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The Unfinished Battle Against the Business of Burning in Southeast Asia: Who Pays for the Haze?

Dr. Venkatesh Karanam[1], Dr. Shahril Hishamuddin[2], Dr. Muhamad Paizal Othman[3], Dr. Noor Azliza Zainal Abidin[4], Dr. Jeffry Mohd Ali[5], Dr. Shankar Nagalingam[6]

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Abstract: **This paper examines transboundary haze in Southeast Asia as a persistent political-economy problem in which the private benefits of land conversion are separated from the public costs of fire and smoke. It asks who gains from burning, who bears the resulting health, livelihood, environmental and economic losses, and why regional cooperation has not ended the recurring crisis. Using a qualitative, desk-based conceptual approach, it draws on ASEAN policy documents, legal scholarship and reporting on the 2025–2026 haze cycle to examine the interaction of peatland drainage, land-use change, commodity incentives, fragmented supply chains, uneven enforcement and the institutional limits of regional governance. The paper argues that fire cannot be reduced to a single crop, company or country: ignition sources and land-use practices vary, and drought amplifies the scale of burning. Where deliberate or negligent burning is linked to commercial land use, however, accountability must extend beyond the person who lights a fire to the entities that control land, finance operations and purchase commodities. The costs fall unevenly on communities, workers, children, small businesses, health systems and neighbouring states, and are rarely reflected in commodity prices. ASEAN's Agreement on Transboundary Haze Pollution and Peatland Management Strategy 2023–2030 provide a foundation, but implementation depends on national enforcement, concession transparency, financing and cross-border cooperation. The paper proposes a six-part accountability framework combining prevention, peatland restoration, supply-chain transparency, corporate due diligence, public-health protection and regional legal cooperation.**

Keywords: **Transboundary haze, Southeast Asia, Peatland, Forest fires, Political economy, Corporate accountability, ASEAN, Environmental justice, Land-use governance.**

I. INTRODUCTION

Seasonal smoke haze has become one of Southeast Asia's most visible examples of a regional environmental problem that crosses national borders but remains difficult to govern collectively. Fires in forest and peatland landscapes can generate smoke that travels across jurisdictions, affecting air quality, public health, education, transport, tourism, agriculture and ordinary economic activity. The consequences are experienced far beyond the places where fires begin. Yet the institutions responsible for prevention, land management, investigation and enforcement are predominantly national and local.

The phrase 'business of burning' directs attention to the economic incentives and institutional arrangements surrounding land clearing. It does not assume that every fire is deliberately lit by a corporation, nor that all burning is commercial. Fires may arise from smallholder practices, land disputes, accidental ignition, negligence, illegal activity or deliberate clearing. Weather and climate conditions, particularly prolonged dry periods and drought, can turn local ignition into extensive and difficult-to-control fires. The analytical question is therefore not simply who started a particular fire, but how land-use systems create exposure to fire, who benefits from those systems, and who is responsible for preventing foreseeable harm.

The 2026 haze cycle illustrates the persistence of the problem. ASEAN reported that hotspot counts across the southern ASEAN region in the first half of 2026 increased by approximately 86 per cent compared with the same period in 2025, attributing the increase in part to drier-than-normal conditions during several months. In July 2026, ASEAN ministers

welcomed an implementation plan for the ASEAN Investment Framework for Haze-Free Sustainable Land Management and reiterated the region's 2030 haze-free ambition [1]. Later reporting described renewed severe fires, health impacts and political disagreement over cross-border responsibility and assistance [2], [3].

This paper addresses four questions. First, what economic and institutional incentives sustain the use of fire in land conversion and land management? Second, how are the costs of haze distributed among producers, communities, governments and neighbouring states? Third, why have ASEAN cooperation and national legal measures struggled to deliver consistent accountability? Fourth, what policy framework could align commercial incentives with prevention, restoration and public protection?

II. METHOD AND CONCEPTUAL FRAMEWORK

The paper uses a qualitative, desk-based conceptual research design. It reviews ASEAN agreements and policy strategies, regional meeting statements, legal scholarship on transboundary pollution and corporate accountability, and selected reporting on the 2025–2026 fire and haze situation. It applies a political-economy lens to examine incentives, power, costs and institutional responsibilities. It does not present original fieldwork, a new satellite hotspot dataset or a quantified estimate of the economic damage caused by the 2026 haze.

Three concepts guide the analysis. First, environmental externalities arise when the costs of production or land conversion are imposed on people who did not make the relevant decisions and are not compensated. Second, the value chain extends responsibility beyond the immediate land operator to financiers, commodity traders, processors, buyers and corporate groups where evidence establishes relevant control, benefit or due-diligence failures. Third, environmental justice asks whether the distribution of risks, decision-making power and remedies is fair, particularly for communities with limited capacity to avoid exposure or influence land-use decisions.

These concepts are used carefully. Commercial association with a commodity or a region is not proof of legal responsibility for a specific fire. Corporate accountability requires evidence linking conduct, control, negligence or statutory duties to identifiable harm. The paper therefore distinguishes structural responsibility and policy risk from findings of legal liability.

III. THE POLITICAL ECONOMY OF BURNING

A. Land conversion, drainage and the economics of fire

Fire can be an inexpensive and rapid means of clearing vegetation, especially where land tenure is contested, enforcement is weak and alternatives require labour, machinery or capital that land users cannot readily access. In drained peat landscapes, the risk is particularly serious. Peat soils contain accumulated organic matter and can burn below the surface, making fires difficult to extinguish and capable of producing prolonged smoke. Drainage for agriculture or plantations lowers water tables and makes peat more vulnerable to ignition and fire spread. ASEAN's review of peatland management identifies drainage and unsustainable management as important drivers of peatland fire vulnerability [4].

The economics are not uniform. A large concession holder may have resources to use mechanical clearing and maintain fire-prevention infrastructure, while smallholders may face high costs, unclear land rights and limited access to equipment. At the same time, large-scale commercial operations can create landscape-level risks through drainage canals, road networks, land preparation and weak oversight of contractors or suppliers. A fair analysis must therefore avoid treating all actors as identical while also avoiding the assumption that the smallest visible ignition source is necessarily the only relevant point of responsibility.

B. Commodity chains and fragmented responsibility

Land-use decisions are embedded in commodity systems that may include plantation operators, independent growers, contractors, mills, traders, refiners, consumer-goods companies, banks and investors. The entity controlling a plot of land may not be the entity selling the final product. Corporate groups may operate through subsidiaries and suppliers, while commodity mixing can make it difficult to trace a shipment back to a particular plantation. These arrangements can weaken accountability when land ownership, concession boundaries, supplier relationships and fire records are not transparent.

Supply-chain traceability can reduce information gaps, but it is not a substitute for public enforcement. A company's sustainability policy or certification status does not automatically establish that every supplier is compliant, nor does a satellite hotspot alone prove that a particular business caused a fire. Credible systems need geospatial concession data,

independent verification, grievance channels, transparent investigation and consequences for repeated non-compliance. Smallholders should receive technical and financial support to meet traceability requirements rather than being excluded from markets through compliance costs they cannot bear.

C. Climate variability as an amplifier, not a complete explanation

El Niño conditions, rainfall deficits and unusually dry periods can increase fire danger and extend the period in which fires spread. These conditions are important for explaining why a particular season becomes severe. They do not, however, explain the underlying distribution of drained peatlands, land-use decisions, ignition practices or enforcement capacity. Climate variability is best understood as a risk multiplier interacting with human land management. Effective policy must therefore combine early warning and emergency response with long-term changes in land and water management.

IV. WHO PAYS? THE DISTRIBUTION OF HAZE COSTS

A. Public health and household costs

People exposed to smoke bear costs through respiratory and cardiovascular stress, aggravation of existing illness, reduced outdoor activity, missed work and school, medical expenses and diminished quality of life. Children, older people, outdoor workers and people with pre-existing health vulnerabilities may face heightened exposure. Households with limited resources may be less able to purchase air filtration, relocate temporarily or absorb lost income. Public hospitals and clinics carry additional demand, while governments must fund monitoring, public communication, masks and emergency measures.

The distribution of harm is unequal. Residents close to fires may experience direct exposure and loss of livelihoods, while urban populations in downwind countries experience episodic pollution and disruption. Workers in agriculture, construction, transport and informal employment may be unable to avoid outdoor exposure without losing wages. A policy response that measures only national averages can conceal these unequal burdens.

B. Education, productivity and local businesses

Schools may suspend outdoor activities or close when air quality deteriorates. Learning interruptions are not limited to the days of closure: attendance, concentration, student health and family routines can remain affected. Businesses may face lower customer traffic, reduced worker productivity, increased cleaning and filtration costs, and disruption to outdoor services. Tourism, hospitality, aviation and logistics can be affected by reduced visibility, flight delays, cancellations and negative perceptions of destination safety.

These costs are dispersed across many actors and are rarely recovered from those responsible for unsafe land practices. Small businesses and workers may have little bargaining power or insurance coverage. Governments may absorb the cost through public health spending, emergency response and lost tax revenue. Neighbouring states can bear substantial costs even when the land-use decisions that contributed to the smoke occurred outside their jurisdiction.

C. Ecosystems, climate and future generations

Peat and forest fires damage biodiversity, degrade soils and alter hydrological systems. Peat fires also release stored carbon, contributing to greenhouse-gas emissions and reinforcing long-term climate risk. Restoration is difficult and expensive where peat has been deeply drained or repeatedly burned. The resulting loss is not confined to current market participants: future generations inherit degraded landscapes, greater fire susceptibility and reduced ecosystem services.

The central distributional imbalance is clear: short-term benefits from cheap land clearing or weakly regulated production may accrue to a relatively narrow set of actors, while the costs of smoke, illness, ecosystem loss and emergency response are distributed widely. This is the core externality at the heart of the business-of-burning problem.

V. WHY REGIONAL COOPERATION HAS NOT FINISHED THE BATTLE

A. ASEAN's agreement and cooperative architecture

The ASEAN Agreement on Transboundary Haze Pollution (AATHP) provides a regional framework for cooperation on prevention, monitoring, assessment and mitigation. It recognises that haze is transboundary and requires action at national and regional levels. ASEAN has also developed peatland strategies and haze-free roadmaps. The ASEAN Peatland Management Strategy 2023–2030 links sustainable peatland management to fire prevention, livelihoods, biodiversity and climate concerns [5].

ASEAN's 2026 regional discussions show that the cooperative agenda remains active. The July 2026 ministerial meeting welcomed an implementation plan for the ASEAN Investment Framework for Haze-Free Sustainable Land Management, intended to support the Haze-Free Roadmap and peatland strategy. The framework aims to mobilise investment for sustainable land management and alternatives to large-scale burning [1], [6].

B. The implementation and enforcement gap

Regional commitments do not automatically create consistent domestic enforcement. The AATHP is built primarily around cooperation and does not establish a comprehensive regional liability regime that directly compensates victims or imposes penalties on private operators. Recent legal scholarship argues that the agreement does not set out a specific liability framework for errant operators or a clear state-responsibility mechanism where governments fail to exercise due diligence [7].

Enforcement also depends on access to evidence. An affected country may observe smoke and hotspots, but concession boundaries, land titles, corporate structures, contractor records and operational decisions may be held in another jurisdiction. Investigators must establish which fire occurred on which land, who controlled the site, whether the fire was deliberate or negligent, and whether the relevant company or group had a legal duty to prevent or address it. Without timely information-sharing, investigations can stall.

The ASEAN principle of non-interference and consensus-based diplomacy can make cooperation politically sensitive. States may be reluctant to expose domestic companies, concede responsibility or permit foreign investigations. This does not make regional cooperation useless; it means that its effectiveness depends on predictable national implementation, transparency and trusted technical mechanisms. Legal scholarship on the regional regime similarly identifies the tension between transboundary harm and the political constraints of ASEAN cooperation [8].

C. The limits of cross-border corporate action

Some affected jurisdictions have enacted laws that seek to address transboundary pollution by reaching companies connected to conduct abroad. Such laws may create preventive notices, information requests or legal consequences where statutory conditions are met. Their practical effectiveness nevertheless depends on evidence, jurisdiction, cooperation from the state where the land is located and the ability to identify the relevant corporate entity. Recent 2026 reporting on Singapore's renewed notices and investigations illustrates both the political salience of corporate accountability and the evidentiary challenges of cross-border enforcement [3], [9].

Corporate accountability should not become a substitute for the responsibility of the state in which land is managed. Nor should the state of incorporation or the location of a corporate headquarters be treated as proof of guilt. A credible approach combines domestic enforcement where the land and fire are located, due diligence by companies and financiers across the value chain, and cooperation by states where parent companies, traders or assets are based.

VI. THE 2025–2026 HAZE CYCLE: A STRESS TEST

The 2025 regional review recorded a mixed picture: hotspot counts in the Mekong sub-region were lower during part of the 2025 dry season than in the corresponding period of 2024, while southern ASEAN hotspot counts were reported to be around 10 per cent higher over the comparison period. The 2026 southern-region increase of approximately 86 per cent in the first half of the year underscores how quickly conditions can change when dry weather intersects with vulnerable landscapes and land-use pressures [1], [10].

Reporting in October 2026 described severe fires in Indonesia, haze impacts in neighbouring countries and renewed public debate over corporate responsibility, foreign assistance and peatland restoration [2], [11], [12]. These reports should be treated as time-specific accounts rather than a complete scientific assessment of the season. They nonetheless demonstrate that the haze problem remains a live regional governance challenge rather than a historical episode.

The stress test reveals three weaknesses. First, prevention remains uneven: once peat and forest landscapes become highly combustible, emergency response may be expensive and insufficient. Second, information and accountability systems remain fragmented across borders. Third, regional investment frameworks require implementation at the local level, where communities, land managers and smallholders need practical alternatives to burning. A strategy focused only on firefighting will repeatedly address symptoms after the conditions for fire have already been created.

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VII. A SIX-PART ACCOUNTABILITY FRAMEWORK

1. Prevention and land-use transparency: publish accessible, regularly updated concession boundaries, land-use permits, fire-risk maps and enforcement outcomes. Require clear disclosure of beneficial ownership and relevant supplier relationships, subject to legitimate privacy and due-process safeguards.

2. Peatland rewetting and ecosystem restoration: prioritise hydrological restoration, canal blocking, water-table monitoring, degraded-land rehabilitation and long-term protection of high-carbon landscapes. Restoration must be designed with local communities and supported by durable financing.

3. Corporate and supply-chain due diligence: require companies and major buyers to identify fire and land-conversion risks, monitor suppliers, investigate credible allegations, disclose corrective action and suspend relationships where serious violations remain unremedied. Apply due diligence proportionately while supporting smallholders.

4. Fair financing and livelihood alternatives: direct public and private investment toward no-burn land preparation, agroforestry, community fire brigades, sustainable agriculture, alternative income and secure land tenure. Transition costs should not be transferred to small farmers without technical and financial support.

5. Public-health protection and compensation: establish clear air-quality alert protocols, school and workplace protections, accessible health services, transparent health-impact reporting and mechanisms to seek remedy where legal responsibility is established. Public-health costs should be included in environmental damage assessments.

6. Regional cooperation and accountability: strengthen cross-border evidence sharing, joint investigation protocols, compatible geospatial data, rapid notification, mutual legal assistance and regular public reporting on implementation. Regional institutions should track not only meetings and plans, but measurable reductions in fire incidence, burned peat area and exposure.

The framework recognises that responsibility is differentiated. Governments are responsible for land governance, enforcement and public protection. Companies are responsible for lawful operations and appropriate due diligence. Commodity buyers and financiers should not ignore credible risks within their business relationships. Communities should participate in decisions and receive support, not be treated merely as enforcement targets. Neighbouring states should cooperate through evidence-based mechanisms rather than rely exclusively on diplomatic protest.

VIII. DISCUSSION

The question 'Who pays for the haze?' exposes a mismatch between the geography of economic benefit and the geography of harm. Commercial benefits may be concentrated in landholders, producers, traders and downstream markets, while the costs are shared by people who have little influence over the land-use decisions that produce risk. The result is a recurring incentive problem: unless prevention is cheaper and more reliable than burning, and unless the expected cost of non-compliance is meaningful, seasonal firefighting alone will not change behaviour.

At the same time, policy must avoid simplistic blame. The presence of a hotspot within or near a concession is a signal for investigation, not conclusive proof of corporate responsibility. Climate conditions influence fire severity, and smallholders may face structural constraints that make alternatives difficult. Effective accountability is therefore evidence-led and differentiated: it targets deliberate or negligent conduct, requires transparent land and corporate information, and provides support for actors who need help changing practices.

The 2030 haze-free ambition can serve as a shared regional objective, but progress should be measured through outcomes. Relevant indicators include the area of peatland rewetted and maintained, the frequency and duration of fires, the proportion of high-risk concessions covered by verified prevention plans, response times, public access to land-use data, the number and resolution of substantiated enforcement cases, and the protection of exposed communities. These indicators would make it harder for institutions to equate policy announcements with implementation.

This paper is limited by its reliance on public documents and secondary reporting. It does not establish liability for any named company or estimate the full economic cost of the 2026 haze. Future research should combine satellite fire data, concession and ownership maps, health records, economic modelling and interviews with affected communities, smallholders, regulators, companies and civil society. Comparative studies could also assess whether corporate due-diligence rules, restoration finance or local fire-prevention programmes produce measurable reductions in burning.

IX. CONCLUSION

The unfinished battle against haze in Southeast Asia is not simply a failure to extinguish fires. It is a failure to consistently prevent the conditions that make landscapes burn, to align commercial incentives with environmental protection, and to ensure that those who create or profit from avoidable risks bear an appropriate share of the resulting costs. Peatland drainage, land conversion, fragmented commodity chains, uneven enforcement and climate variability interact to produce a crisis whose consequences extend across borders.

ASEAN has established important cooperative instruments, including the AATHP, the Peatland Management Strategy 2023–2030 and the Haze-Free Roadmap. The 2026 investment framework offers an opportunity to move from declarations toward practical alternatives and restoration. But the decisive work lies in implementation: transparent land information, credible domestic enforcement, corporate due diligence, support for smallholders, public-health protection and cross-border evidence sharing.

Ultimately, the region will make progress when burning ceases to be an economically attractive shortcut and when the costs of environmental harm are no longer transferred to children, workers, communities, public institutions and neighbouring countries. A haze-free Southeast Asia requires not only cooperation between governments, but a fairer distribution of responsibility across the entire land-use and commodity system.

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