Indonesia-South Korea Cooperation in Forest Fire Management in Ogan Komering Ilir: From Securitization to Adaptive Governance

Ferdiansyah Rivai[1], **Bagaskara Sagita Wijaya[1]***, **Syuryansyah[1]**, **Ridha Amalia[1]**
[1]Department of International Relations, University of Sriwijaya, 30139, Sumatera Selatan -Indonesia

Corresponding Author:
Bagaskara Sagita Wijaya
Department of International Relations, University of Sriwijaya.

Email:
bagaskarasagitawijaya@fisip.unsri.ac.id

Abstract

Abstract Forest and land fires in Ogan Komering Ilir (OKI), South Sumatra, continue to pose a persistent environmental challenge. This study examines Indonesia–South Korea cooperation through the Korea–Indonesia Forest Cooperation Center (KIFC), which was established in response to the securitisation of forest fires and has evolved into a model of adaptive governance. By examining KIFC, this article demonstrates that securitization enables international cooperation and technical control, yet simultaneously constrains deeper adaptive governance needed to address local fire drivers. By employing a qualitative case study approach, this research examines KIFC's initiatives from 2015 to 2024, utilizing a combination of document analysis, policy review, and field observations. The findings show that while KIFC introduced advanced monitoring systems and early warning technologies, local economic dependence on land-clearing and fragmented governance remain significant barriers. This study argues that KIFC has succeeded technically but faces challenges in addressing deeper structural issues. The cooperation's success hinges on the alignment of external technical solutions with local socio-economic realities and the fostering of community-based resilience. This study contributes to understanding how international cooperation can bridge the gap between securitization and adaptive governance, offering lessons for future sustainable environmental governance in Indonesia and beyond.

Abstrak. *Kebakaran hutan dan lahan di Ogan Komering Ilir (OKI), Sumatera Selatan, terus menjadi tantangan lingkungan yang berkelanjutan. Studi ini meneliti kerja sama Indonesia–Korea Selatan melalui Korea–Indonesia Forest Cooperation Center (KIFC), yang didirikan sebagai respons terhadap sekuritisasi kebakaran hutan dan telah berkembang menjadi model tata kelola adaptif. Dengan meneliti KIFC, artikel ini menunjukkan bahwa sekuritisasi memungkinkan kerja sama internasional dan pengendalian teknis, namun secara bersamaan membatasi tata kelola adaptif yang lebih dalam yang dibutuhkan untuk mengatasi pendorong kebakaran hutan. Melalui pendekatan studi kasus kualitatif, penelitian ini meneliti inisiatif KIFC dari tahun 2015 hingga 2024, dengan cara menganalisis dokumen, meninjau kebijakan, dan observasi lapangan. Hasil temuan menunjukkan bahwa meskipun KIFC memperkenalkan sistem pemantauan canggih dan teknologi peringatan dini, ketergantungan ekonomi lokal pada pembukaan lahan dan tata kelola yang terfragmentasi tetap menjadi hambatan yang signifikan. Studi ini berpendapat bahwa KIFC telah berhasil secara teknis tetapi menghadapi tantangan dalam mengatasi masalah struktural yang lebih dalam. Keberhasilan kerja sama ini bergantung pada keselarasan solusi teknis eksternal dengan realitas sosial-ekonomi lokal dan penebangan hutan berbasis komunitas. Studi ini berkontribusi pada dalam menjelaskan bagaimana kerja sama internasional dapat menjembatani kesenjangan antara sekuritisasi dan tata kelola adaptif, menawarkan pelajaran untuk tata kelola lingkungan berkelanjutan di masa depan di Indonesia dan di luar negeri.*

About Author:

Ferdiansyah Rivai The author is currently a lecturer in the Department of International Relations, Faculty of Social and Political Sciences, Universitas Sriwijaya. He holds a Master's degree at the International Relations program at Universitas Gadjah Mada. *Email*: ferdiansyah@unsri.ac.id

Bagaskara Sagita Wijaya. The author is currently a lecturer in the Depatment of International Relations, Universitas Sriwijaya. He holds a master's studies in

the International Relations program at Universitas Gadjah Mada. *Email*: bagaskarasagitawijaya@fisip.unsri.ac.id

Syuryansyah. The author is a lecturer in the Department of International Relations, Universitas Sriwijaya. He holds a master's degree in international relations at Universitas Muhammadiyah Yogyakarta. *Email*: syuryansyah@fisip.unsri.ac.id

Ridha Amalia. The author is a lecturer in Department of International Relations, Universitas Sriwijaya. She holds a master's degree in international Affairs and Global Governance from Zhejiang University. *Email*: ridhaamalia@fisip.unsri.ac.id

Introduction

Forest and land fires in Indonesia, particularly in Ogan Komering Ilir (OKI), South Sumatra, are one of the country's most significant environmental challenges. These fires, primarily driven by agricultural land-clearing practices, result in extensive ecological degradation, loss of biodiversity, and severe socio-economic impacts. In 2015, the fires devastated over 2.6 million hectares of land, releasing more than 1.6 billion tons of CO_2 and causing an estimated economic loss of USD 16.1 billion (Edwards & Heiduk, 2015). Despite continuous national efforts, satellite imagery from MODIS and recent reports from BMKG show persistent hotspots in the region, indicating persistent gaps in governance and fire prevention measures (Kompas, 2023). These recurring fire outbreaks highlight the limitations of conventional governance approaches in addressing the underlying causes of forest fires and their long-term environmental consequences (Tacconi, 2016).

The Indonesian government has shifted its approach to managing forest fires over time. Initially, fire management was framed as an environmental and developmental issue, with a focus on land restoration and reforestation. However, in the face of recurring fires, the government increasingly viewed the issue through a securitization lens, treating forest fires as an urgent national security threat. This shift involved the use of emergency budgets, military forces, and multi-agency task forces (Buzan et al., 1998; Setiawan & Hadi, 2007). While securitization helps direct immediate attention and resources, it often overlooks the social and economic drivers of land-clearing activities, such as local economic dependence on palm oil plantations and inadequate governance at the local level (Floristella, 2013; Noojipady et al., 2017).

While securitization has its merits in addressing immediate threats, it often leads to short-term, crisis-oriented responses that fail to address the root causes of fire risks. The need for a more flexible and participatory approach to governance has led to the rise of adaptive governance. This model emphasizes collaboration, local empowerment, and resilience in the face of uncertainty (Folke et al., 2016). In adaptive governance, decision-making is decentralized, allowing for more local involvement and the integration of traditional knowledge with scientific expertise (Chaffin et al., 2014; Olsson et al., 2014). This shift aims to create systems that can adapt to changing environmental and socio-economic conditions, fostering long-term sustainability and reducing dependency on external interventions.

Research on forest and peatland fires in Southeast Asia has evolved into several interconnected strands. One group of studies focuses on the biophysical dimension, which includes quantifying emissions, fire dynamics, and the physical extent of burned areas. These studies have revealed the extraordinary scale of Indonesia's peatland fires. Gaveau et al. (2014) utilized long-term satellite observations to demonstrate that peat fires release disproportionately large amounts of greenhouse gases and aerosols, even in non-drought years, suggesting that the problem is structural rather than seasonal. Page et al. (2011) further emphasized that tropical peatlands store significant carbon stocks, and their degradation poses substantial risks to global climate stability. These findings underscore the urgency of

addressing the fire crisis, which is not only an environmental issue but also a transboundary problem that requires coordinated action.

Scholars have emphasized that fire prevention requires a combination of restoration, incentives, enforcement, and community engagement. Carmenta et al. (2021) argue that fire management must integrate community-driven approaches with technical expertise. For instance, Carlson et al. (2018) found that programs linking local livelihoods with enforcement mechanisms can reduce fire frequency, but only when institutional monitoring is consistent. Still, structural weaknesses persist, such as fragmented authority across ministries, weak enforcement capacity at local levels, and entrenched political–economic interests that hinder the implementation of cohesive policies.

Recent research has expanded the scope to investigate how international cooperation influences domestic governance. Studies on market-based instruments and certification schemes have shown mixed results. Carlson et al. (2018) demonstrated that certification schemes, while effective in reducing deforestation in specific contexts, have limited success in preventing peat fires unless combined with hydrological restoration and community participation. However, the literature suggests that bilateral cooperation initiatives, such as KIFC, offer a more effective solution when they go beyond the mere transfer of technology. The key to success lies in addressing local governance structures, economic incentives, and empowering communities to sustain long-term change (Yu et al., 2024). KIFC represents a model of climate diplomacy that combines technical support with normative commitments to global sustainability goals, such as SDG 13 (Climate Action) and SDG 15 (Life on Land).

The establishment of the Korea-Indonesia Forest Cooperation Center (KIFC) in 2015 marks a significant shift in Indonesia's forest fire governance, positioning international cooperation as a key tool in addressing both environmental and governance challenges. The center was created through a bilateral agreement between Indonesia's Ministry of Environment and Forestry (KLHK) and the Korea Forest Service (KFS), leveraging South Korea's post-war reforestation experience to provide technological solutions and capacity-building support in Indonesia. KIFC's role has evolved from a purely securitization-driven project to a more integrated approach that seeks to combine technological innovation with local empowerment (FAO, 2025; Lee et al., 2019). However, while KIFC has introduced early warning systems and fire monitoring technologies, local communities continue to face economic incentives to engage in land-clearing, and institutional fragmentation between national and local authorities remains a significant barrier (Gaveau et al., 2014; Rochmayanto et al., 2021).

By design, KIFC is a product of securitized, state-led diplomacy aimed at rapid risk control. In practice, however, it is compelled to operate within the constraints of adaptive governance, where local socio-economic conditions and fragmented institutions shape its effectiveness. While KIFC has strengthened technical capacity, institutional fragmentation and economic dependence on fire-based practices continue to limit the sustainability of fire prevention efforts in OKI. Addressing these challenges requires not only technological solutions, but also policy reform and deeper community engagement, which can help ensure policies are relevant and supported by local populations.

This study critically examines KIFC's role in mediating the transition from securitization to adaptive governance in Indonesia's forest fire management system. Focusing on OKI, it identifies persistent gaps in addressing local socio-economic conditions and inter-institutional coordination, while also exploring how bilateral cooperation might be restructured to enhance adaptive capacity beyond crisis response. Recognizing the tension between securitization and adaptive governance can help the audience appreciate the complexity and urgency of developing balanced, sustainable strategies. In doing so, the article contributes to broader debates on environmental diplomacy and transnational governance by demonstrating how international partnerships can facilitate the integration of the Sustainable Development Goals—particularly SDG 13, SDG 15, and SDG 17—into domestic governance contexts.

Taken together, the findings position Indonesia's forest fire governance within an enduring tension between securitization and adaptive governance, underscoring the need to assess KIFC not only as a technical intervention but as a political and institutional experiment in managing complex environmental risks.

Theory Framework

This study is grounded in a central governance tension between securitization and adaptive governance to analyze forest fire governance in Indonesia and the role of the Korea–Indonesia Forest Cooperation Center (KIFC). Clarifying how these tensions influence policy effectiveness helps assess whether current approaches achieve long-term fire management goals. Rather than treating multiple theories as parallel analytical tools, this framework contrasts two competing governance logics that shape policy responses to forest fires: a securitized, top-down approach and a participatory, adaptive governance model. Global sustainability norms, including the Sustainable Development Goals (SDGs), are treated as a contextual normative backdrop that informs, but does not determine, governance practices.

Securitization theory, as developed by the Copenhagen School (Buzan et al., 1998), explains how issues such as forest fires are framed as existential security threats, thereby legitimizing extraordinary measures. In the Indonesian context, the securitization of forest fires has justified the mobilization of emergency budgets, military forces, and multi-agency task forces. At the same time, this approach has enabled rapid coordination and resource allocation during crises; understanding its impact on actual policy outcomes, such as long-term fire prevention, is crucial. As a result, securitization often fails to address underlying socio-economic drivers of forest fires, including local economic dependence on land-clearing practices and persistent institutional fragmentation across governance levels (Balzacq et al., 2016; Setiawan & Hadi, 2007).

In contrast, adaptive governance offers a governance logic centered on flexibility, participation, and resilience in managing complex environmental challenges. Adaptive governance emphasizes decentralized decision-making, collaboration among multiple stakeholders, and the integration of local knowledge with scientific expertise (Chaffin et al., 2014; Folke et al., 2005; Olsson et al., 2014). In fire-prone landscapes, this approach prioritizes long-term capacity building and community engagement over emergency-driven interventions, positioning adaptive governance as a potential corrective to the limitations of securitization-dominated fire management.

Within this governance tension, international cooperation through KIFC occupies a complex and ambiguous position. While KIFC is institutionally produced through securitized, state-led diplomacy, its on-the-ground implementation requires adaptive governance practices to engage local actors and address socio-economic realities. To contextualize this dynamic, the study draws on Finnemore & Sikkink's (1998) concept of norm diffusion to explain how global sustainability norms, particularly SDGs 13 (Climate Action) and 15 (Life on Land), are embedded in bilateral cooperation frameworks. This complexity invites researchers and scholars to explore how KIFC's role evolves within these broader international processes.

By framing securitization and adaptive governance as competing yet interdependent governance logics, this study emphasizes the need for policymakers to balance security and participation, fostering a sense of responsibility in navigating Indonesia's forest fire governance system. This framework enables a critical assessment of whether KIFC merely extends securitized control through technical interventions or contributes to a more adaptive and socially embedded approach to fire management.

Methods

This study employs a qualitative case study design to investigate how bilateral cooperation between Indonesia and South Korea, through the Korea–Indonesia Forest Cooperation Center

(KIFC), influences forest and land fire governance in Ogan Komering Ilir (OKI), South Sumatra. A qualitative approach is appropriate because the research seeks to interpret governance logics, institutional behaviour, and policy framing that are not readily captured through quantitative measurement (Bryman, 2016; Creswell & Poth, 2018). Following Yin (2018), the case study strategy is particularly well-suited for analyzing complex policy processes that operate across overlapping political, institutional, and socio-ecological contexts.

OKI was selected as a critical and illustrative case because it represents both high ecological vulnerability and an active site of transnational intervention, where nationally securitized fire governance is operationalized through bilateral cooperation amid local institutional constraints. Data were collected between 2015 and 2024 and consist primarily of documentary and secondary sources, including national policy documents on forest fire emergencies, presidential speeches and official statements, institutional coordination frameworks issued by the Ministry of Environment and Forestry and related agencies, bilateral cooperation agreements, KIFC annual and project reports, technical manuals, and independent evaluations of fire management and peatland restoration programs. Limited, non-intrusive field observations were conducted at publicly accessible program sites to contextualize documentary findings and observe the visible outcomes of institutional collaboration at the local level.

Document and discourse analysis were employed as the primary analytical techniques to examine how forest fires are framed, institutionalized, and governed through language, policy instruments, and organizational practices (Bowen, 2009; Fairclough, 2010). Drawing on securitization theory, the analysis explicitly identified securitizing speech acts—such as emergency framing, existential threat narratives, and command-oriented language—and traced how these discourses were translated into institutional arrangements and KIFC programs.

In parallel, indicators associated with adaptive governance, including participation, capacity-building, flexibility, and community engagement, were used to assess how KIFC initiatives functioned in practice and interacted with local socio-economic conditions (Chaffin et al., 2014; Schultz et al., 2015). Analytical rigour was enhanced through triangulation across multiple document categories and corroboration with field observations (Rapley, 2007), while reflexivity was maintained to account for the researcher's interpretive position and theoretical assumptions (Tracy, 2020). Ethical considerations were addressed by relying exclusively on publicly available documents and conducting observations in open-access settings. Rather than seeking statistical generalization, the study aims for analytical transferability by generating conceptual insights into how bilateral environmental cooperation can simultaneously facilitate technical coordination and constrain adaptive governance within securitized contexts of transnational environmental risk management (Schweiger, 2022; Wight, 2006).

Results and Discussion

Reframing Environmental Risks: From Development Issue to Security Concern

The evolution of Indonesia's forest and land fire (*karhutla*) governance reflects a profound transformation in how environmental risks are understood and politically managed. Prior to 2015, forest and peatland fires were primarily viewed as technical and developmental issues associated with land conversion, plantation expansion, and seasonal climatic variability, necessitating improvements in land management, restoration, and productivity enhancement. This framing shifted decisively following the 2015 fire crisis, which burned approximately 2.6 million hectares of land, released more than 1.6 billion tons of CO_2, and generated economic losses estimated at USD 16.1 billion, making it one of the most severe environmental disasters in Southeast Asia (Tacconi, 2016; WHO, 2014; World Bank, 2021). The humanitarian consequences further amplified the magnitude of the crisis, with the World Health Organization reporting more than 500,000 cases of acute respiratory infections linked to haze exposure

during the same period (WHO, 2024). These intertwined ecological, economic, and public health impacts catalyzed a reframing process in which *karhutla* was no longer treated as a developmental externality but as a threat to public welfare, state legitimacy, and regional stability (Wijaya et al., 2024).

This reframing became increasingly visible in high-level political discourse. In his presidential address in Kubu Raya, West Kalimantan, in January 2015, President Joko Widodo emphasized that Indonesia already possessed the institutional infrastructure and monitoring technology required to detect fires, but lacked the political will to act preventively, signalling an early shift toward urgency and responsibility framing (S. K. R. Indonesia, 2015). The securitizing tone intensified in subsequent years. During the National Coordination Meeting on Forest and Land Fire Control in August 2019, the President explicitly labeled the 2015 fires as a "national crisis," citing losses of Rp 221 trillion and 2.6 million hectares burned, and warning that such a catastrophe "must never happen again" (S. N. R. Indonesia, 2019). That is national priority, thereby legitimizing extraordinary policy responses. In line with securitization theory, the articulation of fires as existential threats enabled the mobilization of exceptional measures, including emergency funding, centralized command structures, and military involvement (Balzacq et al., 2016; Buzan et al., 1998).

The securitization of *karhutla* was subsequently institutionalized through formal policy instruments. The Ministry of Environment and Forestry's Forest and Land Fire Control Strategy 2020–2024 repeatedly invokes concepts such as "resilience," "preparedness," and "sovereignty," embedding a security-oriented lexicon within environmental governance (KLHK, 2024). Likewise, Presidential Instruction No. 3/2020 positions forest and land fire mitigation as a cross-sectoral "national duty," explicitly involving ministries, regional governments, and the Indonesian National Armed Forces (S. N. R. Indonesia, 2020). This policy architecture reflects an ontological shift in which environmental governance becomes intertwined with demonstrations of state capacity and authority, reinforcing the Copenhagen School's argument that securitization reshapes bureaucratic priorities and legitimizes centralized intervention under conditions of perceived existential threat.

Within this securitized governance context, international cooperation emerged as a politically enabled response. Bilateral initiatives, such as the Korea–Indonesia Forest Cooperation Center (KIFC), were facilitated by the elevation of *karhutla* to a national and transboundary security concern. Intertextual analysis of policy documents issued by the Ministry of Environment and Forestry, the National Disaster Management Agency (BNPB), and joint KIFC–Korea Forest Service (KFS) reports reveals a convergence of security-oriented framing across domestic and international institutions. BNPB's National Disaster Management Plan 2021–2024 explicitly classifies forest and land fires as a "non-traditional security threat," aligning Indonesia's domestic discourse with ASEAN's broader narrative of environmental security and regional resilience (BNPB, 2021; Caballero-Anthony, 2022). In parallel, the KIFC–KFS Joint Report characterizes bilateral programs as "strategic investments" aimed at enhancing environmental resilience and technological sovereignty, situating forest fire cooperation within a security-inflected diplomatic framework (AgroIndonesia, 2021).

Table 1 summarizes the evolution of discursive frames in Indonesia's forest fire governance from 2010 to 2024, illustrating how policy language and institutional priorities shifted from developmental management toward crisis response and, ultimately, toward security- and sovereignty-oriented governance.

**Table 1. Evolution of Discursive Frames in
Indonesia's Forest Fire Governance (2010–2024)**

Period	Dominant Frame	Representative Discourse / Citation	Key Actors	Policy Implications

2010–2014	*Developmental / Resource Management*	" and land fires are land-use dynamics that require productivity enhancement and community-based restoration programs." — *KLHK, Forest Development Report (2013)*	KLHK, Local Governments, Plantation Sector	Fires treated as development byproducts; focus on reforestation and land productivity.
2015–2019	*Crisis / Emergency*	"The 2015 haze crisis caused losses of Rp 221 trillion and burned 2.6 million ha—this must never happen again." — *Presidential Remarks, Rakornas 2019*	President's Office, KLHK, BNPB, TNI	Elevation of *karhutla* to national emergency; military involvement and international coordination.
2020–2024	*Security / Sovereignty*	"Forest and land fire control is a matter of sovereignty and national resilience." — *KLHK Strategic Plan 2020–2024*; *KIFC–KFS Joint Report 2021*	KLHK, BRGM, KIFC, KFS, BNPB	Institutionalized securitization; environmental cooperation reframed as security diplomacy.

Source: KLHK (2024); Sekretariat Negara (2015); (2019); (2020); KIFC–KFS (2021); compiled by author.

As shown in Table 1, the semantics of forest fire governance shifted from "management" to "protection," and from economic recovery toward national defence and resilience. This linguistic transformation was accompanied by material and institutional changes. Government monitoring data revealed persistent hotspots in fire-prone districts, such as Ogan Komering Ilir. Meanwhile, the BNPB reported that a substantial proportion of fire suppression operations involved military coordination, indicating the normalization of security actors in environmental governance (BNPB, 2023; KLHK, 2024; RRI, 2023). Consistent with Floyd's (2019) concept of the institutionalization of security discourse, the introduction of crisis language into policy frameworks reconfigured governance logics by prioritizing rapid control, centralized coordination, and visible state intervention. Environmental protection thus became a metric of state legitimacy and crisis preparedness (Ramadhi et al., 2023).

However, the securitization of *karhutla* also produced ambivalent consequences. While it mobilized unprecedented political attention, funding, and international cooperation, it simultaneously narrowed the space for community participation and local agency. Empirical studies in South Sumatra have demonstrated that community-based fire management groups (*Masyarakat Peduli Api*) and local NGOs often experience reduced decision-making authority as centralized command structures expand (Carmenta et al., 2021). This dynamic illustrates how security-oriented governance can marginalize local knowledge and adaptive practices, resulting in governance that is rhetorically inclusive but operationally hierarchical. At the transnational level, Indonesia's partnership with South Korea further embedded security logics within environmental diplomacy, aligning national fire governance with ASEAN's framing of haze as a non-traditional regional security challenge (Caballero-Anthony, 2022).

Taken together, the reframing of forest and land fires as a security issue constitutes the institutional and discursive context within which KIFC operates. The securitized framing not only enabled bilateral cooperation and technological intervention but also shaped the boundaries within which adaptive governance could emerge. Understanding this transformation is essential for assessing how KIFC's programs are designed, implemented, and constrained, and it provides the analytical foundation for examining the tensions between security-oriented control and adaptive, locally embedded governance practices discussed in the following sections.

Adaptive Governance in Practice: Institutional Learning and Policy Experimentation

If securitization reflects the state's drive to impose centralized control over ecological uncertainty, adaptive governance emerges in response to the limitations of command-based intervention. This tension became evident in Indonesia after the 2015 haze crisis, when the

scale and complexity of forest and peatland fires exposed the inadequacy of hierarchical control alone. Rather than abandoning securitization, state institutions gradually supplemented emergency responses with learning-oriented approaches emphasizing flexibility, collaboration, and reflexivity. This shift reflects the recognition that uncertainty is not merely a problem to suppress, but a condition that requires adaptive institutions capable of evolving (Ruane, 2020). This understanding aims to foster a sense of collective effort among readers, emphasizing that collaborative approaches are vital for effective fire management.

Institutional adaptation unfolded through incremental policy experimentation rather than abrupt reform. The establishment of the Peatland and Mangrove Restoration Agency (BRGM) in 2016 marked a critical response to the structural drivers of peatland fires. Since 2020, the *Program Restorasi Gambut Berbasis Masyarakat* (PRGM) has sought to decentralize fire prevention by integrating peat rewetting, community-based monitoring, and livelihood support. In priority villages across South Sumatra, including Ogan Komering Ilir, BRGM reported a decline in local fire recurrence between 2018 and 2022, indicating that localized interventions can reduce fire risks when aligned with community participation (BRGM, 2022). These efforts reflect institutional learning through experimentation, whereby iterative interventions generate feedback for policy adjustment (Chaffin et al., 2014).

Adaptive governance has also been formalized within state bureaucracies. The Integrated Fire Management Plan 2021–2024 institutionalized coordination among KLHK, BNPB, BRGM, and the Indonesian National Armed Forces (TNI), assigning differentiated yet interdependent roles (Aminah et al., 2020). However, learning remains uneven. Although coordination mechanisms exist, inter-agency interactions often prioritize compliance and reporting over critical reflection, constraining deeper institutional learning (Harakan et al., 2025).

At the local level, adaptive governance is most visible in the evolving role of *Masyarakat Peduli Api* (MPA) groups. In Ogan Komering Ilir, MPA units have shifted from reactive firefighting toward proactive prevention through patrols, canal blocking, and peat hydrological monitoring. Supported by digital platforms such as SiPongi, these groups illustrate a polycentric governance structure in which multiple centers of authority and knowledge operate across scales (Budiningsih et al., 2022). Nevertheless, their effectiveness varies depending on leadership quality, access to resources, and sustained institutional support.

Transnational cooperation through the Korea–Indonesia Forest Cooperation Center (KIFC) has further shaped this adaptive governance landscape. Since 2021, KIFC programs have introduced monitoring technologies, including the Forest Fire Management Information System (FFMIS), remote-sensing tools, and technical training for restoration teams (Budiningsih, 2017). While these interventions have strengthened monitoring capacity, their broader significance lies in the interaction between standardized foreign technologies and local practices. This interaction has produced hybrid learning processes, but also reveals a key tension: technology can enhance coordination while simultaneously reinforcing expert-driven governance if local knowledge is treated as secondary.

Trust remains a central yet fragile condition for adaptive governance. BRGM evaluations indicate that inclusive decision-making and transparent benefit distribution are associated with stronger community engagement and more sustained prevention outcomes (BRGM, 2022). Conversely, top-down interventions—regardless of technical sophistication—risk eroding trust and reducing local commitment. This supports the view that adaptability depends not only on institutional design, but also on social relationships and mutual accountability (Folke et al., 2016). Recognizing the importance of trust encourages readers to appreciate the role of social bonds in fostering effective governance.

Despite its promise, adaptive governance in OKI continues to face structural constraints. Fragmented authority across governance levels complicates coordination and knowledge sharing, while marginalized groups, including smallholders and indigenous communities,

remain underrepresented in formal decision-making (Carmenta et al., 2021). As Olsson et al. (2014) argue, adaptation is inherently political and claims of inclusivity may obscure persistent hierarchies of expertise and access. Acknowledging these challenges aims to motivate readers to consider their role in addressing power and socio-economic issues for more equitable fire governance

Within this context, KIFC illustrates both the potential and limits of adaptive governance embedded in bilateral cooperation. Although recent initiatives have shifted toward co-learning approaches that integrate community feedback with technical indicators, KIFC continues to operate within a broader securitized framework that prioritizes control and coordination. Adaptive governance therefore, does not replace securitization, but is negotiated within its boundaries. The OKI case demonstrates that institutional learning can enhance resilience only insofar as it addresses power asymmetries and socio-economic constraints, underscoring the need to evaluate whether adaptive practices introduced through international cooperation can move beyond technical adjustment toward more socially embedded and equitable fire governance.

Embedding Sustainability Norms: Translating Global Agendas into Local Practice

Within Indonesia–South Korea environmental cooperation, sustainability operates not merely as a moral principle but as a governance instrument that legitimizes policy choices and international engagement. The Korea–Indonesia Forest Cooperation Center (KIFC) in Ogan Komering Ilir (OKI) was established to mitigate forest and land fires while simultaneously translating global sustainability agendas into Indonesia's institutional and ecological context. In this framework, sustainability norms—particularly those associated with SDG 13, SDG 15, and SDG 17—function less as fixed implementation templates and more as reference points that shape discourse, program design, and policy justification (Sachs et al., 2019). The key analytical concern is therefore not formal adoption, but how these norms are interpreted, negotiated, and constrained within local governance realities.

While norm diffusion theory conceptualizes norms as progressing through emergence, cascade, and internalization (Finnemore & Sikkink, 1998), empirical evidence from the Global South suggests a more contingent process. Acharya's (2014) concept of norm localization better captures this dynamic by emphasizing selective adaptation to domestic political narratives and institutional priorities. In the KIFC case, sustainability is framed less as compliance with international standards and more as an extension of national resilience and sovereignty. Official policy documents consistently invoke notions of "ecological resilience," "community preparedness," and "environmental sovereignty," embedding global sustainability objectives within Indonesia's securitized narrative of state capacity and stability.

This translational process is evident across policy texts and inter-agency reports. The KLHK Strategic Plan 2020–2024 and BRGM Annual Reports explicitly align peatland restoration and fire prevention initiatives with SDG targets, while KIFC cooperation reports frame bilateral activities as "partnerships for sustainable restoration" (BRGM, 2022; KIFC, 2022). Such convergence reflects discursive intertextuality, whereby global sustainability language is absorbed into national bureaucratic and security-oriented frameworks (Fairclough, 2015). Through this process, sustainability operates simultaneously as a governance rationale and a diplomatic signal, reinforcing Indonesia's international environmental credentials while sustaining centralized coordination.

At the empirical level, sustainability localization is reflected in program outputs and performance metrics. Between 2020 and 2023, KIFC-supported initiatives contributed to the restoration of approximately 6,000 hectares of degraded peatland in OKI and were associated with reduced hotspot density relative to pre-intervention conditions. Capacity-building efforts reached more than 200 local facilitators, integrating peat hydrological monitoring with Korea's Forest Fire Management Information System (FFMIS). These outcomes illustrate the

operationalization of global norms, whereby normative commitments are translated into measurable, reportable, and fundable outputs within bureaucratic governance systems (Bernstein, 2005).

**Table 2. Localization of Global Sustainability
Norms in Indonesia–Korea Cooperation (2020–2023)**

Global SDG Framework	Local Policy/Program in OKI	Main Implementing Body	Key Outputs (2020–2023)
SDG 13 – Climate Action	Integrated Fire Management Plan	KLHK, BNPB, TNI	31% reduction in hotspots; real-time fire alert integration
SDG 15 – Life on Land	Peatland Rewetting & Restoration	BRGM, Local Villages	6,000 ha restored; 15 priority villages rehabilitated
SDG 17 – Partnerships for the Goals	Korea–Indonesia Forest Cooperation Center (KIFC)	KLHK–KFS	200+ trained facilitators; 5 joint workshops

Source: Compiled from KLHK (2024), BRGM (2022), and KIFC–KFS (2021).

While these outcomes signal measurable progress, they also prompt critical questions about whose knowledge and priorities define sustainability in practice. Critical scholarship cautions that global sustainability frameworks tend to privilege technocratic rationalities, often marginalizing local epistemologies and lived experiences (Escobar, 2018). In OKI, despite the formal emphasis on participation, evaluation metrics continue to prioritize restoration area, training outputs, and technological deployment over indicators of local well-being, cultural continuity, and livelihood security. This pattern reflects what Bernstein, Hoffmann, and Weinthal (2022) describe as the managerialization of norms, whereby sustainability is reduced to administrative benchmarks that risk obscuring underlying social relations.

At the same time, Indonesian governance actors display agency in negotiating these global scripts. The discourse of "mutual partnership" promoted in KIFC documents rhetorically departs from conventional donor–recipient hierarchies and resonates with broader narratives of South–South cooperation (Biermann & Kim, 2020). However, this partnership remains asymmetrical in practice, particularly in areas such as technology Design and data infrastructure, where the Korean side largely shapes expertise and standards. Rather than reflecting genuine equality, partnership discourse functions as a legitimizing narrative that facilitates cooperation while masking persistent power differentials.

Institutionally, the localization of sustainability norms reshapes coordination mechanisms. Under the National Action Plan for the SDGs 2021–2030, KIFC activities in OKI are formally linked to national targets on peat restoration, emissions reduction, and community resilience (Bappenas, 2021). However, overlapping mandates and data inconsistencies continue to constrain effective coordination across agencies. These conditions exemplify institutional bricolage, in which governance innovation emerges through pragmatic adjustment and informal adaptation rather than comprehensive structural reform (Cleaver, 2017).

At the community level, sustainability gains meaning through vernacular reinterpretation. Local facilitators in OKI frequently frame peat restoration as merawat tanah leluhur—caring for ancestral land—thereby integrating ecological objectives with cultural identity and moral responsibility. This process of re-signification transforms abstract global norms into locally resonant ethical commitments, strengthening legitimacy and participation (Henry, 2017). Field observations indicate that villages with greater community ownership maintain restoration infrastructure more consistently, underscoring that sustainability depends not only on technocratic precision but also on cultural resonance and social trust.

Taken together, the embedding of sustainability norms in OKI reveals a negotiated and contested process rather than linear diffusion. Global agendas are neither imposed wholesale nor fully internalized; instead, they are selectively adapted and reinterpreted within Indonesia's securitized governance framework and the practical constraints of adaptive governance. As a result, sustainability functions as an enabling discourse for cooperation while remaining bounded by existing power relations and institutional logics.

Conclusion

This study aims to analyze the evolution of forest and land fire governance in Indonesia through securitization and adaptive governance frameworks, using the Korea–Indonesia Forest Cooperation Centre (KIFC) in Ogan Komering Ilir (OKI) as an empirical case. The findings demonstrate that forest and land fires have been successfully reframed from a technical development issue into a matter of national and transboundary security. This securitized framing enabled the mobilization of extraordinary state resources, centralized coordination, and international cooperation, creating the institutional conditions for bilateral initiatives such as KIFC to emerge.

Empirically, the study shows that KIFC has achieved notable technical successes. The introduction of monitoring systems, early warning technologies, training programs, and inter-agency coordination mechanisms has strengthened Indonesia's capacity to detect and respond to fires, contributing to measurable improvements in fire management indicators in OKI. However, these technical gains coexist with persistent social and institutional gaps, such as local economic dependence on fire-based land management, uneven community participation, and fragmented authority across governance levels. These gaps continue to limit the sustainability of fire prevention efforts, underscoring that technical capacity-building alone is insufficient to address structurally embedded environmental risks.

From a theoretical perspective, the article argues that KIFC operates within a fundamental governance tension. By design, KIFC is a product of securitization, emerging from emergency narratives, state-led diplomacy, and security-oriented policy frameworks that privilege centralized control and technological solutions. In practice, however, KIFC is compelled to function through adaptive governance mechanisms that rely on learning, flexibility, and negotiation with local actors. This analysis highlights that securitization has not been entirely 'tamed' or replaced but has been partially reconfigured, with security logics remaining dominant at the policy framing and institutional design levels. At the same time, adaptive practices emerge unevenly at the implementation level.

Based on this insight, the article advances Adaptive Security Governance as its primary theoretical contribution. Adaptive Security Governance refers to a hybrid mode of environmental governance in which securitization enables cooperation and coordination, but adaptation determines whether such cooperation can endure beyond crisis moments. In this framework, security does not disappear; instead, it is negotiated through institutional learning, polycentric coordination, and selective localization of global sustainability norms. The case of OKI illustrates that adaptive governance does not operate outside securitization, but within its constraints, shaped by power asymmetries, expert-driven technologies, and bureaucratic imperatives.

The analysis of sustainability norms further reinforces this conclusion. While the Sustainable Development Goals (SDGs) provide a shared normative language that legitimizes cooperation and aligns domestic policies with global agendas, their localization remains partial and contested. Sustainability norms are translated into administrative targets and performance indicators, but their social internalization depends on trust, cultural resonance, and recognition of local knowledge. As a result, sustainability functions primarily as an enabling discourse rather than a guarantee of transformative or equitable governance outcomes.

Overall, this study contributes to the literature on environmental securitization, adaptive governance, and international environmental diplomacy by demonstrating that security-driven cooperation can enhance technical capacity while simultaneously constraining deeper social adaptation. The Indonesia–South Korea partnership through KIFC highlights both the possibilities and limits of bilateral environmental cooperation in the Global South. While securitization can unlock resources and international support, long-term resilience depends on the extent to which adaptive governance practices address underlying socio-economic drivers

and redistribute epistemic authority. Although this study is limited to a qualitative case in OKI, it offers broader insights into how states navigate the politics of environmental risk under conditions of ecological uncertainty. Future research could extend this framework through a comparative analysis of similar bilateral initiatives or by incorporating community-level perspectives further to explore the social limits of securitized environmental governance.

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