



LEGAL PROTECTION FOR PUBLIC HEALTH AGAINST THE IMPACT OF FOREST FIRES IN INDONESIA

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Abstract: Forest fires in Indonesia have become a recurring issue, significantly affecting public health. This journal addresses the topic of legal protection for public health in Indonesia in the face of the consequences of forest fires. Beyond causing losses to ecosystems, forest fires in Indonesia pose a significant risk to public health. This paper aims to analyze the legal protection for public health against the impacts of forest fires in Indonesia. The methodology is normative legal research with a legislative and case law approach. The research results indicate that the legal protection for public health against the impacts of forest fires in Indonesia is still inadequate and needs improvement through enhanced regulations and more effective law enforcement. The study has analyzed the legal protection for public health against the impacts of forest fires in Indonesia. The findings show that existing regulations are still inadequate and need improvement to provide better protection for public health. Additionally, more effective law enforcement is required to prevent forest fires and reduce their impact on public health. Therefore, regulatory improvements and more effective law enforcement are necessary to enhance legal protection for public health against the effects of forest fires in Indonesia.

Keywords: Forest Fires; Legal Protection; Public Health

1. Introduction

Indonesia is a country rich in natural resources, including forests. Indonesian forests are among the richest on Earth, covering over 120 million hectares, nearly twice the size of France or about 10% of the world's total forest area. However, Indonesian forests face various challenges and serious problems. Forest fires, deforestation, and illegal logging pose threats to the sustainability of Indonesia's forests. Forest fires in Indonesia have become a frequent and significant problem, impacting public health and the environment. The consequences of these forest fires include environmental damage, loss of wildlife habitat, and significant health impacts on the population. In this context, legal protection for public health against the effects of forest fires in Indonesia becomes crucial to discuss.

Forest fires in Indonesia have garnered severe attention both nationally and internationally. Government data from 2015 to 2018 indicates that over 2.6 million hectares of land in Indonesia experienced forest fires. The forest and land fire disaster of 2015 is considered one of the worst environmental threats to the country in the 21st century. According to the World Bank, these fires resulted in Indonesia suffering losses of 221 trillion rupiahs in the form of forest damage and damage to the agricultural, tourism, and other industrial sectors.¹ In 2019 alone, 857,756 hectares of land were burned in Indonesia. From January to August 2023, forest

¹ The World Bank <https://www.worldbank.org/in/news/video/2015/12/01/indonesia-forest-fire-crisis> accessed on 12 December 2023



and land fires in Indonesia affected 204,894.00 hectares. Most of these fires occurred in West Kalimantan, East Nusa Tenggara, West Nusa Tenggara, South Kalimantan, South Papua, East Java, and Central Kalimantan. In Indonesia, forest fires are caused by groups or individuals who expand forest areas while often neglecting the surrounding environment for their economic goals.² Moreover, addressing the air pollution caused by forest fires has been challenging. Forest fire cases have various effects, including decreased workplace productivity, severe cross-border smoke pollution, and contagious respiratory disturbances. In other words, the environment becomes unusable. Other impacts of forest fires include air pollution, respiratory problems, eye irritation, and other health issues.

Consequently, if a forest fire occurs in Indonesia, law enforcement must be ready to protect the environment. Law serves as a means to represent the values upheld by society as essential for good daily life, encompassing personal, societal, national, and state lives. Forest fires can release a large amount of micro-sized particulate matter, potentially harming human health. Public health is a fundamental human right, and serious efforts are needed to protect citizens from rising risks when disturbed by forest fires. This journal aims to explore legal protection aspects for public health in the context of forest fires in Indonesia. Therefore, this research will significantly contribute to understanding and developing more effective policies to protect public health in the future. Forest and land fires are not only local but can also expand regionally and even internationally. Indonesia, as a country with a large tropical forest area, is responsible for protecting its public health and mitigating risks associated with forest fires. Therefore, a robust legal framework must be developed to respond to these challenges efficiently.

In this journal, the author aims to analyze the legal protection of public health against the impacts of forest fires in Indonesia. This research will explore existing regulations, review their implementation, and identify shortcomings in the current legal protection. Additionally, the study will offer recommendations for improving regulations and law enforcement for a more effective system. The research is expected to enhance legal protection for public health against the impacts of forest fires in Indonesia. With this research, a better understanding of legal protection for public health against the effects of forest fires in Indonesia is anticipated, along with implementable recommendations to improve this legal protection. Furthermore, the study can contribute to developing better policies and regulations to protect public health from the impacts of forest fires in Indonesia.

2. Research Method

The method used in writing this journal employs a normative legal research approach focusing on legislative analysis and related cases. This approach was chosen to thoroughly examine the legal protection of public health against the impacts of forest fires in Indonesia. The researcher will analyze various legislative regulations on forest management, forest fire prevention, and public health protection. The first step in this methodology is the collection of relevant legal data, including laws, government regulations, and presidential decisions related to forest

² Greenpeace <https://databoks.katadata.co.id/datapublish/2023/08/18/luas-kebakaran-hutan-indonesia-capai-90-ribu-hektare-sampai-juli-2023> accessed on 12 December 2023

management and forest fire control. This legal data will be carefully analyzed to identify the legal framework governing the protection of public health against the impacts of forest fires. Additionally, the study will analyze related cases concerning the legal protection of public health in the face of forest fire impacts. This case analysis will provide a concrete overview of implementing existing regulations and policies and their implications for public health.

All collected data will be analyzed systematically and comprehensively. The research will also involve literature reviews to support the legal analysis conducted. References from various sources will strengthen arguments and findings generated from legislative and case analyses. With the normative legal research approach and analysis of legislation and related cases, this research is expected to provide a deep understanding of legal protection for public health against the impacts of forest fires in Indonesia.

3. Authority and Norms in the Field of Forestry.

Article 33, paragraph (3) of the 1945 Constitution clearly states that the state has control over the land, water, and natural resources within it, and they must be used as optimally as possible for the maximum welfare of the people. Furthermore, Law No. 41 of 1999 stipulates that forest management aims to achieve the welfare of the people with the principles of justice and sustainability. This is further reinforced by Law No. 32 of 2009 concerning Environmental Protection and Management, which aims to protect the territory of Indonesia from pollution and environmental damage. Similarly, Law No. 39 of 2014 concerning Plantations seeks to improve the welfare and prosperity of the people. Based on the above norms, it can be ensured that the protection of natural resources from damage and pollution aims to improve the well-being of the people.³

3.1. Environmental Law

The management of the environment, law enforcement, and environmental protection in Indonesia are currently inadequate and require improvement. The existing regulations are not strong enough to provide adequate protection for the environment and society from the impacts of environmental damage. There is a need for increased effectiveness in law enforcement to prevent ecological damage and reduce its impact on the environment and society. Regulation improvements and more effective law enforcement are necessary to enhance environmental management and protection in Indonesia. These improvement efforts must be integrated, involving various parties, including the government, the community, and the private sector.

Moreover, increasing public awareness of the importance of environmental preservation is a crucial factor in sustainable environmental management. This awareness can be enhanced through education and socialization campaigns. Steps should be taken to increase public participation to improve environmental management, law enforcement, and environmental protection in Indonesia. This can be achieved through education activities, socialization

³ Elita Rahmi. "Penegakan Hukum Dan Fatwa Haram Mui Terhadap Kebakaran Hutan Dan Lahan Di Indonesia". *Al-Risalah Forum Kajian Hukum dan Sosial Kemasyarakatan*. Vol. 16, No. 1, Juni 2016 (hlm. 57-70). DOI: <https://doi.org/10.30631/al-risalah.v16i01.336>.

campaigns, and involving the community in decision-making processes related to the environment.

The current legal foundation in Indonesia is the 1945 Constitution of the Republic of Indonesia. In this Constitution, citizens must use natural resources wisely and according to their needs. This principle is stated in Article 3, paragraph (3) of the 1945 Constitution, which declares that the land, water, and natural wealth contained therein are the authority of the State and can be utilized to the maximum extent for the prosperity and welfare of the Indonesian people. Pollution and environmental damage, such as forest fires in Indonesia, require regulations that can have deterrent effects.⁴ Therefore, the government has issued rules to protect the environment, particularly in addressing forest fire cases. Law Number 32 of 2009 Concerning Environmental Management and Protection is a government initiative to address these issues. With the enforcement of this law, legal measures are expected to significantly impact change, especially in strengthening planning and law enforcement aspects. Law enforcement in the context of environmental issues is known as environmental law.⁵ This law encompasses regulations related to environmental organizations that cover all objects and conditions, including the spaces where human interactions can impact the well-being and survival of each individual.

Environmental law is also often considered a legal instrument for every environmental management and protection aspect. In every implementation of environmental law, general principles of good governance always take precedence. These principles aim to ensure that the implementation of policies and regulations does not deviate from the goals of environmental management and protection that have been established. This is done for the common interest so everyone can enjoy an environment that provides benefits and optimal health conditions.

Environmental law will always be related to environmental issues such as forest fires, species extinction, deforestation, climate change, etc.⁶ Government involvement is crucial in addressing ecological problems. This is because the potential for disasters resulting from environmental damage can harm the country and its population. As agents of environmental damage, humans need to take responsibility because their needs for natural resources often exceed the limitations of available natural resources.

Unethical management and disregard for norms in utilizing the environment have severe consequences for environmental damage. Therefore, the government's role is essential in

⁴ Anika Ni'matun Nisa, Suharno. "Penegakan Hukum Terhadap Permasalahan Lingkungan Hidup Untuk Mewujudkan Pembangunan Berkelanjutan (Studi Kasus Kebakaran di Indonesia). *Jurnal Bina Mulia Hukum* Volume-4, Nomor 2. DOI: <http://dx.doi.org/10.23920/jbmh.v4i2.337>.

⁵ Ratnasari Fajariya Abidin, "Penegakan Hukum Lingkungan Hidup dalam Perspektif Filsafat Ilmu Hukum", *Jurnal Hukum Bisnis Islam*, Vol. 6, No. 2, 2015, hlm. 70. DOI: <https://doi.org/10.14421/azzarqa.v4i1.1582>.

⁶ Anika Ni'matun Nisa, Suharno. "Penegakan Hukum Terhadap Permasalahan Lingkungan Hidup Untuk Mewujudkan Pembangunan Berkelanjutan (Studi Kasus Kebakaran di Indonesia). *Jurnal Bina Mulia Hukum* Volume-4, Nomor 2. DOI: <http://dx.doi.org/10.23920/jbmh.v4i2.337>.

addressing these environmental issues. Government policies, such as disaster mitigation, are necessary to prevent ecological damage disasters. This policy aligns with the state's responsibility to preserve nature or the environment. The government can also involve legislation to protect the environment, including all existing natural resources. However, there are errors in managing environmental issues, one of which is caused by the weaknesses in the existing legal system and the oversight system for various ecological management and protection activities.

Therefore, law enforcement is needed to protect the environment, considering Indonesia is based on the rule of law. The law here reflects values believed and recognized by society as the foundation for individual and collective life. Law enforcement, especially in the context of environmental law, is an integral part of ecological preservation in Indonesia. Based on the background of these issues, the importance of the role of Environmental Law in protection and law enforcement to preserve the environment becomes highly relevant. Enforcement of Law Against Environmental Issues: The Case of Forest Fires

Forest fires are one of the environmental issues frequently occurring in Indonesia. The destruction of forests, loss of wildlife habitat, and air pollution leading to respiratory and other health problems are just a few adverse effects of these fires on the ecosystem. Therefore, enforcing the law to combat environmental problems, especially forest fires, is crucial. Those affected by this issue should have access to proper legal enforcement to address ecological problems resulting from forest fires. In this regard, government and official support is required alongside enforcing applicable laws to address issues that arise each year effectively. Laws can serve as a framework to regulate citizens' rights and legal obligations to carry them out in a manner that respects others and does not cause harm. Law also provides something that will later become a driving force in development, making society more advanced to think logically, rationally, and critically. Written laws are referred to as the Constitution.

Regulations involved in law enforcement against forest and land fires include several laws and government regulations providing the legal basis and framework for addressing these issues. These include Law Number 32 of 2009 concerning Environmental Protection and Management, a primary foundation for addressing Indonesia's forest and land fire problems. This law stipulates environmental protection and natural resource management provisions, including forests. Article 69 states that anyone who engages in activities causing pollution and ecological damage is legally responsible. Article 78 establishes criminal sanctions for perpetrators of forest and land fires. Government Regulation 11 of 2020 concerning Forest and Land Fire Management provides the legal basis for emergency handling of forest and land fires. This regulation governs the steps and coordination between institutions in emergency forest and land fire handling. Government Regulation Number 61 of 2011 concerning Protected Forest Management provides the legal basis for involving the community in preventing and mitigating forest fires, especially in protected forests.

Additionally, Law Number 39 of 1999 concerning Human Rights is relevant because forest and land fires can threaten human rights. This law asserts human rights, including the right to a healthy environment. Other regulations governing environmental management and protection are outlined in Law Number 23 of 1997 concerning Environmental Management. Still, it has been updated and improved to Law Number 32 2009 concerning Environmental Protection and Management. Moreover, laws clarify environmental objectives outlined in Section 3 of the environmental protection and management regulations. These objectives must be met in the future to enable law enforcement to address ecological issues, which can then be directed according to monitoring and application for various threats, including extinction, criminal cases, and civil cases.

The establishment and protection of law enforcement by guiding community regulations, as well as individuals, groups, and communities, will be influenced by environmental challenges. Fires in Indonesia need law enforcement to reduce the problem of forest and land fires. Humans cause forest and land fires in Indonesia, resulting in environmental damage and harm to human respiratory health. According to Kompas.com, in 2023, the forest and land fire situation will worsen. From January to September 2023, the total indicative burned area reached 800,000 hectares. Forest and land fires occur because people deliberately set fire to forests, causing harm to others. As a result, the forest is destroyed in such cases.

Law enforcement for forest and land fires is stated in Article 187 of the Criminal Code, which declares that "Anyone who intentionally causes a fire, explosion, or flood is threatened with:

- a. imprisonment for up to twelve years if such acts pose a public danger to property;
- b. imprisonment for up to fifteen years if such acts pose a danger to the lives of others;
- c. life imprisonment or imprisonment for a maximum of twenty years if such acts pose a danger to the lives of others and result in death."

According to Article 188 of the Criminal Code, "Anyone who, due to negligence, causes a fire, explosion, or flood is threatened with imprisonment for up to five years or imprisonment for up to one year or a fine of up to four thousand five hundred rupiahs, if such acts pose a public danger to the lives of others, or if such acts result in death." Law enforcement for forest and land fires is also outlined in Law Number 32 of 2009 concerning Environmental Protection and Management. According to Article 69(1):

- a. Subsection a states that "Any person is prohibited from engaging in acts that cause pollution and destruction of the environment";
- b. Subsection h states that "Any person is prohibited from clearing land by burning";
- c. Subsection j states, "Any person is prohibited from providing false information, misleading information, omitting information, damaging information, or untrue information."

The provisions of the article on forest fires clearly explain their content, stating that anyone who has taken actions causing harm to others will face fines and criminal penalties. These

penalties are related to enforcing environmental laws to address forest fire issues. Numerous forest fires have occurred in Indonesia, causing significant losses and negative impacts on surrounding communities. Additionally, there is a reluctance to accept responsibility, meaning the issue in this case has not been adequately resolved. In the event of a forest fire in Indonesia, law enforcement is expected to protect the affected communities.

The above text provides a list of law enforcement to combat environmental issues if forest fires occur in Indonesia, as determined by the law. The passage clearly states that individuals or organizations committing crimes against the environment will face punishment, including fines and imprisonment. Government intervention is essential to address environmental issues because uncontrolled ecological damage can lead to disasters that harm the country and its population. A weakness lies in the causes of environmental damage, such as forest fires. To prevent future environmental damage, law enforcement must be stringent. Many issues related to ecological damage require strong regulations and law enforcement for the well-being, with a focus on the environment.

Therefore, Law No. 32 of 2009 on Environmental Management and Protection and the articles within the Criminal Code can serve as primary guidance. Individuals may be deterred by their rights and responsibilities, reducing the frequency of environmental incidents like Indonesian forest fires. Environmental problems can be reduced by enforcing substantial penalties, such as fines and criminal punishment, and maintaining strict oversight, requiring collaboration between the government and law enforcement.

3. 2 Enforcement of Laws Regarding Environmental Issues: Forest Fire Causes

One of the recurring environmental issues in Indonesia is forest fires. The destruction of forests, the loss of wildlife habitats, and air pollution leading to respiratory and other health problems are just a few of the adverse effects of these fires on the ecosystem. Therefore, enforcing laws to combat environmental problems, especially forest fires, is crucial. Those affected by these issues must have access to proper legal enforcement to address ecological problems resulting from forest fires. In this regard, government support and officials' involvement are necessary, alongside the enforcement of existing laws, to protect the environment and effectively address the issues that arise each year.

Laws can be established to serve as a framework for regulating citizens' rights and legal obligations, encouraging them to act in a manner that respects others and avoids causing harm.⁷ The written form of these laws is referred to as the Constitution. The regulations involved in law enforcement against forest and land fires include several laws and government regulations that provide the legal basis and framework for handling these issues. The Government Regulation 11 of 2020 on Forest and Land Fire Management provides a legal basis

⁷ Anika Ni'matun Nisa, Suharno. "Penegakan Hukum Terhadap Permasalahan Lingkungan Hidup Untuk Mewujudkan Pembangunan Berkelanjutan (Studi Kasus Kebakaran di Indonesia). *Jurnal Bina Mulia Hukum* Volume-4, Nomor 2. DOI: <http://dx.doi.org/10.23920/jbmh.v4i2.337>.

for emergency handling of forest and land fires. This regulation outlines steps and coordination between agencies handling emergency forest and land fire situations. Government Regulation Number 61 of 2011 on Protected Forest Management provides a legal basis for involving the community in preventing and controlling forest fires, especially in protected forests. Additionally, Law Number 39 of 1999 on Human Rights (HAM) is relevant because forest and land fires can threaten human rights. This law emphasizes human rights, including the right to a healthy environment.

Other Regulations governing environmental management and protection are outlined in Law Number 23 of 1997 concerning Environmental Management. However, this law has been updated and refined into Law Number 32 of 2009 concerning Environmental Protection and Management. Furthermore, the law clarifies environmental goals, as outlined in Article 3 of ecological protection and management regulations. These goals must be met to enable law enforcement to address ecological issues, directing it according to oversight and application for various threats, including extinction, criminal, and civil cases. The establishment and protection of law enforcement by guiding community regulations, as well as individuals, groups, and communities, will be affected by environmental challenges. Fires in Indonesia need law enforcement to reduce forest and land fire problems. Forest and land fire problems in Indonesia are caused by human actions, resulting in environmental damage and harm to human respiration.

The forest and land fire situation in 2023 is worsening. From January to September 2023, the total burned area reached 800,000 hectares. Forest and land fires occur because humans deliberately set fires, causing harm to others. As a result, the forest is destroyed in such cases. Law enforcement for forest and land fires is stipulated in Article 187 of the Criminal Code, stating that "Anyone who deliberately causes a fire, explosion, or flood is threatened with imprisonment for a maximum of twelve years if the act poses a public danger to property; b. with imprisonment for a maximum of fifteen years if the act poses a danger to the lives of others; c. with life imprisonment or a maximum of twenty years if the act poses a danger to the lives of others and results in death." According to Article 188 of the Criminal Code, "Anyone who, due to negligence, causes a fire, explosion, or flood is threatened with imprisonment for a maximum of five years or imprisonment for a maximum of one year or a maximum fine of four thousand five hundred rupiahs if the act poses a public danger to the lives of others or if the act results in death."

Law enforcement for forest and land fires is also covered in Law Number 32 of 2009 concerning Environmental Protection and Management. Article 69, paragraph (1), a. states, "Everyone is prohibited from committing acts that cause pollution and environmental damage"; b. prohibits land clearing by burning; c. prohibits providing false information, misleading information, removing information, damaging information, or giving false statements. The provisions in the law clearly state that anyone or any organization committing crimes against the environment will face punishment, including fines and imprisonment. Government involvement is needed

to address environmental problems because if ecological damage is not controlled, it can lead to disasters that adversely affect the country and its inhabitants.⁸

The weakness is the cause of environmental damage if forest fires occur. To prevent future environmental damage, law enforcement must be used more rigorously. Many issues related to ecological damage require strong regulations and law enforcement for life, emphasizing the environment. Therefore, Law No. 32 of 2009 concerning Environmental Protection and Management and the articles in the Criminal Code can be used as a primary guide. People may be deterred from committing environmental crimes by understanding their rights and obligations, reducing the frequency of incidents such as forest fires in Indonesia. Environmental problems can be reduced by enforcing strong penalties, such as fines and criminal penalties, and maintaining strict oversight, requiring collaboration between the government and law enforcement. In the context of law enforcement against forest and land fires (karhutla), its implementation involves several institutions and legal enforcement instruments, including the role of the Ministry of Environment and Forestry (KLHK).

The Ministry of Environment and Forestry is primarily responsible for preventing forest and land fires. They oversee forest activities and enforce policies to prevent forest fires. The Ministry also educates the public and businesses about the adverse effects of forest fires and preventive measures. The role of the National Disaster Management Agency (BNPB) is crucial because it is directly involved in handling emergencies such as forest fires during national disasters. They coordinate emergency responses and provide assistance to extinguish fires. BNPB acts as a coordinator between agencies, ensuring effective collaboration between KLHK, the police, and other relevant institutions in handling forest fires. Lastly, the role of the police is essential. The police can impose administrative sanctions, such as freezing business permits for companies involved in forest fires. The police can also punish individuals or companies violating forest and land-burning rules. If criminal elements are found, the police can investigate, arrest, and bring perpetrators to court.

3.3 The Implementation of The Government's Responsibility For Public Health During Forest Fires in Indonesia

Forest fires in Indonesia have environmental impacts and severe consequences for public health. The widespread release of smoke can trigger several health problems, especially respiratory system disorders. In this regard, the government's responsibility in addressing public health during forest fires becomes crucial. Based on existing research, the effects of forest and land fires may not be immediately felt. However, several years later, hazardous substances in the smoke can still adhere to the lungs, threatening public health.

Therefore, the government should take serious measures to handle the health impact of forest fires on victims. The recurring victims every dry season should prompt the central and regional

⁸ Arvin Asta Nugraha , I Gusti Ayu Ketut Rachmi Handayani, Fatma Ulfatun Najicha. *Jurnal Hukum tora: Hukum untuk mengatur dan melindungi masyarakat*. Vol.7, No.2, Agustus 2021, pp. 283-298 p-ISSN: 1410-4695 - e-ISSN: 2620-3952. DOI: [10.33541/tora.v12i3.1295](https://doi.org/10.33541/tora.v12i3.1295).

governments to make improvements and prevent similar incidents from recurring. The government needs to pay special attention to holding companies accountable through administrative sanctions and ensuring that companies comprehensively address the health impacts of karhutla disasters. This includes resolving health impact issues with short-term and long-term effects, potentially leading to death. The impact of forest fires also disrupts various sectors. Impaired visibility causes difficulties in daily mobility, hampers vital transportation, and potentially threatens the safety of affected communities. The air transportation sector is most affected, with many flights delayed, redirected, or canceled. Airports in several provinces, such as Jambi, Riau, and Palembang, are severely affected, resulting in significant economic losses.

The smoke disturbance also affects the wheels of the affected community's economy, especially in the labor, plantation, and livestock sectors. The difficulty in carrying out regular economic activities can lead to a high potential for layoffs, especially in the economic losses experienced by several sectors. For example, the tourism sector also feels a significant impact, with the potential economic losses reaching tens of billions of rupiah. The government's advice not to leave the house also contributes to the difficulty of carrying out economic activities, which can trigger layoffs and harm the economy as a whole. The production of staple crops and vegetables by farmers then decreased by up to 40% due to the production process relying on sunlight being hindered by the smoke haze, despite precautions being taken.⁹

The Impacts of forest fires raise significant concerns, especially considering similar incidents have occurred repeatedly. Several factors have garnered public attention. Firstly, there is a lack of law enforcement. The Indonesian National Police appears confused in criminally addressing individuals or groups suspected of involvement in forest arson crimes in Indonesia. Secondly, there is a lack of coordination among relevant state institutions in responding to emergencies, particularly in prioritizing efforts to extinguish fire points and ensuring the health of residents in several critical areas affected by forest fires. Thirdly, the Indonesian government has not maximized the support from neighboring Southeast Asian countries to expedite the handling of forest fires.

The response of some high-ranking officials refusing to disclose the names of companies involved in forest arson crimes is also considered counterproductive to the government's commitment to resolving this recurring issue each year. Another common issue in the field is the shortage of medical personnel and the availability of medicines for victims of forest fires. Many reports from the public complain about the slow response, especially for children and pregnant women. This contradicts Law Number 36 of 2009 concerning Health, which establishes the responsibility of the government, local governments, and the community to provide comprehensive and sustainable health resources, facilities, and services during disasters. Although the roles of the central and regional governments in addressing the health impacts of haze on the public are regulated by law, the reality falls far short of expectations.

⁹Yuda Frana Jaya. "Perlindungan Hukum Atas Kesehatan Masyarakat Terhadap Dampak Kebakaran Hutan Di Provinsi Riau". (Pekanbaru: 2020), Hlm 84

Additionally, the availability of resources and health services before, during, and after disasters is not optimal. Article 85 asserts that in a disaster emergency, health service facilities, both government and private, must provide health services to save lives and prevent disability. However, efforts to combat diseases caused by forest fires are still reactive, involving community warnings, improvements in clean and healthy living behaviors, activation of health task forces, the establishment of health posts with free treatment, and the activation of community health centers 24 hours a day, seven days a week.

The Ministry of Health's recommendation to evacuate when the Air Pollution Standard Index (ISPU) reaches the hazardous category cannot be implemented like other disaster responses according to Law Number 24 of 2007 concerning Disaster Management. This is due to concerns that evacuation actions could worsen the conditions of respiratory disease patients, requiring a safe evacuation mechanism. The most important aspect of mitigation efforts is the optimal use of the health system to reduce losses. Before a disaster, the health system can be mobilized through surveillance subsystems to determine the patterns of spreading respiratory diseases and other respiratory illnesses. With this pattern, subsequent mitigation efforts can be targeted by combining preventive and promotive efforts before the disaster occurs.

Another action in addressing this problem is through mitigation and adaptation programs. Mitigation efforts are carried out collaboratively involving the community, companies, and law enforcement to prevent forest and land fires. Unfortunately, these programs are insufficient, even though the Ministry of Health has a risk-based health intervention strategy.¹⁰ Research results indicate that these programs are currently in the strategic planning stage and have not been implemented. This needs to be re-evaluated and tested first, considering that implementation requires significant funding allocation, the availability of skilled medical personnel, and an ample supply of medicines. The government's response, especially in the health sector at both the central and regional levels, has not shown adequate strength. Adaptation efforts, such as school closures and mask distribution, must be progressively and widely enhanced.

Also, some of the government's actions in fulfilling its responsibility for public health during forest fires in Indonesia include air quality monitoring. The government monitors air quality around forest fire areas to ensure air quality does not endanger public health. If the air quality is poor, the government can warn the public to avoid outdoor activities. The government should provide masks for people living around forest fire areas. These masks can help protect the respiratory system from inhaling smoke and particles. Finally, education and socialization are essential. The government can educate and socialize the public about the dangers of forest fires and how to prevent them. This can help raise awareness among the public about the importance of preserving forests and the surrounding environment.

¹⁰ Yuda Frana Jaya. "Perlindungan Hukum Atas Kesehatan Masyarakat Terhadap Dampak Kebakaran Hutan Di Provinsi Riau". (Pekanbaru: 2020), Hlm 87

Furthermore, the lack of information about the health risks of haze has caused many people to continue their activities as usual, ignoring government warnings. Thus, it can be concluded that the lack of communication and information from the government to the public is a cause of misunderstanding regarding the health hazards posed by forest fires. Challenges also include difficulties in coordination between agencies, unclear distribution of authority and responsibilities, the ad hoc nature of institutional sustainability, policy disunity in forest and land fire control, constraints in law enforcement, and budget limitations.

4. Conclusion

Forest and land fires have severe impacts, both directly and indirectly, on public health and the economic sector. Although the effects of fires may not always be felt directly, hazardous substances in the smoke can adhere to the lungs, posing a threat to long-term health. Thus, forest and land fires are environmental issues, public health, and human rights issues. All parties, including the government, companies, and relevant institutions, need swift and effective actions to address and prevent the adverse effects caused by forest and land fires. The government must take serious and comprehensive actions in handling the victims, including holding companies accountable and addressing potential health impacts. The importance of improvements and prevention from central and regional governments is also emphasized, mainly since forest and land fires occur routinely every dry season. Despite mitigation and adaptation efforts to address the issues of forest fires and their impact on public health, these programs still face several constraints and obstacles. Mitigation involving communities, companies, and law enforcement, including fire prevention, is still hindered by suboptimal implementation and inadequate funding allocation. Mitigation programs are also still in the strategic planning stage and have not been fully implemented, requiring further evaluation and testing.

On the other hand, adaptation efforts such as school closures and mask distribution need to be progressively expanded and improved. The lack of information about the dangers of diseases caused by haze results in a significant portion of the population continuing their activities as usual, disregarding government warnings. In this context, the lack of communication and information from the government to the public is a critical factor in misunderstanding the health hazards caused by forest fires. Challenges such as difficulties in inter-agency coordination, unclear distribution of authority and responsibilities, the ad hoc nature of institutional sustainability, policy disunity in controlling forest and land fires, enforcement challenges, and budget limitations are also significant. Therefore, there is a need for improvements in implementing mitigation and adaptation programs and increased coordination and communication between agencies to address the impacts of forest and land fires more effectively.

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