

Public Policy Vs Local Wisdom: Controlling Forest and Land Fires in West Kalimantan

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Abstract

Forest and land fires are a phenomenon that often occurs every year in West Kalimantan. The indicative burned area in West Kalimantan in 2023 reached 154,167 hectares. The incident was 95% caused by humans who manage forests and land. Implementing regulations controlling forest and land fires and needing more protection of local wisdom are problems in tackling forest and land fires. This study aims to analyze the implementation of public policy vs. local wisdom in controlling forest and land fires in West Kalimantan. This research uses qualitative research methods with descriptive analysis. Data collection will be done using observation, interviews, and documentation. Based on the study's results, the West Kalimantan Provincial Environment and Forestry Service monitors and evaluates locations prone to forest and land fires on fire prevention activities such as counselling, making technical instructions, and procuring infrastructure. The limited quantity of human resources and budget, especially during socialization and firefighting, hampers policy implementation. The West Kalimantan government is committed to guiding communities or palm oil entrepreneurs in clearing agricultural land without burning. The flammable condition of peat soil complicates the fire extinguishing process. The government must prepare qualified human resources and a budget to provide continuous assistance and enforce strict sanctions against forest and land-burning perpetrators.

Keywords:

forest fire control; public policy; local wisdom

Introduction

Forest and land fires are a phenomenon that often occurs every year in West Kalimantan province. (Dicelebica et al., 2022).. Based on data from the West Kalimantan Environment and Forestry Service in August 2023, there were 128 hotspots in West Kalimantan. The hotspots were distributed in Ketapang Regency, with 88 locations; North Kayong Regency, with 12 locations; Malawi Regency, with 7 locations; and Kubu Raya Regency, with 21 locations. (Fahrurozi Bafadal & Hestiani, 2023). The worst forest and land fires occurred in 2023. The indicative area burned in West Kalimantan in this period reached 154,167 hectares. (Danur Lambang Pristiandaru, 2023). As a result of forest and land fires, the government suffered economic losses and produced 3,214,481 million tons of carbon dioxide during January-July 2023.(Nabilah Muhamad, 2023). From 2021 to 2022, West Kalimantan lost more than 3.83 million hectares of tree cover due to land use change and forest and land fires (MIKAELA WEISSE & LIZ GOLDMAN, 2022).

West Kalimantan's forest and land fires are the highest compared to other provinces, at 108,000 ha. Forest and land fires in West Kalimantan caused haze and ash rains that covered West Kalimantan and eastern Malaysia (Arifa, 2022). The following is data on forest and land fires in West Kalimantan Province according to the Ministry of Environment and Forestry from 2015.

Table 1.1.

Area of Forest and Land Fires in West Kalimantan

Luas Kebakaran Hutan Kalimantan Barat 2015-2023



Source: (sipongi menlhk: 2023)

According to the Ministry of Environment and Forestry's Sipongi data from 2015-2023, forest and land fires always occur in West Kalimantan. Forest and land fires in West Kalimantan have become an annual routine. Every year, there are forest fires that burn hundreds of thousands of hectares. From 2015 to 2023, 462981.73 hectares of forest and land were burned in West Kalimantan. (M.O.E.F., 2023). The worst in that period occurred in 2019, amounting to 151,919 hectares. Even indications of the extent of forest fires in 2023 alone show a number that is not small. Until the third quarter of 2023, 82,411.38 hectares were indicated to have burned in West Kalimantan.

Forest and land fires (karhutla) are allegedly caused by human actions. The West Kalimantan Regional Disaster Management Agency (B.P.B.D.) stated that 95% of forest and land fires in West Kalimantan occurred due to human actions, which aim to clear agricultural or plantation land. In comparison, the remaining 5% comes from natural sources such as the long dry season when plants become dry, friction occurs and then burns. (Mohammad R, 2023). According to the Indonesian Forum for the Environment (Wahana et al. Indonesia) West Kalimantan, there were 3,275 hotspots observed in 203 oil palm plantation concessions and 1,675 hotspots in 32 Industrial Plantation Forest (H.T.I.) concessions in West Kalimantan.

Land clearing by burning benefits the company but harms the public because the pollution and damage caused reaches the entire province of West Kalimantan.

The distribution of hotspots in the company's area hurts the environment due to the resulting haze. The West Kalimantan government is considered less assertive towards palm oil companies that clear or precise land by burning. Wahana Lingkungan Hidup West Kalimantan said the government should not only focus on local people who clear land by burning because the community has local wisdom to prevent fires. The government has not been brave enough to sanction companies that burn hundreds of hectares of land. (Walhikalbar, 2023) According to Wahana Lingkungan Hidup Indonesia, 3,275 hotspots were observed in 203 oil palm plantation concessions and 1,675 hotspots in 20 companies with Industrial Plantation Forest (H.T.I.) concession licenses in West Kalimantan. In 2024, forest and land fires again occurred in Bansir Laut Sepakat II End Village, Limbung Village and Rasau Jaya Village. Due to these fires, Pontianak City and Kubu Raya Regency were shrouded in haze, which disrupted community activities. (P.I. Editor, 2024)

Clearing agricultural land by burning is commonly practised by most people living in rural areas or around forests. Apart from being considered adequate because it is easy and saves energy and time, the people of West Kalimantan also have a hereditary belief that has become local wisdom that clearing land by burning will restore soil fertility and plants will thrive. (Fonny Rianawati, 2020). Local wisdom (Koentjaraningrat, 1946) suggests that local wisdom has a solid social and cultural dimension because it is born from human patterned treatment activities in social life. Local wisdom can manifest in various forms, such as ideas, values, norms, and regulations in the realm of culture, while in social life, it can be in the form of religious systems, community systems and organizations, knowledge systems, livelihood systems and technology and equipment systems.

In West Kalimantan Regional Regulation No. 2 of 2022, land clearing for cultivation of a maximum of 2 hectares using limited and controlled burning using firebreaks carried out in rotation per head of household is permitted. However, the opening of cultivation based on local wisdom by burning is prohibited on peatlands. Criminal provisions in Article 26 of West Kalimantan Regional Regulation No. 2 of 2022 concerning Control of Forest and Land Fires are not imposed on communities that pay attention to local wisdom in their respective regions that carry out land clearing activities by burning using the method when burning a maximum of 2 (two) hectares per head of household with types of rice, secondary crops and or vegetables that have existed and been cultivated for generations in the local area.

The policy has caused conflict in the community because most forests in West Kalimantan are flammable peat areas. The West Kalimantan government must still apply appropriate technology to communities clearing agricultural land. This causes forest fires because fires are difficult to control. In addition, the source of hotspots is not only community-owned plantations but also palm oil entrepreneurs (Jawad et al., 2015). (Jawad et al., 2015). According to Edward III (1980), there needs to be communication in policy implementation so that policies remain consistent and are easily understood by the target group when implemented. There are three variables in communication, namely Transmission, Clarity, and Consistency, which need sufficient resources and disposition, namely the support of stakeholders in policy implementation and an easy and simple bureaucratic structure. The following are the results of community plantation crops around the forest area.

Vegetable and chilli pepper crops



Figure 2.

Community Rice Crops



The people around the forest, mostly Dayak, depend on gardening for their livelihoods. The results of gardening will be sold and consumed by themselves. In addition, the community also grows rice to meet food needs. Community farming in forest areas occurs in several districts,

such as Kubu Raya, Ketapang, Sekadau, Mempawah, Sambas, North Kayong and Kapuas Hulu. The economy in West Kalimantan is driven by the primary sector as the base sector and the secondary sector as the supporting sector. The movement of the economy is supported by various potentially rich natural resources such as agriculture, plantations and livestock. Forests and land are the community's primary sectors that open dry and wetlands. Both dryland and wetland agriculture have great potential; several commodities are cultivated: rice, corn, sweet potatoes, soybeans, peanuts, and vegetables and fruits. The centres of these commodities include the sub-districts of Sungai Kakap, Terentang, Batu Ampar, Rasau Jaya and Teluk Pakedai. These areas are well-known in West Kalimantan as agricultural centres with considerable agricultural production. (Kalbar.BPS.go.id, 2023).

Based on these problems, this study aims to determine how government policies can protect local wisdom in forest and land management and control of forest and land fires in West Kalimantan.

Methods

This research uses qualitative research methods with descriptive analysis. The research location is in West Kalimantan Province. Data collection methods used were observation, interviews, and documentation. The focus of this research is the extent to which government policies can protect local wisdom in forest and land management and control of forest and land fires in West Kalimantan.

The determination of informants is determined through *the purposive sampling* method, namely the determination of research informants tailored to the needs; this is because not all informants have criteria that are by the phenomenon to be studied. The informants in this study are:

1. Head of the Land and Forest Fire Management Division of the West Kalimantan Provincial Environment and Forestry Agency
2. Non-Governmental Organization (Masyarakat Peduli API)
3. Land and Forest Fire Management Agency Prov. West Kalimantan

Data analysis in this study is as follows:

1. Data Condensation
2. Data Presentation
3. Drawing conclusions

A qualitative analyzer begins to look for the meaning of things, noting explanatory regularities, possible configurations, causal pathways, and propositions. "Final" conclusions may

not emerge until the end of data collection, depending on the size of the collection of field notes and the coding, storage, and retrieval methods used (Huberman, 2014). (Huberman, 2014).

Analysis

Policy vs Local Wisdom: Controlling Forest and Land Fires in West Kalimantan

Forests provide abundant resources for many lives on Earth. In both anthropocentric and biocentric perspectives, this reciprocal relationship exists. Forests play an essential role in human life; commodities sourced from forests have supported humans for a long time, as well as the ability of forests to produce oxygen and water for life. From a social aspect, the interaction between forests and humans inspired the birth of human civilization. Besides humans, forests are habitats for animals and sources of germplasm and biodiversity in a forest ecosystem. (Gemawan, 2023).

West Kalimantan Province is located in the western part of Kalimantan Island, between 2°08' North latitude and 3°02' South latitude and between 108°30' - 114°10' East longitude on the earth map (B.P.S., 2023). The West Kalimantan region is passed by the Equator line (latitude 0°) based on the specific geographical location. The influence of this location makes West Kalimantan one of the tropical regions with high temperatures. The total area of West Kalimantan reaches 14.73 million hectares, equivalent to 7.53% of the total area of Indonesia (B.P.S., 2023).

The West Kalimantan Provincial Environment and Forestry Service provides social forest permits for agricultural land covering an area of 76,370 ha and a combined subject of 10 villages. The provision of forest and land management is in accordance with the potential of the community and agricultural conditions that are used as a source of economy for the people of West Kalimantan (Menlhk, 2019).

According to the Central Bureau of Statistics, West Kalimantan has a forest area of more than 8.16 million hectares, about 5.9% of Indonesia's total forest area of 101.22 million hectares. From 2001 to 2022, West Kalimantan lost more than 3.83 million hectares of tree cover due to land use change and forest and land fires (Global et al., 2023). Forest fires have a huge impact, not only on West Kalimantan but even on neighbouring countries. In the 2014 forest fire phenomenon, the forest burned in West Kalimantan reached 196 thousand hectares. The smoke from the fires penetrated the territorial boundaries of Malaysia, Singapore and Brunei Darussalam. (Walhikalbar, 2023).

Figure 3.1.**Forest and land fire suppression process**

Source: Kompas

The West Kalimantan government formulated a regional regulation policy No. 2 of 2022 concerning Forest and Land Fire Control, which aims to prevent, control and handle post-burning. Prevention of forest and land fires is carried out through the Regional Disaster Management Agency (B.P.B.D.) taking steps to prevent forest and land fires as follows:

1. Everyone is prohibited from burning or taking actions that may cause forest and land fires, intentionally or unintentionally.
2. Socialization of land clearing by not burning
3. Establish a community fire awareness group
4. Conduct field patrols in forest areas prone to fire
5. Appeal to the community to immediately report if a hotspot is found.

The Environment and Forestry Service coordinates with B.P.B.D. for forest and land fire management in the following way:

1. Setting up fire extinguishers and water barriers
2. Cooperate with related parties for aerial suppression
3. Extinguishing fires in burnt forest areas.

The West Kalimantan government prohibits anyone, intentionally or unintentionally, from burning or taking actions that can cause forest or land fires. People who violate the law will be penalized by being banned from clearing burned land for 3 to 5 years. This excludes indigenous people who use the principles of local wisdom to clear land by burning to restore soil fertility. However, according to the Regional Regulation, the maximum area of land that can be burned is 2 hectares, with a note that fire breaks must be made to avoid forest and land fires. According to research results (Asteriniah & Sutina, 2017), policy implementation needs to be socialized optimally in advance and supported by reliable human resources. In dealing with forest and land

fires, the West Kalimantan government certainly requires qualified resources, both human resources and budgets, followed by compliance with policy implementers.

The Environment and Forestry Service of West Kalimantan Province still needs more human resources, especially the participation of plantation crop entrepreneurs and local communities to clear land without burning. There is a lack of fire extinguishers distributed to communities and the development of effective technology to clear land without burning. According to Budiningsih (2017), in controlling forest and land fires, institutional strengthening, such as human resources, enforcement of local regulations and budgets for effective technology development, and coordination with various parties is very important.

The Regional Disaster Management Agency (B.P.B.D.), the Environment and Forestry Service and the West Kalimantan Police arrested nine forest or land-burning suspects in Limbung Village, Sungai Raya District. The police said that of the nine perpetrators who were secured, almost all of them burned land with the mode of their own land for agriculture. (Rino Kartono Mawardi, 2023). As a result of burning one's land, the spread of forest and land fires is widespread and difficult to control. This has resulted in a high Air Pollution Standard Index (I.S.P.U.). Based on West Kalimantan Regional Regulation No. 2 of 2022 concerning the control of forest or land fires, the sanction for suspected perpetrators of land burning that causes forest fires is the temporary suspension of business activities for three years for forests or land burned due to negligence and temporary suspension of business activities for five years for forests and land that are deliberately burned.

As a result of these arrests, the community requested that the government be more fair and not selective in the implementation of Regional Regulation No. 2 of 2022 concerning the control of forest and land fires because, based on data from Walhi West Kalimantan, the number of hotspots found from January to August 2023 reached 1,243 hotspots and was dominated by companies holding oil palm concession rights. The distribution of hotspots is as follows:

The following is the distribution of hotspots in oil palm plantation companies in 2023.

Table 1.1
Distribution of hotspots in the company
palm oil leaseholders 2023

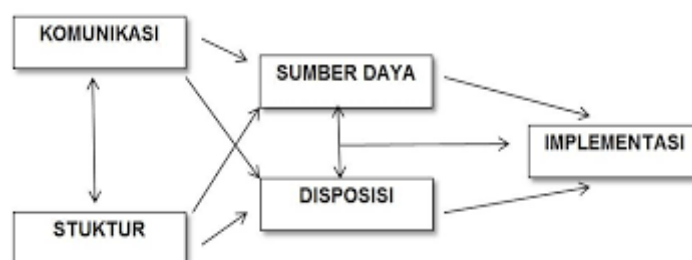
Company Name	Number of hotspots
1. PT PN XIII Parindu	276 Point
2. PT Daya Landak Plantation	124 Point
3. PT Arvena Sepakat	167 Point
4. PT Sumatera Makmur Lestari	62 points
5. PT Agri Sentral Lestari	119 Point
6. P.T. Kebun Ganda	118 Point
7. PT Sebukit Internusa	116 points

8. PT Sime Agro Indo	89 Point
9. PT Mitra Austral Sejahtera	86 points
10. PT Prana Indah Gemilang	86 points
11. PT Mahkota Rimba Utama	238 points,
12. PT Finnantara Intiga	676 points,
13. PT Prima Bumi Sentosa	255 points,
14. PT Mitra Jaya Nusaindah	76 Ducks
15. PT Inhutani III Nanga Pinoh	77 points
16. P.T. Bumi Mekar Hijau	79 Ducklings,
17. PT Mayawana Persada	96 Ducklings,
18. P.T. Boma Plantation	118 Tick,
19. PT Wana Hijau Pesaguan	135 Tick,
20. PT Nitiyasa Idola	168 points,

Source: Walhikalbar, 2023

From these data, it can be seen that the enforcement of regional regulations still needs to be improved for palm oil plantation entrepreneurs. The occurrence of forest and land fires is not only from the community as farmers but also from palm oil companies with industrial plantation forest business licenses in West Kalimantan. The people of West Kalimantan feel that the government tends to focus on farmers targeted as perpetrators of forest and land fires. On the one hand, local wisdom and the protection of local wisdom are less protected by the government by the contents of regional regulation no. 2 of 2022. Walhi West Kalimantan said that government policies can affect the income of people who depend on the harvest of rice, vegetables and so on. This will also affect poverty and unemployment rates. Do not be surprised that many West Kalimantan people become migrant workers in Malaysia because it is difficult to find work in their homeland. (Walhikalbar, 2023)

According to (Edwards III, 1980), The implementation of forest and land fire control policies can run well and be accepted by all parties, so it is necessary to fulfil the following implementation model:



Communication

The Environment and Forestry Service of West Kalimantan Province is a regional apparatus that organizes government affairs in the area of environmental and forestry. In combating forest and land fires, the Environment and Forestry Service has the main tasks and functions of carrying out the contents of forest and land fire management policies and

coordinating technical guidance with relevant *stakeholders*. Communication and socialization are needed for coordination and technical guidance for communities and palm oil entrepreneurs to run well. Based on the findings in the field, the government conducted meetings with communities and plantation owners to form community fire awareness groups. In addition, the government also advised the community to clear only the land by burning if the area is less than 2 hectares. According to (Bastaman & Komir, 2010), an organization's or organizational performance's success at any level or type, including local government organizations, will be determined mainly by its communication activities or communication within the organization.

In the early stages of socialization, the West Kalimantan government provided fire extinguishers and training on how to deal with forest and land fires. In addition, it also reminded the public and entrepreneurs regarding strict sanctions in the form of revocation of business licenses and closure of burned forests or land for a minimum of 3 years and a maximum of 5 years for perpetrators who deliberately burn forests. The Department of Environment and Forestry also conveyed that people with local wisdom who want to clear land by burning should pay attention to the provisions of regional regulations, namely, the maximum land area that can be cleared by burning is 2 ha. However, they must use the firebreak method. The arrest of 9 forest and land burning perpetrators for violating regulations that cause forest and land fires.

Figure 4.

Fire Fighting Assistance Process



Resources

The smooth communication process with relevant *stakeholders* is also strongly supported by the availability of existing resources, especially human resources in the Environment and Forestry Service and B.P.B.D. of West Kalimantan Province. These resources have been able and willing to communicate forest and land fire management through assistance and socialization of government policies. Regarding the number of employees, it still needs to be improved, especially

during firefighting and field patrols. Therefore, public understanding and participation of the community or business is essential for forest and land fire suppression. According to (Ariany, 2013), local governments must pay attention to the capacity and quality of apparatus resources by conducting training to improve the performance of public service organizations for public service provider organizations in the regions.

The Environment Agency and West Kalimantan B.P.B.D. have attended various regional disaster management trainings, so they already have the competence to direct, assist and provide socialization to the community. Based on the results of the interviews, it is known that people with local solid wisdom are closed and need continuous effort and assistance to follow the government's direction not to burn land that exceeds 2 hectares. The company is cooperative, although many hotspots are still found in the company area. The government continues to take firm action against companies that burn forests and land. This action is based on regional regulations to revoke the palm oil company's license. This was evident in 2019 when several companies were subject to administrative sanctions and revocation of business licenses.

Implementor Attitude

The attitude of policy implementers, in this case, the Environment and Forestry Service and the West Kalimantan BPBD, is very supportive of forest and land fire management policies. This can be seen from the monitoring, supervision, and patrols carried out every week. In addition, the Environment and Forestry Service and B.P.B.D. West Kalimantan also made water catchment ditches and installed billboards or warning boards prohibiting burning forests and land. In addition, the community supports it, but the government must protect and accompany local wisdom. So, any form of policy should be in the public interest or the community. As stated by (Tachjan, 2008) "Quality public policy is not only the opinion or opinion of public administrators, but must also contain public opinion as a representation of the public interest.

The West Kalimantan government is firmly committed to tackling forest and land fires. Based on the results of interviews in the field, in 2022, the West Kalimantan Regional Disaster Management Agency (B.P.B.D.) installed early warning alarms in forest and land areas. This can help B.P.B.D. to respond more quickly to the field if a fire occurs. For communities with local wisdom, B.P.B.D. provides a contact number to the local tribal chief or R.T. head to contact immediately if the community burns more than 2 hectares or there are indications of widespread forest and land fires.

Bureaucratic Structure

An easy and serving bureaucracy also supports implementing forest and land fire control policies in West Kalimantan. Public organizations are oriented towards serving the public

interest. The organizational structure of the West Kalimantan Environment and Forestry Service based on West Kalimantan Governor Regulation No. 63 of 2019 The organizational structure consists of:

- a. Head of Service
- b. Secretariat
- c. Waste Management Division
- d. Environmental Supervision Division
- e. Forest management sector
- f. Natural resource conservation protection sector
- g. Community Empowerment Division
- h. Technical implementation units and functional position groups

Community fire groups are formed at the village or sub-district level to help coordinate with the government if there are indications of forest and land fires. Implementing complex land and forest fire management policies requires the cooperation of various actors, including the government, the private sector and the community. When the bureaucratic structure is conducive, and there is good cooperation between actors, this will cause ineffectiveness and hinder policy implementation. According to (Edward III, 1980), there are two main characteristics of bureaucracy: standard operating procedures and fragmentation.

Standard Operating Procedures (S.O.P.s) are the development of demands for certainty of time and resources and the need for uniformity in complex and large organizations. Fragmentation is the distribution of responsibility for a policy to several different bodies requiring coordination. In overcoming forest and land fires in West Kalimantan, the Environment and Forestry Service coordinates with the Regional Disaster Management Agency to be integrated in preventing and extinguishing forest and land fires. In addition, each regional apparatus organization already has clear standard operating procedures by regional regulations to protect local wisdom with assistance. However, it has not been sustainable due to limited budget and staff.

Leadership Commitment

Leadership commitment certainly affects the successful implementation of local forest and land fire management regulations. The leadership's commitment can be seen in the severe efforts of the Governor, B.P.B.D., and the West Kalimantan Environment and Forestry Service in controlling forest and land fires. This can also be seen in the declining trend in forest and land fires from 2019-2023. The Governor of West Kalimantan also frequently visits forest fire locations

and reminds relevant public organizations always to be committed to forest and land fire management.

The West Kalimantan government provides guidance and assistance to help the community clear agricultural land without burning because the wind and the fire easily carry the condition of peat soil spread below the ground surface. Land clearing in the planting season needs guidance and assistance from the government, which will provide a sense of protection, and the community will consider government policies to protect and provide benefits rather than dropping or blaming.

Conclusion

Based on the results of the research and analysis of the discussion, it is concluded that the West Kalimantan Provincial Environment and Forestry Service carries out monitoring and evaluation of locations prone to forest and land fires on forest and land fire prevention activities such as counselling, making technical instructions, and providing infrastructure for communities and palm oil entrepreneurs. The West Kalimantan Environment and Forestry Service conducts meetings with communities and palm oil plantation entrepreneurs to form community fire care groups that aim to assist the government in preventing and extinguishing forest and land fires. In addition, the government also suggested that the community with local wisdom should not clear land by burning more than 2 hectares with the condition of using the firebreak method. The arrest of 9 perpetrators of forest and land burning for violating local regulations that caused forest and land fires. In addition, the uneven distribution of fire prevention infrastructure has made it difficult for the community to extinguish fires that spread on the surface of peat soil.

The smooth process of supervision, evaluation, and assistance of firefighting infrastructure for farmers is strongly supported by the availability of existing resources, especially those related to human resources and government budgets in the West Kalimantan Provincial Environment and Forestry Service. The West Kalimantan Environment and Forestry Service employees have the competence to socialize and assist in forest fire management. In terms of the number of employees and budget for procuring firefighting infrastructure, it still needs to be improved, especially when extinguishing fires and field patrols. People with local solid wisdom are closed, making it difficult for the government to prohibit clearing land that exceeds 2 hectares by burning. On the other hand, the government also needs help accessing the location of forest and land fires due to damaged and steep roads. Palm oil plantation companies are cooperative, although many hotspots are still found in the company area. The government

continues to take firm action against companies that burn forests and land. This action is based on regional regulations to revoke the palm oil company's license.

Based on these conclusions, the West Kalimantan Provincial Environment and Forestry Service needs to prepare an adequate number of human resources and budget to work optimally in implementing regional regulations on forest and land fire management. In addition, the government also needs to prepare environmentally friendly technology that can be used by the community when clearing land and provide continuous assistance to communities that have local wisdom with a persuasive approach through local customary leaders so that more respect for local communities and the community will participate in forest and land fire management in West Kalimantan.

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