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A Tale of '*Orang-Orang Angkat Pasir*' in the Bird's Head Peninsula: Informality in Sorong's Edge

Kisah 'Orang-Orang Angkat Pasir' di Semenanjung Kepala Burung: Informalitas di Pinggiran Kota Sorong

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ABSTRACT: The term "mining" carries a sensitive connotation for the sand lifters on the margins of Sorong City, West Papua, who prefer to identify themselves as "*orang-orang angkat pasir*" (sand lifters). Their labor involves extracting sand from rivers and clearing hillsides—often through deforestation—to facilitate sand collection. The ecological repercussions of these informal sand mining activities, including deforestation, have drawn concern from local governments, residents, and environmental advocates, who view these practices as detrimental to the environment. This negative perception has contributed to the stigmatization of "sand mining" as a term and a practice. This paper examines the lives and livelihoods of sand lifters, addressing the question: How do they sustain themselves through sand mining activities? For many, sand lifting represents a last resort to survive and participate in urban development, even as their work contributes to environmental degradation. While sand mining poses significant ecological challenges, it simultaneously serves as a lifeline for marginalized communities striving to improve their living conditions. By focusing on the case of sand lifters in West Papua, this paper applies the concept of "*infrapolitics*" to explore the intersections of informality, political agency, and the right to livelihood in urban contexts. In doing so, it broadens the discourse on human rights, informality, and environmental justice in the region, highlighting on the complex dynamics between survival, urban development, and ecological impact.

ABSTRAK: *Istilah "pertambangan" membawa konotasi sensitif bagi para pengangkat pasir di pinggiran Kota Sorong, Papua Barat, yang lebih memilih menyebut diri mereka sebagai "orang-orang angkat pasir." Pekerjaan mereka melibatkan pengambilan pasir dari sungai dan pembersihan lereng bukit—seringkali melalui penebangan hutan—untuk memudahkan pengumpulan pasir. Dampak ekologis dari aktivitas pertambangan pasir informal ini, termasuk deforestasi, telah menimbulkan kekhawatiran dari pemerintah setempat, warga, dan para pegiat lingkungan, yang memandang praktik ini sebagai sesuatu yang merusak lingkungan. Persepsi negatif ini turut menyumbang pada stigmatisasi terhadap istilah dan praktik "pertambangan pasir." Makalah ini mengkaji kehidupan dan penghidupan para pengangkat pasir, dengan mengajukan pertanyaan: Bagaimana mereka mempertahankan hidup melalui aktivitas pertambangan pasir? Bagi banyak dari mereka, mengangkat pasir merupakan pilihan terakhir untuk bertahan hidup dan berpartisipasi dalam pembangunan kota, meskipun pekerjaan mereka turut menyumbang pada kerusakan lingkungan. Meskipun pertambangan pasir menimbulkan tantangan ekologis yang signifikan, ia juga menjadi jalur kehidupan bagi komunitas yang terpinggirkan dalam upaya memperbaiki kondisi hidup mereka. Dengan berfokus pada kasus para pengangkat pasir di Papua Barat, makalah ini menggunakan konsep "infrapolitik" untuk mengeksplorasi pertemuan antara informalitas, agensi politik, dan hak atas penghidupan di konteks perkotaan. Dengan demikian, makalah ini memperluas diskursus mengenai hak asasi manusia, informalitas, dan keadilan lingkungan di kawasan ini, dengan menyoroti dinamika kompleks antara perjuangan hidup, pembangunan kota, dan dampak ekologis.*

Keywords:
human rights; environment; urban development; *infrapolitics*; informality

Kata Kunci:
hak asasi manusia; lingkungan; pembangunan perkotaan; infrapolitik, informalitas

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1. Introduction

The prominence of human rights issues in Papua stems from a history of military violence and land dispossession, particularly since the New Order regime. Research indicates that approximately 40 violent incidents involving the Indonesian Military (*Tentara Nasional Indonesia*/TNI) and the National Police (*Kepolisian Republik Indonesia*/*Polri*) were recorded in 2020. These included shootings, interceptions, and prosecutions targeting Papuan citizens. By 2023, Komnas HAM (Indonesia's National Commission on Human Rights) reported 113 human rights cases in Papua, with most involving armed violence. This data underscores the severely limited democratic space in the region. A critical ongoing issue is the armed conflict between TNI and *Polri* forces and the KKB (*Kelompok Kriminal Bersenjata*, or Armed Criminal Group), widely labelled as a separatist movement for Papuan independence.[1] Historical tragedies further highlight these violations, such as the Wasior tragedy in 2001, the Wamena tragedy in 2003, and the Paniai tragedy in 2014, as reported by *Kompas.com*.[2]

After the fall of the New Order regime, Papua experienced significant transformations in law and human rights, marked by the enactment of special autonomy (*Otonomi Khusus* or *otsus*).[3] Law No. 21 of 2001 on Special Autonomy was introduced to recognize and accommodate the rights of Papuan communities over their lands and natural resources, aiming to enhance their prosperity. While this policy initially held promise, its implementation has had profound and complex impacts on Papuan communities.[4] Development projects ostensibly rooted in indigenous wisdom and collective interests have dramatically altered Papuan cultures, traditions, and values. Rather than fostering equitable growth, these changes have often resulted in widening social inequalities, land grabs targeting customary lands, and the marginalization of indigenous communities. This paradox highlights the challenges of balancing development initiatives with the preservation of indigenous rights and cultural heritage.

For instance, the issuance of certificates for customary land release (*sertifikat pelepasan tanah adat*), initially intended to accommodate indigenous rights, has had unintended consequences. Instead of empowering indigenous communities, these certificates have become tools that enable outsiders (settlers) to more easily invest in Papuan lands. Among the Moi communities, this has led to internal disputes within families, as they face the dilemma of whether to sell their land to outsiders or retain them. Lopulalan[5] highlights that conflicts of interest over customary lands have emerged not only among Papuan people themselves but also between indigenous communities, local governments, investors, and settlers. A similar case is documented by Wafa (2024) in Manokwari, where three ethnic groups—each claiming to be the region's most indigenous—competed for compensation or *ganti rugi adat* related to the planned expansion of Rendani Airport. Although investors may hold certificates of private ownership, indigenous communities can still claim their customary lands in the absence of certificates of customary release. In Manokwari, the three ethnic groups demanded 30 billion rupiahs as compensation for their lands.[6] In the case of Sorong, the certificate of customary land release is required for settlers to conduct sand mining. Some of the land that was once owned by indigenous people has been transferred to settlers. In this context, we examine how customary land release contributes to ongoing conflict that extend beyond legal-formal frameworks and the government's intention to protect human rights.

Scholars have noted that indigenous communities and environmental concerns are closely linked to the expansion of capitalist extraction in various regions. In the case of sand mining in Sorong, those involved are not only settlers and Papuan migrants but also members of the Moi ethnic community who still own land in the

1 I Gede Hendra Widyantara, "Penegakan Hukum Terhadap Pelanggaran Hak Asasi Manusia Dalam Mewujudkan Keadilan Di Papua," JISOS 1, no. 7 (2022): 585–600.

2 Verelladevanka Adryamarthanino and Tri Indriawati, "Daftar Pelanggaran HAM Berat Di Papua," Kompas.com, January 13, 2023, https://www.kompas.com/stori/read/2023/01/13/120000879/daftar-pelanggaran-ham-berat-di-papua?page=all#page2.

3 Special autonomy was initially intended to empower the Papuan people by providing them with a political arena and the opportunity to govern their regions and exercise self-determination. According to Law No. 21 of 2001, Chapter 1, Article 1, "customary laws" are defined as the laws adhered to by indigenous Papuan communities who are deeply connected to their regions, customs, cultural traditions, and shared sense of solidarity (Lopulalan, 2018). This policy grants broad legal authority to indigenous communities through customary institutions (Lembaga Masyarakat Adat, or LMA) to manage their customary lands independently. Furthermore, the policy is supported by Regulation No. 5 of 1999 issued by the Ministry of Agrarian Affairs/National Land Agency, which emphasizes the recognition of customary lands in Papua (Gefilem, 2016). However, these two regulations have also led to unintended consequences, sparking conflicts both within Papuan communities and between these communities and local governments (Mulyadi, 2010). These challenges reveal the complexities of implementing policies designed to promote indigenous rights while navigating competing interests and governance structures.

4 Joseph Eliza Lopulalan, "Jati Diri Orang Asli Papua Dalam Pusaran Otonomi Khusus Di Provinsi Papua Barat," SOCIA: Jurnal Ilmu-Ilmu Sosial 15, no. 1 (January 31, 2018): 37–49, https://doi.org/10.21831/socia.v15i1.20801.

5 Lopulalan.

6 Zaein Wafa, "Government Tips In Severe Human Rights Conflicts In Political Legal: Case Study Of Papua," Indonesia Journal of Criminal Law 6, no. 1 (2024): 11–20, https://doi.org/10.31960/ijocl.v6i1.2369.

area. In reality, they too contribute to environmental degradation due to the large-scale extraction of sand. Many Moi families have opted to open their lands for sand mining as a primary source of income to sustain their daily livelihoods. On one hand, local government officials and environmental advocates, including members of local non-governmental organizations, view sand mining as a significant driver of environmental degradation. On the other hand, those directly involved in the activity see their work as a contribution to urban development in Sorong. This dual perspective underscores the intricate dynamics between livelihoods, environmental concerns, and the shaping of the city's landscape.

The City of Sorong, West Papua, Indonesia, has undergone significant transformations over the years, marked by changes in its demographics, commodities, and landscapes. Sorong has become a hub for extensive development agendas and projects led by the government. Sand mining plays a crucial role in supporting these urban development efforts, providing materials for government buildings, housing settlements, and business and market infrastructure. However, this activity has also generated significant environmental challenges, including altered landscapes, excessive dust, sedimentation, and river pollution throughout the region. As a result, sand mining represents a dilemma of development: while it facilitates urban infrastructure and progress, it simultaneously contributes to environmental degradation.

While these events highlight the persistent challenges of violence, repression, land disputes, environmental degradation, and the limited recognition of Papuan's rights within Indonesia's governance framework, our research seeks to identify gaps in previous studies by exploring human rights issues beyond violence. In particular, indigenous Papuans living in Sorong—especially the Moi ethnic communities—have been marginalized by urban expansion driven by settlers. This has raised concerns about human rights violations affecting their livelihoods, which are largely dependent on the informal economy. Furthermore, this paper advocates for shifting the discourse on human rights in Papua from military violence and land disputes to the 'right to live in the city' as well as 'the right to work in the city' as a new paradigm. In this context, sand mining emerges as a last resort for the Papuan people in their struggle to assert their rights to urban living.

This paper seeks to explore the complexity of connections between human rights, environmental issues, and the historical experiences of Papuan communities being marginalized in their own lands, shedding light on their role in the making of Sorong City. Furthermore, this paper aims to examine this development dilemma through the lens of sand mining activities on the margins of Sorong. These activities highlight the intricate relationship between informal economic practices—such as sand mining—and the formal urban infrastructure they support. Despite its critical role, informality is often rendered invisible, existing outside the framework of formal governance and legitimacy. Drawing on Amin (2014),[7] we seek to explore the interconnectedness of informality and formality in the context of Sorong's urban development, revealing on the often-overlooked contributions of informal economies to the city's growth. Hence, our research question is how they, the sand lifters, sustain themselves through sand mining activities. This will drive this paper for the subsequent section of discussion.

Sand mining on the margins of the city is often associated with informality, typically seen as an activity that exists outside the bounds of formal systems and governance. However, our case demonstrates that there is a complex relationship between informal and formal entities. Abel Polese[8] argues that informality should not be viewed as entirely separate from state governance; rather, it often operates within and alongside formal structures. We draw on James Scott's[9] concept of *infrapolitics* as a framework to explore the lives of sand lifters working around the city of Sorong. Scott defines infrapolitics as "unobtrusive realms of political struggle",[10] meaning that it enables subordinate groups to express their struggles through informal networks or assemblages, providing them with a form of cover for (symbolic) resistance. For indigenous communities facing marginalization in their own lands—particularly the Moi people in the Sorong region—sand lifting serves as a symbolic act of resistance and political struggle. Infrapolitics, also referred to as "the hidden transcript," operates beyond formal political expressions and becomes visible only through deeper analysis. As Scott states,

If formal political organization is the realm of elites (for example, lawyers, politicians, revolutionaries, political bosses), of written records (for example, resolutions, declarations, news stories, petitions, lawsuits), and

7 Ash Amin, "Lively Infrastructure," Theory, Culture & Society 31, no. 7–8 (December 2014): 137–61, https://doi.org/10.1177/0263276414548490.

8 Abel Polese, "What Is Informality? (Mapping) 'The Art of Bypassing the State' in Eurasian Spaces and Beyond," Eurasian Geography and Economics 64, no. 3 (2021): 322–64, https://doi.org/10.1080/15387216.2021.1992791.

9 James C. Scott, "Chapter Seven: The Infrapolitics of Subordinate Groups," in Domination and the Arts of Resistance: Hidden Transcripts (New Haven: Yale University Press, 2008), 183–201, https://doi.org/10.12987/9780300153569-009.

10 Scott, 183.

of public action, infrapolitics is, by contrast, the realm of informal leadership and nonelites, of conversation and oral discourses, and of surreptitious resistance.[11]

Drawing from this perspective, it becomes evident that formality and informality are interconnected. Infrapolitics, therefore, serves as an analytical tool to make invisible political actions visible. As Scott states, "infrapolitics provides much of the cultural and structural underpinning of the more visible political action on which our attention has generally been focused".[12] Considering that sand mining is an informal economic activity, sand lifters express their political rights through symbolic strategies, redefining their role from "sand miners" (*penambang pasir*) to "sand lifters" (*pengangkat pasir*). As a subordinate group, their activities—though informal, small-scale, or uncoordinated—contribute to formal urban governance and the state, particularly through sand mining at the city's margins. This reveals that informal sand mining is deeply connected to and supportive of formal urban infrastructure, government functions, and public spaces. In this view, becoming a sand lifter is a response to systemic subordination faced by indigenous communities. It also reflects a desire to assert their rights, resist marginalization, and remain actively engaged with urban development in Sorong.

Despite being stigmatized for their environmental impact, the label of "sand lifters" itself represents a form of political consciousness. Renaming themselves as "sand lifters" instead of "sand miners" serves as a survival strategy, allowing them to distance their work from the negative stigma of environmental destruction while emphasizing its place within the informal sector. This identity is deeply embedded within the communities involved in sand mining, yet it often remains invisible to formal government structures. In this context, sand mining at the margins becomes an act of resistance—an assertion of recognition and political agency that challenges the rigid boundaries between informality and formal governance.

2. Method

To address our research question, we employed a **qualitative approach**, specifically **ethnographic methods**, including **participant observation (**Musante & DeWalt, 2010**),** to closely engage with local sand lifters across the city. This approach allowed us to gain deeper insights into their lived experiences, work dynamics, and interactions within the broader socio-political landscape. According to Malinowski, ethnography is used to examine the way of life in specific societies and to describe their social structures and cultures.[13] We consider our research to be in its preliminary stages. Regarding sand mining activities, we conducted research across various sites using a multi-sited ethnographic approach,[14] which provided us with a broad, general overview of the people, landscapes, and experiences related to sand mining issues. We obtained data through participant observation, in-depth interviews, and a literature study. Subsequently, we divided our data into two categories: primary and secondary. The primary data was obtained through direct observation, in-depth interviews, and documentation. The secondary data were acquired from a literature review related to the history of Sorong, settler migration, and human rights in Papua. To gain a more comprehensive understanding of how Sorong city functions, further archival research and fieldwork with long-time residents of the city are necessary.

The key informant categories we selected consisted of sand mining owners, sand mining workers, and environmentalists (NGOs). We filtered these categories based on their connection to sand mining issues. Afterward, we categorized and selected consisting of sand mining owners, sand mining workers, and environmentalists (NGOs). We filtered these categories based on their connection to sand mining issues. During our research, we connected with a key informant from the environmental NGO Yayasan Sorong *Peduli Lingkungan*, which helped us engage with individuals involved in sand mining activities. Regardless of their backgrounds—whether Moi communities originally from Sorong, settlers, or Papuan migrants—many now rely on sand mining as a primary source of income. To adhere to the ethical standards of our research,[15] we have anonymized the names of our informants, including Moi clan names, Papuan migrants, and settlers. Additionally, the village names we visited across Sorong have been replaced with pseudonyms to protect the privacy of the individuals and communities involved, especially considering some ongoing disputes in the regions we studied.

11 Scott, 200.

12 Scott, 184.

13 Meisy Permata Sari et al., "Penggunaan Metode Etnografi Dalam Penelitian Sosial," Jurnal Pendidikan Sains Dan Komputer 3, no. 01 (February 10, 2023): 84–90, https://doi.org/10.47709/jpsk.v3i01.1956.

14 George E. Marcus, "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography," Annual Review of Anthropology 24, no. 1 (October 1995): 95–117, https://doi.org/10.1146/annurev.an.24.100195.000523.

15 Carole McGranahan, "The Truths of Anonymity: Ethnographic Credibility and the Problem with Pseudonyms," Rethinking Pseudonyms in Ethnography, 2021, https://americanethnologist.org/online-content/collections/rethinking-pseudonyms-in-ethnography/the-truths-of-anonymity-ethnographic-credibility-and-the-problem-with-pseudonyms/.

The scope of this research includes the history of oil and settler migration in Papua, New Order regime policies, customary land certificates, customary land dispossession, and issues faced by sand mining workers. Coincidentally, the sand mining site from which we collected data is located in the suburbs of Sorong City. The field data acquired thereafter were processed for analysis. Subsequently, we organized the data collected during fieldwork to develop a broader discussion on human rights and environmental issues. Our findings are divided into subtopics: the history of the city during the Dutch oil company and its infrastructure, the changing landscapes experienced by Sorong's residents, the distinction between sand miners and sand lifters, and finally, a discussion of the roles of informality and formality in Sorong's urban infrastructure development.

3. Findings and Discussion

3.1 Sorong City in the Making: from Oil Industry to Sand Mining

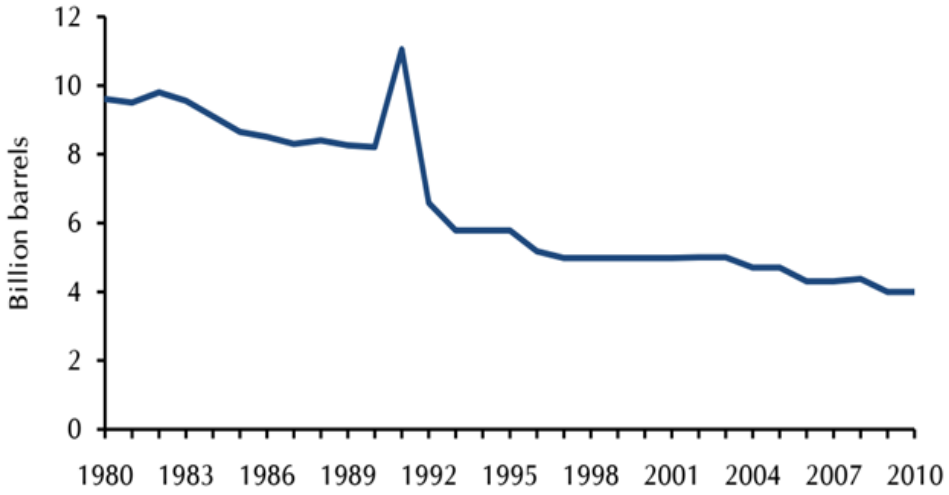
Looking back at the history of the Dutch colonial period in Indonesia, we are particularly intrigued by Greg Poulgrain's article *"Delaying the Discovery of Oil in West Papua"*.[16] The article sheds light on the political dynamics surrounding natural resources, particularly oil, during the Dutch East Indies era, focusing on the Vogelkop (Bird's Head) Peninsula in West Papua. Oil has played a crucial role in shaping the urban frontier in western Papua. Over time, the exploitation of oil in this region has been influenced by shifting colonial regimes and political upheavals following World War II. Despite these changes, West Papua has remained a key frontier for extractive industries operating in the region.

The main actor driving the capitalist frontier during the Dutch colonial period in West Papua was NNGPM (*Nederlandsch Nieuw Guinee Petroleum Maatschappij*). In 1935, the company began exploring the region by deploying Dutch geologists to the Vogelkop Peninsula. During their exploration, they identified oil seepage in various areas, including Sele, Kasim, Mogoi-Waisan, and Klamono. After discovering the oil potential, New Guinea Oil started operations in 1948 and constructed a 58-kilometer pipeline stretching from Klamono to Sorong within just two years.[17] The remnants of these oil companies, which operated from the 1940s to the 1960s, played a foundational role in the urban development of West Papua. This underscores how Sorong city's initial growth was tied to the presence of mining companies, even since the colonial era. However, there remains limited understanding about the lives of the workers and their backgrounds, particularly those who were employed by the oil companies in the 1960s.

After 1967, when NNGPM abandoned the oilfields,[18] Pertamina, Indonesia's leading oil company, took over the fields in the 1970s. Along with Pertamina, seven other companies, including Petromer Trend, signed contracts to operate in West Papua (West New Guinea). Some of these oil companies continue to operate in the western part of West Papua to this day. Research has shown that indigenous Papuan communities, particularly the Moi tribes from the Sorong area, face significant challenges in accessing opportunities within the oil and gas industry due to unequal access to jobs in urban areas.[19] The workforce in these oil companies is predominantly made up of migrants from other parts of Indonesia, such as Java, Sulawesi, Maluku, and Nusa Tenggara Timur. As a result, most indigenous Papuan communities are employed in other sectors outside of the mining industry, and many now live on the periphery of Sorong city.

16 Greg Poulgrain, "Delaying the 'Discovery' of Oil in West New Guinea," The Journal of Pacific History 34, no. 2 (September 1999): 205–18, https://doi.org/10.1080/00223349908572903.
17 Poulgrain.
18 Poulgrain, 215.
19 Hermanto Suaib and Anwar Fitrianto, "A Study of Economic Empowerment of Moi Tribe in Sorong, West Papua," International Journal of Asian Social Science 5, no. 12 (2015): 694–705, https://doi.org/10.18488/journal.1/2015.5.12/1.12.694.705.

Figure 1 Showing steadily declining trend of oil barrels since 1980s



Source: Iswahyudi, 2016, p. 29[20]

In the 1970s, the Indonesian oil industry significantly boosted the country's economy. However, by the 1980s, the economy faced major setbacks due to the collapse of oil prices in 1982 and 1986.[21] In response, the government implemented economic reforms, transitioning public works into private enterprises.[22] These efforts were aimed at reducing state regulations on the economy and moving toward a global market economy to support a free-market agenda.[23] This shift was further complicated by the Southeast Asian financial crisis in 1997,[24] which forced the Soeharto government to adopt IMF-imposed reforms, including deregulation and institutional changes in banking and public management.[25] After Soeharto's fall, the petroleum sector struggled to recover its former strength.[26] As a result, the government enacted an 'exit strategy' that diversified economic sectors, reducing reliance on oil.[27] Consequently, many former workers in the petroleum industry were left to find alternative means of survival, either returning to rural areas or taking on precarious labor in urban centers like Sorong.

Some former oil workers, including indigenous Papuans from Sorong, settlers, and migrants from the highlands of West Papua, have shifted their livelihoods to engage in sand mining activities on the margins of Sorong city. Sand mining has become a vital commodity, serving as a key foundation for formal urban infrastructure in Sorong. This paper aims to explore the transition of livelihoods from oil work to sand mining, highlighting how both indigenous Papuans and Papuan migrants now depend on sand mining as a primary source of income. In the 1980s, people in the region were already collecting sand along the coastline of West Papua. Despite some oil companies continuing their operations in the area, working in the petroleum industry is no longer seen as the primary livelihood option for many in the region.

In the 1980s, before moving to the hills to collect sand, people typically gathered sand from the beaches along the west coast of Sorong, including Saoka, Tanjung Kasuari, Pulau Dom, and Kilometer 0. These areas once boasted abundant sandy beaches, but over time, the exploitative sand collection has led to their depletion.

20 Heru Iswahyudi, "Back to Oil: Indonesia Economic Growth after Asian Financial Crisis," Economic Journal of Emerging Markets 8, no. 1 (April 2016): 29, https://doi.org/10.20885/ejem.vol8.iss1.art3.

21 Anne Booth, The Indonesian Economy in the Nineteenth and Twentieth Centuries (London: Palgrave Macmillan UK, 1998), https://doi.org/10.1057/9780333994962; Vedi Hadiz and Richard Robison, "Neo-Liberal Reforms and Illiberal Consolidations: The Indonesian Paradox," Journal of Development Studies 41, no. 2 (February 2005): 224, https://doi.org/10.1080/00220380420003092 23.

22 Hadiz and Robison, "Neo-Liberal Reforms and Illiberal Consolidations: The Indonesian Paradox," 224.

23 Booth, The Indonesian Economy in the Nineteenth and Twentieth Centuries, 178; Hadiz and Robison, "Neo-Liberal Reforms and Illiberal Consolidations: The Indonesian Paradox," 223.

24 Seung-gook Ahn, "The Truth behind the Asian Financial Crisis: Panic or Cronyism?," Pacific Focus 15, no. 2 (September 2000): 89, https://doi.org/10.1111/j.1976-5118.2000.tb00244.x.

25 Hadiz and Robison, "Neo-Liberal Reforms and Illiberal Consolidations: The Indonesian Paradox," 221–22.

26 Iswahyudi, "Back to Oil," 29.

27 Iswahyudi, 28.

Collecting sand from the coast also contributed to faster sea abrasion. However, sand taken from the beaches was considered of higher quality than sand from the hills. A local resident from KM 14, whom we met at his house on June 7, 2023, shared that sand collected from Kampung Bintan and the hills around Sorong doesn't hold up well for construction. He used sand from those areas to build his house, and now, over 10 years later, the structure has begun to show signs of wear and become porous. In the early 2020s, sand mining shifted inland to the hills and dunes in the urban periphery of Sorong, an area predominantly owned by the Moi tribes.

> *"Jadi Pulau Dom itu tadinya tahun 80-an itu pesisir pantai kami masih ada laut, apa, space darat, pasir, bahkan tempat kita bermain, tetapi karena keseringan warga masyarakat mengambil pasir laut untuk membuat rumah, pada akhirnya sekarang kami sudah mengalami yang namanya abrasi. Jadi air laut itu sudah ke jalan malah, ya jadi kami di Sorong ini sampai saat ini tidak menggunakan pasir laut ini salah satu bisa menyebabkan abrasi pesisir pantai. Jadi kami gunakan tanah gunung yang dicuci, nanti dari situ terpisah, ada pasir kasar, ada halus, cuman ya hasilnya seperti ini, dia keropos, jadi mau sekuat apapun itu campuran ya seperti ini"*, Oasis said.[28]
>
> (Back in the 1980s, the island of Dom had a beach with ample space and a natural playground. However, local residents often took sand from this beach to build their houses, contributing to significant sea abrasion. As a result, the seawater has gradually encroached onto the roads in Sorong, a problem still visible today. Collecting sand from the beaches accelerated this erosion. In response, people shifted to collecting sand from the mountains. This sand, however, requires washing and filtering to separate the coarse sand (*pasir kasar*) from the fine sand (*pasir halus*). Despite these efforts, the mountain sand is still not ideal for construction, as it tends to be porous and doesn't hold up well over time).

In addition to moving to other areas for sand, people have started collecting giant stones and coral reefs for the initial foundations of buildings. Not just gravel, but large rocks are also used in construction projects, including reclamation efforts on the west coast and as the foundational base for houses and infrastructure. Sometimes, housing companies even use coral reefs as part of the foundation. On June 9, 2023, we visited a housing company, Jaya Abadi Mandiri, which was developing a settlement in KM 14 of Sorong city. The area appeared to be very swampy, as much of Sorong consists of wetlands. One local resident mentioned that the company had to elevate the foundation 6 meters above the land to protect the houses from flooding and land subsidence. Only after raising the foundation were, they able to start building the houses on top of it.

Contractors transform wetland or swamp areas into dry land by constructing levees or riprap (locally known as *talud*) and drainage systems to prevent water from flooding the land. Building riprap serves as a barrier to separate the land from saltwater, ensuring they don't come into contact. Once this is in place, they can begin constructing houses on what was previously swampy land. Some construction experts shared with me that coral reefs are ideal for use in building foundations, as they are strong and durable. When coated with cement, sand tends to adhere well to coral reefs, and they are also resistant to water damage. Swampy areas, on the other hand, are very wet and present significant challenges for construction. This is why many contractors prefer using coral reefs for house foundations, as they absorb water efficiently and prevent the houses from sinking. However, coral reefs are not as effective in dry conditions, as they become porous and vulnerable when exposed to such environments.

28 Interview with Oasis, a resident of KM 14, conducted at his home in Sorong on June 7, 2023.

Picture 1 Building Riprap and Settlement Made of Coral Reefs, Sands, and Gravels

Photo by Gilang Mahadika, taken in June 2023.

Coral reefs are abundant throughout Sorong, particularly in swampy areas, where they are collected in large quantities. Compared to the usual rocks collected in areas like Saoka, coral reefs are more expensive. Companies like Jaya Abadi Mandiri have opted for coral reefs as the ideal foundation material for their residential projects in KM 14 of Sorong city. Given that they are constructing homes on swampy land, they believe coral reefs provide a better base for the foundations. However, the collection of coral reefs, rocks, and sand, especially from the mountains, comes with significant negative environmental consequences. The increasing dredging and extraction of these materials are causing serious environmental damage to the surrounding areas.

3.2 Subtle Dispossession: Unseen Impacts of Legal Procedures in Papuan Communities

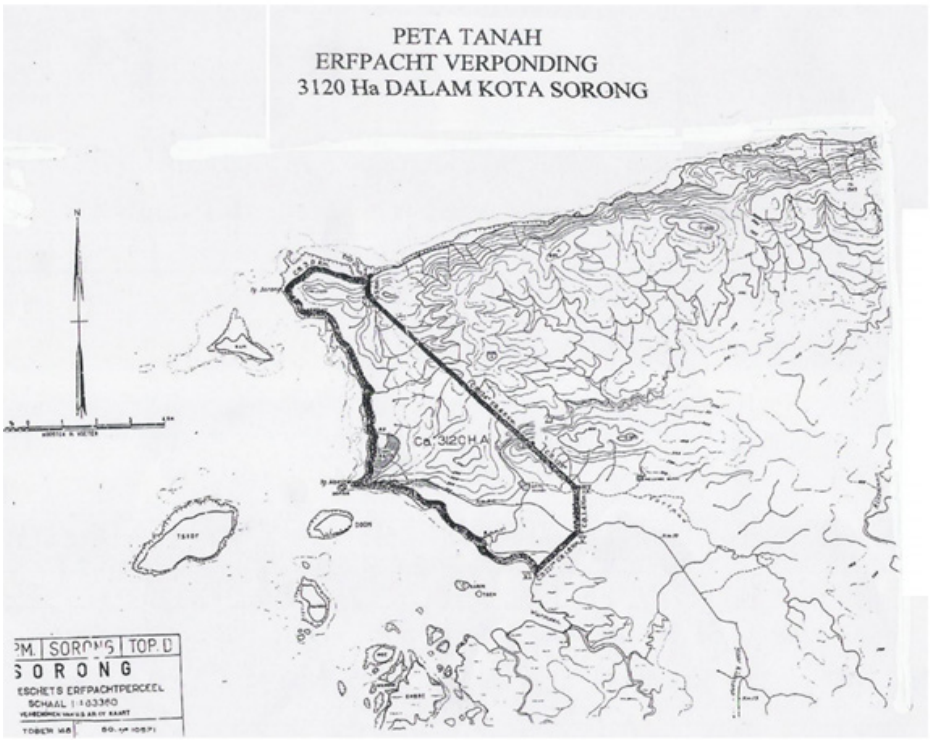
After the colonial period, the geological reports compiled by the NNGPM regarding the oil fields were transferred to Pertamina, the state-owned company, which continued to operate oil extraction in West Papua. Silas Kalami's master's thesis, *Dampak Transformasi Status dan Fungsi Tanah Adat bagi Gerakan Sosial*,[29] examines the power shift from the New Order regime to the Reformasi era in 1997, with particular attention to disputed land previously controlled by NNGPM, which was handed over to the government. These oil fields, once owned by the NNGPM, are now claimed as customary lands by the Moi tribes. In 1997-98, the Moi began to question the status of these lands, known as Ex-*Erfpacht Verponding*, by forming the Lembaga Masyarakat Adat Malamoi (LMA Malamoi).[30] Despite this, the government has claimed these lands as state property without consultation or negotiation with the Moi people, a situation that remains unresolved today. As a result, many Moi communities find themselves marginalized, with little opportunity to reclaim their ancestral lands. This issue is one of the key reasons why indigenous Papuans are often relegated to living on the peripheries of Sorong city, facing social and economic exclusion.

29 Silas Kalami, "Dampak Transformasi Status Dan Fungsi Tanah Adat Bagi Gerakan Sosial :: Studi Kasus Tuntutan Masyarakat Adat Malamoi Tentang Tanah Ex-Erfpacht Verponding Dalam Kota Sorong Provinsi Papua Barat" (Doctoral Dissertation, Yogyakarta, Universitas Gadjah Mada, 2010), https://etd.repository.ugm.ac.id/penelitian/detail/45282#:~:text=Gerakan%20sosial%20yang%20dilakukan%20oleh%20masyarakat%20Adat%20Malamoi,Adat%20ex-Erfpacht%20verponding%203120%20ha%20dalam%20Kota%20Sorong.

30 Kalami, 102.

Another significant factor contributing to the marginalization of indigenous Papuans in urban areas is the legacy of the *transmigrasi* (transmigration) program initiated by the Soeharto government (1965-1997). This policy encouraged the resettlement of people from other parts of Indonesia to West Papua, leading to the dominance of outsiders, or settlers, particularly in the urban center, while the indigenous Papuans—mainly the Moi tribes and other Papuan migrant groups—remain concentrated in the peripheries and coastal areas. Additionally, the historical trauma of military violence during the New Order regime,[31] coupled with the politics of the Indonesian government and state-led colonialism, has positioned indigenous Papuans in disadvantaged and marginalized roles, further compounding their struggles for land, rights, and social recognition in their own homeland.

Picture 2 Map of *Erfpacht Verponding* Located in the Bird's Head Peninsula



Source: Kalami, 2010[32]

Looking back at the history of Indonesian settler colonialism in Papua, the government, particularly during the authoritarian Soeharto regime, implemented the *transmigrasi* (transmigration) program. This initiative aimed to send landless Javanese migrants, predominantly with Islamic backgrounds, to less densely populated regions such as West Papua. The program was framed as a means to integrate indigenous Papuans into the broader Indonesian state.[33] Amid the political instability that accompanied the transition from Dutch colonial rule to Indonesian sovereignty in the 1960s, indigenous Papuans launched attacks against Indonesian troops under the Free Papua Movement (OPM/Orang Papua Merdeka), continuing low-level resistance throughout the 1970s.[34] In response to this separatist activity, the Indonesian government, in 1984, began to mobilize around 12 million new settlers to replace indigenous Papuans in West Papua.[35] The *transmigrasi* program was thus not only a tool for population redistribution but also an instrument of nation-building that significantly displaced indigenous Papuans, including the Moi tribes, and exacerbated their marginalization in their own ancestral lands.

31 Eben Kirksey, Freedom in Entangled Worlds: West Papua and the Architecture of Global Power (Durham and London: Duke University Press, 2012), https://doi.org/10.1215/9780822394761; Danilyn Rutherford, Raiding the Land of the Foreigners: The Limits of the Nation on an Indonesian Frontier (New Jersey: Princeton University Press, 2003), https://doi.org/10.2307/j.ctv182jsz6.

32 Kalami, "Dampak Transformasi Status Dan Fungsi Tanah Adat Bagi Gerakan Sosial :: Studi Kasus Tuntutan Masyarakat Adat Malamoi Tentang Tanah Ex-Erfpacht Verponding Dalam Kota Sorong Provinsi Papua Barat," xii.

33 Lachlan McNamee, Settling for Less: Why States Colonize and Why They Stop (Pricenton: Princeton University Press, 2023), https://doi.org/10.2307/j.ctv2sbm8nj.

34 McNamee, 63.

35 Dale Gietzelt, "The Indonesianization of West Papua," Oceania 59, no. 3 (March 1989): 201–21, https://doi.org/10.1002/j.1834-4461.1989.tb02322.x.

During the New Order regime, the transmigration program encouraged many people to voluntarily migrate and settle in West Papua. In the course of our research, we encountered numerous Bugis people from Sulawesi who had relocated to the city. On June 21, 2023, we met Anto Novenanto, a landowner from the Moi Adabison community in Kampung Bintan. Anto, an outsider from another island of Papua, shared an intriguing story about the area surrounding Kampung Bintan. The land in Kilometer 8 and 10, which used to be paddy fields, had been part of the transmigration projects during the Soeharto regime. Anto, who was born and raised in Sorong in the 1970s, and his family were among the first Sulawesi migrants to voluntarily move to Sorong in search of opportunities in this frontier region. At the time, the roads were little more than footpaths, and they would often walk to their house in Kampung Bintan. He recalled seeing indigenous Papuans wearing *koteka*, and he shared fond memories of his many Papuan friends, with whom he and his family had strong bonds. The water in the area was still pristine and clear, and both he and the Papuans would drink directly from the river. His house was a traditional *gaba-gaba*, where they would light a bonfire inside to stay warm during the cool nights.

In the 1980s, the area around Kampung Bintan saw significant development, with more migrants settling in the region. Anto Novenanto's father, Fatir Haji Novenanto, called upon other relatives from Sulawesi to join him in Sorong. This is one of the reasons why Kampung Bintan is now home to a large family of Novenantos and their extended relatives. Anto shared that the Bugis migrants did not purchase land from the Moi Adabison community but instead acquired it through a gesture of 'brotherhood'—by giving a box of beers as a symbol of goodwill. He explained that his father was considered an adopted child (or foster child) by the Moi Adabison community at the time. Between 1985 and 1987, Fatir Novenanto 'acquired' a substantial amount of land from Harun Adabison, which he then distributed among his relatives so they could live nearby. As a result, Kampung Bintan is predominantly populated by Bugis people, many of whom are still part of the Novenanto family. Anto observed that as the population in the area has grown, the river has become narrower over time. He believes that the flooding issues in the area are largely due to the increasing number of people living close to the watershed. Flooding, he noted, is not a new phenomenon in Sorong; he had experienced it in the past as well. However, he emphasized that the floods have become much worse over time.

Fatir Novenanto has since passed away, and the land he once owned has been inherited by his son, Anto Novenanto. Now, Anto owns several plots of land that were previously under the ownership of the Adabison family. In 2007, sand mining activities began in the area surrounding their village. Anto Novenanto leases his land to anyone interested in extracting sand, making him one of the key figures in the sand mining operations on the margins of Sorong. However, Anto is a complex figure. While he clearly acknowledges the environmental consequences of sand mining, he continues to be involved in the practice. He shared with us how sand mining leads to deforestation, as miners first extract wood from the area before turning to the sand. With the removal of trees, the land can no longer absorb rainwater, which then flows directly into the residential areas of Sorong, exacerbating flooding issues. Anto expressed concern over the environmental damage caused by these activities, yet he remains a contributor to the very destruction he worries about.

We also had the opportunity to meet Hermina Adabison, the daughter of Harun Adabison, who lives near Kampung Asamkumbang. She shared a tragic story about her father's life. Harun Adabison struggled with alcoholism and would often become intoxicated. Whenever someone approached him with an offer to take his land, all they had to do was give him a box of beer. In his drunken state, he would unknowingly sign the certificate of land transfer, effectively giving away much of his land. As a result, most of the Adabison family's land was lost, and Hermina found that there was no land left to pass on to the next generation. Hermina explained that her father never intended to sell the land; rather, he was simply selling his signature under the influence of alcohol.

> "*Dia jual tanda tangan, bukan jual tanah*".[36]
>
> (he sells his signature, but not his own land)

Now, Hermina and her family survive by selling whatever they can, such as banana leaves, pinang (areca catechu), and other items along the roadside. She also shared a poignant story about her father, who once owned a car and trucks that he had acquired by selling land. Unfortunately, he ended up selling those vehicles as well, trading them for beer. In their patrilineal Moi community, the remaining land of the Adabison family has been inherited by Hermina's brother, Pak Hengki Adabison, who now oversees the family land in Melati. If anyone wishes to purchase Adabison's customary land, they must negotiate with Hengki. Reflecting on her father's decisions, Hermina expressed regret, explaining that he lacked foresight and failed to consider the long-term consequences of continually selling their land without any regard for the future.

36 Interview with Hermina Adabison, conducted near Kampung Asamkumbang on June 13, 2023.

Hermina also shared a story about the land in Asamkumbang, which had once belonged to her father. This land was bought by Ongko Candra many years ago to build a crocodile farm. The village residents, some of whom used to eat crocodile meat, were familiar with the farm. Pak Aris, a local sand collector, recalled enjoying crocodile meat himself. Occasionally, the community would be alerted to crocodile carcasses in the area by a loudspeaker announcement: '*Oi, oi, oi, warga yang mau makan daging buaya, datang, panen. Masa panen kupas kulitnya, yang mau ambil*!' With so many crocodiles in the village, Ongko Candra eventually built a massive wall to keep them contained. However, he overlooked the impact of the river's water flow, which eventually broke down the wall. In the 1970s, the crocodiles escaped and began roaming outside of Asamkumbang. The villagers, with help from the BRIMOB (The Mobile Brigade Corps), tried to capture the crocodiles. The remaining crocodiles were relocated to Kilometer 16 in Sorong. After this incident, Ongko Candra had no choice but to sell the land at auction to a bank. Today, the land once owned by Candra in Asamkumbang is now in the hands of others, and sand mining operations are taking place there.

This case highlights the complex nature of indigenous land rights issues in West Papua. Land dispossession is closely tied to the unequal power dynamics between the government, settlers, migrants, and indigenous communities. First, some lands were claimed as state property, a legacy of the Dutch colonial oil company. Second, the transmigration program played a significant role in transferring indigenous lands to settlers, framing them as property for the new arrivals. Finally, we refer to this process as 'subtle dispossession,' where land is taken through the cultivation of 'intimate' relationships between indigenous people and settlers, often framed as 'brotherhood.' Beneath the legal procedures, such as the certificate of customary land release (*sertifikat pelepasan tanah adat*), lies a hidden narrative—one that reflects the social dynamics and power imbalances between indigenous communities and outsiders. Ultimately, land dispossession is not merely a legal matter but one shaped by social relations, often operating in more subtle and less overt ways.

3.3 The Desire and Conflict over Sand Mining

Sand mining has become a widespread and significant activity on the outskirts of Sorong city. Some clans within the Moi people, aware of the value of their land, have begun renting out their properties to those interested in mining sand. This shift reflects a growing understanding of financial literacy (*melek uang*) and the potential profits from sand extraction. For instance, Mama Orpa, also known as Orpa Tisot, belongs to the Moi Tisot clan and owns land in Melati. Before any mining can take place on her property, miners must seek her permission. Living alone and choosing not to marry, Mama Orpa ensures that her land remains in her control, as marriage would risk her losing ownership of it to her husband.

The Moi community follows a predominantly patrilineal kinship system, where family lineage is passed down through the father. Typically, when parents pass away, the land is inherited by the eldest son. However, if there are no male children, the land is passed down to the daughter. This is the case for Mama Orpa Tisot, the only daughter of the Tisot family in Melati. She inherited her parents' land but, being unmarried, she ensures that the land remains in her possession. If she were to marry, her husband would gain ownership of her land, and her children would adopt his clan, which would lead to the loss of her Tisot lineage. For this reason, Mama Orpa has chosen to remain single in order to preserve her family's land and clan identity.

In the sand mining areas, there are two main types of "bosses." The first is the landowner, like Mama Orpa Tisot, who owns the property where the sand is collected. The second type of boss is the person who rents the land or owns the heavy equipment used for mining. This equipment can include things like backhoes, giant excavators (though they are banned, some still use them), water pumps, pipes, hoses, shovels, sand filters, and more. The term "boss" is used to refer to those who own these properties or equipment. Even though the workers have their own tools, they still depend heavily on the bosses to carry out the mining activities.

We met a truck driver named Imam, who is known as the "second boss" in Kampung Melati. He is Bugis and has lived in Sorong for over 15 years. Although he doesn't look like the local Papuan people, he considers himself part of the community, as he was born and raised in this town. Imam explained that he doesn't rent land from Mama Orpa but from the Maybrat people. He shared that the concept of *tanah garap* (arable land) is familiar to local Papuans, and the Maybrat people have reached an agreement with the Moi Tisot clan to use a piece of Mama Orpa's land in Melati. The Moi Tisot community, including Mama Orpa, has known the Maybrat people for a long time, and under the customary Moi land ownership rule of *eges wooti*, she allowed them to use the land.

Aplius Satriya, a member of the Maybrat people, has two sons, Abdul and Yunti Satriya. The Satriya family has been living on Tisot land for a long time. When Abdul and Yunti were children, they were also taken care of by Mama Orpa and Aplius. Now in their 20s, Abdul and Yunti work for Imam in the sand mining business on the land they own, known as *tanah garap*. Imam and the Satriya family reached an agreement to share the revenue

equally, with each party receiving 50% of the profits from the mining activities. Imam doesn't need to pay Mama Orpa for the land, as he deals directly with the Satriya family and leaves them to handle their arrangements with Mama Orpa.

> *"Intinya saya bekerja sama dengan Satriya. Punya sa dengan situ (Satriya) saja, ndak ada orang lain. Jadi kalo ada sapa-sapa di belakang dia, dia yang tanggung jawab. Jadi tiap bulannya saya yang penting sudah bagi dengan mereka. Terserah nanti mau bagi dengan sapa-sapa, keluarganya, mama Orpa, yang jelas kau kerja bagi hasil, bagi dua"*, Imam said.[37]
>
> (The point is that I only work with the Satriya family. My business is only with them, and no one else. If there's anyone else involved behind the Satriya family, I'm not responsible for handling their part of the business. Every month, we always share our income equally. How they manage their share within the family or with Mama Orpa is up to them. The important thing is that we work together and share our profits together).

Imam takes the sand from the mining area, loads it onto trucks, and sells it to contractors or consumers in the urban area of Sorong. He explained that sand is generally a valuable material for building foundations, and prices vary depending on the type of sand. For *pasir plester* (plaster sand), the price ranges from 500,000 IDR to 1,000,000 IDR. *Pasir pasang* (building sand) costs between 400,000 IDR and 700,000 IDR. *Pasir cor* (concrete sand) or *pasir jagung* (corn sand) is cheaper, ranging from 300,000 IDR to 600,000 IDR. I saw Pak Abdul Satriya and his friend loading *pasir pasang* onto Imam's truck. On that day, Imam, as the second boss, earned 700,000 IDR for the *pasir pasang*. This income was split into two portions: 350,000 IDR for Imam and the Satriya family, and the remaining 350,000 IDR was shared among the workers. This system ensures that all parties involved—workers, the first boss (the Satriya family and Tisot), and the second boss (Imam)—receive their fair share of the revenue.

Picture 3 Shooting the Hills with the Water to Collect Sands at the Hill

Photo by Gilang Mahadika, taken in June 2023

"Indeed, working like this is very profitable. The people sitting in those offices have nothing on us," one of the workers said to me. Sand mining offers a substantial income. Workers can earn a minimum of 700,000 IDR per sand truck in one day. If they manage to mine four or five trucks a day, they can earn around 3,500,000 IDR, which adds up to about a hundred million IDR in a month. This is far more than what politicians in Sorong earn,

37 Interview with Imam, conducted on June 26, 2025, regarding his revenue-sharing agreement with the Satriya family on Tisot land.

as they only receive the minimum wage in the region. Because the business is so lucrative, people in other areas, such as Kampung Bintan, have started mining sand in government-protected forests using excavators or *beko-beko*. Kampung Bintan is one of the places where this activity is prevalent. Some residents mentioned that the government had shut down mining operations in the area due to the waste from mining settling in the surrounding rivers. However, many people continue to mine sand manually in Kampung Bintan, using tools like shovels and water pumps.

The workers are typically divided into two main labor divisions. One group is responsible for "shooting" the sand (*tembak pasir*) from the hill. To extract the sand, they direct water to the hill. They have set up water hoses connected to a pump machine placed near water sources close to the mining area. The water is pumped up and directed towards the hill, causing the sand to collapse. The water then carries the sand down to the bottom of the mining site. To help with the flow, the workers have built water bridges out of wood and bamboo to guide the sand down from the top of the hill to the bottom. At the end of these makeshift waterways, there's a filter that separates the sand into two distinct piles. This method benefits the workers because it makes it easier to extract *pasir plester* (plaster sand) without mixing in other types of sand. Another worker is stationed at the bottom, tasked with sorting the sand into three categories, ensuring that each type is separated properly for sale. After collecting and sorting sand on the hills, truck drivers usually arrive at the mining site to purchase it. They pay for the sand lifters based on the quantity ordered. During our fieldwork, we followed one of these trucks to a construction site for a local bank in the city. It became evident that the driver had been hired by a developer working on public service infrastructure, supplying sand for construction projects in town.

Picture 4 Truck will Transport the Sand to the City

Photo by Riki Ari Pradana, taken on August 7, 2023

Due to the mining activities, the water around the site has become increasingly murky or muddy. Despite this, the workers seem content with the situation. One of them explained, *"Kalo air keruh, ekonomi hidup, kalo air jernih, ekonomi lesu*" (when the water is muddy, the local economy thrives; when the water is clear, the

economy is down). The money earned from sand mining is used to meet daily needs, pay off credit cards, repair motorcycles, fund education, or save for the future. However, it's clear that the river has become much muddier than before. While the miners are pleased with the economic benefits, some residents living near the mining sites are uncomfortable with the environmental impact. They often complain about the waste from the mining activities spilling into the river, affecting the surrounding residential areas.

Picture 5 A Bridge to Transport the Sand Down the Hill

Photo by Gilang Mahadika, taken in June 2023

In 2017, local residents placed empty oil drums in the middle of the road to block trucks transporting sand from the mining site. They demanded that the miners, business owners, and truck drivers acknowledge the negative environmental impacts of mining activities. Mining was seen as one of the key contributors to flooding in Sorong city, as waste from the site is carried by the river, where it settles as sediment. This causes the riverbed to become shallower, making the river more prone to overflowing during heavy rains, which can lead to floods. Additionally, mining activities result in muddy roads, and dust from the trucks spread throughout the urban area of Sorong. Frustrated by these issues, the residents began blockading the roads leading to the mining site. This action nearly led to a confrontation between the residents and the miners, particularly those from East Nusa Tenggara (NTT). However, with the help of an NGO, Yayasan Sorong Peduli Lingkungan, efforts were made to mediate the conflict and find a resolution between the two parties.

In 2020, the residents, with the support of Yayasan Sorong Peduli Lingkungan, decided to take legal action and bring the issue of sand mining to court. However, they faced a significant challenge: they lacked the funds to pursue the case. To address this, one of the members of the NGO proposed a fundraising initiative, creating a donation list in each settlement within Kampung Bintan. Out of approximately 25 residential areas in the village of Matamentari, only 12 contributed to the effort. With these donations, they were finally able to gather enough money to move forward with the trial. The residents and the NGO filed a lawsuit against nine defendants: the Minister of Environment of the Republic of Indonesia, the Governor of West Papua, members of the House of Representatives, the Head of the Department of Environment in Papua Province, the Mayor of Sorong, members of the Regional People's Representative Assembly of Sorong, the Head of the Department of Environmental Governance in West Papua, the Head of the Police Department, and various security and law enforcement agencies. One of the main reasons for the lawsuit was the lack of transparency, as they had no information regarding the ownership of the sand mining businesses operating in the area.

"Sebenarnya kami tidak mau panggil yang 9 ini, kami cuma mau panggil penambang-penambang yang beroperasi. Tetapi kami menyurat ke dinas-dinas ini, mereka bilang apa, mereka tidak tahu nama penambangnya, mereka tidak punya data. Kan logikanya tidak masuk akal. Masa dinasnya tidak tahu siapa penambang-penambang di situ, tidak punya data karena walikota tidak tahu data-data itu", informant from Yayasan Sorong Peduli Lingkungan said.[38]

(We don't really want to point the blame at these nine institutions. What we really want is to hold the miners accountable for their actions. However, we did send our proposal to these institutions, and what were their responses? They claimed they didn't know who the miners were, and they didn't have any statistical data on the matter. This is baffling. How can the government not know who is running the sand mining operations? The mayor's office, for example, doesn't even have the necessary data to address the issue properly).

Picture 6 Floods in the City of Sorong

Photo by Gilang Mahadika, taken in June 2023

During our visit on June 7, 2023, heavy rain caused flooding in the area. The water, which once would have been absorbed by the vegetation on the mountains, now simply runs off and floods the downstream areas of Sorong. This change is directly linked to sand mining activities that have stripped the land of its natural cover. During the 2020 trial, the court initially summoned the defendants, but only three of them showed up. The trial could not proceed with such a low turnout. After six summonses, the defendants still didn't appear. The advocate told the judge that if the defendants were unable to attend, they would have to accept the court's decision, which ultimately resulted in a verdict of A/N (no winner or loser). This outcome left many local residents feeling confused and disappointed. They believed that since the judge was from Sorong, he should have understood the situation in Kampung Bintan firsthand.

"Hakim dan segala macam ini kan tinggal di Sorong. Kasus kilo 10 itu dari saya kecil sampai saya besar itu baru digugat. Harusnya waktu kecil itu orang tahu perjalanan itu begini, dampak lingkungan itu begini", one of them said.[39]

(The judge and everyone involved in the case have lived in Sorong for a long time. This issue has been present for years—dating back to when I was a child living in Kilometer 10. By the time I was old enough to bring this case to court, I was certain that they were all well aware of what had been happening).

Since the lawsuit, sand mining activities in Kampung Bintan have continued, but now with smaller tools like shovels, water pump machines, and hoses, instead of giant excavators. Before the lawsuit, the local government had already issued a decree, *Peraturan Daerah Kota Sorong* No. 3 2014, to ban 'illegal' sand mining throughout

38 Interview with a representative from Yayasan Sorong Peduli Lingkungan, conducted on June 19, 2023, regarding the community's legal efforts against unregulated sand mining and the lack of government transparency.

39 Interview with a local resident of Kampung Bintan, conducted on June 19, 2023, reflecting on the flooding in Sorong and the perceived shortcomings of the 2020 trial related to sand mining.

Sorong. The Corruption Eradication Commission (KPK) also pushed for the local government to enforce this ban, citing violations of *Pasal 89 JO Pasal 17 ayat (1) huruf B* of *Undang-Undang Nomor 18 Tahun 2013*, which addresses forest destruction. Despite these legal measures, many people continue to engage in sand mining, often labeled as 'illegal' and informal work that disregards environmental responsibility.

In Mawar Asri, we encountered a different case involving land disputes between two Moi clans, Moi Kandrani and Moi Sulis Hartono, over land rights and access. The residents generally recognize that the land in Mawar Asri belongs to the Kandrani clan. Previously, an Ambonese woman named Mama Ulfa collaborated with Sulis Hartono to open up land for sand mining, but the Kandrani clan soon intervened and forced the mining off their land. Later, Alfin Kuatolo attempted to establish mining in Mawar Asri. Initially, Robi Kandrani, the younger brother of Herkanus Kandrani, believed his older brother had given permission to Alfin. However, Herkanus denied any agreement with Alfin, and Robi eventually removed him from the land. Shortly after, Lambert Sulis sold the land to the Efata Church, claiming it belonged to the Sulis Hartono clan. This led to further disputes over land ownership. Locals often refer to such situations as *tanah jual di atas jual*, meaning "selling land on top of land," where the land is sold without verifying ownership, with the seller falsely claiming it as their own. This practice is common in Sorong, not only between the Kandrani and Sulis Hartono clans but across various other clans in the region.

This case went to trial, and surprisingly, Sulis Hartono won. Additionally, the Efata Church plans to build a church on the disputed land. The church administrators have negotiated with the Sulis family, particularly Lambert Sulis, to acquire a piece of the land. However, the church faced challenges during the negotiations as the Kandrani people continued to question the land's ownership. They had not been informed about the church's plans in the area. Despite this, the Efata Church administrator holds a certificate of land release from Lambert Sulis. In response, Robi Kandrani told me, "If you want to build a church, but you haven't gone through the rightful landowner, how can that be?"[40] The Sulis Hartono clan actually owns land in the Aimas Regency, separate from Mawar Asri, and their history of land ownership does not connect to this disputed area. According to the Kandrani people, the reason the Sulis Hartono family resides in Mawar Asri is rooted in the historical tragedy of Hongi. During the colonial period, Fransis Kandrani, the great-grandfather of Robi Kandrani, helped the Sulis Hartono people by hiding them in a safe place during the Hongi war. This historical connection forms part of the Kandrani clan's claim to the land, viewing the Sulis Hartono people as close relatives in their territory.

The Kandrani brothers—Herkanus, Martinus, and Robi—decided to fully develop the land for sand mining, bringing in *beko-beko* (excavators) to the site. They enlisted their foster relative, Ronald Tiwul, to manage the sand mining operations in Mawar Asri. The Kandrani family was determined not to let their land be taken over by others anymore. Since then, the relationship between the Kandrani and Sulis Hartono families has deteriorated. The land, once a massive hill before mining activities began, has now been flattened and divided into two parts. One side belongs to the Sulis Hartono family, particularly Lambert Sulis, who had sold the land to the Efata Church. The other side belongs to the Kandrani family, who continue to operate the sand mining business. In the wake of the land dispute, the Kandrani family took additional measures to secure their land by holding a customary court (*sidang peradilan adat*) in 2012. The court's report included a family tree of the Kandrani community living in the Sorong region, along with claims related to the land that had been taken over by the government. These claims were supported by historical documentation, specifically the *Erfpacht Verponding* map from the Dutch East Indies period during the time of the NNGPM (Dutch oil company), which illustrated the land rights under colonial governance.

Sand mining in Sorong indeed presents a complex, double-edged sword. On the one hand, it is crucial for driving urban development and economic growth in the city. The demand for materials such as sand, rocks, and coral reefs is essential for the construction of buildings and infrastructure, supporting the rapid growth of the urban area. On the other hand, the negative impacts on the environment are undeniable. The disruption of ecosystems, sedimentation of rivers, and land disputes among Moi communities, especially within clans like the Kandrani and Sulis Hartono, create deep tensions and environmental degradation. Despite the awareness of these harmful consequences, sand mining remains an unavoidable activity. Housing companies, local residents, and even some government institutions continue to rely heavily on these materials for construction. This dependency underscores a paradox: while many entities and individuals condemn the environmental damage caused by sand mining, they simultaneously contribute to its demand in order to meet the growing need for urban development in Sorong. Thus, while sand mining fuels economic progress, it also exacerbates environmental and social challenges that must be carefully balanced.

40 Interview with Robi Kandrani, conducted on June 25, 2023, regarding the land dispute involving the Sulis Hartono family, the Efata Church, and the historical claims of the Kandrani clan in Mawar Asri.

The case between the Kandrani and Sulis Hartono clans highlights how environmental issues and indigenous land rights are deeply entangled in local disputes, with each party viewing the issue through their own values and interests. Within the Moi ethnic community, the different perspectives on sand mining activities have become sources of conflict, even though they are all considered citizens under the positivist legal framework with equal rights to voice their concerns. This legal uniformity, however, overlooks the nuanced differences in how each clan relates to the land and how they interpret the impacts of sand mining. For the Kandrani clan, sand mining is seen as a means of protecting their ancestral land and ensuring control over it, especially after the historical disputes over ownership. For the Sulis Hartono clan, the issue reflects their own claim to the land, which is entwined with historical narratives and cultural ties. The legal process, intended to resolve these disputes, has inadvertently deepened the divisions between clans as they vie to protect their own specific lands, with the environment caught in the crossfire. This scenario underscores the limitations of a one-size-fits-all legal framework when addressing complex, culturally rooted land disputes. It reveals how the same law that grants citizens equal rights to voice their concerns can, in practice, exacerbate divisions and misunderstandings within indigenous communities, especially when land and environmental issues are viewed through such varied cultural and historical lenses.

3.4 Lifting Sand: Carving Out Space in Urban Development Project

Mining has become a sensitive term for those involved in the activity. Sand mining, or *menambang pasir*, is viewed negatively due to numerous environmental lawsuits filed by local residents with the support of environmental advocates, government policies, observers, and NGOs. As a result, they prefer to be called 'sand lifters' or *pengangkat pasir*, rather than *penambang pasir* (sand miners). During our research, we recall asking the sand lifters about their work collecting sand from the hills. *'Kaka semua menambang pasir di sini ka?*' (Do all of you mine sand here?), we asked. Immediately, they became uncomfortable with the term 'sand mining' and responded with, '*Kaka bertanya ada urusan apa ka di sini*?' (Why do you ask, what's going on?). From that moment, we realized how this activity has acquired negative connotations among those engaged in it.

According to the locals, sand is classified into three types: *pasir plester*, *pasir pasang*, and *pasir cor* (or *pasir jagung*). The first type, *pasir plester*, is the most expensive due to its finer size and its flexibility when used as a foundation for buildings. The term *pasir plester* comes from *pasir* (sand) and *plester* (plaster), as it is sticky like tape and easily blends with cement. This makes *pasir plester* highly preferred on the market because of its stickiness, flexibility, and small grain size. In contrast, *pasir cor* or *pasir jagung* resembles small rocks, and it is called *jagung* (corn) because the grains are similar in size to shelled corn. It is primarily used for the initial foundation of buildings, typically laid on the ground. *Pasir pasang* is a mix of *pasir jagung* and *pasir plester* and is considered a middle-ground sand in terms of cost—not too cheap, but also not overly expensive. Many local residents in Sorong use this type of sand to improve their homes. However, business owners and government officials tend to prefer *pasir plester* for constructing buildings intended for businesses and administrative purposes.

In Mawar Asri, where the land is owned by the Moi Kandrani brothers, the Imeko people from Inanwatan, Southwestern Papua, have already settled in the area. Due to sand mining activities, sand has fallen into the homes of the Imeko-Inanwatan residents living near the mining site. Before the mining began, the Imeko people had established three water sources. However, now these water sources are completely covered by sand, making it extremely difficult for the Imeko community to find alternative water sources. The Imeko people shared stories about the water before mining activities took over; it was used for bathing, cooking, cleaning clothes, and drinking. But now, the water is murky and filled with sand, rendering it unusable for these essential needs.

> *"Sudah tidak bisa cuma untuk bikin pakai mandi. Tapi kalo dulu biasa minum, ini air itu tinggal angkat saja. Di dalam air sini warna biru, bening, dicuci biasa, air bersih. Tapi karena sudah membongkar-membongkar tapi akhirnya kita tidak bisa garap lagi"*, Imeko woman said.[41]
>
> (We can only use it for showering now. The water used to be drinkable, and we would collect it directly from the source. It was clear, pristine, and fresh, with a beautiful blue hue. But now, it's ruined, and we can no longer use it as we once did).

We only recently learned that the Imeko people have been living in Mawar Asri for a long time. To them, Mawar Asri has always been considered a *lahan garap* (working land) on the Kandrani family's property. They shared how, in the past, the area was full of trees. They used the wood for fuel, and sometimes they would chop it into smaller sticks, bundle them together, and sell it at the market. But now, they can no longer find large trees because the Kandrani brothers have taken over the land and cut them down to make way for sand mining. The

41 Interview with a woman from the Imeko community in Mawar Asri, conducted on June 22, 2023, regarding the impact of sand mining on local water sources and daily life.

sand also ended up in the river, and the Imeko people used to remove it to restore the river's flow. This activity, known locally as *angkat pasir* (lifting sand), used to be done to clear sand from the river, but now it refers to any process involving the collection of sand, whether from the hills or the river. Sand lifters often approach people entering the mining sites, asking, '*Mau angkat pasir ka pa*?' (Do you need sand, sir?). As a result, any sand-related activity now revolves around lifting it and transporting it for construction and urban development.

Some people have started collecting sand remnants from the river to make money. 'Lifting up' the sand has become an accessible activity because anyone, regardless of gender, ethnicity, clan, or race, can participate. By doing so, they not only earn an income but also help restore the river's natural flow. The term *angkat pasir* (lifting sand) is particularly significant because those involved in this activity feel more comfortable being identified as 'sand lifters.' In contrast, the term *penambang pasir* (sand miners) carries negative connotations. We've observed that the word *menambang* (mining) is unsettling for these workers due to the stigma associated with it, which paints them as contributors to environmental damage. *Angkat pasir* simply refers to lifting the sand, whether into trucks or out of rivers. While there is little difference between lifting sand and mining it, calling them 'sand lifters' feels less intimidating and less associated with the negative impact of mining.

Some Imeko women participate in this activity to help their husbands collect sand, supporting their families and providing for their children. One woman shared that although she's been struggling with blood deficiency and frequently visiting the hospital, she still helps her husband by removing sand from its clay and silt. This process is called *cuci pasir* or 'washing the sand.' The sand that remains in the river doesn't require washing, as the river's water has already separated it from the clay and silt. However, sand that has not been washed needs to be cleaned before it can be sold. In Mawar Asri, some trucks collect the unwashed sand and seek services to wash it. Some Imeko people offer sand washing services in the area, turning *cuci pasir* into an economic opportunity. As a result, the waste from sand mining, namely clay and silt from washing the sand, has become an environmental issue in Sorong. This waste contributes to the risk of flooding in the city, as it accumulates in waterways.

Picture 7 *Cuci Pasir* (Washing the Sand) to Get Rid of the Mud and Other Materials

Photo by Gilang Mahadika, taken in June 2023

The Imeko people once asked the Kandrani brothers why they wanted to open their land for sand mining. They explained, 'If we don't mine the sand, we won't be able to build the city.' This response reflects one of the main reasons people engage in sand mining: urban development. According to the locals, without mining sand, the entire city of Sorong could not be built. From this perspective, the concept of *infrapolitics* reveals how informal sand mining is closely connected to formal urban infrastructure. Through their involvement in mining activities, sand lifters enact a form of political action, allowing them to assert their right to remain engaged in the city without direct confrontation. As Scott states,

> . . . Of *infrapolitics*, is the silent partner of a loud form of public resistance […] The strategic imperatives of *infrapolitics* make it not simply different in degree from the open politics of modern democracies; they impose a fundamentally different logic of political action . . . All political action takes forms that are designed to obscure their intentions or to take cover behind an apparent meaning.[42]

Beyond economic survival, these activities also serve as a means for Papuan communities to assert their **"right to live"** in the city, allowing them to engage with and stake their presence in Sorong's urban development. Sand is readily available in the region and is a crucial material for construction. While cement and sand are abundant in Papua, other materials like iron sheets, additional cement, nails, and various construction supplies must be shipped from the western part of Indonesia, particularly from Java. This reliance on imported materials is one of the factors contributing to the higher cost of subsidized housing in Sorong compared to other regions in Indonesia, due to the expensive shipping costs.

4. Conclusion

The marginalization of Papuan communities has long been tied to issues of human rights, violence, and land dispossession. In this context, many Papuans struggle to secure decent livelihoods in their own lands. For some, working as sand lifters is not a choice but a last resort, reflecting their continued exclusion from equal opportunities for a better life in the city. Using the concept of *infrapolitics*, it becomes evident that Papuan communities engage in ongoing political and collective resistance, asserting their right to live and striving for economic autonomy through informal labor. By working as sand lifters, they maintain a connection to Sorong's urban development, even if only on the margins. Given the serious and hazardous conditions of collecting sand on steep hills, human rights discussions must extend beyond formal labor protection to address the precarity of informal workers and the challenges they endure in their daily struggle for survival. Drawing from this case, the problems of human rights are not merely beyond military violence and land dispossession, but also about human rights in terms of informality and precarity.

Not only does special autonomy exacerbate socio-economic inequality on the island of Papua, but the issuance of customary land release certificates has also led to unintended consequences. One major issue is the rise of conflicts and land disputes among the Moi ethnic communities themselves. These certificates have also become an entry point for settlers to gain access to indigenous lands in Sorong, enabling them to open these areas for sand mining. Several Moi informants revealed that settlers did not acquire the land through direct monetary transactions but rather through a form of *subtle dispossession*—framed as an act of 'brotherhood' between indigenous people and settlers.

The city of Sorong has undergone significant transformations since the Dutch colonial government established an oil company there. Over time, some former oil company workers have shifted their livelihoods to sand lifting around the city. However, sand mining activities have had negative consequences on the urban environment, contributing to severe flooding, particularly during the rainy season. Despite operating within the informal economy, sand mining has become a crucial element in supporting Sorong's urban infrastructure. Although it is often stigmatized for its environmental impact, sand lifters persist in this livelihood to survive and earn an income. Even though the government has imposed restrictions on informal mining activities, many continue gathering sand using manual tools such as shovels, hoes, and water pump machines on hillsides, while others extract sand from rivers. Reframing "sand miners" as "sand lifters" serves as a symbolic strategy for local workers to assert their right to maintain their livelihoods.

The narrative of sand lifters in Sorong, especially among the indigenous Moi and Maybrat communities, reveals a complex interplay between freedom, labor, and economic survival. Sand mining, while often seen as a necessary activity for urban development, is fraught with paradoxes. On one hand, sand lifters experience a degree of freedom compared to their previous industrial labor in the oil sector. They have flexible working hours, autonomy over their work, and are no longer constrained by bosses. However, this freedom is accompanied by precarious conditions, as the work remains unstable, insecure, and physically risky. The tragic deaths of workers due to landslides in the sand hills and the struggles faced by young graduates who turn to sand lifting as a last resort illustrate the labor market's vulnerability.

Furthermore, the situation highlights the environmental degradation tied to sand mining, where once-vibrant rivers and lands now suffer from siltation and destruction, impacting the livelihoods of both local and migrant communities. The sand lifters, caught in this cycle of labor and environmental change, embody the paradox of freedom in the neoliberal context: the promise of self-employment and autonomy comes with the cost

42 Scott, "Chapter Seven," 199.

of unpredictability and danger. As they navigate these complexities, the experiences of individuals like Henrichus and Anwar emphasize the broader socio-economic shifts in Sorong, where traditional practices are intertwined with the pressures of urbanization and capitalist development. In this context, the lives of sand lifters become a lens through which we can examine broader issues of labor, land rights, environmental sustainability, and the socio-economic challenges faced by indigenous and migrant communities in a rapidly developing frontier region.

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REFERENCES

Adryamarthanino, Verelladevanka, and Tri Indriawati. "Daftar Pelanggaran HAM Berat Di Papua." Kompas.com, January 13, 2023. https://www.kompas.com/stori/read/2023/01/13/120000879/daftar-pelanggaran-ham-berat-di-papua?page=all#page2.

Ahn, Seung-gook. "The Truth behind the Asian Financial Crisis: Panic or Cronyism?" *Pacific Focus* 15, no. 2 (September 2000): 89–103. https://doi.org/10.1111/j.1976-5118.2000.tb00244.x.

Amin, Ash. "Lively Infrastructure." *Theory, Culture & Society* 31, no. 7–8 (December 2014): 137–61. https://doi.org/10.1177/0263276414548490.

Booth, Anne. *The Indonesian Economy in the Nineteenth and Twentieth Centuries*. London: Palgrave Macmillan UK, 1998. https://doi.org/10.1057/9780333994962.

Gietzelt, Dale. "The Indonesianization of West Papua." *Oceania* 59, no. 3 (March 1989): 201–21. https://doi.org/10.1002/j.1834-4461.1989.tb02322.x.

Hadiz, Vedi, and Richard Robison. "Neo-Liberal Reforms and Illiberal Consolidations: The Indonesian Paradox." *Journal of Development Studies* 41, no. 2 (February 2005): 220–41. https://doi.org/10.1080/00220380420003092 23.

Iswahyudi, Heru. "Back to Oil: Indonesia Economic Growth after Asian Financial Crisis." *Economic Journal of Emerging Markets* 8, no. 1 (April 2016): 25–44. https://doi.org/10.20885/ejem.vol8.iss1.art3.

Kalami, Silas. "Dampak Transformasi Status Dan Fungsi Tanah Adat Bagi Gerakan Sosial :: Studi Kasus Tuntutan Masyarakat Adat Malamoi Tentang Tanah Ex-Erfpacht Verponding Dalam Kota Sorong Provinsi Papua Barat." Doctoral Dissertation, Universitas Gadjah Mada, 2010. https://etd.repository.ugm.ac.id/penelitian/detail/45282#:~:text=Gerakan%20sosial%20yang%20dilakukan%20oleh%20masyarakat%20Adat%20Malamoi,Adat%20ex-Erfpacht%20verponding%203120%20ha%20dalam%20Kota%20Sorong.

Kirksey, Eben. *Freedom in Entangled Worlds: West Papua and the Architecture of Global Power*. Durham and London: Duke University Press, 2012. https://doi.org/10.1215/9780822394761.

Lopulalan, Joseph Eliza. "Jati Diri Orang Asli Papua Dalam Pusaran Otonomi Khusus Di Provinsi Papua Barat." *SOCIA: Jurnal Ilmu-Ilmu Sosial* 15, no. 1 (January 31, 2018): 37–49. https://doi.org/10.21831/socia.v15i1.20801.

Marcus, George E. "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography." *Annual Review of Anthropology* 24, no. 1 (October 1995): 95–117. https://doi.org/10.1146/annurev.an.24.100195.000523.

McGranahan, Carole. "The Truths of Anonymity: Ethnographic Credibility and the Problem with Pseudonyms." Rethinking Pseudonyms in Ethnography, 2021. https://americanethnologist.org/online-content/collections/rethinking-pseudonyms-in-ethnography/the-truths-of-anonymity-ethnographic-credibility-and-the-problem-with-pseudonyms/.

McNamee, Lachlan. *Settling for Less: Why States Colonize and Why They Stop*. Pricenton: Princeton University Press, 2023. https://doi.org/10.2307/j.ctv2sbm8nj.

Polese, Abel. "What Is Informality? (Mapping) 'The Art of Bypassing the State' in Eurasian Spaces and Beyond." *Eurasian Geography and Economics* 64, no. 3 (2021): 322–64. https://doi.org/10.1080/15387216.2021.1992791.

Poulgrain, Greg. "Delaying the 'Discovery' of Oil in West New Guinea." *The Journal of Pacific History* 34, no. 2 (September 1999): 205–18. https://doi.org/10.1080/00223349908572903.

Rutherford, Danilyn. *Raiding the Land of the Foreigners: The Limits of the Nation on an Indonesian Frontier*. New Jersey: Princeton University Press, 2003. https://doi.org/10.2307/j.ctv182jsz6.

Sari, Meisy Permata, Adi Kusuma Wijaya, Bagus Hidayatullah, Rusdy A Sirodj, and Muhammad Win Afgani. "Penggunaan Metode Etnografi Dalam Penelitian Sosial." *Jurnal Pendidikan Sains Dan Komputer* 3, no. 01 (February 10, 2023): 84–90. https://doi.org/10.47709/jpsk.v3i01.1956.

Scott, James C. "Chapter Seven: The Infrapolitics of Subordinate Groups." In *Domination and the Arts of Resistance: Hidden Transcripts*, 183–201. New Haven: Yale University Press, 2008. https://doi.org/10.12987/9780300153569-009.

Suaib, Hermanto, and Anwar Fitrianto. "A Study of Economic Empowerment of Moi Tribe in Sorong, West Papua." *International Journal of Asian Social Science* 5, no. 12 (2015): 694–705. https://doi.org/10.18488/journal.1/2015.5.12/1.12.694.705.

Wafa, Zaein. "Government Tips In Severe Human Rights Conflicts In Political Legal: Case Study Of Papua." *Indonesia Journal of Criminal Law* 6, no. 1 (2024): 11–20. https://doi.org/10.31960/ijocl.v6i1.2369.

Widyantara, I Gede Hendra. "Penegakan Hukum Terhadap Pelanggaran Hak Asasi Manusia Dalam Mewujudkan Keadilan Di Papua." *JISOS* 1, no. 7 (2022): 585–600.

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