The Kalimantan Forest Fires: An Actor Analysis Based on Supreme Court Documents in Indonesia

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Abstract: Forest fires in Indonesia are of a local, national, and global concern, which is why the activities of local actors have emerged as a new problem in Indonesia, especially in Kalimantan. The current study employed a network content analysis method to examine the involvement of actors in forest fire cases based on Supreme Court decisions, complemented by several reputable online news sources such as kompas.com, detik.com, and tribun.com. By examining the cases, the actors involved were able to be identified as key actors, contest setters, and subject actors. Key actors, referring to companies and landowners, were found to have high correlations between one another. Moreover, key actors were observed to be involved in providing funds for land clearing or burning, yet they remained legally untouchable. Meanwhile, contest setters—permanent employees—were found to be the most involved in land burning/clearing, and they were often convicted in the Supreme Court rulings as they were merely commoners, farmers, and jobseekers in need of cash. Nevertheless, the subject actors, i.e., jobseekers and farm workers, were seen to have a weak relationship with key actors in the Supreme Court rulings, particularly in terms of forest burning and its operational funding.

Keywords: local actors; economic activities; forest fire

1. Introduction

In 2019, wildland and forest fires occurred throughout several Indonesian regions spanning the areas of Sumatra and Kalimantan. Numerous areas were burned, and the resultant haze subsequently forced people near and far to face drastic impacts. There is also evidence that similar fire incidences are also extending into the provinces of Papua. Forest fire cases in Indonesia were not merely of local and national concern as they also gained international attention for various reasons. The dense haze caused by the forest fires reached neighboring Southeast Asian countries and the carbon emissions associated with these fires contributed to climate change [1]. The environmental, cultural, and public education sectors were directly and significantly affected [2]. These fire events also have a broader impact on the environment, influencing climate change by increasing greenhouse gas emissions. In terms of public education, forest fires caused problems that made it impossible for school activities to properly take place as students and teachers experienced health issues, particularly related to upper respiratory related illnesses [3]. In addition, impacts on cultural and overall productivity will continue if the haze generated by the forest fires is not addressed [4].

The total forest fire area significantly increased in 2019 when compared to previous years. Figure 1 shows data on four regions that experienced land burning in Indonesia. South Sumatra is ranked as the Province with the largest land burning area at 33,6798 hectares (ha) [5]. However, Figure 1 also shows that in terms of total area burned in Indonesia in 2019, Kalimantan exceeded values from Sumatra. This is significant because
Kalimantan forest fire cases received less attention by several national media outlets and the central government. Meanwhile, forest fire cases in Kalimantan are divided into their respective provinces, namely Central Kalimantan with 317,749.00 hectares (ha), West Kalimantan with 151,919.00 hectares (ha), and South Kalimantan with 137,848.00 hectares (ha) of burned land [6].

![Figure 1](image.png)

**Figure 1.** Burned land areas in Indonesia from 2016 to 2019 (in hectares).

The problem of forest fires cannot be considered a simple issue as it involves numerous actors such as local actors, large firms, and political economy actors, such as governors, regents, and regional level companies. Forest fires are not only driven by internal factors like types of peatlands and soils [2]. External factors such as the dry climate also contribute to causing forest fires. However, individual behaviors and corporate industry elements were also determined as other major driving factors in forest fires [7]. Land burning is also utilized to clear agricultural land areas (for example, to cultivate oil palm) since this technique is relatively inexpensive and simple [8,9]. The financial resources of large companies can easily influence local actors to conduct illegal activities for the benefit of companies. Nine of the dozen oil palm groups that had the largest area of burned land in their concessions between 2015 and 2019 did not receive any serious civil or administrative sanctions [8]. The same case can be seen in Brazil, where the local actors are often blamed for starting most forest fires [10]. The lack of government policy can also contribute to forest fire cases such as those in Pakistan, where the lack of government policy has made it easy for companies to clear forests [11].

In the present study, we looked at forest fires as a complex issue by analyzing the Supreme Court Decisions (the permanent legal degrees) made pertaining to this problem. For example, several large companies, involving local actors, have made the issue of forest fires more complicated [8,9]. The rulings on illegal activities and violations are decided by the Supreme Court of the Republic of Indonesia. Examining the Supreme Court ruling documents will help to find actors who are prone to prosecution and actors who are immune to the law [8]. The Supreme Court is a cassation court, the purpose of which is to foster consistency in the application of the law through cassation decisions.
and re-examination to ensure that all laws and regulations throughout the territory of the Republic of Indonesia are applied fairly, appropriately, and correctly [8]. Decisions seen in this research are final decisions with permanent legal authority. The complexity of this issue makes it essential for the government to understand the dynamics of the forest fire network so that the law can be more effectively enforced in order to reduce the problem of forest fires. Furthermore, this study examined the network of local actors and several communities related to forest fires through network content analysis based on the perspective of law. Who are the main actors involved in the forest fires in Kalimantan, and what activities have led to forest fires in Kalimantan? This is a significant issue, and the present study sought to disentangle dimensions whereby local actors are put in the spotlight as the convicted party, while broader forces establishing conditions for the fire are overlooked.

2. Research Methods

To understand the network of local actors and their relation to forest fires cases in Kalimantan based on a legal perspective, nine Supreme Court rulings with permanent legal authority were examined. Data related to forest fires in the provinces of Kalimantan were recorded accordingly. In addition, the characteristics of the research issue have motivated researchers to apply qualitative research methods as a network content analysis method and an in-depth explanation of research problems [8]. The data used in this study were documents of forest fire cases issued by the Supreme Court of the Republic of Indonesia (Table 1). The data were collected from the official website of the Supreme Court. The use of NVivo 12 plus software in this study aimed to map out and explore patterns and networks of local actors’ practices as stated in the documents issued by the Supreme Court of the Republic of Indonesia, and this was further supported and supplemented by online media reports on forest fire cases and practices by local actors.

Table 1. List of decisions made by the Supreme Court of the Republic of Indonesia concerning forest fire cases in Kalimantan.

| Number | Name                  |
|--------|-----------------------|
| 1.     | Decree No. 33 of 2017 |
| 2.     | Decree No. 36 of 2017 |
| 3.     | Decree No. 62 of 2019 |
| 4.     | Decree No. 114 of 2018|
| 5.     | Decree No. 118 of 2016|
| 6.     | Decree No. 213 of 2018|
| 7.     | Decree No. 242 of 2019|
| 8.     | Decree No. 448 of 2013|
| 9.     | Decree No. 698 of 2016|

With the aim of objectivity and improving the quality of analysis, we double-checked data by comparing with the media news. The media was used as a confirmation technique for data obtained from the Supreme Court decision. The selected national online media outlets were www.tribunews.com, www.detik.com, and www.kompas.com. Ten online news articles were collected and analyzed based on keywords related to the forest fire cases in Kalimantan. The online news articles were used to corroborate or confirm statements in the corresponding Supreme Court rulings. The NCapture tool was utilized to gather data from three news media websites. In addition, Nvivo 12 plus software, which has robust reporting capabilities and is capable of digging up in-depth news information, was employed [12]. Moreover, the collected data were analyzed with the help of NVivo. The NCapture tool in NVivo facilitated in capturing the desired legal documents from the Supreme Court before conducting subsequent analysis using the scheme code analysis in NVivo 12 Plus [13].
The scheme network code was used to examine the local actor activities that caused forest fires in Kalimantan. Scheme code was classified into two mother nodes [14]. The first mother node refers to actors’ activities found in the decisions of the Supreme Court. Hence, the first node was classified into unsustainable logging, new land clearing, illegal logging, and land conversion. Subsequently, the second mother node refers to actors found in the decisions of the Supreme Court. The second mother node was classified into the first actors, which are the key actors who had significant influence in the forest fire cases in Kalimantan. The second actors are the contest setters who had secondary influence in the forest fire cases in Kalimantan. Lastly, the actors referred to as subject actors are those who had the least influence in the forest fire cases in Kalimantan. The second node was used to identify the correlations between the actors and the activities found in the first node.

The steps shown in Figure 2 were utilized as follows: the first step in the analysis was to import nine Supreme Court decisions and several online news articles. The second step was to code the information relating to scheme code from the Supreme Court decisions and several online news articles. After finishing the coding step, the third step was analysis using cluster analysis to identify who had the main role based on correlations with the activities’ scheme code. The fourth step was to establish a network map used to describe the details of the three classified networks in the scheme code. For the analysis results, crosstab tools were used to obtain the value of the actors’ network. Additionally, project map tools were used to automatically acquire the mapping network after information relating to the actors involved in forest fire cases from the decisions of the Supreme Court of the Republic of Indonesia was coded. The project map tools were used in analyses that considered the relationships of several actors based on the correlation value. Subsequently, word cloud tools were used to obtain the contents of the legal documents from the Supreme Court.

Figure 2. Data analysis process.

3. Literature Review

Social Fire Network Analysis

Local actor is a term used to refer to people living in a local area [15] that shape a local community [16]. By using a local community approach, local actors can easily have an impact on policymaking [17], and given the support of the local government their role becomes most crucial in every issue of land management [18]. Hence, local actors are perceived to be elites in the local level political arena [18–21]. However, the presence of local actors is not limited to being elitists, as they often serve the local population [22,23].

Within a forested landscape, agriculture usually has greater added value than forest does, which consequently drives deforestation [1]. Nevertheless, the direct drivers of deforestation differ in each country [24]. In Indonesia, the following can be categorized as direct drivers of deforestation [25]: natural causes and human induced local activities, including logging, illegal logging, forest burning to prepare land for oil palm plantations, and mining [26]. The localized human activities should be underlined and are inseparable from the role of small-scale landholders that utilize fire as part of their cultivation practices. There have been attempts to address land burning and forest fires by establishing multiparty collaborations as well as cooperation among regional governments in various provinces throughout Indonesia. Small-scale landholders can become small- and large-scale operators, a third category of “local, midlevel entrepreneurs” that has economic and environmental impacts on fires [27]. Hence, the description of a mismatch between the causes of forest fires and the proposed management-related solutions is prevalent in countries around the
world including Indonesia [28]. In the case of Indonesia, the main cause of forest fires is actually a sociopolitical issue [29].

Based on existing literature, the network can be divided into three classifications. Forest fires should be resolved thoroughly and carefully at both provincial and central levels of government [30]. The provincial government should pay attention to local actors and not look at local issues through a single perspective [20]. Hence, local actors and local government must maintain a healthy relationship [31]. The provincial government should consider the engagement of local actors in local government activities as part of possible solutions to the current and impending local problems [32,33].

The activities carried out among local actors thus form the local collective activities [34]. This differs from the concept of political economy, which emphasizes the embeddedness of economic activity within larger political institutions. This is because the political economy is highly macro level with the nation as its most frequent unit of analysis, whereas social network analysis (SNA) operates at a more micro level, with individual actors or firms as its units [35]. Social network analysis (SNA) is a technique for analyzing the frequency and interactions of social relations between various actors and a means of theorizing the social system and its impact on actions [36]. In social research, network theory has become a gold mine as it offers theories of social processes in a wide range of fields, from psychology to economics [37]. The network theory perfectly illustrates that dominance is fundamentally hierarchical [38]. Methods of analysis of the social network offer some valuable methods to discuss the origins and transfer of power [39]. In network theory, the centrality indicators are usually used to measure the relevance, effect, and meaning of the topics of the social network [40]. Nevertheless, in social conflict research, the correlation between actors is also important to examine which actors are involved in network activity [41]. In other words, local collectives’ activities in network mapping theory are classified into three levels [42]. The first classification is key players, who have the main role in the network. The second classification is contest setter, who has the role of supporting key players, and third is subject actors, who maintain the role of supporting the contest setter [34]. In terms of network mapping, the three were classified based on their power and ability in the network [43].

4. Results

Local Actor Network in Forest Fire Cases

Based on the analysis of the nine decisions of the Supreme Court in several cases of forest fires in Kalimantan, it is shown that several actors were involved in the forest fire cases, yet only a few actors were punished and had to face the consequences of their misconduct. The lack of policies that can improve people’s lives encourages people to look for alternatives to meet their family’s needs. It is undeniable that the poor economic standard of living is the reason many local actors do everything they can to improve their standard of living, including by helping large companies to clear land [44]. Forests specified as green zones by the state have mostly been misused by large companies such as large oil palm plantations.

As clearly shown in Figure 3, there were several illegal activities in forest fire cases. Figure 3 shows the four dominant activities that caused forest fires in recent years in Kalimantan. The percentage of clearing new land by key actors, such as palm firms and industrial companies, averaged at 33.33 percent. Subsequently, Figure 3 indicates that clearing new land is dominated by contest setters with 53.33 percent. Furthermore, it can be observed that clearing new land maintains the highest percentage across all three actors. Based on the crosstab result, It can be concluded that key actors gain more benefit from the clearing of new land areas and their conversion into new productive land areas. Hence, land clearing through various activities, both legal and illegal, will continuously occur in forest fire cases. The substantial amount of income that large companies obtain makes it very easy for them to instruct local actors to clear the land.
Results in the previous passages are, further, related to and confirmed by results from the word cloud in Figure 4, which shows the four dominant words that involve forest fires in Kalimantan from 2016 to 2020 based on the nine documents issued by the Supreme Court. According to the nine documents, most of the cases in Kalimantan involved land clearing, which is commonly understood as opening up new agricultural land. However, there is an interesting result wherein the words “paid”, “employment”, and “companies” are the main words in Figure 4. This means that companies carried out new land clearing activities by paying local actors needing money and employment. The local actors are classified as freelance laborers in the network. Thus, in the case of forest fires in Kalimantan, casual workers paid by companies, landowners, and large corporations are very clear in Figure 3. In addition, the small-scale farmers are, hence, legally vulnerable.
In most cases, these actors directed the blame onto others for forest fires caused by their activities. The government blamed agricultural parties such as landowners, while business firms passed the blame on to the community for aggravating the fire. Furthermore, the local community blamed the greediness of industrial corporations for monopolizing the forest and its resources. However, almost every forest fire case indicates a conflict relating to economic activities between plantation companies and local communities, which intensified and ultimately resulted in arson.

Figure 5 shows the correlation between several actors involved in forest fire cases in Kalimantan. The correlation that subject actors, who are identified as casual freelance workers, had was of a lesser value than that of key actors concerning forest fire activities. The result of the correlation was examined with Pearson's correlation analysis. A value of correlation near 1 indicates that the actors have the main role in the forest fire [45]. In social conflict research, the correlation between actors is important in determining the actors involved in network activity [41]. The correlation of subject actors merely reached 0.167 for unsustainable logging, 0.441 for clearing new land, 0.365 for land conversion, and 0.142 for illegal logging. Nevertheless, there were several cases, based on the Decisions of the Supreme Court, that found local actors employed as freelance workers legally and conclusively guilty for causing forest fires, such as the case in Sintang Regency. In addition, in the case of Palangkaraya City, local actors employed as freelance workers were proven legally and conclusively guilty of causing a forest fire by using a cigarette lighter. The difference in compensation given to local actors, such as indigenous peoples and those living in the forest region, is direct proof that local people are victims of economic manipulation [8]. The government merely determined that the main actors in forest fires were local actors based on the consideration that only farmers and workers were present in the forest to clear the land. They were the ones who were put on trial and punished, while key actors involved in the administration of the said land clearing were acquitted [46].

Figure 5. Network of local actors in forest fire cases.
Indications of economic pressure were clearly observed in the forest fire cases in Kalimantan. Figures 5 and 6, Table 2 show the role of the main actors behind the forest fire cases in Kalimantan. Alternative livelihoods are, therefore, required to maintain local economies. The total expansion of oil palm plantations in Indonesia has now reached 13.5 million hectares, with more than 7 million employees [47]. Almost 70% of the total employees are projected to be casual daily workers [48]. In the midst of the numerous advantages and achievements enjoyed by oil palm plantations, the conditions faced by the workers are very problematic. Nevertheless, economic growth has multiple effects on all elements in society [34]. This is because economic growth is led by the role of companies [7]. Concerns about the economy can never be excluded from the activities of the company [15].

![Figure 6. Classification of actors suspected in Kalimantan forest fire cases based on the decisions of the Supreme Court.](image)

**Table 2.** Detail of the Network of local actors.

| Key Actors | Contest Setter | Subject Actors |
|------------|----------------|----------------|
| Oil Palm Company | Small Plantation Company | Local Landowner | Permanent Employee | Freelance Day Laborer |
| Illegal Logging (0.546) | Illegal Logging (0.336) | Illegal Logging (0.151) | Illegal Logging (0.324) | Illegal Logging (0.142) |
| Clearing New Land (0.614) | Clearing New Land (0.762) | Clearing New Land (0.772) | Clearing New Land (0.600) | Clearing New Land (0.441) |
| Unsustainable Logging (0.275) | Unsustainable Logging (0.681) | Unsustainable Logging (0.536) | Unsustainable Logging (0.304) | Unsustainable Logging (0.167) |
| Land Conversion (0.415) | Land Conversion (0.741) | Land Conversion (0.853) | Land Conversion (0.528) | Land Conversion (0.365) |

From a legal point of view, weak law enforcement causes large companies to disregard government regulations. The fact that law enforcement is weak can be clearly seen from the nine legal documents issued by the Supreme Court, wherein only one large company was considered a suspect as presented in Figure 6. A large company named PT Archipelago Timur Abadi was a suspect in a forest fire case in Palangkaraya City. The private sector took steps to reduce forest fires on their concession land areas but neglected fires occurring in surrounding areas. According to a case example in Kalimantan, this is a piece of evidence proving that the law is not being followed. This is contrary to Decree No. 118 of 2016 issued by the Supreme Court of the Republic of Indonesia, which stipulates that the government, at all levels, has the responsibility to sustain the forest in Kalimantan. Based on the decree,
The government has to formulate and implement strict regulation concerning forest fire cases in Kalimantan. Under that decree, the government holds a major role in preventing and eradicating forest fires. Meanwhile, government apparatus or officers shall represent the state in carrying out various efforts that can prevent and reduce damage to the forest. Consequently, fire suppression would not be effective in the fight against arson. A change from the approach of extinguishing forest fires to one that minimizes or prevents them is imperative. Accordingly, forest fire cases in the region were not limited to soil characteristics and industrial development. The government must use a broader perspective in addressing forest fires. Evidently, forest fire cases involved problems relating to aspects of regional economy. Prominent companies have pressured the local community to carry out activities that often result in forest fires. With this, the government has to take solid measures to prevent these prominent companies from manipulating the economy, and it has to enhance the living conditions of the local communities, such as by creating more employment. Economic growth is, hence, a complex issue, let alone sustainable development, which can be beneficial to all [49]. Countries have to be able to attain economic growth, but few have managed to achieve the three dimensions of sustainable development [50]. The complexity of achieving sustainable development is high as the three dimensions, namely economic growth, broad social inclusion, and environmental sustainability, have to be achieved at the same time [51].

5. Conclusions

The problem of forest fires cannot be observed merely from a single viewpoint. It must be seen expansively in various contexts. Forest land areas, which are supposedly designated as green zones by the state, are being misused by local actors. Based on the findings, the actors are categorized into three classifications. The first actors are key actors who have significant impact in forest fire cases. The second are the contest setters who have a secondary substantial impact in the forest fire cases in Kalimantan. Finally, the subject actors are those who possess the least influence in the forest fire cases in Kalimantan.

The key actors are the large oil palm companies, small local plantation companies, and local landowners. In the network, the key actors played an important role in the forest fires cases in Kalimantan. Key actors carried out more activities that devastated the forest by providing resources to contest setters and subject actors. The key actors reaped a lot of benefits from the clearing of new land areas because they could convert them into new productive land areas. In addition, the key actors were impervious to any punishment or fine that may be imposed in a tribunal.

The lack of policy that can improve the living conditions of local citizens has compelled the community to seek alternative means to provide for and meet their household needs. Consequently, local actors engage in illegal logging, unsustainable logging, clearing new land, and land conversion. The second actors are contest setters who are permanent employees of companies and oil palm farmers. They maintain a relationship with the key actors—large and small companies and landowners. The third actors are subject actors, comprising freelance workers or community members. In this context, high economic pressure causes employees and farmers to take the instant means of clearing the land by using the slash and burn technique. The contest setters and subject actors are victims of an economic trap, which is clearly apparent in the network of local actors in the forest fire cases.

In Kalimantan’s forest fire cases, local community members were freelance workers paid by local oil palm farmers. As a result, the local oil palm farmers and the freelancers or local community members became the second actor also involved in the nefarious activities of land burning. Furthermore, in terms of trials or tribunals, these two actors have always been targeted by the police and courts of justice. In other words, small-scale farmers and local community members remain legally vulnerable and have little protection.
Moreover, economic growth is a complex issue in forest fire cases, yet it is even more difficult to achieve sustainable development, which is extremely challenging and requires solid support. The government must pay attention to the activities of key local actors. Strict regulation will provide an alternative to monitor the activities of key forest fire actors. Integration between the central government and local government must be encouraged to prevent forest fire activity. The continuous monitoring of local authorities must also be facilitated to prevent local actors involved in forest fires activity. This is an important measure that can be taken to prevent small-scale farmers and local community members from being involved in illegal forestry and from being victims of an economic trap. Land clearing and other forestry activities are, hence, only beneficial to the key actors, and the forest remains far from being sustainable.

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