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Mining Outside the Law: Environmental, Public Safety, and Governance Dimensions of Illegal Mining in Tampakan, South Cotabato, Philippines

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A B S T R A C T

Illegal mining remains a critical challenge to public safety in mineral-rich areas of the Philippines; also, the municipality of Tampakan, South Cotabato, acts as a prominent example in this regard. For the study design, a qualitative case study was used while data collection involved document review, key informant interviews, and field observation; also, data analysis followed Braun and Clarke's six-phase thematic approach. Illegal mining contributes in effect to the deforestation, to the soil erosion, and to the water contamination. It displaces indigenous communities and also causes land disputes, armed violence, and corruption. Resource constraints, together with alleged collusion with local actors, plus the miners' adaptability obstruct enforcement efforts. To reduce all of the threats that are posed by illegal mining, the study concludes that just a holistic strategy is important for integrating law enforcement, community engagement, economic development, and environmental education. Policymakers should formally recognize small-scale mining under Republic Act 7942 strictly enforced. They should target also livelihood programs to the communities that are affected as well.

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INTRODUCTION

The Philippines is recognized as one of the most mineral-rich countries within the world, also as its estimated untapped mineral reserve value exceeds US $1.3 trillion (Pavlova & Hincks, 2013). Even with this abundance, the mining industry has contributed modestly to the national economy even still. Approximately 0.5% of gross domestic product (GDP) was the sector's accounting and 1.7% of total exports were in 2021 (Mines and Geosciences Bureau [MGB], 2013). The government introduced the 2004 Mineral Action Plan to unlock the country's mineral potential because the Supreme Court's landmark decision upheld the constitutionality of key provisions of the Philippine Mining Act of 1995 (Republic Act No. 7942) and benefited the government instead. These changes made a better investment climate through ensuring legal stability for foreign and domestic mines. However, they reinforced social environmental conflicts too. Competing interests with respect to land, livelihood, together with interests with respect to environmental protection have frequently tended to clash, particularly in resource-rich regions that are also politically sensitive.

One of Southeast Asia's largest undeveloped copper-gold deposits is the Tampakan Copper-Gold Project site in Tampakan, South Cotabato. For proponents, it is their argument that the project can generate revenue, employment, and infrastructure investments of a meaningful nature. Environmental advocacy groups and also the Catholic Church in addition to many indigenous Blaan residents have still sustained as well as broadened their opposition. This opposition includes each one of these parties here. Open-pit mining on a large scale presents risks like threats to food plus water security and community displacement (Sarmiento, 2022). The focus of their concerns is all about this mining because of the irreversible degradation of our environment.

Illegal small-scale mining is in a markedly resurgent phase through banlas in addition to tunneling. In Tampakan, operations on a large scale with open pits are suspended at the same time in this resurgence. A host of environmental and socio-cultural and also public safety risks are posed from and via these unregulated activities. Ecologically they drive deforestation also they accelerate soil erosion. Waterways now are contaminated so agricultural productivity is weakened too. Socially, they disrupt indigenous governance systems, deepen divisions inside the Blaan community, and exacerbate land disputes. Regarding security, illegal mining distributes unregistered firearms, miners with enforcement personnel violently confront each other, likewise, illicit proceeds finance insurgent activities per some reports (Sarmiento, 2023).

This study examines the interconnections linking illegal mining to public safety in Tampakan by analyzing its environmental, socio-economic, and governance dimensions. Evidence-based perceptions are what situate Tampakan within the broader discourse on artisanal as well as small-scale mining as well as the national mining policy framework to guide enforcement strategies, livelihood interventions, and community-based governance mechanisms.

Objectives

The study aimed to identify the most prevalent forms of illegal mining in Tampakan, assess the perceived risks to public safety and security arising from

these activities, examine the responses of local authorities and communities, and recommend strategies for mitigating public safety threats associated with illegal mining.

THEORETICAL REVIEW

This section blends diverse academic and policy sources so as to ground the study when it speaks on illegal mining, governance, indigenous rights, and public safety. It sets the Tampakan case in context within global as well as national patterns. According to studies from the Philippines, Sub-Saharan Africa, and Latin America, similar socio-environmental conflicts have been fostered in governance-challenged but resource-rich environments.

Illegal Mining and Public Safety Risks

Illegal mining refers to mineral extraction activities implemented without due permission frequently outside regulatory supervision (Amankwah & Anim-Sackey, 2021). Such operations frequently employ hazardous methods, such as mercury amalgamation with hydraulic sluicing, plus these methods degrade ecosystems while also make working conditions unsafe since they cause fatalities also chronic illnesses (Hilson & Potter, 2005). Armed confrontations, land disputes, and also unlicensed firearms proliferation are just some risks in areas that are like Tampakan (Sarmiento, 2023). Environmental harm is also a risk that is there.

Global Patterns of Illegal Mining and Security Implications

Globally, illegal mining has been recognized as both a security and a developmental challenge (International Institute for Planned Studies, 2019). In Sub-Saharan Africa, artisanal and small-scale mining (ASM) often operates in an informal way because it provides for the livelihoods of millions but at the same time weakens environmental integrity and state authority (Hilson & Potter, 2005). Peru and Colombia reveal similar patterns in Latin American contexts. Illegal gold mining there fuels organized crime, arms trafficking with environmental destruction (Veiga et al., 2014).

Philippine Context of Illegal Mining

In the Philippines, the Philippine Mining Act of 1995 (Republic Act 7942) formed a regulatory structure for mineral extraction even though issues with execution have remained. Mendoza et al. (2018) as well as Cruz et al. (2005) studied regulatory provisions of. Their studies highlight that it is limited resources, it is bureaucratic inefficiencies, and it is political interference that hamper enforcement despite these provisions. Small-scale mining, which is recognized under the People's Small-Scale Mining Act of 1991 (RA 7076), is often conducted without any proper permits, so that it leads to environmental degradation and safety hazards.

Environmental Impacts

Illegal mining widely documents the environmental cost in the Philippines namely Mindanao in scholarly reports plus government reports. Banlas mining, a destructive technique, dislodges mineral-bearing soil via high-pressure water jets. Erosion increases in soil, slopes lose stability, vegetation strips from cover, drainage patterns disrupt, altering systems fundamentally (DENR-MGB, 2020). When root structures are lost, soil cannot absorb nor retain water, at which risks landslides also flash floods during intense rainfall events (Cañares, 2014).

Use by artisans of mercury to extract gold compounds these impacts. Mercury binds onto fine gold particles, but its release into waterways poses severe threats. This release occurs either directly during ore processing or indirectly by way of runoff, harming aquatic ecosystems as well as human health. Due to mercury polluting Naboc River within Compostela Valley for a good long time, mercury bioaccumulated inside fish plus shellfish, so it threatens biodiversity plus food security (Drasch et al., 2001). Chronic mercury exposure has been linked with neurological disorders as well as developmental impairments within Paracale, Camarines Norte, also Diwalwal, Monkayo, in which similar contamination patterns also have been reported (Appleton et al., 1999; Telmer & Veiga, 2009).

These trends mirror after Tampakan's case. Siltation has been triggered via illegal mining in both the Mal and Taplan River catchments, thus clogging systems for irrigation. Reduced agricultural productivity and also diminished fish populations have as well resulted. Sources of potable water have been compromised now. Therefore, communities must depend on replacement supplies that are frequently dangerous. These connected impacts highlight addressing illegal mining as an environmental and public health imperative, not just an economic or legal worry.

Socio-Economic Drivers and Livelihood Dependencies

Poverty along with absence of stable jobs get acknowledgement as causes for illegal mining among country people (Crawford & Botchwey, 2018). In Tampakan, large-scale mining operations were suspended, and formal employment opportunities subsequently decreased. Due to the fact that residents needed to survive, this was incentivizing them for engaging in small-scale mining. This aligns to what Prosper and Guan (2015) did find noting economic deprivation as well as marginalization often push communities toward exploitation of unsanctioned resources.

Indigenous Peoples, Cultural Rights, and Resource Conflicts

The Blaan tribe, whose ancestral domain overlaps with the Tampakan mining concession, has depended historically on swidden agriculture and also forest resources for its subsistence (Ambag, 2016). Customary governance systems have changed through large-scale mining concessions. Leaders face accusations of conspiring alongside outside parties this destroys community trust (Trocio et al., 2023). Anthropological research (Eder & McKenna, 2004) underscores that external mining interests often disrupt indigenous governance systems, also this creates divisions inside communities. Pangayaw, which is

armed retaliation that is based on customary justice, has been the occasional result of such tensions against perceived violations of indigenous rights (DINTEG, 2015). This reflects indigenous people's resistance elsewhere in the Philippines such as Subanen opposition to Zamboanga Peninsula mining (Gaspar, 2010).

Governance and Enforcement Challenges

Weak institutional capacity along with corruption as well as the remoteness of illegal mining sites obstruct those individuals who enforce mining regulations such as Republic Act 7942 (Philippine Mining Act of 1995). Prior alerts for unlawful miners before raids imply potential conspiracy. Local officials along with operators may be involved (Sarmiento, 2025). Furthermore, the Philippine National Police (PNP), Armed Forces of the Philippines (AFP), and environmental agencies coordinate in such a fragmented way that it has limited just how effectively they operate against illegal mining.

Public Safety and Security Nexus

Illegal mining within conflict-prone areas has been linked to armed groups' financing, as seen in the Democratic Republic of Congo's 'conflict minerals' trade (UN Group of Experts, 2017). In the Philippine context, the discovery of some unlicensed firearms in mining sites does indicate something. Illegal extraction along with local security threats potentially overlap there. Because of how this dynamic elevates illegal mining up from just an environmental issue and to a thorough public safety concern now, it also requires multi-sectoral responses.

METHODOLOGY

Research Design

This study employed in qualitative case study design to examine illegal mining's nature, drivers, and impacts in Tampakan, South Cotabato. The approach did allow for a more in-depth exploration of more complex socio-environmental and security issues. Contextual understanding was stressed instead of generalizing with statistics. To improve validity as well as triangulate findings, primary with secondary data sources were then combined.

Study Area

Tampakan is a first-class municipality within South Cotabato, Philippines, which covers 28,810 hectares also includes 14 barangays. It has features of rough land also plentiful ore beds. Important indigenous Blaan populations define it as well, particularly when regarding copper and gold. Because the municipality has been found as the focal point for legal mining and for illegal mining activities, it is still an appropriate site for the examining of the intersection of mineral extraction with governance and public safety.

Data Sources and Participants

Primary data were obtained by way of semi-structured interviews from key informants that included municipal officials plus barangay leaders plus law enforcement personnel plus indigenous leaders plus community residents coming from barangays Danlag plus Pula Bato plus Tablu. Official police blotters, incident reports, environmental assessments, and government records were sources of secondary data via agencies such as MENRO, DENR, and MGB.
Researchers selected participants through purposive sampling for they knew, acted, and were directly involved in issues of illegal mining. Informants engaged totaled twenty-five overall. These same informants represented certain diverse stakeholder groups.

Data Collection Procedures

Field data were collected through key informant interviews and on-site visits conducted with the aid of interpreters when necessary in the local languages (Blaan, Hiligaynon, and Cebuano). Document reviews covered all years from 2017 to 2024 since they focused upon recorded violations of Republic Act 7942 (Philippine Mining Act of 1995), related environmental laws, as well as public safety incidents linked to illegal mining. Visual and descriptive context came forth from documented observations that are of affected sites. Also, these observations provided this context.

Data Analysis

Qualitative data were analyzed in a thematic way using the six-phase method of Braun and Clarke (2006): familiarization with data (1), generation of initial codes (2), searching for themes (3), reviewing of themes (4), defining and naming themes (5), and production of a report (6). They drew themes around "environmental degradation," "security risks," "socio-economic drivers," together with "governance challenges." Quantitative elements, for example, what violations took place and how often arrests occurred, supported qualitative perceptions once someone tabulated them.

Ethical Considerations

The study adhered to ethical research standards because it obtained informed consent from all participants, it ensured confidentiality, also it protected sensitive information—particularly regarding alleged collusion in illegal mining operations. The presentation concerning results omitted personal identifiers. No such identifiers appeared. The Philippine Public Safety College–National Police College Davao Campus has approved the fieldwork.
This section presents the key findings of the study captured into four (4) thematic areas: (1) prevalence and nature of illegal mining activities, (2) environmental impacts, (3) public safety and security concerns, and (4) governance and community responses.

RESULTS AND DISCUSSION

Prevalence and Nature of Illegal Mining Activities

Two primary forms of illegal mining documented in Tampakan were tunneling along with banlas (hydraulic sluicing). To erode or dislodge soil,

banlas involves directing the high-pressure water jets onto some mineral-bearing slopes, after processing it for ore recovery. This method is efficient for quickly exposing shallow deposits while also leading to sedimentation in downstream waterways (DENR-MGB, 2020; Cañares, 2014) and destabilizing slopes, thus causing severe soil erosion. In contrast, tunneling entails that miners excavate underground shafts when they access ore bodies at greater depths. These operations, when conducted without engineering safety standards and without structural reinforcements, present risks that are large. Tunnel collapse as well as subsidence coupled with occupational accidents are serious risks involved within these operations (Hilson & Potter, 2005; Veiga et al., 2014).

Republic Act No.'s regulatory scope is entirely away from both forms' operation. 7942 or the Philippine Mining Act of 1995 lack licenses, taxes, and monitoring then. Persistent violations are indicated by fluctuations in the police records from 2017–2024. In all, 47 people were taken into custody. 2017 (n = 19) was the peak year, and renewed activity in 2024 (n = 9) was noted (Table 1). The large scale mining projects had been suspended especially the Tampakan Copper-Gold Project and this all coincided with the resurgence. Formal sector jobs decreased because of this suspension. This mirrors findings within other mining regions, where formal mining contracts and pushes displaced workers toward artisanal and small-scale mining (Banchirigah, 2008; Crawford & Botchwey, 2018).

Table 1. Number of Individuals Apprehended for Violations of RA 7942, 2017–2024

Year	**Number of Individuals Apprehended**
2017	19
2018	2
2019	13
2023	4
2024	9
Source: PNP Tampakan MPS Incident Reports	

These operational patterns are intrinsically connected to local socio-economic kinds of motivators. Many residents participate within or tolerate illegal mining activities, especially those with prior mining experience. Poverty, limited livelihood alternatives, coupled with the cyclical nature of agricultural income represent compelling factors for them. Banlas and tunneling can provide for immediate cash flow within barangays vulnerable to either droughts or

market fluctuations. However, the cash flow is unsustainable since farming incomes are vulnerable. This dependence feeds back: communities rely more upon illegal mining to survive, so enforcing prohibitions without also offering viable alternatives becomes harder.

Case studies that are from Ghana, Tanzania, and certain parts of Mindanao show that just by enforcing regulations one cannot eliminate illegal mining if economic vulnerability is still unaddressed (Hilson, 2016; MGB, 2020). To address Tampakan's challenge, a dual strategy is needed: law enforcement must gain strength, and investment must occur in community-driven livelihood programs, microenterprise development, and skill training. This thorough tactic fits within systems for governance and livelihoods that value linking rules plus socio-economic support for lasting endurance.

Environmental Impacts

Illegal mining has emerged also as a primary driver of ecological degradation in Tampakan, impacting both the upland extraction sites and the downstream agricultural plains. Banlas involves directing high-pressure water jets to dislodge soil plus expose ore against mineral-rich hillsides a common method locally. This process greatly destabilizes slopes as well as accelerates soil erosion and strips away vegetation cover for miners while it yields immediate mineral output (DENR-MGB, 2020). Because root structures that normally anchor the soil are removed, slope fragility increases, coupled with upland communities and lowland areas being more susceptible to landslides, particularly during heavy rainfall events (Balthazar et al., 2015). Rainfall absorption potential lessens when vegetative buffer diminishes. This in fact heightens the risk of flash floods (Bryan et al., 2013).

By introducing toxic pollutants, these risks are compounded by the use of mercury in artisanal gold extraction. Mercury is often used in order to amalgamate fine gold particles. Processing directly discharging it into streams nearby or rain causing soil runoff means it often escapes containment. Such contamination does particularly threaten the Mal and Taplan Rivers which are Tampakan's two major waterways as field observations and interviews indicate. Mercury within the aquatic environments may undergo methylation. This transformation creates methylmercury, a highly toxic compound that bioaccumulates in fish along with shellfish (Drasch et al., 2001; Bose-O'Reilly et al., 2010). Local populations which are relying on these rivers for water use do face direct health risks (WHO, 2017).

These processes have severe ecological implications beyond. Aquatic biodiversity is under threat since sedimentation because of banlas fills up riverbeds and water depth reduces as flow regimes alter (Cañares, 2014). Turbidity increases so light penetrates less then, disrupting aquatic plant photosynthesis. Also, turbidity diminishes light penetration so as to impact benthic organisms in order that they do not survive (Allan & Castillo, 2007). Fish populations decline via habitat loss plus mercury bioaccumulation in fish tissues impairing reproduction and causing mortality (Cheng et al., 2009). Sediment-laden water lowers vegetable farms' and downstream rice paddies' productivity

also distribution systems become clogged plus irrigation canals' efficiency decreases in the agricultural sector (DENR-MGB, 2020; Prosper & Guan, 2015).

These findings do closely align with the argument from Prosper and Guan (2015) that illegal mining negatively affects agricultural productivity plus sustains rural communities economically in the long-term. Silt entering waterways, fertile topsoil disappearing, with contaminants polluting irrigation systems all reduce crop yields so limit farmers' capacity for maintaining viable livelihoods. Obvious cascading effects are clear: upland deforestation plus erosion leads to lowland siltation, which then weakens both farmers and fishers—the two main livelihood sources within many Tampakan barangays.

Fieldwork reinforces scientific observations. Local accounts were gathered throughout it. Residents of barangays Danlag and Tablu report that streams once clear now are muddy and shallow with fish catches dropping markedly over five years. Farmers in Pula Bato report sediment buildup increased irrigation systems' maintenance. Also these farmers observe a decrease in their fields' fertility. These community testimonies depict how environmental factors link throughout the landscape: when upland zones degrade from mining, the damage inevitably radiates into the broader socio-ecological system (Sarmiento, 2023).

Instead of just isolated incidents of localized damage, illegal mining's environmental consequences in Tampakan are systemic disruptions jeopardizing ecological stability, food security, and public health. Marginalized populations especially face perpetuated vulnerability because slope destabilization, water contamination, habitat destruction, and agricultural decline converge in a feedback loop. Enforcement regarding illegal mining activities is required to address these issues, and so is coordinated watershed management. In order to restore all of the resilience of Tampakan's ecosystems, more community-based reforestation and environmental remediation programs will also be needed (FAO, 2016; UNDP, 2018).

Public Safety and Security Concerns

Illegal mining operations in Tampakan do present meaningful threats to the public safety and security, and to environmental and economic challenges. Tampakan official reports and field interviews show these activities link closely to armed fights, many unlicensed firearms, and organized groups involved in resource extraction, like global resource conflict findings (UNODC, 2016; Siegel & Veiga, 2009).

Law enforcement records from 2023 to 2024 document multiple operations aimed at banlas as well as tunneling sites. These raids frequently seized mining equipment along with unregistered firearms. The raids sometimes found even improvised weapons and also homemade weapons along with live ammunition plus high-powered rifles, too. Such weaponry's presence mirrors patterns observed in parts of Africa along with Latin America. Mining sites that are illegal there are militarized so raids are deterred plus illicit profits are safeguarded (Banchirigah, 2008; de Theije & Salman, 2018). Gunfire accompanied at least two operations enforcing laws in Tampakan. So, security forces withdrew briefly thus preventing escalation. Such incidents do place security personnel as well as

civilians at a risk. These incidents do also increase the potential for collateral damage as well as weaken community safety.

Local residents plus barangay officials and indigenous leaders whom we interviewed in the field widely worry that illegal mining financiers plus armed actors and certain local government plus law enforcement personnel collude. Like what Crawford and Botchwey (2018) found within Ghana's galamsey sector and what Armenta et al. (2020) found throughout Colombia's gold-mining zones, allegations in Tampakan suggest some authorities are financially incentivized to protect or warn about raids. It is said that someone leaked out sensitive operational details that came from Peace and Order Council meetings to certain operators, so that they could dismantle all of their equipment and then vacate the sites before security forces arrived on scene.

"May mga taong nagrereport sa mga illegal na gawain sir. Kaya lang ang iba ay natatakot kasi sila ay binabalikan at sa nagsasagawa naman ang local na pamahalaan para matigil ang at madakip ang may gawa ng illegal na pagmimina. Ang iba ay nakakatakas at walang nahuhuli dahil sadyang mailap at magaling magmasid sa paligid ang mga illegal miners sir. (There are people who report illegal activities, sir. However, some are afraid because they are being targeted afterward. As for the local government, they do take action to stop and apprehend those involved in illegal mining. But some manage to escape, and no one gets caught because the illegal miners are elusive and very observant of their surroundings, sir.)" - Informant 10.

"Tapos ang narinig ko d'yan sa taas, walong walong pulis may contact d'yan sa Tampakan. Nagsusuporta d'yan. Amo yan ang sabi d'yan sa tong pamangkin nko kay nakatrabaho man d'yan sir. Siling ko, kung hindi ka mag-alis dira, hindi ka mapatay sa pusil, mapatay ka sa matabunan ka sa lupa. Bag-o rapud siya naghawa sir. Mao na nakabalo ko ana kay siya man nag-ingon sa akoa ana. Naay financer, lookout. 'Pag may magsaka doon magsabi magraid sila, walang maka, wala silang makita kasi may sabot na sila doon na mao na nga petsa, o oras, nandoon ang mga pulis. Pagpunta nila, wala na. (And what I heard up there is that there are about eight police officers who have contacts in Tampakan and are supporting the activities there. That's what my nephew told me, sir, since he used to work there. I told him, "If you don't leave that place, if you don't get killed by a gun, you'll die from being buried in the soil." He had just recently left, sir. That's how I know about it—because he told me himself. There's a financier, and there are lookouts. When someone plans to go up there and says there will be a raid, they don't find anything because there's already an arrangement. They know the exact date or time when the po

These dynamics severely erode public trust and institutional credibility. Bebbington et al. (2018) wrote that state complicity perception in illegal mining may make communities cynical plus weaken governance legitimacy plus embolden illicit actors. Illegal mining continues, so trust erodes in Tampakan even more. Because impunity prevails, operators see prosecution as unlikely.

Armed forces protect along with politicians interfere also compromised entities enforce, underscoring the need behind a coordinated, intelligence-driven security strategy. To counteract information leaks and to ensure credibility along with transparency and with effectiveness of enforcement actions, measures should include more independent oversight, stronger whistleblower protections, and community-based monitoring. Should they fail to reform, public safety

threats tied to illegal mining in Tampakan probably will strengthen, greatly affecting local stability with wider regional security.

Governance and Community Responses

Local government units (LGUs) and Tampakan law enforcement agencies have acted by the use of various interventions in order to address illegal mining. These are coordinated multi-agency raids that do involve the Philippine National Police (PNP), the Mines and Geosciences Bureau (MGB), the Department of Environment and Natural Resources (DENR), and also sometimes the Armed Forces of the Philippines (AFP). Those operations took apart sluicing setups plus seized mining equipment but also confiscated unlicensed firearms. This approach aligns with national enforcement frameworks existing under RA 7942 with also RA 7076 (DENR-MGB, 2020). To deter participation as well as inform communities about environmental, health, and legal consequences, complementary measures like installing anti-illegal mining signages plus conducting public awareness campaigns plus strategies prove effective in other Southeast Asian small-scale mining contexts (Hilson & Potter, 2005).

"Diri sa amoa sa barangay sir, kung mahimo lang sir diri sa Brgy. Danlag, kung naa man may testing diri ug banlas or tunnel o magsample lang diri sa daplin, amo jud na sya ireport sa MENRO or didto kay Mayor. (Here in our barangay, sir – specifically in Brgy. Danlag – if ever there's any testing of banlas or tunnel mining, or even just a sample operation along the sides, we immediately report it to MENRO or directly to the Mayor.)" –Informant 16.

Even so, functional issues are still present now. Inadequate funding, inadequate personnel, absence of specialized transport along with absence of monitoring equipment restrict how often enforcement happens also how far enforcement extends particularly in remote upland areas having difficult terrain (Bebbington et al., 2018). Illegal miners move on toward the sites with less accessibility and make modifications to the equipment so it can have more rapid disassembly. This pattern has documentation in illegal mining zones located in Ghana and also in Peru (Crawford & Botchwey, 2018; Veiga et al., 2014) after lookouts get employed in order to evade the raids.

Blaan tribal leadership participation throughout the anti-mining campaigns has been important within barangays where customary governance still remains strong. LGUs together with non-government organizations (NGOs) have collaborated alongside tribal councils to monitor illegal activities also promote environmental stewardship, as well as Ambag (2016) findings reflect this collaboration: indigenous leadership improves environmental governance. However, internal divisions due to land use plus ancestral domain claims in addition to corporate mining partnerships have diluted collective action which is a challenge also reported among other Philippine indigenous groups that are confronting resource extraction (Gaspar, 2010).

Community perspectives reveal concern along with empathy balanced well. A number of the residents express an understanding toward illegal miners, citing poverty as also unemployment plus a lack of alternative livelihoods as actually being the primary motivators. Worldwide ASM livelihood studies reflect

these exact reasons (Banchirigah, 2008; Batterman et al., 2018). Dangers of ecological durability gain wide recognition too. The public do indeed notice dangers also for their own safety long-term. For improved transparency plus accountability, commonly proposed solutions include sustainable livelihood programs plus stricter enforcement and institutionalization of more consistent community-based monitoring systems which recommendations are consistent with FAO (2016) watershed governance frameworks.

"Siguro sir kung aksyonan, may medyo mapigilan kung aksyonan, pero kung pabayaan mapatuloy na ang ah yung mga tao doon. Kasi kung isipin natin, parang doon na sila nakita ang kung ano ang pangangailangan nila, makabili sila ng pagkain. Kasi wala naming ibang choice diba, syempre kahit alam mo na delikado 'yan, pasukin mo na. Kapit sa patalim. Kaya nga syempre may mga rason 'yung iba na ah, wala nang ibang asahan na trabaho, doon na lang para makabili ng pangangailangan, lalo na may mga anak na nag-aaral, para lang makasuporta sa pangangailangan ng anak, kahit delikado yung trabaho, pasukin. Syempre, sir sa side naman naming, hindi naman naming pwede sabihin na ihinto nyo yan, illegal yan eh. Kasi yung tao, wala nang ibang wala na syang ibang sources, yung sa pangangailangan nya, hindi mo Talaga mapipigilan. Bahala na yung tao bahala na ano mangyaring… (Maybe, sir, if action is taken, it could somehow be controlled. But if it's left unchecked, the people there will just continue. Because if you think about it, they see it as a way to meet their needs – to buy 70 food. They don't really have any other choice. Even if they know it's dangerous, they still go into it – it's like holding on to a knife's edge. That's why some of them reason that they have no other job to rely on, so they turn to that just to provide for their needs – especially those who have children in school. Just to support their children's needs, even if the work is dangerous, they go for it. Of course, sir, on our part, we can't just tell them to stop because it's illegal. Because for those people, they have no other source of livelihood – when it comes to their needs, you really can't stop them. Whatever happens, they'll just take the risk.)" – Informant 6

The study revealed that illegal mining in Tampakan consists of banlas (hydraulic sluicing) and tunneling two dominant methods outside the Philippine Mining Act of 1995 regulatory framework. These activities persist due to poverty, lack of alternative livelihoods, and seasonal agricultural income creating socio-economic pressures as police records from 2017–2024 show recurrent violations despite periodic crackdowns. Since the Tampakan Copper-Gold Project got suspended, formal mining employment got further reduced, and some displaced workers entered small-scale, illegal operations.

Banlas destabilized slopes therefore environmental degradation became a consequence. Also, banlas sped up soil erosion as well as caused sedimentation within the Mal and Taplan Rivers. Mercury contamination as a result of gold processing threatens aquatic biodiversity as well as agricultural productivity plus public health and it creates cascading impacts ranging from upland deforestation all the way to lowland siltation.

Illegal mining relates to public safety and security concerns because sites link with armed groups. It seems that financiers and certain officials do allegedly collude and use unlicensed firearms at just these sites. These dynamics can erode public trust, can weaken governance, and can heighten risks of armed

confrontations because they mirror patterns observed in other resource-rich but conflict-prone regions.

Governance along with community responded using enforcement measures—raiding, seizing equipment, campaigning for awareness—as they participated indigenously against the mining. Resource constraints as well as difficult terrain along with divisions within the Blaan community in regard to land use also corporate partnerships do however obstruct these. Residents generally acknowledge the environmental and safety risks along with empathizing with miners. This underscores the need for integrated solutions as these solutions should pair stronger enforcement with sustainable livelihood programs coupled with community-based monitoring and inclusive governance.

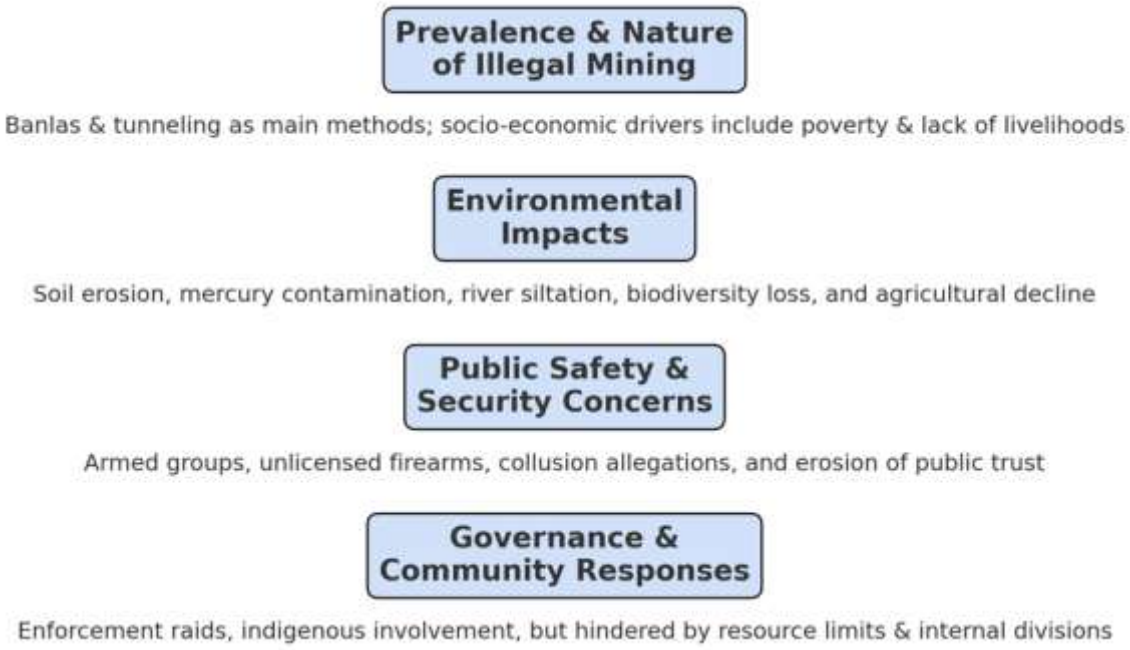

Figure 1. The Safety and Security Issues of Mining in Tampakan, South Cotabato

CONCLUSIONS AND RECOMMENDATIONS

Illegal mining in Tampakan, South Cotabato, was found to be a multidimensional problem that extends beyond environmental degradation it risks public safety it makes socio-economic vulnerabilities as well as it challenges governance. Banlas plus hydraulic sluicing and then tunneling were each identified as being the most common of illegal mining forms in that study. Both operate entirely outside of all of the legal provisions within Republic Act 7942. These methods have weakened agricultural productivity, threatened potable water supplies, together with endangered community health through wide-ranging deforestation, accelerated soil erosion, river siltation, plus mercury contamination.

The analysis revealed direct intersections of environmental harms with certain concerns. These specific junctions affect general welfare. Armed confrontations occurred between miners and security forces. Firearms without

licenses spread as land disputes that recur increased instability in barangays affected. Allegations about collusion of certain local officials with illegal mining financiers do further compound the persistence of these threats that weakens enforcement efforts plus erodes public trust.

Community perspectives reflected such a dual reality they empathized with miners since poverty and livelihood scarcity drive participation and they worried about the long-term environmental and security consequences. A holistic multi-sectoral approach is needed for addressing this complex issue since that approach strengthens law enforcement institutional transparency as well as community-based monitoring. Also important is that we provide sustainable livelihood alternatives, develop skills, and formalize pathways for small-scale miners. Indigenous leadership is empowered, unity inside the Blaan community is fostered, and environmental education is institutionalized so inclusive, locally driven solutions can be created that protect ecological integrity while safeguarding public safety.

FURTHER STUDY

Future research may explore a comparative analysis of illegal mining practices across different regions in the Philippines to identify common patterns and unique contextual factors. It is also recommended to examine the long-term impacts of illegal mining on local communities' health and livelihoods through longitudinal studies. Moreover, further studies could integrate participatory approaches involving local stakeholders to design more effective governance strategies and sustainable interventions that balance economic needs with environmental protection and public safety.

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