

The formulation of the problem in this research is that it is known that Indonesia, as a country that is prone to disasters, has the political will (political will) to cope with disasters that occur. This political will has been translated into legislation through a process of formulating a policy (legal policy) as part of the country's legal politics. This shows a correlation between legal politics and disaster management. Based on this, the study in this paper uses a framework related to disasters and legal norms. Based on the background described above, the formulation of the problem in this research is: "Haze and Trigger Factors." Politics of FISIP Universitas Brawijaya and as the representative of Malaysia is from SoIS (School of International Studies), College of Law, Government and International Studies (COLGIS) Universiti Utara Malaysia (UUM). So the goal is to formulate policies in cross-border disaster management between Indonesia and Malaysia in overcoming the problems of haze disaster based on existing laws and regulations (Ida: 2014; Hermawan: 2019; Karim: 2019, pp. 1554-1570; Purnomo et al.: 2019, pp. 486-500).

METHODOLOGY

Location Settings

Qualitative research tends to collect field data in locations where participants experience the issue or problem to be studied. In this case, the natural setting is the individual from whom information is collected without a prior setting. This means that researchers do not share instruments with them. The information collected is by talking directly to people and seeing them behave in a natural context, which is the main

characteristic of qualitative research. In a natural environment, qualitative researchers conducted face-to-face interactions throughout the study.

This location determination will be determined in Jakarta, Kalimantan, and Sumatra and in Kedah, Malaysia. This designation takes into account that Jakarta is the decision-making government, while Kalimantan and Sumatra are areas that are considered to be the ones that produce haze in Indonesia, and Kedah Malaysia is a very close border with Indonesia and was also involved in this research.

Research focus

The research focus determined by the researcher is based on the overall social situation studied, which includes 3 (three aspects):

1. The aspect of place (place)
2. Actors (Actor)
3. Activity (Activity)

The three interact synergistically if described as follows:

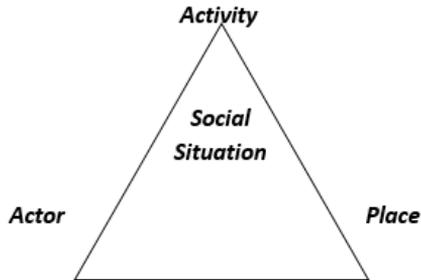


Figure 1. Interaction 3 Aspects of Social Interaction

Spradley in Sanapiah Faisal (1988) suggests four alternatives for setting focus, namely (Basrowi: 2008):

1. Establish a focus on the problems suggested by the informant.
2. Define focus based on specific domains organizing domains.
3. Establish a focus that has findings value for science and technology development.
4. Establishing focus based on problems related to existing theories.

So that in the study "Haze Incidence and Trigger Factors."
This research focus can be divided as follows:

- 1) The biggest factor that triggers the haze disaster.
- 2) Actors involved in the haze disaster.
- 3) Analysis of the haze that occurred during the last two years.
- 4) Political, economic and cultural influences in the haze disaster.

Research Instruments and Informant Selection

The main research instrument in qualitative research is the researcher himself. Researcher as a key instrument (researcher as a key instrument). Researchers collect their own data through documentation, behavioral observation, or interviews with participants. They may use protocols - some kind of instrument to

collect data - but they are actually the only instruments in gathering information. They do not generally use questionnaires or instruments made by other researchers (Creswell: 2016, pp. 5-6).

The meaning of participants' meaning in the overall qualitative research process, researchers continue to focus on efforts to study the meaning conveyed by participants about a research problem or issue, not the meaning conveyed by other researchers or authors in certain literature (Creswell, 2016, pp. 5-6).

The determination of informants in qualitative research is carried out using the triangulation method, meaning that the researcher will cross-check the data that has been collected between the informants. The information in this study is:

1. Head of Public Relations of BNPB (National Disaster Management Agency)
2. BNPB Disaster Response Sector
3. IABI Central Board (Indonesian Association of Disaster Experts)
4. Members of the House of Representatives Commission VIII in charge of Disaster Affairs
5. Ministry of Forestry

Data collection

Researchers in most qualitative studies collect various types of data and use the most time as effectively as possible to gather information at the research location (Creswell: 2016, pp. 5-6).

Data Analysis and Data Interpretation

Data analysis in qualitative research will take place simultaneously with other parts of qualitative research development, namely data collection and writing findings. When the interviews are collected beforehand, write down a memo, which is eventually included as the narrative in the final report, and structure the final report. This process is unlike quantitative research, where the researcher collects data, then analyzes the information, and finally writes a report.

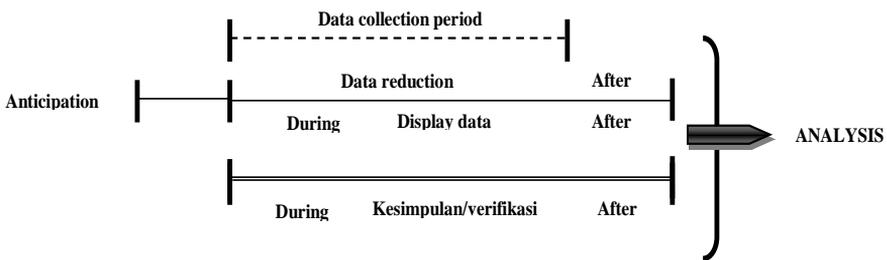


Figure 2. Components in the data analysis (flow model) Miles and Huberman Model (Basrowi: 2008)

Techniques to Ensure Data Validity

Although the validation of research results can take place during the research process, the researcher still has to focus his discussion on this validation by writing validation procedures in a special section of the proposal. Researchers need to convey the steps taken to check the accuracy and credibility of their research results. In qualitative research, this validity does not have the same connotations as validity in quantitative research, nor is it parallel to reliability (which means stability testing) or generalisability (which means external validity of research results that can be applied to new settings, people, or samples. in quantitative research).

Qualitative validity is an effort to check the accuracy of research results by applying certain procedures, while qualitative reliability indicates that the approach used by researchers is consistent if applied by other researchers (and) to different projects in (Creswell: 2016, pp. 5-6). Validity is one of the strengths of qualitative

research and is based on determining whether the findings obtained are accurate from the point of view of researchers, participants, or readers (Creswell & Miller, 2000) in (Creswell: 2016, pp. 5-6). Terms that are found in much qualitative literature discuss the validity, such as trustworthiness, authenticity, and credibility (Creswell & Miller, 2000) in (Creswell: 2016, pp. 5-6), and this is a widely discussed topic. (Lincoln, Lynham, & Guba, 2011) in (Creswell: 2016, pp. 5-6).

RESULTS

Border Territory between Indonesia and Malaysia

The border between Indonesia and Malaysia stretches along 2,019 km from Tanjung Batu, North West Kalimantan. Passing through the inland highlands of Kalimantan to the Teluk Sebatik and Latu Sulawesi in the east of Kalimantan. The maritime borders in the Malacca Strait are generally determined based on the median line between the bases of the continents of Indonesia and Malaysia, stretching south from the Malaysia-Thailand border to the meeting point of the Malaysia-Singapore border (<https://id.m.wikipedia.org>).

The RI-Malaysia border is one of the border areas that has an important and strategic position in the context of national development. As the gateway to the Republic of Indonesia, the borders of the two countries include maritime borders along the Malacca Strait, South China Sea, and Sulawesi Sea, as well as the land border that separates the two countries on the island of Kalimantan along 2004 km. This is the longest physical border in Indonesia with other countries, which stretches across the Provinces of West Kalimantan, East Kalimantan Province, and North Kalimantan Province. The three provinces are directly bordered by land to the Malaysian state, namely Sarawak and Sabah.

The RI-Malaysia border area is currently recognized as essentially a colonial product. In this case, the struggle for territory between the Dutch and British in Kalimantan resulted in the agreements contained in three Treaties, namely the Treaty of The Boundary Convention between the Netherlands and England signed in London, 20 June 1891, The Boundary Agreement between the Netherlands and England signed in London, September 28, 1915, and The Boundary Convention between the Netherlands and England signed in the Hague, March 26, 1928 (Bachzan: 2019; Ihsan: 2018, pp. 553-568).

As a colonial product, Indonesia and Malaysia, which each inherited the Dutch and British agreement on the division of sovereign territory at the border of the two countries, still inherit the problem of territorial division, which has not been resolved. A number of issues related to the determination of maritime and land boundaries between RI and Malaysia indicate this reality. One of the border disputes between the two countries is the determination of maritime boundaries between the two countries that have not been agreed upon by the two countries, mainly in three segments, namely the Malacca Strait segment, the South China Sea segment, and the Sulawesi Sea segment.⁵ The disputes in the three segments, among others, relate to the problem of territorial sea boundaries, the Exclusive Economic Zone (EEZ), the continental shelf, and overlapping claims in waters, especially around the Ambalat Block. This overlap was a result of the decision of the International Court of Justice regarding the ownership of the Sipidan-Ligitan Island to the Malaysian government in 2002.⁶ As is the case in the maritime border area, Indonesia-Malaysia also still faces disputes in determining land borders. There are nine boundary points that have not been completely agreed upon by both parties, namely five points in the East Kalimantan area and four points in the West Kalimantan area.

Border Map Between Indonesia and Malaysia

Indonesia has a border zone with 10 (ten) neighboring countries in the waters and 3 (three) on the land border. In the sea area, Indonesia is directly adjacent to Singapore, Malaysia, Vietnam, the Philippines, India, Thailand, the Republic of Palau, Australia, Timor Leste, and Papua New Guinea. Meanwhile, on the land territory, Indonesia is bordered by Papua New Guinea, Timor Leste, and Malaysia. The definitive determination of state boundaries can provide clarity and legal certainty regarding the rights and obligations of the state in managing its territory. However, Indonesia still has several problems related to the settlement

and confirmation of state boundaries with neighboring countries in several border areas. In the land border area, Indonesia and Malaysia have territorial disputes in 9 (nine) points in the land boundary zone of the East Sector of Kalimantan Island, which includes areas on Sebatik Island, Sinapad River, Simantipal River, Point B2700-B3100, C500-C600 in East Sector, as well as the Batu Aum area, Buan River / Mount Jagoi, Gunung Raya and Point D400 in the West Sector. Based on the principle of *Uti Possidetis Juris*, both Indonesia and Malaysia should inherit areas previously controlled by the Dutch and British, which were their colonial states in the past. The regional agreements that have been agreed by the two countries include the Treaty between Great Britain and the Netherlands defining Boundaries in Borneo (1891), the Agreement Between Great Britain and the Netherlands relative to the Boundaries Between the State of Borneo and the Dutch Possessions in Borneo (1915). and Treaty Respecting the Further Delimitation of the Frontier Between the State of Borneo Under British Protection and the Netherlands Territory in the Island (1928) (Bachzan: 2019; Ihsan: 2018, pp. 553-568).

These differences, among others, relate to the agreements in 1891 and 1915 in the East Sector, as well as the Treaty of 1928 in the West Sector of Kalimantan Island. The nine points of land boundary dispute areas, which are commonly known as Outstanding Boundary Problems, are also related to the implementation of the Survey Procedure, which was carried out jointly in 1974. Both Indonesia and Malaysia have different views on the results of field measurements that are not in accordance with the agreed agreement and feel disadvantaged by each other in different areas. This then became the reason for holding negotiations on the boundaries of the two countries. Until now, Indonesia and Malaysia have agreed to prioritize areas in the East Sector first, but the negotiation process has not been able to produce an agreement regarding the boundaries of the two countries. Since the 1970s, several Memorandums of Understanding (MoU) have been agreed, namely the MoU between Indonesia-Malaysia in Jakarta on 26 November 1973, Minutes of the First Meeting of the Joint Malaysia-Indonesia Boundary Committee on 16 November 1974, and the Minutes of the Second Meeting of the Joint Indonesia-Malaysia Boundary Committee in Bali, on July 7, 1975. The confirmation of the land boundaries between Indonesia and Malaysia was carried out in the form of a Joint Survey on Demarcation, which began in 1975 and was declared completed in 2000 (Bachzan: 2019; Ihsan: 2018, pp. 553-568).

The Biggest Factor Triggering the Haze Disaster

Forest and land fires (*karhutla*) are regular disasters in Indonesia every year. Throughout this year, until August, 135.7 hectares of land and forest were burned. Kalimantan and Sumatra are the two areas with the most hotspots. Based on data from the Ministry of Environment and Forestry during the period August 16-22, there were 999 hotspots. In Kalimantan, there are 480 hotspots, while Sumatra has 467 hotspots (Purnomo et al.: 2019, pp. 486-500; Suryani: 2012, pp. 59-75).

This is confirmed by the statement of the Major General. TNI (Ret.) Prof.Dr. Syamsul Maari, M.Si (Head of BNPB 2008-2015, in Sentul Bogor) in the interviews conducted, namely:

"The problem of forest fires is an old case from the era of Pak SBY's administration until now that has not been resolved properly, because it is suspected that government actors, both TNI and Polri, are involved, not only the Police but with the TNI. For a quick settlement, the Head of BNPB asked the president to make an announcement that the perpetrators of forest burning should be shot on the spot; if this policy is not implemented, there will be high costs because to extinguish this fire one must rent a booming water plane." (Interview on 18 June 2019 in Sentul Bogor).

Furthermore, Doni Monardo (Head of the 2019-present BNPB), in his opening remarks on the 6th PIT (Annual Scientific Week) of the Indonesian Association of Disaster Experts (IABI), which was held in Sentul-Bogor, said:

"Our big task as Disaster Management actors is how we can ensure a reduction in the disaster risk index in Indonesia as well as increasing regional preparedness in facing disasters. In the Annual Scientific Meeting (PIT), which is routinely held by the Indonesian Association of Disaster Experts, it is hoped that: (1). The

culture of disaster research in Indonesia must continue to be encouraged through the development of science and technology (IPTEK) through education, basic and applied research; (2) Research/studies on disasters produced by experts must be based on needs and can be integrated into supporting the implementation of disaster management in Indonesia in the future; (3) Experts must improve research/study on community-based disasters and can encourage industrialization of disasters” (Statement on 18 June 2019, Sentul-Bogor).

This means that Indonesia is a country that is a frequent occurrence of forest fires; it is evident that every year forest fires always occur in Indonesia with areas of forest fires where each fire point fluctuates. It is recorded that the worst fires occurred in 1997 and 2015. Forest fires that occur are always accompanied by extreme and large smoke, so that not only is Indonesia affected by the smoke that occurs, but the smoke also spreads to neighboring countries.

The National Disaster Management Agency (BNPB) Data Center, Information and Public Relations estimate that the burned area in Riau covers around 2,398 hectares of conservation area consisting of 922.5 hectares of Giam Siak Kecil Wildlife Reserve, 373 hectares of Kerumutan Wildlife Reserve, 80.5 hectares of Nature Tourism Park Dumai River, 95 hectares of Tesso Nilo National Park, 9 hectares of Bukit Butut Nature Reserve, and 867.5 hectares of non-burning forest area use. As many as 75 percent of the fires occurred on peatlands. On 23 March 2014, the agency predicted that the weather in Riau would be drier in the next three days triggered by tropical cyclone Gillian. Dry air in Riau has the potential to cause the previous hotspots to shrink under the gambu again.

The above case is just a snapshot of the persistent problem of forest and land fires in Indonesia that have occurred almost every year in the last decade. The following shows the data on the development of hotspots and forest and land fires that occurred in Indonesia from 2010 s.d. 2013. Forest and land fires are mostly caused by human behavior, whether intentional or as a result of their negligence. Only a small part is caused by nature (lightning or volcanic lava).

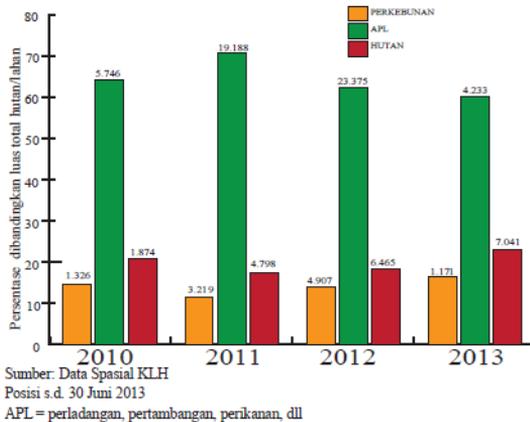


Figure 3. Chart of Development of Hotspots on Land Allocation 2010-2013 (Qodriyatun: 2014)

Forests as part of national natural resources have an important meaning and role in various aspects of social life, development, and the environment. It has been accepted as an international agreement that forests, which have an important function for the life of the world, must be fostered and protected from various actions that result in loss of the balance of the world's ecosystems. However, there are actions by humans who destroy forests, including through forest burning, which has recently become increasingly prevalent in Indonesia. The causes of fire by humans can be detailed as follows (Qodriyatun: 2014):

1. Land conversion, which is caused by activities to prepare (burn) land for agriculture, industry, construction of roads, bridges, buildings, and others;
2. Burning of vegetation, which is caused by deliberate but uncontrolled burning of vegetation resulting in fire jumping, for example, clearing of industrial plantations (HTI) and plantations, or land preparation by the community;
3. Utilization of natural resources, which is caused by activities such as burning bushes and cooking activities by illegal loggers or fishing in the forest;
4. Utilization of peatland, which is caused by the activity of making canals or channels without adequate control gates for water, causing the peat to become dry and flammable;
5. Land disputes, which are caused by attempts by local communities to regain their rights to land or land looting activities, which are often characterized by burning.

In fact, the socio-economic and ecological losses arising from forest fires are quite large; even in some cases, it is difficult to measure them in terms of the rupiah value. Ecologically, forest fire incidents threaten Indonesia's unique natural flora and fauna, perhaps even extinction. The loss that must be borne by the Indonesian people due to the forest fires in 1997 was estimated at Rp. 5.96 trillion or about 70.1% of the GDP value of the forestry sector in 1997. Malaysia, which was also affected by forest fires in Indonesia in 1997, suffered a loss of US \$ 300 million in the industrial and tourism sectors, while Singapore suffered a loss of around US \$ 60 million in the tourism sector (UNDP: 1998).

In 2014 and 2015, there was an increase in forest burning in the Riau region. As a result of the forest fire, it has created a large amount of haze, so that Riau was declared a Haze Disaster emergency. The thing that is worrying is that if we look closely, from year to year, the forest fires that occur are actually increasing. For the Riau region, for example, based on the latest NOAA 18 satellite observations, it is known that almost all areas in Riau are experiencing forest and land fires, namely Bengkalis, Siak, Pelalawan, Indragiri Hilir (Inhil), Indragiri Hulu, Rokan Hilir, and Meranti Islands Regencies.

The increase in CO₂ concentration by 30 percent in the last 100 years has resulted in the earth's surface temperature increasing between 0.3 - 0.6 ° C. This increase in temperature causes the ENSO (El-Nino Southern Oscillation) phenomenon in Southeast Asia to occur more frequently and has an impact on increasing the intensity of extreme rainfall events. Global climate change that has caused the prolonged drought in Indonesia is one of the factors triggering land and forest fires. Basically, land and forest fires are not natural disasters because 99% of incidents in Indonesia are caused by human factors, either deliberately or negligently. Land and forest fires in Riau and almost all provinces in Indonesia in 2013 and 2015, whose impact was in the form of haze to Singapore and Malaysia, have made this phenomenon a disaster that needs serious handling. The vast area of land and forest that has been cleared in Indonesia to date is also influenced by the biophysical characteristics of the land. Most of the fires in the last ten years have occurred on peatlands. These lands are naturally non-flammable wetlands, but if the peatlands are dry due to excessive drainage, they are very susceptible to burning. Dry peatlands can also change in character so that they cannot return to their original wetland form, resulting in a higher level of vulnerability to burning. Thus, the aspects of land and climate conditions are important aspects that affect the incidence of land and forest fires (Fachrie: 2020, pp. 104-117).

The incidence of forest and land fires has become an environmental issue in the world, which has had an adverse impact. The impacts of forest and land fires are multidimensional in nature, including social, economic, environmental, and political impacts. An economic study of the impacts of forest and land fires in 1997/1998 by Tacconi (2003) shows that these fires resulted in economic degradation and deforestation of \$ 1.62-2.67 billion, costs from the haze of \$ 674-799 million and valuation of carbon emissions of 2.8 billion dollars. The social impact that is directly felt by the community is healthy, such as asthma, bronchitis, ARI, to death, as well as the impact of job loss (Tacconi: 2003). For the environmental sector, the impact due to land and forest fires is very large, namely damage to land use and haze that can exacerbate existing climate

change. Meanwhile, the political impact that arises from land and forest fires is smog pollution that occurs across countries. There have been many studies and cases that reveal that Indonesia is currently facing major problems related to unsustainable forest management, which results in forest loss or deforestation. This is partly due to poor forest governance that occurs linearly at all levels of government. Moreover, the division of regions into new autonomous regions has made problems at the regional government level even more complex.

Forest fires occur due to human or natural factors or climate change. The biggest causes of forest fires are human actions and negligence. Some say that nearly 90% of forest fires are caused by humans, while 10% are caused by nature. Forest fire prevention efforts are an effort to protect forests so that forest fires with negative impacts do not spread. Forest and land fires have an impact on human life, both positive and negative. However, negative impacts predominate which include: (1) emission of carbon gases into the atmosphere, thereby increasing global warming; (2) loss of habitat for wildlife resulting in an imbalance of the ecosystem; (3) loss of trees which are oxygen-producing and absorbing rainwater resulting in floods, landslides, and drought; (4) loss of industrial raw materials which will affect the economy; (5) reduced forest area which will affect the microclimate (weather tends to be hot); (6) smoke pollution, which interferes with community activities and causes various respiratory diseases; and (7) decreasing the number of tourists. Riau's forest and land fires have caused air quality to deteriorate. The Pekanbaru Health Office noted that the air in Pekanbaru was at the level of 130 Psi (pounds per square inch) or unhealthy because it contains excess particulate matter (PM-10), which is very dangerous for lung health. Even ten districts/cities in West Sumatra Province were also affected by the Riau haze. This caused the Provincial Government to impose a haze emergency alert status until March 31, 2014. It was recorded that three thousand people were infected with acute respiratory infections (ISPA) due to smoke. To mitigate the worse, some mayors/regents!! West Sumatra issued a policy of dismissing school children (SD, TK, and PAUD). BNPB estimates that the economic loss due to forest and land fires that occurred in Riau Province this year will reach IDR 10 trillion, starting from January to March 2014. Considering that the impact is very detrimental both materially and socially, efforts to combat forest and land fires need serious attention from the government (Purnomo et al.: 2019, pp. 486-500; Qodriyatun, 2014).

Even though the government has issued regulations related to land clearing without burning the land and forests, the incidence of forest fires caused by humans still frequently occurs. In July 2013, through satellite imagery monitoring, there were 1,210 hotspots, of which 1,180 hotspots, or 98 percent of them were located in Riau, Sumatra. This incident is likely to continue if law enforcement against the arsonists is still weak; the determination of environmental compensation is often not clear on the basis of calculations and is not supported by calculation documents (JPNN, 2016). The results of research in 2011 showed that the law enforcement efforts by the government, especially regarding land and forest fires, were still very weak. No one has ever been arrested or advised for the arson offense. Papua and Kalimantan, which have the largest area of forest cover, are very vulnerable to burning land to open new plantations. Forest fires due to land clearing that can occur in Papua and Kalimantan are expected to continue as new plantations take place (Fachrie: 2020, pp. 104-117).

DISCUSSION

Actors Involved in the Haze Disaster

In an interview conducted with Syamsul Maarif, Maj. Gen. TNI-AD (Ret.) Prof. Dr., M.Si (Head of BNPB 2008-2015) said:

"The forest fires that are happening right now are deliberately burned."

(Interview, 19 June 2019 at Sentul Bogor)

Forest and land fires in Indonesia have caused haze disasters, harming both physically and psychologically. In 2015, it was estimated to be the worst haze disaster Indonesia has ever experienced. And

there is no need to find out who can be blamed in cases of forest and land fires because the State, the Ministry, and the Governor himself have given permission to burn land for clearing.

Land clearing by burning forests is permitted by the state, which is confirmed by Law Number 32 of 2009, which was signed by President Susilo Bambang Yudhoyono on October 3, 2009, concerning Environmental Protection and Management. Article 69 paragraph (1) letter h states that clearing land by burning is prohibited, but as long as the local community (local community) burns no more than two hectares, firebreaks are made to prevent the fire from spreading. That's why clearing the land is justified and protected by law. It is different if during the land clearing process there is a spate of fire which causes the area of the burning to be more than two hectares, then the perpetrator of burning may be subject to punishment in accordance with Article 108 in the form of imprisonment for at least 3 (three) years and a maximum of 10 (ten) years and a fine. At least Rp. Three billion and a maximum of Rp. 10 billion.

The Ministry of Environment and Forestry, through the Regulation of the State Minister for the Environment Number 10 of 2010, on the mechanism for preventing environmental pollution and/or damage related to fire and/or land, in article 4 paragraph (1) contains "Indigenous peoples who burn land with a maximum land area of 2 (two) hectares per family head for planting local varieties must notify the village head." Although the burning must be notified to the village head and then the village head will notify the agency that carries out government affairs in the field of district/city environmental protection and management (paragraph 2), and it is not allowed to do it when the rainfall is below normal, drought, and climate. Dry (paragraph 3), it is difficult to guarantee that the provisions in paragraphs 2 and 3 are carried out properly because of the difficulty of conducting field supervision. If the law already allows clearing land by burning, the regulations under it are only the details of what is meant in law.

Analysis of Haze Occurring During the Last 2 Years

In 2015, forest and land fires dragged on and had an impact on the environment and the national economy. Forest fires seem to be a routine case that occurs every year at relatively the same time and place.

Table 1. Recapitulation of the Area of Forest Fires in Indonesia

No.	Province	2010	2011	2012	2013	2014	2016
1	Riau	26.000	74.500	1.060.000	1.077.500	6.301.100	2.025.420
2	Jambi	2.500	89.000	11.250	199.100	3.470.605	92.500
3	Sumsel		84.500		484.150	8.504.860	101.570
4	Kalbar			577.400	22.700	3.556.100	900.200
5	Kalteng		22.000	55.150	3.100	4.022.852	655.780

Source: <http://www.sipongi.menlhk.go.id>

From the table above, it can be seen that from 2010 to 2014, the reactivity of forest fires increased, however in 2015, the area of forest fires gradually decreased. The worst recapitulation occurred in South Sumatra, followed by Riau in 2014. That means the government has a lot of domestic work related to forest fires, which must be cleared immediately so that it does not become a continuing problem (Li et al.: 2017, pp. 24733-24742).

Political, Economic, and Cultural Influences in Haze Disaster

The losses due to forest and land fires are very large for human life and for the lives of other living things, either directly or indirectly, among others (Hunawan: 2016):

1. Ecological Impact

Disturbing ecological processes, including natural succession, organic matter production and decomposition processes, nutrient cycle, hydrological cycle, and soil formation. In addition, it disturbs the function of forests as climate regulators and carbon sinks. It can further damage river basins (DAS). Loss of biodiversity and ecosystems. Fires also release large amounts of carbon and greenhouse gas emissions into the atmosphere, which exacerbate climate change.

2. Economic Impact

Loss of forest products (timber and non-timber). The disruption of economic activities from the plantation, transportation, tourism, trade, and so on sectors. Medical expenses for health problems and direct costs to extinguish fires.

3. Health Impact

Minor to acute respiratory distress. Smoke generated from fires contains a number of harmful gases and particles such as sulfur dioxide (SO₂), carbon monoxide (CO), formaldehyde, akrelin, benzene, nitrogen oxides (NO_x), and ozone (O₃).

CONCLUSION

The conclusions that can be formulated from the research focus and related factors/aspects are:

1. The Biggest Factor Triggering the Haze Disaster

Forest and land fires are mostly caused by human behavior, whether intentional or as a result of their negligence. Only a small part is caused by nature (lightning or volcanic lava). Basically, land and forest fires are not natural disasters because 99% of incidents in Indonesia are caused by human factors, either deliberately or negligently. Law enforcement against the perpetrators of the arson is still weak; the determination of environmental compensation is often not clear on the basis of calculations and is not supported by calculation documents

Actors Involved in the Haze Disaster The State, Ministry, and Governor have given permission to burn land for clearing.

- Land clearing by burning forests is allowed by the state, which is confirmed by Law Number 32 the Year 2009, which was signed by President Susilo Bambang Yudhoyono on October 3, 2009.

- Ministry of Environment and Forestry through the State Minister of Environment Regulation Number 10 of 2010, concerning the mechanism for preventing environmental pollution and/or damage related to fire and/or land

2. Analysis of the Haze that Occurred During the Last 2 Years From 2010 to 2014, the recapitulation of the area of forest fires has increased, however in 2015 the area of forest fires has decreased. The National Disaster Management Agency itself released in 2016 information on the number of exposures to land and forest fires in the province, and the worst was Riau.

3. Political, Economic, and Cultural Influences in Haze Disaster

The losses due to forest and land fires are very large for human life and to the lives of other living creatures, both directly and indirectly in the political, economic, and cultural sectors.

The conclusion provides an overview to answer the problems that occur in the real world. From the conclusions, several recommendations can also be given that are directly related to the real conditions in the

field. There are several recommendations given in research regarding the policy of handling haze disaster in the border area between Indonesia and Malaysia, namely:

1. The need to improve the welfare together optimally at the Malaysia-Indonesia border. The government's attention to border areas, especially infrastructure to smooth the flow of the economy, so that the gap between the people living on the border is not too far behind, because, at a certain point, the border area becomes the flow of goods exchange between the two countries.
2. Increasing cooperation between the two countries, Indonesia and Malaysia, in handling problems at the border, as well as handling urgent events that involve the interests of the two countries, namely in the scope, economy, social, culture, environment.'

BIBLIOGRAPHY

- ARLITASARI, W, (2017). " Indonesian policy to resolve the smoke haze disaster toward Malaysia".
- ARNAKIM, L, & SHABRINA, N, (2019). "The role of Indonesia in managing trans-boundary haze pollution as environmental security issue in Southeast Asia". *The 1st Workshop on Multimedia Education, Learning, Assessment and its Implementation in Game and Gamification in conjunction with COMDEV 2018*.
- BACHZAN, A, (2019). "Sengketa kebijakan pelabuhan johor malaysia dan singapura pada tahun 2018". *Universitas Islam Indonesia*.
- BASROWI, S, (2008). "Memahami penelitian kualitatif". *Jakarta: Rineka Cipta, 12(1)*, pp. 128-215.
- BENCANA, B, N, P, (2016). "RBI: Risiko Bencana Indonesia. badan nasional penanggulangan bencana".
- BENCANA, B, N, P, (2017). " Data informasi bencana Indonesia (dibi)". *Diakses dari <http://bnpb.cloud/dibi/laporan4>*.
- CRESWELL, J, W, (2016). "Research design: pendekatan metode kualitatif, kuantitatif, dan campuran". *Yogyakarta: Pustaka Pelajar, 2(1)*, pp. 5-6.
- FACHRIE, M, (2020). " Indonesia's forest fire and haze pollution: an analysis of human security". *MJIR/ Malaysian Journal of International Relations, 8(1)*, pp. 104-117.
- FITRIANY, S, (2017). "Indonesia and Malaysia's response towards transboundary haze pollution issue (1997-2006)". *president university*.
- FORSYTH, T, (2014). "Public concerns about transboundary haze: A comparison of Indonesia, Singapore, and Malaysia". *Global Environmental Change, 25*, pp. 76-86.
- HERMAWAN, I, (2019). "Metodologi penelitian pendidikan (Kualitatif, Kuantitatif dan Mixed Method)". *Hidayatul Quran*.
- HUNAWAN, D, (2016). "Menyelesaikan Kebakaran Hutan dan Lahan (KARHUTLA) di Indonesia melalui "Jalan Pantas" atau "Jalan Pintas" ". *Seminar Nasional Hukum*.
- IDA, R, (2014). " Metodologi penelitian: Studi media dan kajian budaya". *Kencana*.

- IHSAN, R, (2018). "Sengketa batas darat dan diplomasi perbatasan Indonesia terhadap Malaysia". *Analisis CSIS*, 47(4), pp. 553-568.
- KARIM, M, F, (2019). "State transformation and cross-border regionalism in Indonesia's periphery: contesting the centre". *Third World Quarterly*, 40(8), pp. 1554-1570.
- LI, C, WU, K, & WU, J, (2017). "A bibliometric analysis of research on haze during 2000–2016". *Environmental Science and Pollution Research*, 24(32), pp. 24733-24742.
- NOVITA, A, A, AWUMBILA, S, S, & BINTI NAZREY, S, N, (2020). "Transboundary Smoke-Haze Disaster Mitigation Efforts". *2nd Annual International Conference on Business and Public Administration (AI/CoBPA 2019)*.
- PURNOMO, H, OKARDA, B, SHANTIKO, B, ACHDIAWAN, R, DERMAWAN, A, KARTODIHARDJO, H, & DEWAYANI, A, (2019). "Forest and land fires, toxic haze and local politics in Indonesia". *International Forestry Review*, 21(4), pp. 486-500.
- QODRIYATUN, S, N, (2014). "Kebijakan penanganan kebakaran hutan dan lahan". *Pengolahan Data dan Informasi (P3DI) Setjen DPR RI. Jakarta*.
- SURYANI, A, S, (2012). "Penanganan asap kabut akibat kebakaran hutan di wilayah perbatasan Indonesia". *Aspirasi: Jurnal Masalah-masalah Sosial*, 3(1), pp. 59-75.
- TACCONI, L, (2003). "Kebakaran hutan di Indonesia: penyebab, biaya dan implikasi kebijakan".
- UNDP, K, (1998). "Laporan kebakaran hutan dan lahan di Indonesia Jilid I: dampak, faktor dan evaluasi". *UNDP KLH. Jakarta*.

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