

Research Article

Forest and Land Fire Prevention Governance in Central Kalimantan: The Role of Government and Community

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Abstract: Forest and land fires continue to be one of the most chronic environmental management problems in Central Kalimantan. This study will analyze how protection management is implemented, as well as how the roles of the government and community interact in preventing and managing forest and land fires. This study uses a qualitative approach with a literature review method. Several data researched by the authors show that forest fire management is shifting towards a collaborative approach involving various parties. However, implementation continues to face problems of institutional coordination, inconsistent local capacity, and low sustainability of community participation programs. Community-based prevention projects are effective in reducing fire risk, but require better institutional support and sustained government commitment. This study suggests that efficient fire protection governance depends on adaptive collaboration between government agencies and local communities, facilitated by clear coordination mechanisms and long-term environmental governance initiatives.

Keywords: Central Kalimantan; Collaborative Governance; Community Participation; Environmental Governance; Forest Fire.

1. Introduction

Forest and land fires (karhutla) are a serious challenge to environmental governance in Indonesia, especially in Central Kalimantan. Data from the Karhutla Monitoring System (SiPongi) run by the Ministry of Environment and Forestry recorded 595 hotspots in Central Kalimantan during the dry season in October 2025, an increase from the previous record of 42 hotspots at the end of September 2025. Data from the Central Kalimantan Provincial Regional Disaster Management Agency (BPBD) reported that from January 1 to August 31, 2025, the total area affected by fires reached 1,353.73 ha. This accounts for approximately 0.63 percent of the total national fire area (BPBD, 2025). These karhutla incidents not only damage the environment but also affect public health, economic activity, and social relations. The government is working to address these incidents and prevent forest and land fires.

In recent years, forest and land fire prevention efforts in Central Kalimantan Province have been strengthened through various policies and regulations designed to address the challenges of forest fires. One such regulation that serves as an important foundation is Central Kalimantan Provincial Regulation Number 1 of 2020 concerning Forest and Land Fire Control, which regulates forest management activities, business permit holders, and community protection from the impacts of fires. This regional regulation aims to encourage the creation of a better living environment and raise public awareness of the importance of protecting and respecting the function of forests in life. Furthermore, Central Kalimantan Governor Regulation Number 65 of 2024 concerning Forest and Land Fire Management focuses on increasing preparedness in the face of forest and land fire disasters. This gubernatorial regulation was formulated as a guideline for relevant agencies in coordinating, handling, and mitigating

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forest and land fires in Central Kalimantan. It is hoped that it will strengthen synergy between institutions and increase the effectiveness of forest and land fire prevention and management efforts in the region.

The success of peatland fire control policies is heavily influenced by coordination, communication, and good governance. Preventing forest and land fires is not merely a technical matter of extinguishing fires but is also closely related to governance, inter-institutional coordination, and inter-community relations in natural resource management. This is emphasized in research (Muhammad Qur'anul Kariem, 2021), which states that environmental governance is not solely a public issue resolved by the government but also requires collaboration with the community. When coordination is not carried out in a normative manner, it often does not produce tangible impacts on the ground (Asteriniah & Sutina, 2017). This is supported by previous research (Putri & Usmita, 2024), which shows that forest and land fires are generally triggered by land clearing through fires, weak supervision, and low public awareness of the impacts of forest and land fires. This research further confirms that prevention efforts will not be effective without active community involvement and good governance to implement forest and land fire prevention policies.

Collaborative governance in forest and land fire control certainly emphasizes the importance of a collaborative governance approach, namely the equal involvement of actors. This approach also positions communities not merely as policy actors but as partners with the government in monitoring and preventing fire risks (Dita Fisdian Adni, 2024). Previous research (Ambarita, 2021) examined forest fire prevention efforts in Central Kalimantan through the Regional Disaster Management Agency (BPBD), which is the primary actor in forest and land fire prevention. This was further supported by research (Ananda et al., 2022), which found that the government has implemented mitigation strategies, but policy implementation faces constraints on resources, cross-sectoral coordination, and the geography of peatland areas prone to fire.

Several previous studies have focused on the government's role in preventing forest and land fires. Therefore, this article will discuss collaborative policies and governance between the government and the community in preventing forest and land fires. This article will also discuss how forest and land fire prevention is managed, the roles of the government and the community in preventing forest and land fires in Central Kalimantan, and the factors that influence the effectiveness of collaboration between the government and the community. In line with this research problem formulation, this study aims to analyze collaborative governance policies between the government and the community in preventing forest and land fires. This research is expected to provide a conceptual understanding of the importance of collaborative governance in forest and land fire prevention efforts.

2. Proposed Method

This study uses a qualitative approach with a literature review method to gather in-depth information regarding forest and land fire protection governance in Central Kalimantan. By gathering data and analyzing various relevant sources, the author seeks to deepen understanding of how the roles of government and communities synergize in preventing and managing forest and land fires. This approach allows the author to comprehensively examine various research findings, policies, and actions previously recorded on the issue. The literature sources analyzed include various previous studies, policy documents, and reports related to forest and land fire management, particularly in Central Kalimantan. The results of the literature review are then analyzed and provide a comprehensive overview of how protection governance is implemented, the challenges faced in its implementation, and opportunities to strengthen cooperation between government agencies and local communities in efforts to prevent and manage forest and land fires sustainably.

3. Results and Discussion

The phenomenon of forest and land fires in Central Kalimantan Province can be interpreted not only as a seasonal environmental problem but also as an issue related to environmental management. The persistently high number of fires indicates weaknesses in the prevention system, institutional arrangements, and the effectiveness of policy implementation. This area largely consists of peatlands that are highly flammable, especially if water management systems are disrupted by large-scale land clearing activities. However, the recurrence of fires illustrates that this problem is not only related to ecological weaknesses but also indicates a lack of effective prevention strategies and low levels of community involvement in

implementation. According to the collaborative governance perspective outlined by Chris Ansell and Alison Gash, the success of public policy depends heavily on the integration of government, the private sector, and communities in an organized collaborative process. In the context of forest and land fire prevention in Central Kalimantan, existing collaboration tends to be reactive and situational, and has not yet been fully adopted into a long-term prevention system. Existing regulations actually cover various preventative measures, such as implementing integrated patrols, publicizing land clearing without burning, and monitoring hotspots through the Forest and Land Fire Control Information System. However, the lack of synchronization between institutions, limited human resources, and the suboptimal use of technology indicate that the prevention system has not been running effectively and in an integrated manner (Darmawan et al., 2025).

In terms of law enforcement, the existing problems are not only technical but also related to the complexity of proving legal claims related to land burning, especially those involving large companies. Legally, regulations on environmental and forestry protection are already in place and are quite comprehensive. However, in practice, the consistency of sanctions application is still suboptimal (Sadar et al., 2025). Ambiguity in law enforcement can reduce the deterrent effect and diminish the legitimacy of policies in the public eye. Therefore, the government's role is not limited to formulating regulations but also includes consistency and integrity in law enforcement (Adila et al., 2024).

On the other hand, the responsibility for preventing forest and land fires does not lie solely with the government. Local communities play a crucial role, particularly in early detection and rapid response to potential fires. Successful prevention at the local level is closely linked to the availability of infrastructure, community capacity building through training, and the presence of an early warning system that involves citizen participation (Ambarita, 2021). Therefore, strengthening community capacity is an essential part of a sustainable fire prevention management system.

Furthermore, the participation of indigenous communities and local groups in forest and land fire prevention policies has not been fully integrated. In the context of collaborative governance, fire prevention should be built through ongoing collaboration between local governments, law enforcement officials, business actors, and community elements. The reality in Central Kalimantan shows that collaboration often only occurs during emergencies, but has not yet been fully integrated into long-term policy structures.

The main obstacles to forest and land fire prevention management in Central Kalimantan lie in weak collaborative system integration, inconsistent law enforcement, and limited institutional capacity and community participation. Without structural improvements in these areas, prevention policies tend to be reactive and unsustainable (Rusadi & Yuslaini, 2021). Thus, the main problems in forest and land fire prevention governance in Central Kalimantan lie in weak collaborative system integration, inconsistent law enforcement, and low institutional capacity and community participation. Without structural improvements in these areas, prevention policies will remain reactive and unsustainable.

The Central Kalimantan provincial government's role in controlling forest and land fires extends beyond extinguishing fires when they occur, encompassing various efforts such as prevention, preparation, handling, and post-fire recovery. This control is crucial because much of Central Kalimantan consists of peatlands that can dry out during the dry season and are highly flammable. Fires not only damage forests but also create haze that impacts public health, the teaching and learning process, transportation, and the regional economy. Therefore, the Central Kalimantan Provincial Government implements organized forest and land fire control in accordance with applicable regulations. One legal basis for this is Central Kalimantan Provincial Regulation Number 1 of 2020 concerning land and land fire control, which serves as the primary guideline for preventing and managing fires at the regional level. Furthermore, Central Kalimantan Governor Regulation Number 65 of 2024 concerning Forest and Land Fire Contingency Plans explains how to manage fires, the division of tasks between agencies, and how to respond to emergency situations. There is also Central Kalimantan Governor Regulation No. 17 of 2025 concerning the Master Plan and Land Fire Control Information System, which emphasizes the importance of an integrated monitoring system and long-term planning. All of these regulations can be accessed through the Central Kalimantan Provincial Government's JDIH, the official legal source.

In its implementation, control is carried out by the Central Kalimantan Provincial Disaster Management Agency, which monitors hotspots daily using the Ministry of Environment and Forestry's SiPongi system, and coordinates with the National Disaster Management Agency. Based on official data from the Ministry of Environment and Forestry's SiPongi,

Central Kalimantan is one of the provinces that experienced significant fires during peak years of forest and land fires, such as 2019. In that year, the country recorded hundreds of thousands of hectares of burned land, and the majority of the fires were in the Central Kalimantan region (KLHK data, SiPongi). In certain situations, the Governor declares a forest and land fire emergency alert status so that personnel, equipment, and logistics can be deployed more quickly and in a coordinated manner.

In addition to technical methods such as joint patrols, canal fencing, and watering peat soil, the government is also using a social approach by establishing fire-prepared villages, providing education on how to clear land without burning, and taking action against arsonists, both individuals and companies, in accordance with applicable regulations. Overall, efforts to control forest and land fires in Central Kalimantan are carried out comprehensively, from prevention and preparation to emergency response and recovery, based on official regional regulations and a system of inter-sectoral cooperation. By implementing stronger policies, supporting official monitoring data, and actively involving the community, the Central Kalimantan Provincial Government is striving to reduce the risk of fires each year to maintain the environment and ensure sustainable regional development.

The active role of the community in preventing forest and land fires in Central Kalimantan is a determining factor in the success of mitigation at the local level. Local communities are directly involved in hotspot patrols, land management, outreach, and peatland ecosystem restoration. Qamariyanti et al. (2023) emphasized that involving the community in peatland management is highly effective in reducing the risk of fires. This is because communities have a deep understanding of local environmental conditions and social resources that enable them to take more effective preventative measures. In Central Kalimantan, community participation is not passive; community empowerment through Gubernurial Regulation No. 65 of 2024 and Regional Regulation No. 1 of 2020 is a crucial part of the forest and land fire prevention strategy. However, challenges remain, such as a lack of coordination between sectors and technological limitations that impact the effectiveness of these efforts. In West Kotawaringin Regency, Central Kalimantan, success in preventing forest and land fires depends on collaboration between the MPA (Community Action Plan), Tagana (National Disaster Management Agency), and Manggala Agni (Agricultural Agency), supported by the Regional Disaster Management Agency (BPBD), within an integrated joint task system (Ambarita, 2021).

In an effort to strengthen this synergy, the Fire Awareness Community (MPA) is the primary institution used to involve the community in preventing forest and land fires. The establishment of this institution is regulated by the Minister of Forestry Regulation Number P.12/Menhut-II/2009 and the Director General of PHKA Regulation Number P.2/IV-SET/2014. The MPA functions to monitor hotspots, provide knowledge to the community, and carry out early extinguishing. In (Dewi et al., 2023) assessed that active MPA groups succeeded in preventing the spread of fires by conducting early detection and response, although still faced obstacles due to weak internal organizational structures and lack of support from village governments. At the provincial level, According to data (DJPPPI & KLHK, 2023), reported that during the extreme dry season caused by El Niño in 2023, joint patrols involving the MPA with the TNI, Polri, and Manggala Agni were carried out on a large scale in Central Kalimantan, which is one of 11 provinces with a high risk of forest and land fires. This effort succeeded in reducing the area of national forest and land fires (karhutla) from more than 1.6 million hectares in 2019 to 994,313 hectares in 2023, which shows that involving the community through MPA really helps in reducing cases of forest and land fires.

On the other hand, the Dayak indigenous people of Central Kalimantan possess inherited environmental knowledge, enabling them to responsibly manage the use of fire in their farming system. Rotational farming practices utilize previously planted land (Jekau) and then allow it to revert to forest for approximately 8 to 9 years before being reused. This pattern not only helps maintain soil fertility but also prevents the buildup of dry fuel that can lead to large-scale fires. Before starting a fire, residents perform the manyalukut ritual. This ritual involves creating firebreaks, adjusting the timing according to wind direction, and burning together with surrounding landowners to maintain control of the fire. In practice, traditional leaders such as damang and mantir play a role in social control at every stage of land management, from determining the time through customary deliberation to the process of burning and clearing the land. Community adherence to these customary norms demonstrates that control mechanisms based on local wisdom are highly effective in regulating land clearing methods, even in some cases, these rules are more enforced than formal legal regulations (Juriyah et al., 2024).

This is reflected in the Dayak Ngaju community, which has six principles of local wisdom in managing forests: *handel*, meaning continuity; *himba*, meaning diversity; *sub arep*, meaning subsistence; *mihing*, meaning organic; *hadat*, meaning ritual rules; and *jipen*, meaning customary law. These six principles form an environmental management system that focuses on maintaining ecosystem balance, limiting resource use, and controlling burning activities to prevent them from becoming uncontrollable fires. These principles illustrate that local wisdom plays a role as a way to regulate social and environmental life, and helps maintain forest sustainability. Therefore, good cooperation between customary law, local government policies, and the role of the community is crucial to creating a more equitable, effective, and sustainable management in preventing forest and land fires in Central Kalimantan.

Forest and land fires (*karhutla*) remain a significant problem that requires addressing, and this requires collaboration. However, implementing government-to-government collaboration remains a serious challenge. Based on SiPongi monitoring as of October 2022, Central Kalimantan recorded 595 hotspots, indicating a persistently high risk of forest and land fires. This demonstrates that prevention is not solely a matter of government and policy, but requires collaboration between the government and the community. However, the reality on the ground still reveals structural and operational challenges. In implementing prevention, there is uneven coordination between the government and the community, as well as between the central and provincial governments. Therefore, Budiono et al. (2025) also found that forest and land fire mitigation still faces obstacles between the central and regional governments. Their article states: *"Forest and land fire mitigation is still hampered by obstacles in coordination between the central and regional governments in fire management"* (Budiono et al., 2025).

In its efforts, the government has attempted to create policies and regulations, but the challenges faced indicate that many people still do not understand the facilities and technology. The government is trying to provide prevention, but the community also needs efforts in facilities and technology so that in its implementation the government does not only provide regulations to the community, but also the community is able to control forest and land fires. This is in line with previous research conducted by Sadar, Satsipi and Rulandari (2025) which emphasized that *"Lack of coordination between limited technology and firefighting infrastructure is a major challenge in the strategy for managing forest and land fires in Central Kalimantan"* (Sadar et al., 2025).

Although the government has implemented policies for fire prevention, challenges and obstacles arise because the community has not fully participated in forest and land fire prevention efforts. Communities are the primary actors in forest and land fire prevention. They are the ones who know the hotspots, therefore, they must be more participatory in forest and land fire prevention efforts. This requires strong encouragement and support from the government to provide outreach, education, and training so that communities who do not yet understand forest and land fire prevention can be actively involved. This was further stated by (Jaes et al., 2025), who emphasized that the challenge of community participation in fire prevention is greatly influenced by government support, as well as relatively low community participation due to limited resources. However, the challenge in forest and land fire prevention is still minimal government support, which becomes an obstacle to effective prevention.

Collaboration between the government and communities is a crucial element in preventing and reducing the risk of forest and land fires. Empirical research shows that community participation in prevention plans has a significant impact on the success of forest and land fire mitigation. Low community involvement is often caused by internal factors such as a lack of resources and motivation, as well as external factors such as a lack of training, technical support, and data integration between communities and the government (Damanik et al., 2021). A systematic literature review identified key challenges, including a lack of government support in the form of training, technology, and the integration of formal policies with community practices on the ground. To address these issues, strategies are needed that include increasing community capacity, empowering communities, and strengthening support and collaboration between institutions (Cahyawati, 2022).

Furthermore, the lack of unity in formal collaboration structures between government and civil society organizations often hinders forest fire management. Other research shows that community organizations, local firefighting units, and non-governmental groups tend to operate separately without a unified coordination forum that unites all stakeholders. As a result, local resource utilization is reduced and synergy in planning prevention measures is minimal.

4. Conclusions

Based on a literature review, forest and land fires in Central Kalimantan Province are not only influenced by natural factors such as the flammable characteristics of peatlands, but are also related to environmental governance issues and public policy implementation. The high incidence of fires indicates that prevention efforts still face various obstacles, particularly in terms of inter-agency coordination, institutional capacity, and consistent law enforcement against perpetrators of land burning. Nevertheless, the local government has demonstrated commitment through the development of regulations, strengthening hotspot monitoring systems, and implementing prevention, mitigation, and environmental recovery programs. Although the effectiveness of these policies is highly dependent on cross-sectoral coordination, resource availability, and consistent implementation in the field. This study also emphasizes the importance of community participation in forest and land fire prevention systems, as demonstrated by the formation of Fire Awareness Community (MPA) groups, joint patrol activities, and the utilization of local wisdom in land management. Local knowledge of indigenous communities regarding sustainable land management practices can be a source of alternative strategies to maintain ecosystem balance while reducing the risk of fire. However, collaborative governance between the government and communities still faces various challenges, such as technological limitations, low human resource capacity, lack of data integration, and weak coordination mechanisms between parties. Therefore, controlling forest and land fires in Central Kalimantan requires strengthening more integrated collaboration between the government, communities, and various other stakeholders through increased institutional coordination, strengthening community capacity, utilizing more effective monitoring technology, and consistent law enforcement, so that the fire prevention system can run more optimally and support the sustainability of sustainable environmental management.

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