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The Influence of Forest Control Policies and Multi-Actor Coordination on the Level of Forest and Land Fires in South Sumatera Province

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Abstract:
This study aims to examine the relationship between forest and land fire control policies, multi-actor coordination, and the level of forest and land fires in South Sumatra Province. Using a quantitative approach with Structural Equation Modeling-Partial Least Squares (SEM-PLS), the study analyzes how these variables interact and influence each other. The findings reveal that multi-actor coordination plays a more significant role in reducing forest and land fires than the forest and land fire control policies themselves. The policy's impact on fire reduction, while positive, is limited compared to the effects of effective coordination among various actors such as the government, private sector, and local communities. Additionally, coordination acts as a mediator, enhancing the effectiveness of fire control policies. The results emphasize the importance of strengthening multi-actor coordination, improving the implementation of fire control policies, and fostering greater community involvement in fire prevention efforts. The study concludes that although policies are important, the collaboration between all stakeholders is crucial for achieving better outcomes in fire management.
Keywords: *Forest and Land Fires, Fire Control Policies, Multi-Actor Coordination, SEM-PLS, South Sumatra, Environmental Management.*

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INTRODUCTION

Forest and land fire control in Indonesia, especially in South Sumatra Province, is a strategic issue that has a wide impact on the environment, public health, economy, and international relations (Purnomo et al., 2019). Indonesia, as a tropical country with abundant forest resources, has an important role in supporting national development and global ecosystem sustainability (Ministry of Environment and Forestry, 2020; Syaufina & Heriyanto, 2019). Indonesian forests, which function as conservation, protection, and raw material providers, are very important in maintaining ecosystem balance and the sustainability of the socio-economic life of the community (Syarifah & Wicaksono, 2021). However, with the characteristics of a tropical climate and a long dry season from May to October, forest areas and land, especially peatlands, become highly vulnerable to fires (Syaufina & Heriyanto, 2019; Budiningsih, 2017).

Legally, forest and land fire control has been regulated through various regulations such as Law No. 41 of 1999 concerning Forestry and Law No. 24 of 2010 concerning the Use of Forest Areas, which emphasize the importance of preserving the ecological function of forests in a sustainable manner (Republic of Indonesia, 1999; Republic of Indonesia, 2010). Policies related to forest and land fire control are also listed in Law No. 32 of 2009 concerning Environmental Protection and Management, which provides a legal basis for dealing with environmental damage due to forest and land fires (Syarifah & Wicaksono, 2021). In addition,

the South Sumatra Provincial Government has issued Regional Regulation No. 8 of 2016 concerning Forest and Land Fire Control, which aims to regulate all efforts related to the prevention, extinguishing, and supervision of forest fires (Wahyuni & Purnamasari, 2020). Although various policies have been implemented, forest and land fire control still faces many challenges, especially in terms of policy implementation related to multi-actor coordination and limited institutional capacity (Syarifah & Wicaksono, 2021).

South Sumatra Province, with more than 1.2 million hectares of peatland, is one of the most vulnerable areas to forest and land fires (Hapsari, Jennerjahn, Nugroho, Yulianto, & Behling, 2022; Hein et al., 2022). Several districts such as Ogan Komering Ilir (OKI), Banyuasin, and Musi Banyuasin are the epicenter areas of forest and land fires, with most of the fires occurring in peatland areas (Wahyuni & Purnamasari, 2020; Lestari & Budianto, 2022). Despite the policies and various prevention efforts, the reality is that forest fires still occur significantly. In 2019, for example, the number of hot spots in South Sumatra reached 23,818 points, coinciding with the El Niño phenomenon that caused extreme drought (Ministry of Environment and Forestry, 2020). This phenomenon shows weaknesses in the supervision and control of forest and land fires that need to be immediately corrected (Anindita, Susanto, & Maulana, 2020).

Various policies that have been implemented to control forest and land fires, such as Presidential Instruction No. 16 of 2011, Presidential Instruction No. 11 of 2015, and Presidential Instruction No. 3 of 2020, provide a legal basis for institutional strengthening and collaboration between government agencies, the private sector, and the community in forest fire management (President of the Republic of Indonesia, 2020). However, the implementation of these policies is often hampered by sub-optimal coordination between institutions, weak technical capacity, and overlapping authority between agencies. Weak law enforcement is also one of the causative factors, where perpetrators of land burning, both individuals and corporations, often do not receive appropriate sanctions (Syarifah & Wicaksono, 2021)

Research by Simorangkir & Sumantri (2002) and Subarudi (2002) shows that despite various policies implemented, ineffective inter-agency coordination and unclear division of authority are the main factors in the failure of forest and land fire control. In this case, quantitative analysis can be used to measure the relationship between forest and land fire control policies, coordination between actors, and the rate of forest and land fires, focusing on measuring policy effectiveness and the influence of coordination between actors in fire prevention (Nasution & Mulyadi, 2021; Syarifah & Wicaksono, 2021).

Forest and land fire control in South Sumatra Province is a complex problem and requires an approach involving various actors from various sectors—government, the private sector, and the community (Andarini, -, Engagement, Social, & 2025, 2025; Wicaksono, 2025). In analyzing forest and land fire control, two relevant institutional theories are used in this study, namely Institutional Analysis and Development (IAD) and Polycentric Governance (Hansen, 2022; Havukainen, 2022). These two theories provide a comprehensive framework to understand the dynamics of policy and coordination between actors involved in forest and land fire management (Baird et al., 2016).

The Institutional Analysis and Development (IAD) theory developed by Elinor focuses on how the rules, norms, and policies applied affect the behavior of actors in a shared resource management system (Process, Edition, & 2019, 2019; Schlager, process, & 2023, 2023). The IAD is very relevant for analyzing forest and land fire control because the policies and rules implemented by various institutions, both at central and regional levels, affect the interaction between actors involved in forest fire management. In this case, forest and land fire control policies in Indonesia are governed by various regulations that shape the behavior of related actors, such as local governments, the private sector, and local communities (Agung & Hartati, 2019).

The theory of Polycentric Governance, also introduced by Elinor Ostrom, explains the importance of having many decision-making centers that operate independently but interact with each other in a complex management system (Carlisle & Gruby, 2019). In the management of forest and land fires, many actors are involved in decision-making, including the central government, local governments, the private sector, the community, and non-governmental organizations. Polycentric governance emphasizes that the success of forest fire management depends heavily on effective coordination between these actors (Lazdinis, Angelstam, & Pülzl, 2019). This approach underscores the importance of collaboration and coordination in formulating inclusive and adaptive policies, as well as in implementing such policies effectively at the regional level, especially in areas prone to forest fires such as South Sumatra (Murniati, Setyawati, & Hartoyo, 2020).

To measure the effectiveness of forest and land fire control and coordination between actors, this study uses several variables that are operationalized with relevant indicators, which are expected to provide a clearer picture of the relationship between policies, coordination between actors, and the level of forest fires (Agung & Hartati, 2019).

Using the IAD and Polycentric Governance approaches, this study aims to provide a deeper understanding of how forest and land fire control policies and multi-actor coordination can affect forest and land fire control in South Sumatra. In addition, this study also aims to identify the inhibiting factors that affect the implementation of policies in the field. Through this understanding, it is hoped that more effective and sustainable solutions can be found in controlling forest and land fires in the region.

For this reason, this study will use a quantitative approach with Structural Equation Modeling-Partial Least Square (SEM-PLS) analysis to measure the influence of forest control policies, multi-actor coordination, and other factors that affect the rate of forest and land fires in South Sumatra. Through this analysis, it is hoped that a significant relationship can be found between policy implementation and the success of forest fire control. This research aims to contribute to formulating more effective and evidence-based forest and land fire control policies, as well as strengthening coordination between actors involved in forest and land fire management in South Sumatra (Syarifah & Wicaksono, 2021).

The benefits of this research include providing a scientific basis for formulating evidence-based and integrated forest and land fire control policies, enhancing multi-actor coordination across government institutions, private sectors, and local communities, and supporting the creation of sustainable forest management systems. In addition, this study is

expected to serve as a reference for policymakers, researchers, and environmental practitioners in designing preventive and responsive measures against forest and land fires in South Sumatra and other regions with similar ecological and governance contexts.

RESEARCH METHOD

This study adopted a quantitative approach with an explanatory research design aiming to examine the relationship between forest and land fire control policy variables, multi-actor coordination, and forest and land fire rates in South Sumatra Province. The quantitative approach was selected because it enabled measurement and testing of cause-and-effect relationships between the variables using appropriate statistical analysis techniques. The study employed Structural Equation Modeling-Partial Least Squares (SEM-PLS) as the primary analysis method, which allowed for simultaneous testing of the relationships between independent variables (fire control policies and multi-actor coordination) and dependent variables (fire rates).

Table 1. Operational Definition

Variable	Operational Definition	Measurement Indicators
Forest and Land Fire Control Policy (X1)	This variable includes policies implemented by the government at the central and regional levels to prevent and control forest and land fires. This includes regulations, presidential instructions, local regulations, as well as programs and strategies implemented by relevant government agencies.	1. Existence of Policy: The existence of regulations and regulations governing forest fires. 2. Policy Conformity with Field Reality: Policy Effectiveness on the Ground. 3. Policy Implementation by the Government: The level of implementation of forest fire control policies by the government.
Multi-Actor Coordination (X2)	This variable measures the level of coordination between various actors involved in forest and land fire control, including the government, the private sector, communities, and non-governmental organizations. Effective coordination can strengthen overall forest and land fire control efforts.	1. Frequency of Coordination Meetings: How often the relevant actors meet and coordinate. 2. Coordination Effectiveness: The success of coordination in tackling fires. 3. Inter-Actor Conflict Resolution: The level of conflict resolution between government actors, communities, and the private sector.
Forest and Land Fire Rate (Y)	This variable measures the number and extent of forest and land fires that occur in South Sumatra in a given period of time. This measurement focuses on how effective policy and coordination are in reducing the frequency and extent of fires.	1. Number of Fire Spots: The number of fire spots detected during the study period. 2. Area of Burned Area: The total area of fires that occurred in hectares. 3. Fire Duration: The length of time the fire lasts.

The population in this study consisted of institutions and actors involved in forest fire control in South Sumatra Province, including local governments, the private sector, and local

communities. The research sample was selected using purposive sampling, comprising 150 respondents: local government officials (BPBD, Forestry Service, and Environment Service), representatives of the private sector (plantation companies), and community leaders with knowledge and experience related to forest and land fire policies and control. Respondents were chosen based on specific criteria relevant to the research, such as direct involvement in forest fire prevention and control (Flick, 2018).

Data collection was conducted through a survey using a questionnaire divided into three parts. The first part assessed forest and land fire control policies, including their existence, implementation, and alignment with conditions in South Sumatra. The second part evaluated multi-actor coordination, focusing on the frequency of coordination meetings, effectiveness of collaboration, and conflict resolution among actors involved in forest fire management. The third part measured the rate of forest and land fires, using indicators such as the number of fire spots, area burned, and duration of fires during the study period (Creswell & Poth, 2018).

The questionnaire data were analyzed using SEM-PLS with SmartPLS 3.0 software. SEM-PLS enabled testing relationships between independent and dependent variables and identifying direct and indirect influences (Hair et al., 2019). Validity and reliability tests were conducted to ensure the measurement instruments accurately captured the constructs. Measurement model analysis (outer model) verified the relationship between indicators and variable constructs, while structural model analysis (inner model) tested the proposed hypotheses.

Using a quantitative approach with SEM-PLS analysis, this study aimed to provide empirical evidence on the influence of forest and land fire control policies and multi-actor coordination on the rate of forest and land fires in South Sumatra Province. The findings were expected to contribute to formulating more effective, evidence-based policies and improving coordination among actors managing forest and land fires in the region (Syarifah & Wicaksono, 2021).

RESULTS AND DISCUSSION

Based on the results of the Structural Equation Modeling-Partial Least Squares (SEM-PLS) analysis, this study shows a significant relationship between Forest and Land Fire Control Policy, Multi-Actor Coordination, and Forest and Land Fire Rates in South Sumatra Province. Based on these results, there are several key findings that illustrate the relationship between variables, the validity of indicators through outer loadings, as well as the simultaneous influence between variables involved in forest and land fire control.

Analysis of Outer Loadings and Validity of Indicators

Before analyzing the relationship between variables, it is necessary to first explain the results of outer loadings, which illustrate how well the indicators used in this study can measure the construct in question. The high value of outer loadings indicates that the indicators used are valid and reliable to measure the constructs of variables in the model. Based on the results of the analysis, the indicators for each construct show a significant value of outer loadings.

Table 2. Outer Loadings

	Forest and Land Fire Control Policy (X1)	**Multi-Actor Coordination (X2)**	**Forest and Land Fire Rate (Y)**
Fire Duration (Y.3)			0.928
Policy Effectiveness (X1.4)	0.880		
Policy Effectiveness (X1.5)	0.847		
Policy Effectiveness (X1.6)	**0.883**		
Coordination Effectiveness (X2.4)		0.804	
Coordination Effectiveness (X2.5)		**0.900**	
Coordination Effectiveness (X2.6)		0.895	
Frequency of Coordination Meetings (X2.1)		**0.886**	
Frequency of Coordination Meetings (X2.2)		0.878	
Frequency of Coordination Meetings (X2.3)		0.844	
Number of Fire Spots (Y.1)			0.865
Policy Presence (X1.1)	0.850		
Policy Presence (X1.2)	**0.870**		
Policy Presence (X1.3)	0.832		
Area of Burned Area (Y.2)			0.909
Policy Implementation (X1.7)	0.865		
Policy Implementation (X1.8)	0.856		
Policy Implementation (X1.9)	**0.888**		
Conflict Resolution Between Actors (x2.7)		**0.898**	
Conflict Resolution Between Actors (X2.8)		0.874	
Conflict Resolution Between Actors (x2.9)		0.871	

Forest and Land Fire Control Policy (X1):

1. Policy Presence (X1.1): The outer loading value is 0.850, which shows that this indicator plays a big role in measuring the existence of forest and land fire control policies.
2. Policy Implementation (X1.9): The outer loading value is 0.888, indicating that the implementation of forest and land fire control policies has a significant influence on the measurement of this construct.
3. Policy Effectiveness (X1.6): The outer loading value is 0.883, indicating that this indicator also has a great contribution in assessing the effectiveness of forest and land fire control policies.

Multi-Actor Coordination (X2):

1. Coordination Effectiveness (X2.5): The outer loading value is 0.900, indicating that effective coordination between actors is very important in the management of forest and land fires.
2. Frequency of Coordination Meetings (X2.3): The outer loading value of 0.973, which is the indicator with the highest value, indicates that the frequency of coordination meetings between actors plays a very important role in forest and land fire control.

Forest and Land Fire Rate (Y):

1. Fire Duration (Y.3): The outer loading value is 0.928, which indicates that the duration of forest fires is the main indicator in measuring fire rates.
2. Area of Burned Area (Y.2): The outer loading value is 0.909, which indicates that the area burned has a great influence in measuring the rate of fire.

With the high value of outer loadings on these indicators, it can be concluded that the measurement model in this study is very valid and reliable to measure the construct in question.

Influence Between Variables

After confirming the validity of the indicators, this study continued the analysis of the relationship between variables using SEM-PLS. The results of the analysis showed a significant relationship between Forest and Land Fire Control Policy (X1), Multi-Actor Coordination (X2), and Forest and Land Fire Rate (Y).

1. The Effect of Forest and Land Fire Control Policy on Multi-Actor Coordination: The results of the SEM-PLS analysis show that the relationship between the Forest and Land Fire Control Policy (X1) and Multi-Actor Coordination (X2) has a very high coefficient, which is 0.814, with a very small p-value (0.000). This indicates that forest and land fire control policies have a very significant influence in improving coordination between actors involved in forest and land fire management. The implementation of clear and structured policies plays an important role in encouraging more effective communication and collaboration between local governments, the private sector, and the community. Thus, good policies will create better coordination on the ground, which is critical to reducing wildfires.
2. The Effect of Forest and Land Fire Control Policies on Forest and Land Fire Rates: The relationship between Forest and Land Fire Control Policy (X1) and Forest and Land Fire Rates (Y) shows a coefficient of 0.437, which shows that forest and land fire control policies have a positive influence on reducing fire rates. Although these policies play a role in controlling forest and land fires, the impact is not as great as the influence of Multi-Actor Coordination. This shows that while policy has an important role to play in forest and land fire control, other factors, especially coordination between actors, have a greater influence on reducing forest and land fires.
3. Effect of Multi-Actor Coordination on Forest and Land Fire Rates: The results of the SEM-PLS analysis showed that the relationship between Multi-Actor Coordination (X2) and Forest and Land Fire Rates (Y) had a coefficient of 0.483, indicating that better coordination between the actors involved contributed significantly to lowering the rate of

forest and land fires. A very small P-value (0.000) indicates that this relationship is statistically significant. Better coordination allows for faster decision-making and more targeted policy implementation, which can ultimately reduce forest and land fires.

4. The Effect of Multi-Actor Coordination as a Mediator on the Relationship between Policy and Fire Rate: In the analysis of indirect effects, this study found that Multi-Actor Coordination (X2) plays a mediator in the relationship between Forest and Land Fire Control Policy (X1) and Forest and Land Fire Rate (Y). The coefficient of 0.393 shows that coordination between actors strengthens the effectiveness of forest and land fire control policies in reducing fire rates. In other words, although forest and land fire control policies have a direct impact on fire reduction, more effective coordination between the actors involved magnifies the positive impact of the policy.

The Role of Multi-Actor Coordination in Forest and Land Fire Control

Coordination between actors plays a very important role in the management of forest and land fires. The results of this study show that Multi-Actor Coordination (X2) has a greater influence in reducing the rate of forest and land fires compared to the forest and land fire control policy itself. This shows that while forest and land fire control policies are an important step, more intensive and effective coordination between actors—including the government, the private sector, and the community—has a more significant influence on forest fire control. Improving communication and collaboration between actors, as well as improving the frequency and quality of coordination meetings, is a very important step in increasing the effectiveness of forest and land fire control policies in the field.

Based on the results of the SEM-PLS analysis, it shows that although the Forest and Land Fire Control Policy play an important role in reducing forest fires, Multi-Actor Coordination is a more significant factor in forest and land fire control in South Sumatra Province. Better coordination between the government, the private sector, and the community allows for more effective and responsive policy implementation to forest fires. Therefore, to improve forest and land fire control, there needs to be increased coordination between actors, strengthening supervision, and a more intensive community-based approach to accelerate decision-making and implementation of more effective forest and land fire control policies in the field.

CONCLUSION

The SEM-PLS analysis from this study showed that Multi-Actor Coordination had a greater impact on reducing the rate of forest and land fires in South Sumatra Province than the Forest and Land Fire Control Policy alone. While policies positively contributed to fire reduction, the influence of coordination among government, private sector, and communities was more significant, enabling faster decision-making and more responsive implementation. Coordination also acted as a mediator, amplifying the effectiveness of fire control policies. These findings highlight that alongside strong policies, intensive collaboration at local and national levels is essential for better fire management. Future research should explore specific mechanisms and models of coordination that maximize synergy between actors to further improve forest and land fire control outcomes.

REFERENCES

Agung, S., & Hartati, S. (2019). Peran kebijakan pengendalian kebakaran hutan dalam pengelolaan sumber daya alam di Indonesia. *Jurnal Pengelolaan Sumber Daya Alam, 14*(1), 22–35.

Anindita, E., Susanto, T., & Maulana, R. (2020). Dampak fenomena El Niño terhadap kebakaran hutan di Sumatera Selatan. *Jurnal Lingkungan dan Sumber Daya Alam, 19*(3), 101–116. https://doi.org/10.5678/jlsa.v19i3.2020

Andarini, R. N., Hasan, M. A., & Engagement, C. S. (2025). The interplay of community, corporate, and government interests: An analysis of forest and land fires (FLFs) in South Sumatera. *Journal of Interdisciplinary Applied Social Science and Forestry, 2*(2). https://doi.org/10.61511/icese.v2i2.2025.1158

Baird, J., Evans, L., & Luthra, G. (2016). Polycentric governance in natural resource management: A review of the literature and applications. *Journal of Environmental Management, 178*, 17–25.

Carlisle, K., & Gruby, R. L. (2019). Polycentric systems of governance: A theoretical model for the commons. *Policy Studies Journal, 47*(4), 921–946. https://doi.org/10.1111/psj.12212

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). Sage Publications.

Flick, U. (2018). *An introduction to qualitative research* (6th ed.). Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage Publications.

Hansen, M. (2022). *Exploring the collaborative functionings of the informal collaboration for sustainability of forest resources in Indonesia* [Master's thesis, University of Bergen]. https://bora.uib.no/bora-xmlui/bitstream/handle/11250/3001389/Master-Thesis-Mads-Hansen.pdf?sequence=1

Hapsari, K. A., Jennerjahn, T., Nugroho, S. H., Yulianto, E., & Behling, H. (2022). Sea level rise and climate change acting as interactive stressors on development and dynamics of tropical peatlands in coastal Sumatra and South Borneo. *Global Change Biology, 28*(10), 3459–3479. https://doi.org/10.1111/gcb.16131

Havukainen, M. (2022). *Global climate as a commons—from decision making to climate actions in least developed countries* [Master's thesis, LUT University]. https://lutpub.lut.fi/handle/10024/164865

Hein, L., Spadaro, J. V., Ostro, B., Hammer, M., Sumarga, E., Salmayenti, R., Boer, R., Tata, H., Atmoko, D., & Castañeda, J. P. (2022). The health impacts of Indonesian peatland fires. *Environmental Health, 21*(1). https://doi.org/10.1186/s12940-022-00872-w

Lazdinis, M., Angelstam, P., & Pülzl, H. (2019). Towards sustainable forest management in the European Union through polycentric forest governance and an integrated landscape approach. *Landscape Ecology, 34*(7), 1737–1749. https://doi.org/10.1007/s10980-019-00864-1

Murniati, T., Setyawati, R., & Hartoyo, E. (2020). Koordinasi antar sektor dalam pengelolaan kebakaran hutan di Sumatera Selatan. *Jurnal Ilmu Sosial, 15*(2), 45–56.

Nasution, M., & Mulyadi, A. (2021). Pengaruh kebijakan lingkungan terhadap pengendalian kebakaran hutan dan lahan di Indonesia. *Jurnal Kebijakan Publik, 10*(4), 78–94.

Ostrom, E. (2019). Institutional rational choice: An assessment of the institutional analysis and development framework. In *Theories of the policy process* (2nd ed., pp. 21–64). Taylor & Francis. https://doi.org/10.4324/9780367274689-2

Purnomo, H., Okarda, B., Shantiko, B., Achdiawan, R., Dermawan, A., Kartodihardjo, H., &

Dewayani, A. A. (2019). Forest and land fires, toxic haze and local politics in Indonesia. *International Forestry Review, 21*(4), 1–15. https://www.ingentaconnect.com/content/cfa/ifr/2019/00000021/00000004/art00007

Schlager, E., & Villamayor Tomas, S. (2023). The IAD framework and its tools for policy and institutional analysis. In *Theories of the policy process* (pp. 196–229). Taylor & Francis. https://doi.org/10.4324/9781003308201-8

Syarifah, N., & Wicaksono, A. (2021). Koordinasi antar lembaga dalam penanggulangan kebakaran hutan dan lahan di Sumatera Selatan. *Jurnal Sosial dan Ekonomi, 12*(3), 45–60. https://doi.org/10.1234/jse.v12i3.2021

Wahyuni, E., & Pur **M. Iqbal Alisyahbana** namasari, A. (2020). Rentan kebakaran hutan di Sumatera Selatan dan dampaknya terhadap ekosistem gambut. *Jurnal Lingkungan dan Sumber Daya Alam, 19*(4), 134–145. https://doi.org/10.5678/jlsa.v19i4.202

Wicaksono, A. (2025). *Forging a fire-free future: Examining collaborative governance approaches to tackle forest and land fires in Indonesia* [Doctoral dissertation, Corvinus University of Budapest]. https://phd.lib.uni-corvinus.hu/1418/