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The Roots of Ecological Catastrophe Patrimonialism

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The Roots of Ecological Catastrophe Patrimonialism

-- El Niño and Indonesia's 1997-98 Forest Fires

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Abstract

Devastating forest fires struck Indonesia in 1997 and 1998, burning nearly 10 million hectares of forest and creating an unprecedented ecological disaster. These fires were immediately provoked by severe drought, itself the consequence of El Niño. In this paper, I seek to provide a political explanation for this ecological catastrophe, arguing that the neo-patrimonial nature of the Indonesian polity under Suharto was responsible for turning ecological irregularities into an unmitigated disaster. This work draws upon the analysis of Mike Davis (2001), who, in his attention to El Niño events over the last two centuries, situates environmental degradation and its ramifications as the result of a change in economic systems, particularly the involuntary integration of the world into the capitalist economy. I use the example of Indonesia as a case study to expand this point, identifying how domestic politics prompted wide reaching structural changes in forest-based production, which in turn created conditions conducive to ecological disaster upon the arrival of El Niño. This paper traces the history of Indonesian forest policy over the thirty years preceding the fires and connects this history to analysis of the structure of Indonesian politics, particularly the network of patronage connecting Suharto, the military, and Chinese conglomerates. I treat politics and economic change as intimately connected, especially in an era in which the rhetoric of development enabled the state to take an active role in intervening in the national economy. My findings indicate that rather than viewing the 1997-98 El Niño simply as an anomalous climatic event, which, through its severity, just happened to provoke a massive environmental and economic disaster, it is necessary to situate this incident in the context of Indonesia's New Order. This case suggests that, when an anomalous, unprecedented, but not entirely unexpected climatic event, such as the 1997-98 El Niño, strikes, the consequences should not be seen as unavoidable and inevitable. One cannot overlook the importance of domestic politics in determining the conditions that mitigate or exacerbate ecological calamities. I conclude by noting that, paradoxically, when a catastrophic climatic event does occur, the greatest costs are paid by those who have the least say over the structural changes that exacerbated the impact of the event, in this case indigenous subsistence producers, geographically and ethnically distant from elite policy makers.

Introduction

Devastating forest fires struck Indonesia in 1997 and 1998, creating an unprecedented ecological disaster. These fires, by far the most destructive on record on the Indonesian archipelago, burned nearly 10 million hectares of forest, an area slightly larger than the state of Indiana. Parts of 17 protected forest areas, crucial habitats for several types of endangered flora and fauna, were damaged by fire. The resultant haze reached across Southeast Asia, affecting Malaysia and Brunei, as well as Indonesia, and it resulted in air pollution levels far above the level considered hazardous to human health. These fires were immediately provoked by severe drought, itself the consequence of El Niño. Indeed, the 1997-1998 El Niño, recognized as the “El Niño of the twentieth century,” prompted environmental devastation across the globe. Consequently, the forest fires in Indonesia, as well as the resulting economic and social repercussions of these fires, must necessarily be considered with reference to El Niño.

However, presenting this catastrophe as the unavoidable consequence of an unprecedented El Niño event would generate an incomplete and misleading story. Ronaldo Garcia emphasizes in his study of the drought in the Sahel in the early 1970s, *Nature Pleads Not Guilty* that “climatic facts are not facts in themselves; they assume importance only in relation to the restructuring of the environment within different systems of production.”¹ Likewise, Amartya Sen, in *Poverty and Famines*, recognized that famines do not necessarily result from acute food shortages, but rather the decline in entitlements. He claims that “in understanding general poverty, or regular starvation, or outbursts of famines, it is necessary to look at both ownership patterns and exchange entitlements, and at the forces that lie behind them. This requires careful consideration of

the nature of modes of production and the structure of economic classes as well as their interrelations.”ⁱⁱ These two connected insights are critical to understanding the 1997-98 forest fires in Indonesia. Here drought, provoked by a global climatic anomaly, interacted with a transformation of the system of production, new patterns of forest usage, to cause the forest fires.

Mike Davis takes Garcia’s (and implicitly Sen’s) point as a crucial piece of analysis in his arresting account of the connection between El Niño, famine, and the socio-economic transformation that created the third world, *Late Victorian Holocausts*. Davis’s Marxist analysis situates environmental degradation, and its ramifications, as the result of a change in economic systems, particularly the involuntary integration of the world into the capitalist economy.ⁱⁱⁱ Yet Davis does not deny the existence of a political component to the calamities that ensued from this transformation: the indifference of officials and administrators in colonial states to the suffering of their subject populations ensured that there would be little intervention to mitigate the effects of this economic transformation.

With some key adjustments, Davis’s analysis remains quite relevant to Indonesia in the last third of the twentieth century. As Davis recognizes, the ecological explanation, focusing on El Niño, only goes so far in explaining Indonesia’s forest fires. Furthermore, the changes in forest usage, which created the conditions enabling the destruction of 1997-98, are not explicable through economic factors alone. Instead, the “restructuring of the environment within different systems of production” in Indonesia

depends in part on a political explanation. The fault lies in the nature of the state as well as the global economy. Indeed, these forest fires serve as a vivid demonstration of the ecological damage and resulting social and economic upheaval that can result from the weakness of the state. But, unlike Davis's cases, Indonesia in the second half of the twentieth century was not administered by an avaricious and aloof colonial regime. Davis, considering the second half of the 19th century, notes the inability and disinclination of the state to stand in the way of the economic transformation it unleashed, but concentrates on the latter in his analysis. In the case of Indonesia, the blame for the catastrophe lies, at least substantially, in the institutions of an independent state, and how these institutions enabled an economic transformation. Specifically, the neo-patrimonial state of Suharto's New Order both encouraged and was incapable of resisting the growing commercial exploitation of Indonesia's forests, which created the conditions enabling the 1997-98 El Niño to have the impact it did.

The Fires and their Consequences

Fire is a regular occurrence in Indonesia's tropical forests. Analysis of charcoal in the soils of Kalimantan (Indonesian Borneo) indicates that forests have burned periodically starting at least 17,500 years ago.^{iv} These fires have resulted both from natural processes and from humans burning forest to facilitate hunting and clear agricultural plots. Yet the thick forest cover of Sumatra and Kalimantan until recent decades serves as evidence that these two causes of fire did not lead to deforestation on any significant scale. On a 1924 forest map of what are now the provinces of Central,

East, and South Kalimantan, 94 percent of the land shown was still covered by forest.^v The first forest fire resulting in massive deforestation did not occur until 1982-83 in the province of East Kalimantan, when a severe El Niño-induced drought led to fires that destroyed 3.2 million hectares.

While hitherto unprecedented, measured by area burned, the 1982-83 fires had only one-third of the magnitude of the 1997-98 fires. The latter began in September 1997, following well-below average rainfall for the months of June through August throughout the country. The fires, concentrated on the Islands of Sumatra and Kalimantan, were started for the purposes of land clearing, but the severe drought conditions enabled them to grow out of control, especially with the failure of the monsoon to arrive in October. Haze from the fires spread across the region without regard to national boundaries, most intensely affecting Sumatra and Kalimantan in Indonesia, the Malaysian province of Sarawak, and Brunei. In addition to causing health problems, the haze also had significant economic consequences, causing widespread closure of schools and businesses in the affected regions.

The 1997 fires were quelled by the belated arrival of the monsoon in December; however, the monsoon, affected by El Niño, was weaker than usual, and lasted only through January, whereas it customarily continues through April. This allowed the fires to recover, again in both Sumatra and Kalimantan, and the haze reemerged. The most extensive burning in this second wave occurred in the southern part of East Kalimantan, particularly in Kutai National Park, one of the only large areas of lowland forest

protected in Kalimantan. The fires raged and haze continued to affect the region until heavy rains finally arrived in the beginning of May and extinguished the fires. Ultimately, the final report undertaken by the Asian Development Bank estimated that 9.7 million hectares of forest were destroyed.^{vi}

The impact of the fires was not restricted to just the destruction of forests and the outbreak of haze. The repercussions can be divided into four categories: direct, short-term indirect, long-term indirect, and cumulative.^{vii} The direct impact entailed immediate damage caused by flames, such as destruction of forest resources, livestock, and agricultural crops. The health and economic effects of the haze, as well as loss of forest-derived food and income, death of wildlife dependent on forest vegetation, can be considered as indirect, short-term impacts. This category also encompasses immediate destruction to local ecosystems through soil erosion, sedimentation of water bodies and other ecological processes. Indirect long-term impacts are more difficult to document, but they include potential long-term human health consequences of exposure to smoke and haze. Cumulative effects are long-term changes in ecological systems that result from a series of large fires; these changes include extinction, irreversible transformations in forest species composition, and potential increased global warming through the release of carbon dioxide through the fires and the elimination of forests, which serve to absorb other carbon emissions.

The direct and short-term impacts alone led to massive economic losses, for both Indonesia and its neighbors. Most immediate were the losses from destruction of

property and natural resources from the fires, captured by losses in timber and agriculture. But costs included the medical expenses and lost days of labor caused by the haze, decreased incomes from tourism, and airport closures. Also accounting for direct and indirect forest ecosystem production and function losses and fire fighting costs, the WWF and the Singapore Economy and Environment Programme for South East Asia estimated the economic of the 1997 fires alone at nearly US\$4.5 billion.^{viii} Other costs are not quantifiable. Some forest-dependent peoples, particularly the Dayak indigenous peoples of Kalimantan, had their livelihoods eliminated or greatly harmed by the destruction of forests, forcing migration and social upheaval. Furthermore, Indonesia is considered one of the twelve “mega-biodiversity” countries of the world, holding one-tenth of all known plants, one-eighth of all animals and one-sixth of all birds, reptiles and amphibians.^{ix} Losses to this biodiversity from fire damage and altered habitats are irreparable and transcend economic valuation.

Burning, El Niño, and the Genesis of the Fires

El Niño and the resulting drought did not come out of nowhere, leaving Indonesia’s forests entirely at its mercy. We can start by separating the immediate causes of the fires, which may have been preventable once the arrival of the 1997-98 El Niño became clear, with the structural causes, which, while preventable, were inalterable by the time it was clear that an El Niño event was going to occur.

The fires did not start independently of human activity; instead, they were initially started to clear forest land. As noted above, land clearing through burning has been employed in Indonesia for millennia, as it has traditionally been the cheapest and often the most effective means of removing vegetation matter necessary to swidden, or shifting, agriculture. With population increases in forest areas, made more easily accessible through construction of logging roads, swidden agriculture has intensified, leading to increased deforestation and fire risk.^x Additionally, as a consequence of the structural changes in forest usage that will be detailed more thoroughly below, commercial forest users, such as large-scale plantations, by 1997, many new commercial forest users, such as large-scale plantations, had joined subsistence farmers in burning forest land. When it was forecast, by early 1997, that an El Niño event was likely to take place, the Ministries of Environment and Forestry, as well as many provincial governors called upon forest users to be alert and take action to prevent fires.^{xi} However, these warnings were not followed up and there was no institutional structure in place to provide information and guidance at the local level or to sanction those who set fires. Thus, even though awareness of the danger existed at certain levels of the government, fires continued to be set, both by traditional subsistence farmers; but now joined by an increasing number of commercial users.

The increasing number of burning for commercial purposes links directly to the question of structural changes in forest usage. This commercial burning was undertaken to clear land for plantation-based production, both for agriculture and forestry. Low production costs and high international prices create the potential for high earnings by

growing cocoa, coffee, and oil palm for export markets. These enterprises generally operation on a plantation model of production. Legally, plantations may only be established on lands that are set aside for conversion to agriculture. However, the potential for large profits provided commercial interests with a temptation to burn, or to encourage local users to burn degraded production forests, which had low potential for earnings, in order to force a reclassification to forest that could be converted to plantations.^{xii} Plantations were also established in this manner for timber production.^{xiii} Thus, burning forests to facilitate a change in the structure of production was both an immediate cause of the 1997-98 fires, and a process that had been occurring with increasing intensity in recent years as a key element of the structural changes in the nature of forest-based production.

Additionally, while burning for the purpose of clearing was the key initiating factor behind the fires and the El Niño-created drought encouraged and facilitated their spread, recent changes in the nature of forests contributed to the severity of the fires. The growth of the timber industry has led to the decline of pristine forests and the growing acreage of degraded, logged forests and plantation forests. A 2001 study conducted by the Integrated Forest Fire Management Project (IFFM/GTZ) found that while undisturbed tropical rainforest was highly forest-resistant, recently logged forests were much more susceptible to burning.^{xiv} Using satellite imagery, this study found that in recently logged forests (1996-1998) severe damage was found in 49.5% burned land, compared to 26.3% of burned land in less recently logged forests and 17.3% of burned land in pristine forests. Furthermore, a more detailed study in a 100,000 hectare forest concession that

burned revealed that the degree of fire impact was strongly correlated with the time elapsed after logging: in areas logged recently, the volume of dead trees was equal to the volume of living trees; while in old logged forests, the volume of living trees was six times higher than the volume of dead trees. This study thus provides a crucial insight into why in the 1971-72 drought (also the year of a strong El Niño) there was no significant fire damage, while 1982-83 led to unprecedented damage, which was then dwarfed by 1997-98. Clearly, the greatly accelerated pace of logging has led to a proliferation of forests highly susceptible to burning, thus increasing the intensity of fires.

Patrimonialism and Neo-patrimonialism in Indonesia

To understand fully the dynamics of these structural changes in forest-based production, it is essential to turn to an analysis of the structure of the Indonesian polity over the last thirty years. If the increasing degradation of forest resources was the key contributor to the severity of 1997-98's El Niño, and the premise that climatic facts are determined by social, political and/or economic relations is accepted; then the particular structures determining the pattern of forest use (or abuse) must be seen as agents of environmental catastrophe. If a policy of forest exploitation was consciously pursued by the state as an instrument of economic development, which would ultimately work to improve the living conditions and capabilities of the bulk of the Indonesian population, and this policy did deliver tangible benefits, it might be legitimate to consider the necessary tradeoffs between environmental protection and development.^{xv} Analysis on the nature of the Indonesian state under Suharto's New Order suggests that beyond the

initial step of opening up the country to foreign investment, economic development was clearly not the chief impulse behind the policy and reality of forest use. This is not to say that government policy was indifferent to development outcomes: Ascher argues that some of the unsustainable forest policies emerged through Suharto channelling forestry rents towards the downstream wood-products industry as well as the state aircraft industry.^{xvi} These are both examples of “nationalist” economic development endeavors, policy contrary to the prescriptions of free-market oriented policy-makers. Still, the following analysis shows that even the basis for the above policies can be comprehended both through examining their specific utility to the government as well as their supposed contribution to “development” aims.

This is because Indonesia, under Suharto, can be best conceptualized as a neo-patrimonialist state. Patrimonialism, an interpretation of state structure first advanced by Max Weber, involves a system of organization through which the ruler cultivates a system of organization dependent on patron-client relationships, in which “the position of the patrimonial official derives from his purely personal submission to the ruler, and his position vis-à-vis the subjects is merely the external aspect of this relation.”^{xvii} Furthermore, for Weber, the foremost obligation of the ruled in a patrimonial system is the “material maintenance of the ruler”; the system works both to enrich the figure at the top and his clients. Van de Walle updates this concept, specifically informed by the experiences of African polities, with the term “neo-patrimonialism.” In these neopatrimonial states, a modern bureaucracy coexists with a culture of clientelism, and one single individual, the executive, holds ultimate control of the network of clients.^{xviii}

Van de Walle's formulation of neo-patrimonialism is particularly relevant to the Indonesian case as it refutes conceptions that connect clientelism to limited state autonomy: just because a political leader has clients does not mean that they control him.

Post-colonial Indonesia, dominated by an authoritarian government and with no institutions capable of restraining and rationalizing the activity of the bureaucracy, easily fits the model of neo-patrimonialism. Richard Robison, while rejecting patrimonialism as a fully sufficient theoretical framework for Indonesia, identifies several crucial features of the relationship between state, economy, and society that lend support to this interpretation.^{xix} Among these elements are the retention of the 1945 constitution, which effectively locates power in the office of the president; the consolidation of effective political power in military-dominated, extra-constitutional bodies appointed by the president; the widespread movement of military personnel into high-ranking positions in the state bureaucracy; and the disconnect between the formality of rule of law and the actual activities of the military politico-bureaucrats, who allocate licenses, concessions, contracts, and credit not through systems designed to promote efficiency and accountability for the good of the nation, but rather to promote their own personal and political interests.

Indeed, patrimonialism has deep roots in Indonesian culture and society, as patron-client relationships are an ubiquitous feature of most pre-modern polities, particularly throughout Southeast Asia, and traditional Javanese society is no exception. These relationships were necessary to maintaining power in the absence of political

institutions, both in the localized units of organization on the geographical periphery of Southeast Asian states and among governments attempting to extend their power over this periphery.^{xx} The Javanese are the dominant group in New Order politics, holding 75 percent of the decision-making positions in the Indonesian military. Thus, traditional village values in Java, in which leaders dispense patronage in return for loyalty, pervade politics in the modern Indonesian state.

The existence of these conditions creates a system where the mechanisms of power are completely disconnected from any mechanisms that express popular interests, a standard feature of any authoritarian polity. The increased autonomy of the state from most of the low-level beneficiaries of patronage, apart from a small well-connected “political aristocracy” that is served by the modern bureaucracy, completes the turn to neo-patrimonialism.^{xxi} The state is neither representative of the people as a whole, nor of a specific economic class, as in a Marxist interpretation of power. Jamie Mackie argues that the power of the state in Indonesia dominates that of property owners, and economic interest groups have little coherence and just as little clout. Essentially, power and access to economic and financial resources are concentrated at the top of the socio-political pyramid, controlled by Suharto and the high-ranking politico-bureaucrats, who were also tied to the military. Mackie also asserts that the patronage-dispensing capabilities of the Indonesian state grew in degree as the amount of resources available to the state increased, particularly through oil revenues, foreign aid, and illegally collected slush-funds.^{xxii} Certainly, as the Indonesian state’s revenues increased, it could dispense with the economic liberalization policies advocated by the technocrats, and focus on

supporting the projects of the politico-bureaucrats and the closely linked conglomerates, ignoring the demands of multinational capital. Conversely, economic crises would challenge the hold of the politico-bureaucrats and crony capitalists. However, from the start of the logging boom in the late 1960s, the actions of the Indonesian state in forest resource management follow a pattern highly indicative of neo-patrimonialism.

Neo-patrimonialism and Forest Degradation

As a system encompassing both political decision-making and the allocation of economic resources, neo-patrimonialism can be viewed as a political process which leads to sub-optimal outcomes in economic efficiency. Policies are not pursued out for general gains in welfare, but instead to generate rents for those in power. Where power accrues to a well-connected ruling elite that faces virtually no institutional constraints, the structure of incentives encourages rent-seeking behavior rather than entrepreneurship and profit-seeking. Michael Ross, while shying away situating cronyism and the culture of patronage at the core of his argument, richly demonstrates the connection between commodity booms, weak institutions and bad forest policy, recognizing that state institutions are endogenous, and can easily be dismantled by key government actors. Consequently, bad policy comes not only as the result of rent-seeking by private actors, but predominantly through what he calls “rent-seizing,” a strategy in which state actors seek the right to allocate rents to others. To do so, they alter the structure of political institutions, which should ideally promote sustainable use of forest revenues and protect the state from the demands of rent-seekers.^{xxiii}

Ross positions institutional failure, via the “rent-seizing” behavior of key state actors, as an alternative to clientelism as an explanation of windfall policy failure. Yet, using Van de Walle’s notion of “neo-patrimonialism, the two explanations can be made to complement each other. Ross critiques arguments connecting bad policy to cronyism and entrenched systems of patronage because they assume that a weak state exists to begin with, but fail to demonstrate why resource booms lead to institutional decline.^{xxiv} Yet, in his case study of Indonesia, Ross recognizes the role of patronage in Suharto’s New Order: “Rather than use patronage in an ad hoc manner, or rely on dyadic personal ties with his many clients, Suharto crafted a set of patronage institutions that created a stable set of incentives for generations of military officers, who had few if any personal links with him.”^{xxv} Thus, identifying the pervasiveness of clientelism and patronage in Indonesia does not mean that the state was at the mercy of its clients. Instead, as Van de Walle recognizes, a political leader, in this case Suharto, was capable of using the state to consolidate a network of clients. Thus, bad forest policy, indifferent to both economic efficiency and environmental sustainability, emerged from state-driven, rather than crony-driven, patrimonialism.

While it is certainly a stretch to argue that policies that encourage competition and profit-seeking will lead to sustainable forest outcomes, particularly when prices do not internalize the many negative externalities that result from forest exploitation, it is certainly possible to envision well-regulated markets serving to promote some modicum of restraint. Where rent-seeking as well as rent-seizing dominate, we can expect

environmentally unsound results to accompany economic inefficiency. Indeed, in his study of rent-seeking behavior in Indonesia, Andrew MacIntyre notes that the timber industry was notorious for rampant cronyism and corruption. Indeed, in a process neatly emblematic of patrimonialism at its purest, companies, which received their concessions based on connections to the state, would unofficially contribute to a large slush fund that was controlled by President Suharto, managed by key interests in the forest industry, and used for off-budget fiscal activity that would create further rents for military leaders, top-level bureaucrats, and other players in the great game of patronage (MacIntyre 2000).^{xxvi}

From the start of the logging boom, government timber policies were heavily influenced by the pervasive pattern of neo-patrimonialism. With the wide scale opening of Indonesia's forests to exploitation through issue of government concessions in the late 1960s, many timber concessions were not distributed on the open market to the highest bidder. Instead, Suharto directed concessions to military leaders in order to reward loyal generals, co-opt military dissidents, and create an additional income source for the military budget. The Basic Forestry Law of 1967 placed all forest land under the authority of the directorate general of forestry in Jakarta, increasing the authority of the central government to distribute exploitation rights to clients. Government control of forest concessions only continued to increase: Government Regulation No. 20/1970 increased the minimum concession size to 50,000 hectares. Existing laws granted provincial governors to issue concessions smaller than 10,000 hectares and district heads less than 5,000 hectares; this new regulation effectively stripped them of their power to

distribute exploitation rights, further concentrating power to allocate rights in Suharto's hands.

These policy changes, while increasing the ability of Suharto and the central government to distribute concessions and thus to consolidate a network or patronage, also reduced the number of concessionaires, decreasing the size of the potential network of clients. Government Regulation No. 20/1970, by also mandating that all logging must be mechanized, outlawed the traditional practice of *banjir kap*, or "cutting during the flood," a lower cost and less ecologically destructive method of logging.^{xxvii} In eliminating smaller concessionaires, thus increasing control over client networks, this move accelerated and intensified forest degradation. Government Regulation 21/1971 weakened traditional *adat* rights, or customary law allowing forest dwellers to use the land for swidden cultivation and appropriation of non-timber forest products, to forests, by both stipulating that commercial loggers would have precedence when entering into conflict with *adat* rights, and that loggers had the authority to regulate *adat* on their own concessions. The value of concessions increased, as did the amount of timber rents that the government could access.^{xxviii} The creation of a close-knit patronage network thus facilitated structural changes in the forestry sector, increasing ecologically unsustainable practices.

In addition to Suharto, the primary beneficiaries of these changes were the aforementioned military leaders and the business to which they were connected. Timber exploitation became a crucial component of military-owned business groups, which

worked to both raise money for the military and create rents for individual officers, which served to both increase their personal wealth and provided resources for greater patronage, to increase their political power.

However, the military companies, while recipients of many of the concessions, played little role in the actual processes of logging. At the start, these companies were rich in political connections but poor in financial capital. They were dependent on forming joint ventures with Chinese or international capitalists. These groups would then provide the capital, management, and broader corporate structures necessary to realize profits. According to Robison, the concession holders generally only had an initial capital investment of 2 to 3 million rupiah, while the foreign or Chinese firms, with whom they would partner, would boost investment to around 100 million rupiah.^{xxix} In such a relationship, the only contribution of the military firm to the partnership was the concession itself.

Beyond the concessions allocated to the military through patronage, many other concessions went to well-connected business groups, which were primarily owned by the Chinese. In fact, by the late 1990s, about two-thirds of logging concessions were controlled by Chinese conglomerates. While the Chinese in Indonesia, and throughout Southeast Asia, dominate capitalist production, they make up a small percentage of the population (3 percent in Indonesia) and have no base for acquiring political clout. Their capital base and political dependency makes them excellent allies for the politico-bureaucrats. The politico-bureaucrats have the power to grant Chinese companies

concessions and licenses; in return, the Chinese companies provide kickbacks to the politico-bureaucrats, which they use for adding to personal wealth and building patronage-based relationships. Furthermore, Chinese companies also depend on military officers for protection and bureaucrats for lax enforcement of official rules.^{xxx} Again, both of these groups benefit financially from providing these services. Regulatory forces responsible for overseeing the responsible and sustainable use of forests, however, are hamstrung.

A closer look at the relationship between key Chinese-owned conglomerates and the Indonesian state reveals how these two groups benefit from poor forest management. The leading figure among Indonesian-Chinese timber entrepreneurs is Bob Hasan. Hasan had maintained ties with Suharto since the 1950s, when Suharto was commanding the army's Diponegoro division in Central Java, and the two were allegedly involved in illicit financial dealings that ultimately resulted in Suharto's removal from that position. By virtue of these ties, Hasan received lucrative concessions, and by the mid 1990s, he controlled over two million hectares of forests, mostly in Kalimantan. Hasan also controls four timber associations, the Indonesian Plywood Association (Apkindo), the Indonesian Sawmillers Association, the Indonesian Rattan Association, and the Indonesian Forestry Community, an umbrella group. Through his position at the helm of these organizations it is widely acknowledged that Hasan holds more influence over the management of Indonesia's forests than the Ministry of Forestry. In an archetypical example of the chicken guarding the henhouse, Hasan's considerable power over the general structure of forest management leads to shoddy enforcement of tree felling rules

and misappropriation of reforestation funds. Additionally, Apkindo, which functions as a cartel and has guided the expansion of the plywood industry, has managed to resist pressure to increase royalties and other fees imposed on loggers, both encouraging further unchecked exploitation and depriving the government of an estimated US\$500 million in revenue.^{xxxii}

In addition to Hasan, the other major players in the timber industry, also Indonesian-Chinese were clients of Suharto. Prajogo Pangestu, the largest timber operator in Asia and the largest tropical plywood exporter, controls 5.5 million hectares of timber and his concessions, logging equipment and plywood mills are worth around \$US5-6 billion. Like Hasan, Prajogo held close, personal ties to Suharto and was business partners with Suharto's oldest son.

The influence of these key actors, along with the neo-patrimonialist nature of forest policy, grew over time, particularly after the mid 1970s. The oil boom allowed the state to restrict foreign investment in forests, thus squeezing out multinational investors and creating more room for the well-connected Chinese capitalists, and the increased oil revenues gave the state more resources, which it could spread around to enlarge networks of patronage. By the middle of the 1980s, particularly after the 1982-83 fires, when concerns about the sustainability of logging practices began to be raised, a tightly knit web enveloping Suharto, the military, the politico-bureaucrats, and the key crony capitalists had been constructed. All of these groups gained from rapid exploitation of timber resources; but paradoxically, the power to regulate forest usage emanated from

within this web. Predictably, forest use policies worked to benefit these interests, and what regulations did exist were either toothless or unenforced.

The list of examples is lengthy. Subsidies to Apkindo helped establish the plywood industry, which led to surge in logging, once it was fully constituted, while creating large profits for Hasan and others in addition to rents for officials. Subsidies went to logging companies in order to create plantations, encouraging deforestation, as areas were cleared to establish the plantations, rather than the intended result of reforestation. As noted above, Ministry of Forestry officials, prohibited from accessing concessionaires land alone, were inhibited in detecting violations. The Ministry of Environment, also responsible for oversight, was vulnerable to corruption, just like the rest of the bureaucracy. The most powerful timber clients, personally connected to Suharto, were untouchable. Government royalties on timber, kept low through the close connections between industry leaders and government officials, provided almost no incentive to reduce timber waste and exercise sustainable management strategies.

Suharto's New Order and Changing Patterns in Forest Resource Use

A significant, and ultimately devastating, decline in the condition of Indonesia's forests was one key result of this closely wound network of patronage and influence. The following section details the connection between the Indonesian logging boom, the neo-patrimonialism of the New Order, and ecological transformation. The Indonesian logging boom did not take off until the middle of the 1960s, coinciding with Suharto's rise to

power and the establishment of the New Order government, following the abortive coup of September 1965. As will become clear, there is a clear connection between Suharto's government and changes in Indonesia's forests. With Indonesia's economy in crisis, as a result of increasing debt and inflation as well as a foreign exchange crisis stemming from declining receipts from the plantation sector, Suharto quickly turned to a team of Western-trained economists, who recommended encouragement of foreign investment as one element of recovery. The 1967 Foreign Capital Investment Law provided tax incentives and long-term operating licenses, in conjunction with easing restrictions on trade and the use of foreign manpower.^{xxxii} This policy change opened the gates to multinational investors and initiated a logging boom, especially in Kalimantan.

The logging sector took off through the process of granting concessions by the Ministry of Forestry and various local governments. A large amount of these concessions went to business groups owned by the military and their Chinese clients. Upon receiving these concessions, they would then enter joint ventures with foreign companies, which would provide the bulk of the capital for the venture and then often subcontracted the actual logging activity to Philippine or Malaysian loggers.^{xxxiii} Thus, while military businesses and Chinese capitalists had some degree of involvement in these forest concessions, indigenous capital was almost completely absent.

This logging boom continued until 1980, and by this time Indonesia had become the largest tropical hardwood exporter in the world. Its log production was five times higher than in 1968.^{xxxiv} Yet over this period, the heavy involvement of foreign capital in

the logging industry, and the concurrent exclusion of domestic indigenous capital became increasingly discomfoting to the government. While the technocrats who initially urged the promotion of foreign investment continued to support policies favoring openness, the Malari riots in 1974 highlighted public discontent with the rising dominance of foreign investors across sectors.^{xxxv} Following these riots, laws were passed outlawing 100 percent foreign ownership, and by 1975 the government no longer accepted new foreign investments in logging, restricting investors to processing ventures. Further government restrictions followed, including a mandatory deposit on log exports to support processing costs, and increased log export taxes. By the end of the 1970s, foreign firms began to withdraw, and in 1980, the government imposed a ban on log exports.

While providing a major boost to the Indonesian economy, this logging boom predictably had negative effects on Indonesia's forests. During this logging boom, Indonesia adopted a selective felling system (Tebang Pilih Tanam Indonesia [TPTI]) for its concession areas, which aimed at facilitating a steady flow of timber to be extracted on a 35-year rotation. However, the original leases in these concessions lasted for only twenty years, which weakened the incentives to follow the prescribed guidelines for cutting, since there was no guarantee that companies would have their leases extended and gain the benefits from conscientious management. Furthermore, the TPTI system encouraged particularly poor forest management. Only trees greater than 53 centimeters in diameter at breast height were available for felling. This policy required a larger area to be designated for felling than is necessary under more uniform cutting systems. The TPTI system also based extraction fees paid by the companies on removals rather than on

the number of commercial trees in the stand, but there was no incentive to protecting the unharvested trees. The compaction of soils caused by bulldozers, winches, and dragged trees also diminished the potential for natural regeneration that was crucial to the TPTI.^{xxxvi} One estimate claims that two-thirds of the trees that are “left” after logging through this process are either destroyed during logging or die as a result of long-term ecological imbalances.^{xxxvii} And one reason fires are especially damaging in areas that have been recently logged is because of the large amounts of highly combustible forest waste and dead trees left behind. Additionally, because only the high-grade trees harvested are recorded in logging figures, this system of extraction results in underestimation of the actual damage sustained.

With the ban on logging for export imposed in 1980, timber production dipped briefly but soon recovered. While the ban may have been prompted slightly by concern over the rapid degradation of Indonesia’s forests, the greater apprehension was that this degradation was not providing significant enough benefits to the Indonesian economy. Producing timber for export does not create any forward linkages, and with the bulk of the profits going to foreign companies, there were few gains from logging that could justify the costs. What was needed was a program that could harness Indonesia’s timber resources to further the process of development; the solution was found in the development of a domestic plywood and sawnwood industry. Supported by state subsidies and propelled by the lack of alternatives for profiting from forest resources, the plywood and sawnwood industries took off: plywood production increased from around one million cubic meters in 1980 to 10 million cubic meters in 1992, while sawnwood

also increased from less than 3.5 million cubic meters in 1979 to over 10 million in 1998.^{xxxviii} In 1985, all plywood producers were forced to join the cartel Apkindo, which undercut the world market for plywood and created a virtual monopoly in Indonesia. The costs to the forests continued. While official whole-log harvests declined from 25 million cubic meters to 15 million cubic meters between 1980 and 1983, because of insufficient milling capacity, once these industries had been sufficiently established, the rate of logging recovered, hitting 26 million cubic meters by 1987. Additionally, these numbers reflect official figures and may overlook illegal felling.^{xxxix}

Through periods of both foreign control and domestic control of forest concessions, intensive logging has led to swift exhaustion of much of Indonesia's primary forests. An estimate made by the Indonesian economist Rizal Ramli directly prior to the 1997-98 fires estimated that if the current rate of logging continues, the primary forests of Indonesia could disappear in three decades.^{xl} By the time of the fires, Indonesia had become the world's largest plywood producer, with 7.85 million cubic meters exported in 1997, or 80 percent of total Indonesian plywood production, worth US\$3.58 billion.^{xli} These logging activities were not without benefit to the Indonesian economy. In 1996, total output from forest-related activities was about US\$20 billion, about 10 percent of Indonesia's GDP. Additionally, forest related employment provided approximately 800,000 jobs in the formal sector and many more in the informal sector, and the government received over US\$1 billion a year in royalties and other revenues from forestry.

Yet these benefits do not tell the complete story of the state of logging by the middle of the 1990s, for they fail to convey the considerable disconnect between policy and enforcement. Nationwide, there is only one Ministry of Forestry (MOF) staff person for every 127,100 hectares of forest, and in East Kalimantan, where logging activities are the heaviest, the ratio declines to one per 314,000 hectares. This low level of regulatory power is exacerbated by rules that prevent MOF staff from entering public forest lands where a concessionaire operates without prior approval from the company.^{xliii} As a result, enforcement of regulations is weakened, monitoring of harvest practices is imprecise, and logging companies can get away with under reporting harvests to reduce royalty payments. Illegal logging is a systematic and widespread phenomenon across Indonesia, as illegal loggers gain access to areas through logging concession roads. Particularly tragic is the degree of logging in two of Indonesia's showplace national parks, one in northern Sumatra and the other in southern Kalimantan, which are the two most important protected habitats for the endangered orangutan in Indonesia.^{xliiii} Government punishment of illegal logging activity by major logging interests is rare, and licenses are almost never revoked. Instead, enforcement efforts are generally focused on small-time loggers or swidden farmers, rather than well-connected companies.^{xliv}

Finally, the rise of the commercial logging industry, while the primary source of changes in the use and quality of Indonesia's forests, is not the only factor contributing to degradation. As mentioned above briefly, burning forests for the establishment of plantations was one of the key immediate causes of the 1997-98 fires. By the middle of the 1990s, creation of plantations for both industrial timber and oil palm production had

jointed logging of existing forests as a major source of deforestation. Timber plantations were initially billed by the government as a way to promote conservation and augment supplies of timber from natural forests; timber plantation entrepreneurs received interest-free loans from a “Reforestation Fund” collected from logging concessions to establish these plantations. As noted above, the availability of these incentives to establish plantations has led to practices which actively seek to degrade forests, in order to receive lucrative plantation licenses. Oil palm plantations have grown at an even faster rate than timber plantations: from 843,000 hectares in the mid-1980s to nearly 3 million hectares in 1998.^{xlv} Again these plantations result from the conversion of production forests, and they encourage burning for land clearing as well as retaliatory burning by local people out of protest over the loss of their land to plantations firms. Unsurprisingly, the oil palm industry is dominated by some of the same domestic conglomerates that control the logging, wood-processing, and pulp and paper industries, whose connection to the Indonesian state has already been detailed.

Development and Deforestation

Ultimately, Indonesian forestry policy could not be sustained simply by the raw avarice of top government and military officials in conjunction with the crony capitalists. Even with a monopoly on power and the ability to suppress dissent, Suharto’s New Order government needed ideological justification for their policy choices. The rhetoric of economic development conveniently filled this space. The politico-bureaucrats have used their domination of state authority in order to amass personal and political benefits,

through sale of access to state facilities such as export and import licenses, subsidized credit, and of course, forestry concessions. Access to these facilities depends on a state that intervenes in markets and the economy. Thus, the politico-bureaucrats argued that state intervention in the economy was necessary to encourage national economic development, particularly the creation of an autonomous industrial sector capable of producing complex capital and intermediate goods, as well as low value-added products.^{xlvi} Hence, since plywood production created more backwards and forward linkages than simple logging for export, this segment of the economy was to be supported, through subsidies and other forms of government intervention.

Just as the pressing need for development could be used to justify the general practice of government intervention in the economy, it was also used to undergird the unsustainable forestry policies that resulted from this intervention. Peluso emphasizes the continuity between the “scientific” forest management implemented through Dutch colonial rule and state control of production and protection forests in Java, noting that in the latter period, control was justified through the rhetoric of “public interest” and “public welfare.”^{xlvii} Through envisioning the relationship between economic growth and environmental protection as a zero-sum game, a notion that has been challenged with the rise of the paradigm of sustainable development, Indonesian forestry policy through the 1970s and 1980s recognized forests as a valuable resource to be exploited for economic gains. Indeed, with the fall in oil revenues from the decline of prices in the early 1980s made the government even more dependent on extracting revenue from forest resources. The attitude of the Minister of Forestry toward the 1982-83 fires is especially indicative

of this lack of concern for forest preservation. In an interview, he asserted that “nearly all of the forest burned was conversion forest. So what you have is land clearing for free. The forest fire was the natural way of ‘clearing the land.’”^{xlvi}

It would thus be misleading to assert that the capture of the state through the politico-bureaucrats and crony capitalists was the sole force behind deforestation. Exploitation of resources to propel growth was also pursued by rational policy-makers. The dominance of the politico-bureaucrats and crony capitalists over policy-making was not uniform throughout the lifespan of the New Order government. In times of economic crisis, like that caused by the oil price decline in the early to middle 1980s, the government faced severe fiscal difficulties, particularly on the balance of payments. In response, the locus of power shifted to the technocrats, Western-trained neo-liberal economists, who also agreed that exploitation of natural resources was necessary to raise funds to service debt and generate foreign exchange. Yet because of the extremely well-connected nature of crony capitalists like Hasan and Prajogo, with their deep interests in the forestry sector, the technocrats had less success in eliminating subsidies and breaking up cartels. Still, the major disconnect in policy preference between patrimonialist decision-making and rationalist decision-making was not over the question of whether to exploit Indonesia’s forest resources; instead, it was over the degree of this exploitation as well as where the economic gains from this exploitation would go.

Indeed, a crucial feature of New Order Indonesia is that while Suharto and his family, the politico-bureaucrats, and the crony capitalists amassed great wealth,

Indonesia's economy did rather well during this period. Emerging out of a severe economic crisis in the mid 1960s, Indonesia's GDP achieved an annual rate of growth of more than 7 percent from 1968 to 1981, slowed to 4.3 percent between 1981 and 1988 and returned to 7 percent between 1989 and 1993. Furthermore, poverty alleviation has been a great success. While, according to one estimate, almost 60 percent of Indonesians in 1970 were living below the poverty line, the figure had dropped to 15 percent by 1990.^{xlix} Of course, these figures fail to take into account the long-term costs of many of the policies that served to facilitate growth.

Conclusions

This last point returns us to the issue of El Niño. Rather than viewing the 1997-98 El Niño simply as an anomalous climatic event, which, through its severity, just happened to provoke a massive environmental and economic disaster; it is necessary to situate this incident in the context of the political economy of Indonesia's New Order. Again, the framework provided by Mike Davis in *Late Victorian Holocausts* is particularly helpful. Davis's case-studies of India, China, and Brazil in the late nineteenth century elucidate the role played by environmental change provoked by the shift from subsistence agricultural production to commercial production, combined with the weakening of state capacity in setting the conditions for the droughts of this era. Indonesia, under Suharto's New Order, demonstrates striking parallels. Within a thirty-year span, the use pattern of Indonesia's forests moved dramatically from small-scale clearing for swidden agriculture and other subsistence needs to large-scale commercial

logging and plantation-based production led by large, politically well-connected conglomerates. Additionally, the power of the state, especially over forest-related policy, was commandeered by a small group of military elites, politico-bureaucrats, and crony capitalists. Thus, we observe a considerable shift in the mode of production in addition to a consolidation of patrimonial governance in Indonesian politics. However, contrary to Davis's neo-Marxist interpretation of history, the Indonesian scenario demonstrates the decisive role of politics in engendering economic change.

When an anomalous, unpredictable, but not entirely unexpected climatic event, such as the 1997-98 El Niño, strikes, the consequences should not be seen as unavoidable and inevitable. Especially after the 1982-83 El Niño, but even before, Indonesia's susceptibility to monsoon-altering weather patterns was evident. Yet the management and usage of Indonesia's forests continued in a manner that emphasized short-term gains, which accrued primarily to well-connected political and commercial elites, but were often justified through the rhetoric of national economic development, an end that theoretically benefited all in Indonesian society. In the end, the policies that were officially pursued, in conjunction with the rules that were ignored by regulatory agencies, which were powerless in relation to the coalition of interests at the top of the state apparatus, must be recognized as the source of the conditions that made the wildfires possible.

Paradoxically, when a catastrophic climatic event does occur, the greatest costs are paid by those who have the least say over the structural changes that exacerbated the impact of the event. While political and economic decision-making under Suharto was

dominated by Javanese elites (with close ties to Chinese capitalists), the greatest damage from the fires occurred on the islands of Sumatra and Kalimantan. The fires were especially damaging to indigenous subsistence producers, who lost their harvests and sometimes their homes. Those who remain dependent on small-scale agricultural production on the outer islands were generally those who failed to benefit fully from Indonesia's economic growth. Yet the fires were not the first time that subsistence producers paid the price for Indonesia's modernization; for since the rise of the logging industry, both logging and plantation production have impinged upon their livelihoods.¹ With luck, the political and economic order of post-Suharto Indonesia will continue to disentangle the linkages between politico-bureaucrats and commercial elites, enabling a system of forest management that makes the mechanism of the state responsive to the needs and long-term interests of those groups in society that have the most to lose from another El Niño related disaster.

ⁱ Quoted in Mike Davis, *Late-Victorian Holocausts: El Niño Famines, and the Making of the Third World* (London: Verso, 2001), 21.

ⁱⁱ Amartya Sen, *Poverty and Famines: An Essay on Entitlement and Deprivation* (Oxford: Clarendon Press, 1981), 6.

ⁱⁱⁱ Davis also draws a distinction between *meteorological drought*, the shortage in precipitation for a given locality, and *hydrological drought*, in which natural and artificial water storage systems lack accessible supplies to save crops; and he argues that hydrological drought, with regard to its causation of famines, always has a social history. Davis, *Late Victorian Holocausts*, 18. In this analysis, however, I emphasize forests fires, which result from meteorological drought, aiming to demonstrate the social and political history not of drought, but of an immediate offshoot.

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- ^{iv} James Schweithelm and David Glover, "Causes and Impacts of the Fires," in *Indonesia's Forest Fires and Haze: The Cost of Catastrophe*, ed. David Glover and Timothy Jessup (Singapore: Institute of Southeast Asian Studies: 1999), 4.
- ^v Charles Victor Barber and James Schweithelm, *Trial by Fire: Forest Fires and Forestry Policy in Indonesia's Era of Crisis and Reform* (Washington: World Resources Institute, 2000), 5.
- ^{vi} BAPPENAS (National Development Planning Agency), *Final Report, Annex I: Causes, Extent, Impact and Costs of 1997/98 Fires and Drought* (Asian Development Bank Technical Assistance Grant TA 2999-INO, Planning for Fire Prevention and Drought Management Project, Jakarta, April, 1999).
- ^{vii} Schweithelm and Glover, "Causes and Impacts of the Fires," 7-8.
- ^{viii} Jake Ruitenbeek, "Indonesia," in Glover and Jessup, *Indonesia's Forest Fires and Haze*, 86-112.
- ^{ix} J.A. McNeely, K.R. Miller, W.V. Reid, R.A. Mittermeier and T.B. Verner, *Conserving the World's Biodiversity* (Geneva: IUCN, World Resources Institute, Conservation International, World Wildlife Fund-US, and The World Bank, 1990).
- ^x Schweithelm and Glover, "Causes and Impacts of the Fires," 5.
- ^{xi} ADPC (Asian Disaster Preparedness Center), *Indonesia Country Study*. (Report sponsored by UNEP/NCAR/WMO/UNU/ISDR, 2000), 5.
<http://www.unu.edu/env/govern/EI/Ino/CountryReports/pdf/indonesia.pdf> (22 November 2005).
- ^{xii} Agribusiness concessions had been legally prohibited from burning forest as means to land clearing first in by the Ministry of Agriculture in 1995, and the Ministry of Transmigration and Settlement of Forest Dwellers adopted a comparable policy for preparation of transmigration areas in 1997. See FWI/GFW, *The State of the Forest: Indonesia* (Bogor, Indonesia: Forest Watch Indonesia, and Washington DC: Global Forest Watch, 2002), 57-58. The lack of enforcement of these regulations will be examined more fully later.
- ^{xiii} Peter Dauvergne, *Shadows in the Forest: Japan and the Politics of Timber in Southeast Asia* (Cambridge: MIT Press, 1997), 80-81.
- ^{xiv} F. Siegert, G. Ruecker, A. Hinrichs, and A. A. Hoffman, "Increased Damage from Fires in Logged Forests During Droughts Caused by El Nino," *Nature*, 414(November 22, 2001), 437-440.

^{xv} The formulation of the Environmental Kuznets Curve does exactly this, showing that with economic growth comes an initial phase of deterioration followed by a subsequent phase of improvement. See Gene Grossman and Alan Kruger, "Economic Growth and the Environment," *The Quarterly Journal of Economics* 110, no. 2 (May 1995), 353-77. Here, this phase of deterioration is viewed as a necessary, but temporary, state of affairs. Yet even this formulation overlooks the possibility of irreversible damages and unanticipated costs that can result from this phase of deterioration. Through fitting both of these criteria, the 1997-98 fires challenge passive acceptance of the EKC, through demonstrating that environmental damage can have long-term economic costs.

^{xvi} William Ascher, *Why Governments Waste Natural Resources: Policy Failures in Developing Countries* (Baltimore: Johns Hopkins University Press, 1999), 80-81.

^{xvii} Max Weber, *Economy and Society*, ed. Guenther Roth and Claus Wittich, vol. 2 (Berkeley: University of California Press), 1030.

^{xviii} Nicolas van de Walle, *African Economies and the Politics of Permanent Crisis, 1979-1999* (Cambridge: Cambridge University Press), 51-54.

^{xix} Richard Robison, *Indonesia: The Rise of Capital* (North Sydney: Allen & Unwin, 1986), 111-113.

^{xx} James Scott, "Patron-Client Politics and Political Change in Southeast Asia," *American Political Science Review* 66, no. 1 (March 1972), 91-113.

^{xxi} Van de Walle, *African Economies and the Politics of Permanent Crisis, 1979-1999*, 54.

^{xxii} Jamie Mackie, "Property and Power in Indonesia" in *The Politics of Middle Class Indonesia*, ed. Richard Tanter and Kenneth Young (Clayton, Victoria, Australia: Center for Southeast Asian Studies, Monash University), 87.

^{xxiii} Michael Ross, *Timber Booms and Institutional Breakdown in Southeast Asia* (Cambridge: Cambridge University Press, 2001), 36-37.

^{xxiv} *Ibid.*, 31.

^{xxv} *Ibid.*, 160

^{xxvi} Andrew McIntyre, "Funny Money: Fiscal Policy, Rent-Seeking, and Economic Performance in Indonesia" in *Rents, Rent-Seeking and Economic Development: Theory and Evidence in Asia*, ed. Mustaq. H. Khan and K. S. Jomo.. (Cambridge: Cambridge University Press, 2000), 255-60.

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- ^{xxvii} Ross, *Timber Booms and Institutional Breakdown in Southeast Asia*, 174. Peluso notes that this shift was also a response to the refusal of Japanese buyers to purchase hand-cut logs because of their lower quality. See Nancy Peluso, "The Political Ecology of Extraction and Extractive Resources in East Kalimantan, Indonesia," *Development and Change* 23, no. 4 (October 1992), 49-75.
- ^{xxviii} Ross, *Timber Booms and Institutional Breakdown in Southeast Asia*, 176.
- ^{xxix} Robison, *Indonesia: The Rise of Capital*, 256.
- ^{xxx} Dauvergne, *Shadows in the Forest*, 65.
- ^{xxxi} Adam Schwarz, *A Nation in Waiting: Indonesia's Search for Stability*, 2nd Edition (St. Leonards, Australia: Allen & Unwin, 1999), 140.
- ^{xxxii} Mark Poffenberger, "Rethinking Indonesian Forest Policy: Beyond the Timber Barons," *Asian Survey* 37, no. 5 (1996), 453-69.
- ^{xxxiii} Robison, *Indonesia: The Rise of Capital*, 186.
- ^{xxxiv} Peter Dauvergne, "Weak States and the Environment in Indonesia and the Solomon Islands" (Canberra: Resource Management in Asia-Pacific Project, Australian National University, Working Paper No. 1997/10, 1997) 7.
- ^{xxxv} Schwarz, *A Nation in Waiting*, 34-35.
- ^{xxxvi} Poffenberger, "Rethinking Indonesian Forest Policy," 457.
- ^{xxxvii} Peter Dauvergne, "The Politics of Deforestation in Indonesia," *Pacific Affairs* 66, no. 4 (Winter 1993-94), 512.
- ^{xxxviii} Dauvergne, "Weak States and the Environment in Indonesia and the Solomon Islands," 7.
- ^{xxxix} Poffenberger, "Rethinking Indonesian Forest Policy," 459.
- ^{xl} Quoted in Peter Dauvergne, "Environmental Insecurity, Forest Management, and State Responses in Southeast Asia." (Canberra: Department of International Relations, The Australian National University, Working Paper No. 1998/2, 1998), 10.
- ^{xli} Barber and Schweithelm, "Trial by Fire," 2.
- ^{xlii} Poffenberger, "Rethinking Indonesian Forest Policy," 458.
- ^{xliii} Barber and Schwiethelm, "Trial by Fire," 30.

^{xliv} Dauvergne, “Environmental Insecurity, Forest Management, and State Responses in Southeast Asia,” 13.

^{xlv} Barber and Schwiethelm, “Trial by Fire,” 32.

^{xlvi} Andrew Rosser, *The Politics of Economic Liberalisation in Indonesia: State, Market, and Power* (Richmond, UK: Curzon, 2002), 33.

^{xlvii} Nancy Peluso, *Rich Forests, Poor People: Resource Control and Resistance in Java* (Berkeley: University of California Press, 1992), 18.

^{xlviii} Dauvergne, “The Politics of Deforestation in Indonesia,” 507.

^{xliv} Schwarz, *A Nation in Waiting: Indonesia’s Search for Stability*, 52.

¹ This pattern of suffering and exploitation is emblematic of what Watts refers to as the “local link between environment and social justice.” The policies and actions of non-local forces (foreign companies, governments insulated from popular demands) and their failure to internalize the externalities of these actions are felt most sharply by local communities, whose powerlessness is shaped by a “history of past exploitation as much as by the ostensibly new forms of market involvement.” Michael Watts, “Contested Communities, Malignant Markets, and Gilded Governance: Justice, Resource Extraction, and Conservation in the Tropics,” in *People, Plants and Justice: The Politics of Nature Conservation*, ed. Charles Zerner (New York: Columbia University Press, 2000), 45-46. See also Peluso, *Rich Forests, Poor People*, and Peluso, “The Political Ecology of Extraction and Extractive Resources in East Kalimantan, Indonesia.”