Terre des Hommes Netherlands

Child Labour in the Extraction of Nickel in the Philippines, Bauxite in India and Copper in Peru

December 2025

Imprint and Acknowledgements

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Suggested citation: Terre des Hommes Netherlands. (2025). *Child Labour in the Extraction of Nickel in the Philippines, Bauxite in India, and Copper in Peru.* The Hague: Terre des Hommes Netherlands.

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1 Introduction

The global shift from fossil fuels to low-carbon and renewable energy is accelerating rapidly, driven by the urgent need to address climate change (National Council on Climate Change, n.d.). This transition relies heavily on so-called **critical minerals,** such as cobalt, nickel, copper, graphite and rare earth elements. Minerals that are building blocks for electric vehicles, solar panels, wind turbines and digital technologies. The European Union (EU) and the U.S., as well as other countries, classify many of these minerals as "critical" or "strategic" due to their economic importance and supply chain vulnerabilities (Joint Research Centre, 2023).

The extraction of these minerals, however, could come at a high cost. Mining is associated not only with environmental degradation, including polluted water and air, and degraded soils, and associated health risks, but also other serious risks such as **child labour,** which is defined as work that is harmful to children's health, development and dignity (International Labour Organization, n.d.). Well-documented cases from countries like the Democratic Republic of the Congo (DRC) show how children as young as 12 work in artisanal and small-scale mining (ASM) of cobalt, performing hazardous tasks, experiencing long hours and often leaving school (Amnesty International, 2016).

Emerging evidence shows that these risks are not limited to cobalt or to the DRC. As highlighted in a recent review by Terre des Hommes Netherlands (TdH NL) (Kutscher, Notté & Anderson, 2025), high-risk minerals and countries combinations include cobalt and copper in the DRC, nickel in Indonesia and the Philippines, graphite in Mozambique and Madagascar, rare earth metals in Myanmar and bauxite/aluminium in India. Against this backdrop, an exploratory study was conducted into how children may be involved in and impacted by the extraction of critical minerals in three countries of growing importance:

1. Bauxite/Aluminium in India;
2. Nickel in the Philippines, and;
3. Copper in Peru.

This report will focus on answering the question: *To what extent are children involved in or further impacted by the extraction of Bauxite/Aluminium in India, Nickel in the Philippines and Copper in Peru?* The following sections will outline the used methodology and the findings for each country respectively.

2 Methods

Given the lack of information on child labour and other risks related to the extraction of minerals and the difficulties in obtaining information on this topic, this study was exploratory and qualitative in nature. In collaboration with the Renewable Energy Agreement (REA) Due Diligence Working Group, three minerals and countries of interest were selected as case studies: bauxite/aluminium in India, nickel in the Philippines and copper in Peru. The choice for these countries was based on relevance of the mineral and country for companies being party to the REA, as well as the availability of local teams for Terre des Hommes Netherlands. In each of these countries, stakeholder interviews were held following a topic list that can be found in Annex I. The following sections will provide an overview of the focus and sampling in each country.

2.1 India: Bauxite / Aluminium

The first case study will focus on the extraction of bauxite/aluminium in India. Terre des Hommes Netherlands worked together with their strategic in-country partner the Children of India Foundation and associated local researchers. Jharkhand was visited from 8 to 13 September by Lohardaga Gram Swaraj, a NGO with wide presence in the entire district and well connected with the authorities. In Odisha, a visit took place from 25 to 29 October 2025, by Saba Jagat, a NGO with a wide presence in the entire mining areas.

Using a qualitative design with community meetings (four in Jharkhand, five in Odisha), five Focus Group Discussions (FGDs) and ten Key Informant Interviews with a diversified range of stakeholders in each state were held in addition to observations during exploratory visits in the communities associated with bauxite mining or the subsequent bauxite supply chain. Stakeholders represented decentralised local governance systems (Panchayati Raj), Government officials, the labour union, corporate sustainability and responsibility officers from the private sesctor, and environmental activists.

Separate FGDs were organised for men and women to ensure comfort and openness during discussions. Female participants were facilitated by women researchers wherever possible. The team was attentive to cultural practices, local hierarchies, and norms around communication. All discussions were conducted in local dialects (Khortha and Hindi) to encourage meaningful participation.

2.2 The Philippines: Nickel

The second case study is the extraction of nickel in the Philippines. Through their country office, TdH NL collaborated with a local researcher from the organisation Bantay Kita, that focuses on advocating for transparency and accountability in the extractive industry in the Philippines. Fieldwork was conducted between 15 May and 15 July 2025 across seven municipalities in the Philippines: Santiago (Agusan del Norte); Claver (Surigao del Norte); Carrascal and Cantilan (Surigao del Sur); and Libjo, Tubajon, and Loreto (Dinagat Islands).

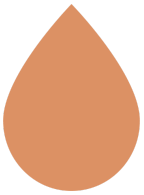
In addition, fieldwork and community dialogues were carried out in four administrative units - “barangays” - (Basnunuk, Maraning, Tuhog-tuhog, and Bakkaw-bakkaw) within the municipality of Languyan, from 26 July to 4 August 2025. The local researcher secured 14 interviews with key informants (NGOs/CSOs, village and religious leaders, Indigenous Peoples’ Organisations, mining companies and workers, health workers, and the coast guard) through their network and local presence in the Philippines.

2.3 Peru: Copper

Although Terre des Hommes Netherlands does not have any presence in Latin America, Peru was added as a small additional case study. Various stakeholders were reached out to, but unfortunately with limited success. There was only one lawyer who responded and provide some insights into child labour and the copper industry in Peru in addition to findings from the desk review.

2.4 Data Analysis

The qualitative data in each country was captured by audio-recording. In Peru and the Philippines, these audio recordings were transcribed and translated for TdH NL’s research team in the Netherlands. Each transcript was read and screened for information on child labour and other impacts of the extaction of the mineral on children. In India, the local research team used their own transcripts to deliver a report, which was analysed and relevant parts were added to this report.



2.5 Limitations

This study has several important limitations that should be considered when reading the findings. The local research team noted that the scope of the work was small, which limited the level of immersion possible in some communities. In several locations, respondents were hesitant to participate due to fears of being identified by mining companies, resulting in challenges in securing interviews.

In some cases, restricted access to information also constrained the depth of dialogue during interviews. Although we aimed to apply a consistent methodology across all countries, variations in researcher backgrounds, contextual conditions, and differing levels of success in obtaining interviews and selecting appropriate modalities led to notable differences between country studies. These findings should therefore be understood as distinct case studies shaped by their local realities, rather than as directly comparable datasets.

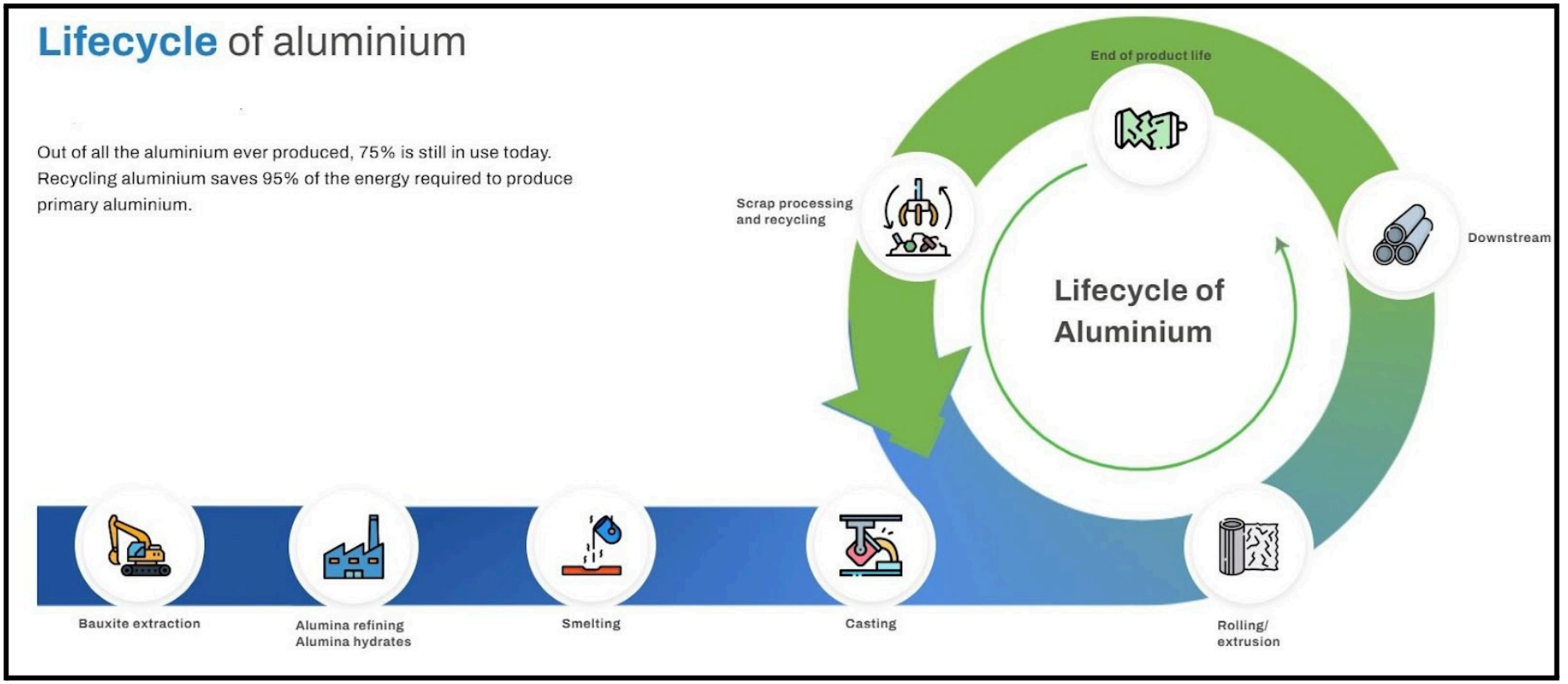
3 Bauxite Mining in India

3.1 Bauxite as a Critical Raw Material

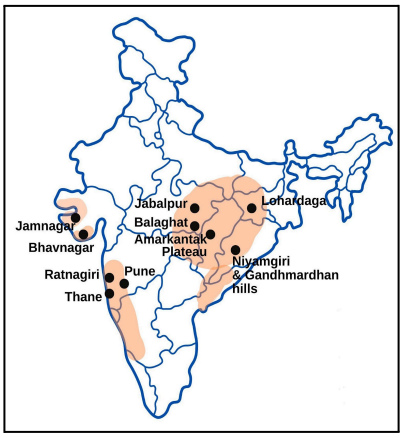
Bauxite ore is a primary source of Aluminium. The aluminium lifecycle begins with the extraction of bauxite ore, which is refined into alumina and then smelted into primary aluminium. The aluminium is subsequently manufactured into products, used, and can be recycled multiple times (see Figure 1). Aluminium is critical for diversified sectors ranging from renewable energy and aerospace, construction and packaging. Aluminium, being lightweight, recyclable, and energy-efficient, is often called the "green metal," and key contributory in achieving the global goals of sustainable energy (SDG# 7) and decent work and economic growth (SDG #8).

The mining of bauxite is open-cast and mechanised. By using excavators, the material is extracted. The material is then loaded in trucks and transported to the crushing sites or railway sidings. In the Bagru mines in Jharkhand, the material is carried through a ropeway. From the railway sidings, the bauxite ore is transported to other processing or industrial units under the stewardship of HINDALCO. A similar process is followed in Odisha, where bauxite mines are open cast strip mines that use mechanised equipment for extraction from the mining block. The mined ores are transported from mining sites through trucks to the railway sidings and to the bauxite refinery units operated by Vedanta Limited.

Figure 1. The Lifecycle of Aluminium.



3.2 The Bauxite Sector in India



Bauxite ore holds a significant place in India's industrial landscape and strategic development needs. Within India, **Jharkhand and Odisha** (contributing approximately 70%) are the top bauxite-producing states,[1] in addition to lower-producing regions such as Chhattisgarh, Maharashtra, Gujarat, Goa, Karnataka, Madhya Pradesh, and Tamil Nadu. The top producing region's hilly terrain with laterite soils areas are rich in Bauxite deposits that feed major aluminium industries, such as HINDALCO Industries in Jharkhand and NALCO in Odisha. Jharkhand possesses the distinction of pioneering state in India for Bauxite mining since 1948 (Lohardaga district in Jharkhand) and gradually expanded to other states with special mention of Odisha, Chhattisgarh and Andhra Pradesh. Since then Bauxite as one of 'key mineral wealth' from Jharkhand and Odisha has been contributing significantly to India's industrial development and export potential. Further it is worth mentioning that the entire bauxite zone (Odisha, Jharkhand and Chhattisgarh) is also a conduit to the infamous red corridor[2] for extreme left wind extremism activities.

In the catchment of bauxite mining across both the states in one of the most socio-economic vulnerable geographic regions[3] with exclusive societal composition (either tribal group or particularly vulnerable tribal groups, PGVTs) at the uppermost node of the supply chain, an exploratory research study was undertaken. The exploratory research study covered two districts (Lohardaga in Jharkhand and Kalahandi in Odisha).

India ranks among the top 10 bauxite extractor/producers in the world, and the high-grade bauxite from Odisha and Jharkhand meet international standards. These states are important contributors to the global aluminium and chemical markets. Major extraction of bauxite in India is obtained from the East Coast Bauxite (ECB) region and western plateau region.

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[1]Jharkhand (Lohardaga district >> commonly referred to as Bauxite town of India) Odisha (Kalahandi and Koraput districts in southern and southwestern parts of the state of Odisha), India. They are part of the economically backward Kalahandi-Bolangir-Koraput (KBK) region.

[2] The red corridor designates the districts of India which have the presence and influence of Naxalites. At the beginning of 2000, this red corridor encompassed 180 districts covering seven states in central and east India when the leftwing extremism was at its peak. At present it has been reduced to 18 districts due to intensive activities from security forces, but the bauxite region still features in the list of extremist activities.

[3] Also a part of red corridor emanating from Andhra Pradesh and concluding in West Bengal >> 112 districts with 120 kilometers of conduit to travel the left wing extremist.

The ECB belt stretches 300 kilometers long and 40 to 100 kilometers wide covering Odisha and Andhra Pradesh. ECB contributes 95% of Bauxite production for Odisha (leading state in India) and western plateau region contributes 100% of bauxite extraction in Jharkhand (ranked in 3rd position with approximately 10% contribution behind the state of Gujarat[4] with 15% share in bauxite production in India).

3.2.1 Bauxite mining in Jharkhand

In Jharkhand, specifically the Lohardaga district, the bauxite mining and the supply chain are formal. HINDLACO is one of the world's largest aluminium rolling and recycling companies, and a key player in the region alongside other companies (e.g. Grs Industries, Tayal Group of Industries, Saksham Minerals, TEQ Mines and Minerals Pvt Limited). HINDLACO deals with bauxite mining to alumina refining through desired arrangements, as well as industrial units.

3.2.2 Bauxite mining in Odisha

In the Kalahandi and Raygada districts of Odisha, bauxite mining and the supply chain are also formalised. Here, the National Aluminium Company Limited (NALCO) is the major company, with 36% contribution to the total production in India. It runs an integrated bauxite-alumina-aluminium complex with captive mines and power plants in Odisha and deals with bauxite mining to alumina refining through desired arrangements as well as industrial units. In Kalahandi and Raygada, Vendata limited operates the bauxite mining supply.

The current bauxite mining operations in Kalahandi have been banned by the Supreme Court of India since 2014, due to huge risk of environmental degradation and huge unrest from the particularly vulnerable tribal groups (PVTGs) that live in bauxite mining areas. Despite these actions of banning environmental activities running under the banner of "Green Kalahandi", Vendata is allowed to run bauxite refinery activities as usual. Preparatory measures by Vedanta Limited were found in anticipation of the lift of this ban, as the New Delhi government and political parties are in favour of mining in pursuit of its strategic independence and dominance through adopting the National Critical Mineral Policy.[5]

[4] Bauxite reserves in Gujarat extend from the Gulf of Kachchh to the Arabian Sea, which includes the districts of Bhavnagar, Junagadh, and Amreli.

[5] National Critical Mineral Mission-Policy (2024-25 to 2030-31)

Brief details are as under:

Geographic region	Mining sites	Key companies (Bauxite supply chain)
Odisha (Kalahandi, Koraput and Raygada)	Total 152 mines Panchpatmali mine, Niyamgiri, Kodingamali Sijimali bauxite block, Baphlimali mine	NALCO, HINDLACO and Vedanta Limited
Jharkhand (Lohardaga, Gumla and Latehar)	Total of 16 mines Bagru, Pakhar, Amtipani, Kujam and other smaller sites such as Hisari, Rudhali Pat, and Khamar Pat and a few smaller ones	HINDLACO

3.3 Child labour

In the recent article of Terre des Hommes Netherlands (Kutscher et al., 2025), Bauxite/Aluminium was identified as a risk mineral and India as a risk country for child labour. Although the Indian government reports that all bauxite mines are formalised, there are reports of illegal mines, corruption and mining mafias. The lack of oversight in these illegal mining operations could pose a risk for child labour.

In Jharkhand, there was no direct involvement of children in the bauxite mining found and the involved companies and service providers deny the engagement of anyone under the age of 18. The explanation for this could be the basic nature of bauxite ores, being a heavy and generally large-sized rock. The communities, however, indicate that adolescents were found to be engaged in loading and unloading activities at the aggregation sites and the railway sidings, as well as carrying tools, cleaning or doing small mechanical work around mining sites. Most of them are hired through third-party contractors, allowing the main company to maintain formal compliance with labour laws while avoiding accountability.[6] This was also observed during the field research.

Similar to Jharkhand, there was no direct involvement of children in the bauxite mine in Odisha, but involvement of adolescents in loading and unloading activities. There were also instances of adolescents doing support work such as menial jobs in the bauxite refinery units, canteens, construction activities in the premises of Vedanta company.[7]

[6] Community meetings #1, #2, and #3 in Jharkhand, supported by Focus Group Discussion #5 with adolescents in Jharkhand

[7] Community meetings-#2, #3 in Odisha and Focus Group Discussions #2, #4 with adolescents in Odisha

3.4 Other impact

3.4.1 Jharkhand

The majority of the villages around bauxite mining sites continue to face chronic underdevelopment issues due to societal composition, such as belonging to a tribal group or PGVTs, remoteness, agro-climatic condition, as well as apathetic intent of regulators of the supply chain as well as mainstream development process.[8] This affects education, health and access to a decent income. For example, inadequate access to school beyond primary education (up to the 8th standard) insinuates towards the engagement of children and adolescents in labour work, including their informal engagement in loading and unloading at the sites.[9]

The majority of children discontinue their education after completion of lower level of primary education (5th standard), due to the distant location of schools (Upper primary schools being 3-4 kilometers and High school 7-8 kilometer away from the villages), remoteness of the villages in the bauxite mining area leading to lack of desired number of staff in schools, poor economic conditions of the families living in the catchment of bauxite mining areas inadequate income to fulfill basic needs as an ability to afford the cost of education for their children.[10]

Only few families get employment in the bauxite supply chain activities (mining sites, loading/unloading sites, crushing sites and at railway sidings) due to undisclosed preference of the company as well as the contracted service provider agencies to employ persons from outside areas. Lack of context specific alternative/additional gainful livelihood options results in the inability of the families to support the educational needs of children.[11] Many families depend on a diversified nature of rainfed agriculture, low-paying jobs through engagement in bauxite mining related activities and distress migration of adolescents and youths to distant states in search of livelihood.[12] Adolescents (14-19 years) assist in loading and unloading trucks, carrying tools, cleaning, or small mechanical work around mining sites.[13]

[8] Observations during visit to the villages in Jharkhand

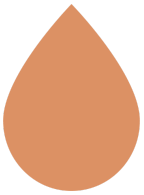
[9] Observations during visit to the sites in Jharkhand

[10] FDGs #1, #2, #3 and #4 with adolescents in Jharkhand

[11] Community meeting #4 in Jharkhand

[12] Community meeting #4 in Jharkhand and key informant interviews with head of villages (#4 and #5) and a ward member (#6) in Jharkhand

[13] Community meetings #1, #2 and #3 in Odisha supported by Focus group discussion #5 with adolescents



Access to social packages for children and their families was limited, due to the lack of awareness, remoteness and lack of collective voices to raise their problems and concerns with the authorities.[14] This also applied to schooling, as direct Corporate Social Responsibility (CSR) efforts were limited and did not fully support education in schools and government-run community centres (Anganwadi).

There were a few recreational activities found in the catchment areas, but these were not up to par with contextual needs and aspirations of the communities. It is likely that the major portion of CSR funds was allocated to the District Mineral Foundation Trust (DMFT),[15] which is mandated to work for the interest and benefit of persons and areas affected by mining-related operations.

3.4.2 Odisha

The villages in the catchment areas of bauxite mining sites were found to be poorly serviced in terms of basic (digital) infrastructures and drinking water, sanitation, education and health infrastructures.[16] The majority of families, like in Jharkhand, are subjected to poverty due to social composition, remoteness and the lack of willingness of the regulators and government agencies to ensure social protection schemes.[17]

Access to education for children is limited at the primary level of education and the majority of these schools are multi-grade and with inadequate number of school teachers. Schools are often far away (4-5 kilometers), especially higher grades after the 8th standard. The continuity of education after this standard is therefore low, less than 50% and for girls less than 30%, both due to distance and extreme poverty of the families that cannot afford education.[18] Direct CSR efforts are not sufficient to support the educational support in schools and Anganwandi centers.[19]

Families depend on diversified nature of rainfed agriculture, with in Odisha a special mention of shifting cultivation, which is referred to as Podu cultivation. This is an agricultural practice by tribal communities that live around the hill tops in Odisha.

[14] Community meetings-#1, #2, #3 in Jharkhand and key informant interviews-with heads of villages (#4 and #5) in Jharkhand

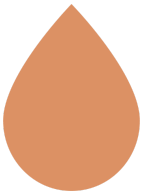
[15] Observations and Key Informant Interviews with school head masters (#1, #2, #3) and heads of villages (#4, #5) in Jharkhand

[16] Observations while visiting Odisha

[17] Observations and community meetings-#1, #2, #3,#4 and #5 in Odisha

[18] Focus Group Discussions with adolescents #1,#2,#3 and adult females #4 in Odisha

[19] Observations and Key Informant Interviews with school head masters #1, #2, #3 and heads of villages #4 and #5 in Jharkhand



They use a slash-and-burn method to clear the hill top vegetative land for growing crops between the onset of the monsoon in June until the end of the winter season in March. Families also depend on low-paying jobs related to bauxite mining.[20]

It was found that adolescents are informally engaged in labour work in support services (including loading/unloading of bauxite consignments to the bauxite refinery unit of Vedanta company in Lanjigarh and other service support works such as menial jobs in the bauxite refinery units, canteens, construction activities in the premises of Vedanta company). All of them are exclusively hired through third-party service providers/ contractors, allowing the main company to maintain formal compliance with labour laws while avoiding accountability.[21]

There are designated government agencies[22] and special programmes[23] (such as OPELIP) which are exclusively mandated for socio-economic development for the PVTGs as the key societal composition across the entire catchment of bauxite mining. The efforts are inadequate to bring forward these PVTGs in the mainstream development process.[24]

There have been instances of pollution from the bauxite refinery units through breach embankment of red mud ponds. These damaged the agricultural fields at its downstream end. The ash from the refractory unit also has a lot of health complications in communities residing in the vicinity of the refractory unit in Lanjugarh, Kalahandi.[25]

[20] Observation, Community meeting-#4, #5 and Key Informant Interview with an elected official of the rural local government #4 in Odisha
[21] Community meetings #2, #3 in Odisha
[22] Examples are Kutia Kanda Development Agency (KKDA), Scheduled Tribes (STs), Scheduled Castes (Sc), minorities and Other Backward Classes (OBCs)
[23] Examples are Odisha's Particularly Vulnerable Tribal Groups (PVTG) Empowerment and Livelihood Programme (OPELIP), and Odisha PVTG Nutrition Improvement Programme (OPNIP)
[24] Special Officer of an agency responsible for socio-economic development of particularly vulnerable tribal groups #10 in Odisha
[25] Observations at Basantpada Village

3.5 Conclusion and Recommendations

Across both Jharkhand and Odisha, no direct involvement of young children in bauxite extraction was identified. However, the study found informal and hazardous engagement of adolescents, primarily through third-party contractors, who carried out loading and unloading, tool handling, cleaning, small mechanical work, and support tasks in refineries, canteens and construction areas. These arrangements allow companies to remain formally compliant with Indian labour laws while avoiding accountability for what are effectively child labour practices. Although bauxite mining is officially formalised in India, reports of illegal mining, opaque supply chains and weak oversight continue to create environments where adolescent labour can persist undetected. These findings align with broader concerns identified by TdH NL about child labour risks in India's bauxite/aluminium supply chain.

The impacts of bauxite mining on children extend beyond labour involvement. In both states, mining-affected villages face chronic underdevelopment driven by social marginalisation of tribal and PVTG communities, remoteness, and limited state or corporate investment. Access to education is severely constrained: schools are distant, understaffed and under-resourced, leading to high dropout rates and indirectly pushing adolescents into informal work. Families rely on low-paid mining-related labour, rainfed or shifting cultivation, and distress migration, further limiting their capacity to support children's education, health and wellbeing. Social protection schemes and CSR initiatives remain inadequate, and in Odisha, environmental harms from refinery pollution add an additional layer of risk. Together, these structural challenges create a context in which children's rights to education, protection and healthy development are compromised, even when they are not directly involved in mining itself.

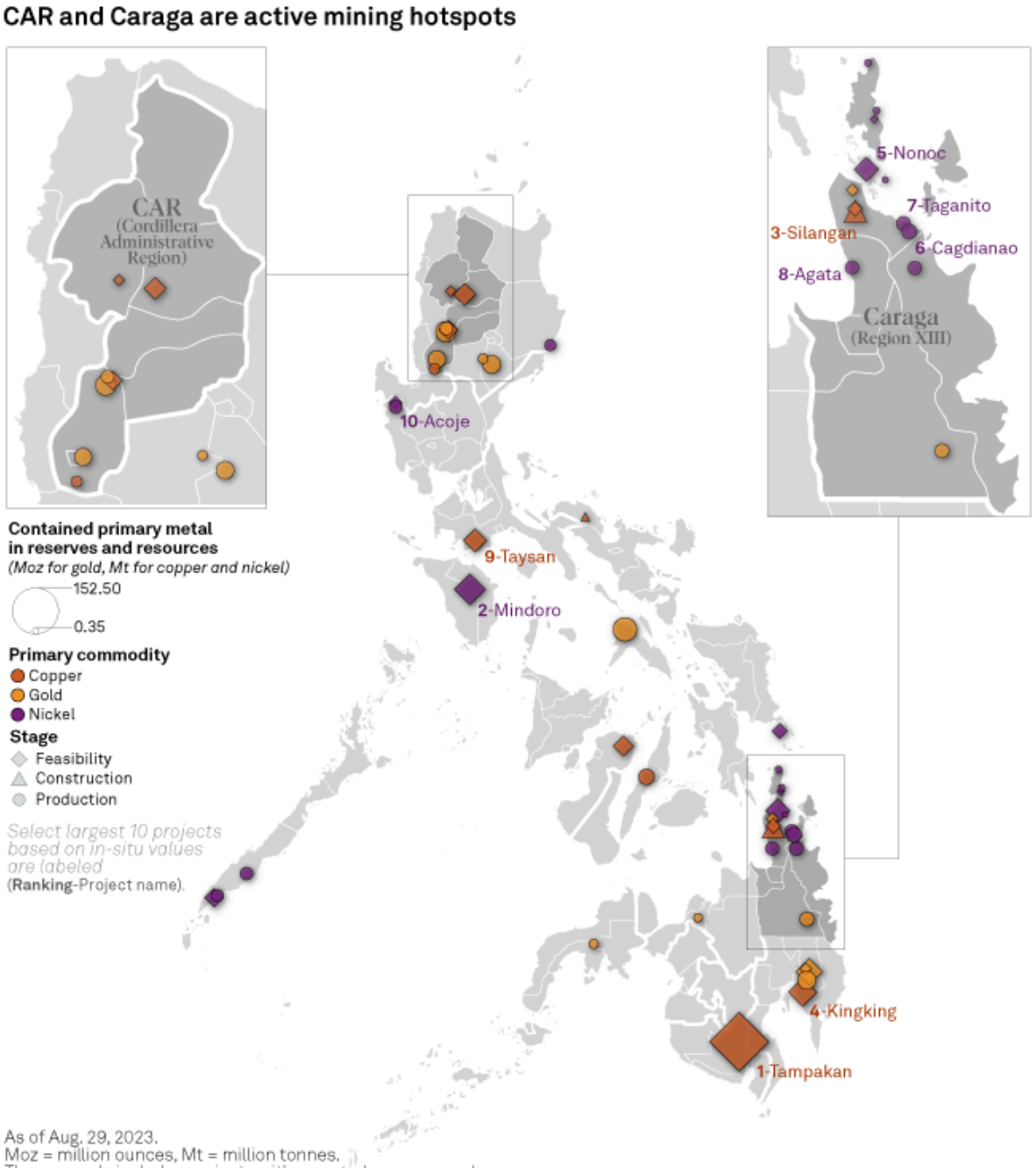
Despite these insights, information on children's involvement in bauxite mining remains limited. This exploratory scoping study revealed substantial gaps in publicly available data, weak documentation of adolescent labour in supply chains, and little systematic evidence on how mining affects children's wellbeing in bauxite-rich regions. These findings underscore the need for more in-depth, field-based research to better understand risks, monitor supply-chain practices and inform stronger protection measures for children in mining-affected communities.

4 Nickel Mining in the Philippines

4.1 Nickel as a Strategic Raw Material

After closely monitoring the demand, **Nickel (Ni)** is identified as a strategic raw material by the European Union (European Commission, 2023) due to its use in batteries, steel making and the automotive sector. It had previously not been included in the list, due to a "good supply diversification for the assessed period" but has now been included in the list from 2023 (European Commission, 2023, p. 36).

The Philippines is the **second largest processor of nickel in the world,** with 14% after 26% in Indonesia (European Commission, 2023). In 2015, the Philippines was even the largest exporter of unprocessed nickel after Indonesia introduced an export ban (AJOT, 2025). In the Philippines, the mining hotspots are considered to be in the Cordillera Administrative Region and Caraga, and to a lesser extent the island of Sibuyan and the state of Mindoro (Kutscher et al., 2025).



Our local Filipino researcher made the following observations about the nickel mining sector in the Philippines:

- To date, the Philippine Extractive Industry Transparency Initiative (PH-EITI) recorded a total of thirty-six (36) nickel mining operations across the regions, twenty-three (23) of which are operating in Caraga Region, where the interviews and fieldwork were conducted. With the increased demand for

nickel, the government anticipates 190 new mining operations to take place in the next 4 years.

- The nickel mining operation in Caraga region started in the late 1980s, and the province of Dinagat Islands was declared a Mineral Reservation Area as early as the 1930s. Hence, communities in the nickel mining areas are well aware of the benefits and impacts of the industry in their respective localities. In the mining areas of Dinagat Islands, for example, community dialogues revealed the acceptance of the communities of the mining realities. Community leaders understood the impacts and implications of the mining operations, and at the same time, are not complacent when it comes to dealing with the socio-environmental issues related to the mining operations.
- In Tawi-tawi, nickel mining operations started in 2012. The mining companies are mostly owned by local clans and political leaders. One current mining operation is owned by a Filipino-Chinese businessman who previously served as an official envoy of the Philippine government to China. The community members of Languyan in Tawi-tawi are more receptive of the mining operations yet less informed as regards to the legal framework, the supply chain, and the use and purpose of the mineral that is being mined. They know, though, that the soils from their mountains are apparently brought to China. The majority of the adults and elderly in the community cannot read, write, or understand the Filipino language.[26]

In the Philippines, most nickel is extracted by companies. The companies are not very big, except for one operation that is the collaboration of three mining companies. Most, if not all, are Chinese-owned, with some Filipino managers that interface with local officials.[27] Nickel ore is extracted in the mountains, and hauled and transported in the upland to lowland areas and to the shore for shipping. For the processing, only one nickel processing plant is operating in Caraga, and another processing plant is located in Palawan. The majority of nickel ores are thus exported.[28]

Currently, about **70% of all exports of the Philippines is unprocessed nickel, of which 87% goes to China** (AJOT, 2025). In 2025, there was an increase of export to Indonesia, due to their shrinking nickel reserves and increasing national processing and smelting demands (Mining.com, 2025). China uses the ores in stainless steel (80%) or batteries (15%). Due to the increased demand for batteries, it is expected that the battery-making industry will increase (AJOT, 2025).

[26] Observational report from local researcher (PH #15)
[27] Interview with Local village official (PH #2)
[28] Observational report from local researcher (PH #15)

Following the example of Indonesia and in the hope to promote national processing, grow investments and the value of the nickel export, the Senate of the Philippines passed a bill in February 2025 to ban all unprocessed nickel export by 2030 (AJOT, 2025). The nickel industry didn't welcome this plan and the planned ban was finally removed, to "protect jobs, uphold investor confidence, and reflect a more realistic understanding of the challenges around domestic mineral processing" (Argus, 2025).

4.2 Informal Child Labour is Present in the Nickel Industry of the Philippines

Nickel in the Philippines was also identified as a high risk country and mineral by Kutscher et al. (2025), mostly due to the presence of small-scale mining and the presence of child labour in those in the past. In the Philippines, the legal age from when children can work is 18 years old.[29] Key informants observed that direct hiring of children is ***officially*** **absent**, but that some youth is engaged through informal work.[30] Teenagers liked to earn extra money to help their family or to buy gadgets like cellphones, or cigarettes or alcohol.[31]

There was a clear difference in the likelihood of child labour of what informants describe as "inside" and "outside" of the mines. Inside the mines, meaning concerning mining companies and formal hiring processes, child labour was considered to be unlikely, due to **strict implementation of the 18+ employment policy**, verified through identification, birth certificates and barangay (local unit of local governance and public service delivery) clearances.[32] Two loopholes existed, however, as one respondent indicated the **inconsistency in hiring processes** across mining companies, where "*some mining companies now require the same documents [ID, birth certificate] as ours, but there are still others that don't.*"[33] Another one noted that the **barangay clearance could bypass strict identification checks**, as children could present as 18+ and the local leader recommended them for a certain job.[34]

[29] Interview with NGO director from the Philippines (PH #1)
[30] Interview with NGO director from the Philippines (PH #1)
[31] Interview with Indigenous Peoples Chieftain (PH#3)
[32] Interview with Community leader with close engagement in local mining operation (PH #7); Civil Society Leader (PH #8)
[33] Interview with Former mining worker (PH #13)
[34] Interview with Indigenous Peoples Chieftain (PH #3)

Outside the mine, children could be involved in mining through subcontractors or family arrangements.[35] **Informal subcontract chains** have weaker oversight and there are no clear guidelines for monitoring subcontractors and child labour.[36] One respondent even said that children are often instructed to lie about their age to avoid detection by inspection: *"they tell them to say they are 18 already, but if you separate them and ask 'how old are you?' - I am thirteen, sir."*[37] Informants mentioned children taking up the following tasks:

- Boys assisting in operating heavy equipment;[38]
- Boys transporting ore;[39]
- Panning and hauling of nickel;[40]
- Transport of nickel, such as on a motorcycle.[41]

Four of the informants pointed out a particular subcontracting job in the nickel mining industry, namely ***trapal boys,*** *"who are in charge of covering the stockpiles with wide plastic-made sheets to prevent nickel ores from getting wet due to rains."*[42] Trapal is the Filipino word for the canvas that is needed to perform this task. Respondents indicated that the boys would stay on a ship and as soon as it rained would run to the pile of nickel ore to cover it. It was considered a light job, as it would only need to be performed occasionally and at other times *"they would just swing in their hammocks"*, but it was also considered risky, as *"there is a chance that they could be buried under the stockpile."*[43]

Respondents specifically mentioned this job in the context of child labour because of a less strict hiring system, as *"they only need a biodata, so they can just write they are 18 years old, even though they are only 15 and the company will hire them."*[44] A few respondents mentioned that this used to be common practice, but now, due to increased migration, adult workers are available and took over this job from youth.[45]

[35] Interview with Focal Person of CSO (PH#5)
[36] Observational report from local researcher (PH #15); Interview with Unspecified respondent (#10)
[37] Interview with Focal Person of CSO (PH#5)
[38] Interview with Executive Director of NGO (PH #4)
[39] Interview with Executive Director of NGO (PH #4)
[40] Interview with NGO director from the Philippines (PH #1); Interview with Unspecified respondent (#10)
[41] Observational report from local researcher (PH #15); Interview with NGO director from the Philippines (PH #1)
[42] Observational report from local researcher (PH #15)
[43] Interview with Former mining workers (PH #13)
[44] Interview with Former mining worker (PH #13)
[45] Interview with Religious leader (PH#6); Interview with Two caretakers of a bar / restaurant (PH #9)

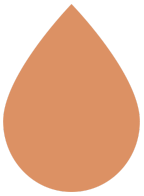
Girls were commonly seen **serving in places that cater to mine workers,** such as restaurants, bars, canteens, and videoke bars.[46] Girls under 18 that served food or were "table girls" were observed in Siargao and Taganito.[47] One respondent indicated: *even the videoke centers had many minors assisting, most are underage."*[48] The local researcher also spoke to two caretakers of a restaurant, who didn't recognise this practice. They explained that the same strict rules from the mine applies to restaurants and bars, that *"IDs are required"* and *"there are no children working in eateries or bars"* they know.[49]

Children were also mentioned to **help out family** in many ways. Near the nickel mines, teenagers aged 13 to 15, are known to help parents to wash clothes, cook, fetch water, plant seedlings, or refill bottles. This was considered as common in the Philippines and involved more occasional tasks that are done on the weekends or holidays to earn for school.[50] As one respondent described: *"it's really like* bayanihan *[family or neighbor]. That's the only thing I know. The family is helping, even the young girl, young boy, middle school."*[51]

Our local researcher observed families, including children (of 3, 4, 10, 13, 16 and 18 years old), **harvesting stones**. Female members of the family were responsible for the washing and segregation of rocks based on its size. The rocks come from the upland portion of the river where there is an active nickel mine. They sell the rocks to construction companies that build roads and infrastructure projects, or to locals that use it as fillers in their houses. Families indicated to have done this work for at least three years. Even though the work is providing the youth with money, it was said that they work long hours (from 7 am to 3 pm), in the heat, and heavily-silted water.[52]

Some parents, especially mothers, **take their children to work**. Children are not hired formally, but teens, especially on weekends, would help their mothers in the kitchen of mining sites, to serve food[53], or vending outside mining sites.[54] Not all mining companies approve of this practice, and one respondents did not recognise that this was happening.

[46] Interview with Focal Person of CSO (PH#5); Religious leader (PH#6)
[47] Interview with Former mining worker (PH #13)
[48] Interview with Focal Person of CSO (PH#5)
[49] Interview with Two caretakers of a bar / restaurant (PH #9)
[50] Interview with Civil society leader (PH #8)
[51] Interview with Executive Director of NGO (PH #4)
[52] Observational report from local researcher (PH #15)
[53] Interview with NGO director from the Philippines (PH #1); Interview with Indigenous Peoples Chieftain (PH#3); Religious leader (PH#6)
[54] Interview with NGO director from the Philippines (PH #1)



They explained that *"it's already included in our orientation with mothers, that it's prohibited to bring your children to work with you"* and that *"even in canteens or stores, [they] did not see any young girls working."*[55]

In conclusion, formal child labour in the mining sector itself does not seem to exist, although some youth may slip through the cracks and are able to pick up tasks to earn money for gadgets, their family and school. In addition, children are engaged in work in the broader nickel industry, for instance by working for a subcontractor, accompanying parents in their work or serving in establishments around the mines. There are particular jobs that are performed by boys and girls, pointing to the gendered division of labour in the nickel mining industry. Children on these islands have thus started working before the legal age of 18. Due to the informality of these tasks, children do not have proper protection or benefits.

4.3 Sexual Abuse and Exploitation is Present due to the Nickel Mines

In addition to children's direct involvement in mining tasks, the surge in mining operations leads to children being impacted in different ways. For instance, around the mines, there are local bars with mine workers as a target audience. It opens only during night hours and weekends. There are jobs for people outside of mining work, such as "singers, entertainers, cooks, food servers, security guards and sex workers."[56] Before COVID-19, the local clubs "accepted even underage girls [to work]. The health centers checked them every week."[57]

Post-COVID, it was reported that there were no longer fixed establishments that were known for sexual exploitation, but sex work was offered through "freelance groups that coordinate online."[58] This was confirmed through an interview with a former sex worker, who explained that cell phones and messaging apps are now used to make arrangements.[59] Although some respondents were unsure that there were still minors involved in sex work, they explained that the new ways of working makes it harder to monitor and control and minors could slip through. Other respondents were more certain that children were still involved, especially from the LGBTQIA+ community.[60] During a visit at one of the bars, the researchers observed young boys that were waiting for bar visitors to come out. They learned that women more commonly made

[55] Interview with Community Leader with close engagement in local mining operations (PH#7)
[56] Observational report from local researcher (PH #15)
[57] Interview with Two caretakers of a bar / restaurant (PH #9)
[58] Interview with Two caretakers of a bar / restaurant (PH #9)
[59] Interview with former sex worker (PH #14)
[60] Observational report from local researcher (PH #15)

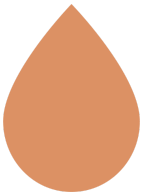
arrangements for sex work through their phone, while members of the LGTBQIA+ community and young boys tended to be more present in the bars.[61]

> ***Case story: Nico***
>
> Nico is a young person that identifies as gay. Despite having common experiences of negative consequences of local nickel mines such as dust and environmental pollution, he recalls one specific incident from when he was sixteen. He was spending time with a friend at the local port when they were approached by two foreigners from a nickel vessel that docked in the port. The two friends were invited by the two men to dinner and were asked to be intimate with them in exchange for money. Out of curiosity, Nico and his friend agreed and experienced their first encounter with men. Nico expresses that he does not look back on this experience negatively, because he already identified as being gay. He has female and gay friends that still go to the vessels regularly and engage with sexual activities with the crew.[62]

In addition to bars and online coordination, there were also stories of sexual exploitation of children and adults taking place at nickel export ships with Chinese workers.[63] This is referred to as "Akyat Barko." One respondent stated, that they "are even offering [their] young women, [their] young girls to these Chinese, [...], for the benefit of their workers who are staying too long in the ocean waiting for our ore."[64]Another stated that "they have regular boats to bring the girls to the ships, most of the girls were 13 to 15 years old."[65] Young girls are lured with the promise of phones, money, or "if they use drugs, they are easy targets."[66] They are being brought to the ships in pump boats. One respondent said that there were harrowing stories of the girls getting gang raped in the ship."[67]

Multiple respondents say that Akyat Barko happens on a regular basis, even to the extent that San Pedro is widely known for these practices: *"Before, they get so embarrassed when asked where they live. 'We're from San Pedro' - we were called "Burikat" (prostitute).*[68]

[61] Observational report from local researcher (PH #15)
[62] Observational report from local researcher (PH #15)
[63] Observational report from local researcher (PH #15)
[64] Interview with Executive Director of NGO (PH #4)
[65] Interview with Focal Person of CSO (PH#5)
[66] Interview with Focal Person of CSO (PH#5)
[67] Interview with Executive Director of NGO (PH #4)
[68] Interview with Executive Director of NGO (PH #4)



Another respondent says it existed, but no longer happens due to Coast Guard patrols.[69] This is due to stricter enforcement unlike areas like Valencia and Cagdianao, where nightlife and videoke bars flourish alongside mining.[70]

Some respondents directly link the influx of migrants (due to higher salaries in the nickel mines)[71] to sexual exploitation of children, including early marriage. In her observational report, the local researcher describes especially 16 and 17 year olds being in "demand" by migrants[72], for instance on the boats or in the bars. In addition, an increase has been observed in teen marriages and cohabitation of teenagers with mine workers, some as young as 14 or 15 years old.[73] One of the respondents noted that this is both a consequence of the migration of foreign workers to the mines and the affected livelihood of local residents: *"No income means no school and no food. That's why some end up living with older men who have an income, sometimes 40 plus years old with a 16 or 17 year old girl."*[74]

Others still linked the increase in sexual exploitation and abuse to nickel mining, but stated that it was also perpetrated by Filipinos. For instance, a former sex worker said that the majority of her clients were Filipino seamen.[75] Another respondent said that there are reports of younger girls of 13 and 14 years old marrying mine workers and marines.[76] Some respondents noted that for the younger generation, the appeal of status and having certain goods also makes them engage in transactional sex: "*Young girls engaged in informal marriage with migrant men, workers. Because they can give them cell phones and maintain their way of life."*[77] Another respondent noted that children are going online to earn money: "*My daughter is earning 28k a month online. I checked her Instagram, her breasts are exposed. I'm thinking bad already"*[78]

The consequences of the sexual abuse and exploitation on the islands include teen pregnancy, family breakdown, sexually transmitted infections, and stigma. Respondents commented about the reactions when a teen gets pregnant: "*She was pregnant, but would not tell who the father is. She was hanging out with kids working in Adlai, where mining companies are."*[79]

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[69] Interview with Community Leader with close engagement in local mining operations (PH#7)
[70] Interview with Community Leader with close engagement in local mining operations (PH#7)
[71] Interview with NGO director from the Philippines (PH #1)
[72] Observational report from local researcher (PH #15)
[73] Interview with Indigenous Peoples Chieftain (PH#3)
[74] Interview with Indigenous Peoples Chieftain (PH#3)
[75] Interview with Sex worker (PH #14)
[76] Interview with Civil society leader (PH #8)
[77] Interview with Executive Director of NGO (PH #4)
[78] Interview with Executive Director of NGO (PH #4)
[79] Interview with Executive Director of NGO (PH #4)

The stigma of raising a child alone. Your future is destroyed, physically, emotionally, psychologically, they are victims because they cannot give consent."[80] HIV, AIDS and other sexually transmittable diseases are also a prevalent issue on the islands, where children get a preventative injection.[81]

4.4 The Filipino Nickel Industry Impacts Children's Rights beyond Exploitation

4.4.1 Health and Environment

Many respondents spoke about the health impacts of the nickel industry on children. For instance, children that are directly involved in mining were observed without proper clothes or working "half-naked the whole day", which violates the Labor Code and ISO standards.[82] Someone else disagreed and says that workers now are provided with protective gear, orientation and paid overtime[83] There are also occasional accidents in the nickel industry, such as a 15-year old boy who died after playing with a backhoe while accompanying his brother. This illustrates the danger of allowing dependents near sites.[84]

Beyond direct involvement, respondents report that "*the hexavalent chromium in nickel ore is very deadly. It affects the rice field, the water sources, and people who ingest it."*[85] The nickel industry thus has a significant impact on the environment that in turn impacts children. Mining causes siltation of coasts and rivers, especially during rains: water turns red and murky, seaweed farms and fishing areas have receded.[86] Rivers around the mines are discolored and where water used to be free and accessible, the water is sometime rationed by companies:[87] "Now they buy water in the forest. Mamanwa (pastoralist[88]) [...]. They used to live where water was abundant."[89] The fishing is impacted both due to siltation, and nickel ships disturbing the fish inside the corrals."[90] This also impacts "food security, indirectly pushing children into mining work."[91]

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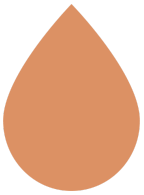
[80] Interview with Focal Person of CSO (PH#5)
[81] Interview with Indigenous Peoples Chieftain (PH#3)
[82] Interview with Focal Person of CSO (PH#5)
[83] Interview with Community Leader with close engagement in local mining operations (PH#7)
[84] Interview with Civil society leader (PH #8)
[85] Interview with Executive Director of NGO (PH #4)
[86] Interview with Civil society leader (PH #8) and, Local village official (PH #2)
[87] Interview with Executive Director of NGO (PH #4)
[88] A pastoralist is someone whose livelihood is based on raising and herding livestock.
[89] Interview with Religious leader (PH#6)
[90] Interview with Community Leader with close engagement in local mining operations (PH#7)
[91] Interview with Indigenous Peoples Chieftain (PH#3)



These environmental changes have **direct health consequences** for children. Dust exposure causes skin allergies[92] and respiratory illnesses[93], while outbreaks of diarrhoea and cholera have been reported in mining-affected villages. Although companies sometimes provide medicine, this does not resolve the root causes of exposure.[94]

Communities also raised concerns about the **scale of deforestation**. While there have been examples of successful rehabilitation — *e.g.*, areas on **Tumbagaan Island** where replanting worked — many sites were abandoned with "dead soil" and mismatched exotic grasses such as pana grass, which could not survive.[95] Despite a legal **1:100 reforestation rule** requiring one hundred seedlings for every tree cut, residents say this is "not achievable in practice."[96] As a result, forests continue to thin, and the risks of soil erosion and inland flooding intensify.

Several barangays reported **repeated flash floods** directly linked to mining-driven deforestation.[97] "We've had three flash floods already," one resident recounted. "A man was carried away with his carabao. It will increase the impact on children because our area is flood-prone."[98] In the Cantilan and Carascal watersheds, siltation has also degraded rice fields, forcing farmers to spend more on fertilisers just to maintain yields.[99] The combined impact on fisheries and farming undermines nutrition and weakens household resilience.[100]

4.4.2 Social and cultural impact

These environmental harms also have an impact on social and cultural structures, as they reinforce a **cycle of poverty.** As agricultural and marine livelihoods deteriorate, families become dependent on precarious mining incomes or transactional relationships to survive. One local advocate put it starkly: "Mining does not help. Mining only exacerbates poverty and degrades the dignity of our people, our young girls and children, and even mothers."[101]

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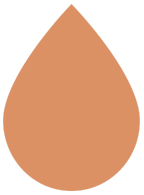
[92] Observational report from local researcher (PH #15)
[93] Interview with Religious leader (PH#6) and Civil society leader (PH #8)
[94] Interview withCommunity Leader with close engagement in local mining operations (PH#7), and Civil Society Leader (PH #8)
[95] Interview with Civil society leader (PH #8)
[96] Interview with unspecified respondent (PH#10)
[97] Interview with Executive Director of NGO (PH #4)
[98] Interview with Executive Director of NGO (PH #4)
[99] Interview with Executive Director of NGO (PH #4)
[100] Interview with Focal Person of CSO (PH#5)
[101] Interview with Executive Director of NGO (PH #4)



What they mean by that is twofold. Firstly, traditional livelihoods such as farming, fishing, and handicrafts are eroding as young people gravitate toward mining jobs and adopt more urban or consumer-oriented lifestyles. “Most of them want to work just to buy a cellphone. These youth today feel like they can’t live without one.”[102] For families facing seasonal shortages, mining provides a welcome income: “During Habagat (monsoon) season, there was no livelihood here. So people were thankful to have mining work even if the salary was low.[103] Some workers reported improved salaries and benefits, including health care.[104]

Yet these improvements coexist with the decline of traditional crafts, as youth are said to believe “why work if you can just buy?”[105] in combination with the increased economic dependency on mining.[106] In addition, land use restrictions and environmental changes have accelerated the abandonment of traditional crops. “When I arrived here the mountains were really full of plants, but now people would say: Why should I plant when I can just work in mining?”[107]

Secondly, communities described an increase in transactional sex tied to economic hardship: “There are many here with sugar daddies… They get paid through GCash.”[108] The ongoing mining boom is expected to bring more migrant workers and possibly sex workers to local towns. Hotels and inns in Cantilan are already frequented by such groups, raising concerns among conservative women’s groups about the exposure of students and young girls to these new social dynamics.[109] Indigenous leaders in Agusan del Norte similarly reported rising early pregnancies, school dropouts, and sexually transmitted diseases among young people, coinciding with the influx of mining workers.[110] Seasonality worsens instability: during off-season periods, as many as 40% of residents leave, creating inconsistencies in household income and support structures.[111]

Some **particularly vulnerable groups** have been identified, such as these patterns increasingly affecting LGBTQIA+ youth,[112] and indigenous communities. Sama Dilaut (Badjao) and Sama Diliya communities remain among the most vulnerable.

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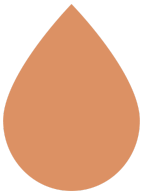
[102] Interview with Indigenous Peoples Chieftain (PH#3)
[103] Interview with Community Leader with close engagement in local mining operations (PH#7)
[104] Interview with Community Leader with close engagement in local mining operations (PH#7)
[105] Interview with Religious leader (PH#6)
[106] Interview with Civil society leader (PH #8)
[107] Interview with Local village official (PH #2)
[108] Interview with unspecified respondent (PH#10)
[109] Observational report from local researcher (PH #15)
[110] Observational report from local researcher (PH #15)
[111] Interview with Two caretakers of a bar / restaurant (PH #9)
[112] Interview with unspecified respondent (PH#10)



Early marriage, limited access to schooling, bullying, and segregation in classrooms compound their social exclusion. Settlements near mine sites expose them to heightened dust and chemical risks. “Badjao girls marry early, once they menstruate. They don’t often go to school because they are bullied.”[113] However, across all affected communities, the sense of injustice is palpable. As one leader concluded: ”We are being made **sacrificial lambs** for the energy transition. It's difficult to transition using our minerals, not for our own transition, but for other countries. We are sacrificing our children for energy transition.”[114]

4.4.3 Education

These environmental and economic pressures deeply shape children’s **educational opportunities**. Leaders in multiple communities described rising numbers of high school girls dropping out due to early pregnancies or entering relationships with older mine workers.[115] Although mining companies sometimes promise to support schooling, communities repeatedly noted that such promises are often not fulfilled.[116] Requests for school buses for children living along dusty mining routes went unanswered.[117] For many families, mining income remains the only way children can remain in school: “If there was no mining, there would be no students because they wouldn’t be able to study.”[118] Yet **seasonal employment** also pulls children away from education when families migrate in search of work.[119]

Population influx from mining has resulted in **severe overcrowding** in schools. “There are not enough classrooms. The lower grades go half days,” one teacher explained.[120] The pressure on school infrastructure contrasts sharply with the social development funds companies highlight. Some firms provide school supplies, sponsor sports uniforms, and offer scholarships for environmental, engineering, or mining-related courses.[121] In addition, some companies actively collaborate with teachers and social workers. As one leader put it, “the teachers really question if there is a child not going to school [and] will call the parents.”[122] Dinganat Nickel also provides wage adjustments during school months for some workers who need to support schooling, although implementation is inconsistent.[123]

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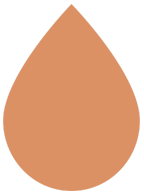
[113] Interview with Civil society leader (PH #8)
[114] Interview with Executive Director of NGO (PH #4)
[115] Observational report from local researcher (PH #15)
[116] Interview with Local village official (PH #2) and Indigenous Peoples Chieftain (PH#3)
[117] Interview with Local village official (PH #2)
[118] Interview with Community Leader with close engagement in local mining operations (PH#7)
[119] Interview with Indigenous Peoples Chieftain (PH#3)
[120] Interview with Executive Director of NGO (PH #4)
[121] Interview with Community Leader with close engagement in local mining operations (PH#7)
[122] Interview with Community Leader with close engagement in local mining operations (PH#7)
[123] Interview with NGO director from the Philippines (PH #1)



However, many indigenous children, especially in Sama and Badjao, cannot access scholarships due to delayed or missing birth registrations.

As one respondent explained, "many parents still don't register births right away, thinking it brings bad luck."[124] At the same time, children face distractions that pull them from schooling: the lure of quick-money mining jobs, peer influence, and mobile phones and gadgets. Among indigenous youth, scholarships are strong incentives, but sustainability and job outcomes remain uncertain.[125]

4.5 Conclusions and Recommendations

The findings from this exploratory study show that nickel extraction in the Philippines creates a dense web of risks for children that goes far beyond formal employment in the mines. While "inside the fence" there are relatively strong protections (strict 18+ hiring policies, ID checks and barangay clearances), child labour and exploitation still occur "outside the fence" through subcontractors, family-based work arrangements, and service jobs around the mines. Boys help operate or support heavy equipment, transport ore, pan and haul nickel, and work as *trapal boys* covering stockpiles in unsafe conditions; girls serve in eateries, canteens, videoke bars, and other venues catering to mine workers.

These patterns mirror earlier risk assessments that flagged nickel in the Philippines as a high-risk mineral for child labour. At the same time, children face environmental contamination, food insecurity, school drop-out, and increased exposure to sexual exploitation in and around mining communities. The combined effect is a cycle in which environmental harm, precarious parental work, and informal subcontracted labour reinforce each other and deepen children's vulnerability.

These risks are **enabled by a cluster of structural factors**. Local governance of the nickel sector is weak, fragmented across agencies, and often heavily influenced by political dynasties who benefit from permits and profits.[126] Subcontracting is pervasive at every step, from extraction and hauling to stevedoring, food services, and shipping, often involving local politicians as subcontractors themselves, which blurs lines of responsibility and weakens oversight.[127] There is no clear, enforceable regulation for subcontracting processes in nickel operations, and labour, environmental, and social monitoring occur separately, making it difficult to see the full picture or hold anyone accountable.[128]

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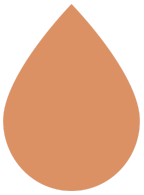
[124] Interview with Civil society leader (PH #8)
[125] Interview with Religious leader (PH#6)
[126] Observational report from local researcher (PH #15) and Interview with Executive Director of NGO (PH #4)
[127] Observational report from local researcher (PH #15) and Interview with Civil society leader (PH #8)
[128] Observational report from local researcher (PH #15)



Many workers are seasonal, without contracts or proper accident compensation, and rely on short bursts of income during "good months," which in turn pushes families and teenagers to accept risky or informal work, including misrepresenting their age.[129] Poverty, desire for consumer goods, cultural expectations that children should help their parents, and peer pressure normalise early work and transactional relationships, including sex work, especially during peak months when migration surges.[130] Apps like GCash and online recruitment make these informal economies faster and harder to trace.[131]

At the same time, there are **protective factors** to build on. Some barangays have virtually no child labour due to strong local enforcement, active local government engagement, school–community collaboration, curfews, and community monitoring norms.[132] Religious norms in certain areas actively discourage alcohol, drugs, and prostitution, creating social buffers even where mining income circulates.[133] Access to education is improving, and a planned local education could further reduce the economic pressure for young people to work early, if combined with stronger protection and livelihood options for their families.[134] These local practices show that it is possible to reduce child labour and exploitation when governance, community norms, and services align.

Recommendations for the Private Sector

Nickel operators and their subcontractors have a responsibility to ensure that the green transition does not rest on invisible, exploited labour. Concrete steps include:

- **Map and reform subcontracting chains.** Companies should work with the Mines and Geosciences Bureau to double-check subcontracting schemes, validate existing regulatory mechanisms, and close gaps where local elites or politically connected subcontractors evade oversight. This should include full disclosure of permit extensions, rehabilitation obligations, subcontractor chains, and workforce data, including seasonal and casual workers.
- **Create traceable, accountable labour systems.** Clear monitoring guidelines should be created and enforced so that responsibility for labour conditions, including informal and seasonal workers, extends up to the Mineral Production

[129] Interview withNGO director from the Philippines (PH #1), Religious leader (PH#6) and Indigenous Peoples Chieftain (PH#3)
[130] Interview withNGO director from the Philippines (PH #1), Indigenous Peoples Chieftain (PH#3), Focal Person of CSO (PH#5), Religious leader (PH#6) and unspecified respondent (PH#10)
[131] Interview with unspecified respondent (PH#10)
[132] Interview with Community Leader with close engagement in local mining operations (PH#7)
[133] Interview with Civil society leader (PH #8)
[134] Interview with NGO director from the Philippines (PH #1)

Sharing Agreement[135] holder, with joint liability across the chain. This should explicitly cover subcontractors responsible for extraction, hauling, stevedoring, ship loading, food services, security, and camp services.

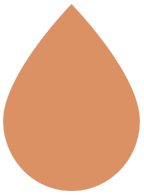
- **Strengthen decent work for adults to reduce pressure on children.** All workers in nickel operations, including those hired by subcontractors, should receive protective gear, written contracts, living wages, and meaningful accident compensation; improving adult labour conditions reduces the need for children to contribute to the family income.
- **Deliver on social commitments that directly protect children.** Companies should ensure that promised scholarships, school transport, and agricultural support are actually implemented and monitored, not just listed in Social Development and Management Program documents. Protective buffers should be created around schools near mining zones (dust control, traffic measures, noise barriers) and safe recreational and learning spaces should be supported so that children have alternatives to "adventure work" in mines or chromite pits.
- **Integrate child rights into Environmental, Social, Governance and Human Rights due diligence.** Mining impacts should be reframed through a child rights lens, recognising that environmental degradation, unsafe labour, and sexual exploitation are violations of children's rights to health, water, food, education, and protection from violence. Companies should explicitly assess risk to children in their due diligence, including around nightlife, entertainment venues, and ships that load nickel ore.

For Government and Regulators

Government agencies at national and local levels play a critical role in turning fragmented oversight into coherent protection for children:

- **Coordinate environmental, labour, and social monitoring.** Regular monitoring of mining operations should integrate environmental, labour, and social indicators in a single, synthesised framework, rather than separate streams that miss cross-cutting risks for children.
- **Regulate and scrutinise subcontracting.** The Mines and Geosciences Bureau, Department of Labor and Employment, Department of Social Welfare and Development (DSWD), Local Government Units, and other relevant agencies should jointly review subcontracting schemes, set minimum labour and child protection standards for all contractors, and make adherence a condition of permits and renewals.

[135] A Philippine mining contract allowing private companies to extract minerals while the government retains ownership of the resource



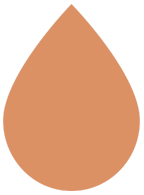
- **Strengthen community-based regulation.** Barangay-level ordinances should explicitly prohibit child involvement in high-risk work (such as chromite and informal quarrying), while empowering barangay councils, DSWD, and schools to monitor school attendance, pregnancies, and the presence of minors in entertainment venues and around ports.
- **Support livelihood restoration and diversification.** National and local governments should advocate and budget for livelihood alternatives in mining-affected communities so that families do not have to choose between income and their children's safety and education. This includes agricultural support where rice and fishing yields have dropped, as well as non-mining economic options for youth.
- **Tighten oversight of "green transition" narratives.** Regulators should critically scrutinise how the energy transition narrative is used to justify rapid nickel expansion and ensure that climate goals do not come at the cost of Caraga's children and communities.

Recommendations for Communities, Local Organisations and Civil Society

Local organisations are essential in watching what happens "outside the fence" where risks are highest:

- **Build community capacity for monitoring and advocacy.** Support groups, CSOs, people's organisations, and churches should be capacitated to monitor mining impacts, especially those affecting children, and to engage meaningfully with companies and government through existing mechanisms.
- **Develop local trainers and child-rights education.** Community-based training modules and local trainers should be developed to promote women's and children's rights in transition mineral areas, including on labour rights, sexual exploitation, online recruitment, and safe use of apps like GCash.
- **Provide safe alternatives for children and adolescents.** CSOs and local governments can jointly create safe recreational, cultural, and educational spaces, so that "nothing else to do" no longer means going to the mines, bars, or ships. Protective community norms (for example, religious norms that limit alcohol and prostitution) can be reinforced as part of local child protection systems.
- **Support documentation and access to entitlements.** Community initiatives can help families obtain late birth registration and IDs, so children can access scholarships, social protection, and formal opportunities instead of being pushed into informal labour or exploitation.

Recommendations for Researchers and Donors



The study also highlights urgent gaps in knowledge and the need for long-term, child-centred research:

- **Measure the hidden scale of child labour and exploitation.** Future studies should systematically measure the scale and patterns of possible underage employment in nickel, including subcontracted work and "helping" arrangements in families. Research should also better document sexual exploitation around ports, nightlife, and ships (*Akyat Barko*), including the involvement of LGBTQIA+ youth.
- **Analyse gendered vulnerabilities.** Research should unpack how risks differ for boys, girls, and LGBTQIA+ children, in mining work, service jobs, and sexual exploitation, and how gender norms intersect with poverty, migration, and technology use.
- **Link local harms to global value chains and climate policy.** Donors and researchers should trace where nickel from these communities ends up (e.g. EVs, batteries, steel) and integrate climate justice questions into debates on critical minerals.
- **Document good practices and protective factors.** Finally, research should also document how strong barangay enforcement, active DSWD, community monitoring, religious norms, and expanded education can reduce child labour and exploitation, so these approaches can be replicated and scaled.

5 Copper Mining in Peru

5.1 Copper as a Strategic Raw Material

Copper (Cu) is used in all electrical and electronic applications, including renewable energy technologies, power grids, electric vehicles, electronic devices, aircrafts and defence technologies (European Union, 2025). It is usually extracted using open-pit, or opencast mining, a surface mining technique used when mineral or ore deposits are found relatively close to the surface of the earth (Gray, 2023). According to UNCTAD (2025), over half of global reserves of copper lie in just five countries, Chile, Australia, Peru, the Democratic Republic of the Congo and the Russian Federation, with Peru accounting 10%.

5.2 Copper Mining in Peru

There are more than 709 copper mines in operation globally, of which 86 are in Peru, according to GlobalData's mines and projects database. Cerro Verde Mine, Antamina Mine, Quellaveco Project, Las Bambas Project, and Toromocho Project are the five largest copper mines by production in Peru in 2023, according to GlobalData's mining database, which tracks more than 33,000 mines and projects from early exploration to closure across more than 150 countries (Mining Technology, 2024). Peru produced about 2.7 million tons of copper in 2024 and attracted $ 4.96 billion of investment in the key mining sector (Aquino, 2025). Peru's copper production between 2023 and 2024 observed a slight decline, falling 0.73% to 2.73 million t/y from 2.75 million t/y (GBReports, 2025). According to Hidayat (2025), Peru's copper extraction landscape operates under a complex legal framework where illegal copper mining in Peru has extracted 90,000 metric tons of copper over 15 years from a single concession area. This represents approximately $ 950 million in lost resources at current market prices, highlighting the massive scale of Peru's informal mining crisis.

Mining in Peru is divided in two groups:

1. Large and medium-scale mining, which are most formalised and comply with legal requirements, but present problems associated with environmental impact and the protection of property of indigenous and native communities;[136]
2. Small-scale and artisanal mining: the State has not published regulations that adequately govern small-scale and artisanal miners.[137]

[136] Interview with a human rights lawyer in Peru

[137] Interview with a human rights lawyer in Peru

5.3 Impact of Copper Mining on Children in Peru

5.3.1 Child labour

Kutscher et al. (2025) did not identify copper in Peru to be one of the top countries with risk of child labour. In Peru, child labour is most common in the context of gold mining (Department of Labor, 2024). Due to the absence of effective governance over small-scale and artisanal mining, illegal mining has expanded significantly in regions such as the Peruvian Amazon and coastal areas like Pataz.

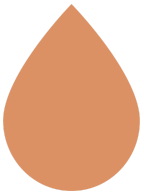
Although mostly absent from reports and research, a human rights lawyer in Peru stated that in these contexts of weak regulatory oversight, **minors are involved in the extraction of minerals, including copper**.[138] While most documented cases of child labour in Peru concern **gold mining**, similar risks exist across all forms of artisanal and small-scale mining, including for minerals such as copper. Children typically engage in extraction, artisanal processing, and auxiliary tasks such as transporting materials.[139] Corruption further exacerbates these risks, with reports indicating that members of Congress have been involved in illegal mining operations.[140]

Illegal mining sites also create enabling environments for additional harms. These areas often become hotspots for **sexual exploitation, violence, and severe environmental degradation**, all of which carry serious health implications for nearby communities.[141] La Pampa is one such example. Although primarily known for gold mining, it illustrates how illegal mining enclaves can generate multilayered risks. Beyond the Amazon, environmental liabilities linked to mining pose binational challenges in other regions as well. **Lake Titicaca**, shared with Bolivia, faces significant contamination threats from mining activities, despite its protected status under the Ramsar Convention and its designation as a Subject of Rights.[142]

5.3.2 Environmental and Health Impact

As explained above, large- and medium-scale mining operations impact children through the right to a healthy environment. In Peru, many of the land that is being mined is property of indigenous and native communities. For them, nature has an incredible value that connects to their spirituality and “sumak kawsay”, which means good living.

[138] Interview with a human rights lawyer in Peru
[139] Interview with a human rights lawyer in Peru
[140] Interview with a human rights lawyer in Peru
[141] Interview with a human rights lawyer in Peru
[142] Interview with a human rights lawyer in Peru



Mining companies that operate on these lands have many conflicts with indigenous peoples and communities, who claim that the projects jeopardize their health and main source of income, which is agriculture.[143]

For example, previous research points to the health impact of copper mining. High concentrations of numerous heavy metals were detected in children's hair. The concentrations of these were substantially higher in children residing in the mining area compared to children elsewhere. Children in the mining area have odds of suffering from nosebleeds being 15 times higher, white lines on nails 12 times higher, chronic colic[144] 7 times higher, dermatological alterations 5 times higher and irritability or depression 7 times higher (Piñeiro, Ave, Mallah, Guisández Jiménez, Viera, Bianchini & Muñoz-Barus, 2021).

A well-known example of this is the case of La Oroya Metallurgical Complex, a copper production company that has caused severe air and soil pollution. Since 1922, the pollution has made La Oroya one of the most polluted cities in the world.[145] In an unprecedented decision on March 22, the Inter-American Court of Human Rights found the State of Peru guilty of violating the human rights of 80 people and the rights of the children of 57 victims. The Court ruled that Peru failed to act effectively for decades to protect the community from extreme pollution from the metallurgical complex, which resulted in residents suffering from severe health issues. The Court ordered Peru to adopt measures of integral reparation, including:

- Creating a remediation plan for air, soil, and water contamination;
- Providing free and specialised medical care to the victims and other affected residents;
- Updating air quality regulations to ensure the protection of human health;
- Granting monetary compensation to the victims.

This judgment sets a significant precedent in Latin America for the protection of the right to a healthy environment and adequate state oversight of corporate activities (Quintanilla Sangüeza, 2024).

[143] Interview with a human rights lawyer in Peru
[144] Recurrent episodes of severe abdominal pain in infants
[145] Interview with a human rights lawyer in Peru

5.3 Conclusion and Recommendations

These exploratory findings, though limited, align with broader risks and impacts identified in the critical minerals sector. With worries around child labour and sexual exploitation in the mining and broader impact on the environment and children's health, copper mining in Peru is no different than nickel mining in the Philippines or bauxite mining in India. To address these impacts, the following recommendations are proposed.

For companies:

- **Implement robust controls** to prevent the involvement of minors in all copper-related work, specifically extraction, artisanal processing and auxiliary tasks, which are currently missed due to weak regulatory oversight.
- **Prevent and remediate pollution** by adopting and enforcing environmental standards to halt severe air, soil and water contamination caused by large- and medium-scale operations and investing in remediation plans.
- **Prioritise community health** by funding and ensuring independent, specialised medical care for all residents, including children.

For governments and regulators:

- **Strengthen regulatory oversight** to tackle child labour, illegal mining and corruption. Ensure that all operations, both formal and informal, are inspected and held accountable.
- **Update and enforce environmental law** to meet international standards to protect vulnerable ecosystems and prevent air, soil and water contamination.
- **Develop and execute strategies** to curb illegal mining sites, which are documented as creating enabling environments for exploitation and environmental degradation.

For civil society, local organisations and community:

- **Empower affected communities** and Indigenous Peoples' Organisations in articulating their concerns, advocating for their rights and monitoring the social and environmental impacts of copper mining.
- **Increase public awareness** targeting parents, local authorities and the general public about the impact of copper mining on children, including child labour, and the importance of children's rights.
- **Conduct and disseminate further research** to fully map child labor dynamics and other impacts of copper mining on children's rights in different regions of Peru.

6 Other findings

The data collection also led to the identification of other findings that are not within the scope of this particular study, but could be interesting for future projects.

6.1 Child labour in Chromite mining on Dinganat Island

On Dinganat Island, Philippines, small chromite mining existed long before large-scale nickel operations, but has now declined and gone underground.[146] This is located in Bil-ad and Akuhi.[147] Children as young as 8 years old haul and wash chromite in rivers, often shirtless and exposed to hazards. Children have shovels and pans, they throw pieces in a pan and start to throw it into a small screen until they are able to get the chromite. They carry out cleaning of the chromite at the river side. Older youth (16-18) transport loads by motorcycles on roads. Children bring the chromite to the trucks that come to the community regularly. There are weighing scales there, where children bring the chromite, weigh it and sell it per kilo.[148] All these activities have an impact on children's health and development.

Activities are both family- and peer-driven, with motivations ranging from helping household survival to earning extra pocket money:[149] "They just want the income for themselves. You know how young kids are. They want to play games. So they have to get some money so that they can go and play."[150] The chromite is sold to Chinese buyers. Children are said to help during summer only, but price surges in chromite lead to school disruptions, particularly for boys, who are more likely to drop out or lose interest in education. They are requested by their family to do this job to secure additional income, or youth decide to do this themselves to earn some extra money. A Filipino NGO director mentioned that children from various ages (10-15) can carry up to 2 kgs of chromite.[151]

"We found in Libjo, there are small chromite miners. That is where the children are involved. They are not only involved in carrying the chromite, the sand, but they are also in washing. But they wash in rivers."[152]

[146] Interview with Local village official (PH #2)
[147] Interview with Local village official (PH #2)
[148] Interview with NGO director from the Philippines (PH #1)
[149] Interview with NGO director from the Philippines (PH #1)
[150] The current mining boom is expected to bring more migrant mine workers and potentially migrant sex workers too, who are said to frequent the hotels and inns in the municipality
[151] Interview with NGO director from the Philippines (PH #1)
[152] Interview with NGO director from the Philippines (PH #1)

6.2 Child labour in Gold mining in Dinganat Island

There were also reports of younger boys, typically 12–14 years old, joining fathers or older siblings in small-scale gold mining tunnels. Tasks include carrying sacks, hauling ore, and entering tunnels, work that is normalised within family systems.[153] Youth who "strike gold" often lose motivation to remain in school, and some out-of-school boys work permanently in tunnels. Families that prioritise education are the exception rather than the norm.[154]

While these practices fall outside the immediate focus on nickel, they highlight a broader pattern of **family-based, informal, and hazardous mining work** occurring across Dinagat Island. They also point to an interconnected set of risks, educational disruption, unsafe work, and intergenerational labour norms, which may be important to address in future child-centred research and programming.[155]

[153] Interview with Indigenous Peoples Chieftain (PH#3)
[154] Interview with Indigenous Peoples Chieftain (PH#3)
[155] Interview with Indigenous Peoples Chieftain (PH#3)

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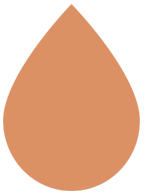

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Annex I: Topic-list for stakeholders and rightsholders interviews

Introduction

- Thanking for their time
- Explain the purpose of the interview
- Emphasise confidentiality
- Obtain verbal consent to record session on audio

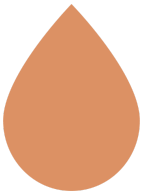
Mining and supply chain context

- Can you describe the context of [mineral] mining in this region?
    - Who operates the mines?
    - Are there artisanal or informal mining activities?
    - How do workers usually get involved in [mineral] mining?
- What do you know about the working conditions in the mines and processing facilities?

Labour risks and vulnerabilities

Explain that we are particularly interested in the involvement of children in [mineral] mining.

- What is the legal age that children can work in this region?
- If children would work in mines illegally, how is this regulated? How can it be reported?
- To what extent are you aware of younger workers (up to 18 or below the legal age) being involved in [mineral] mining?
- If yes, in what ways are children involved in [mineral] mining?
    - Are they working directly in mining? If yes, what are typical jobs that children are doing in the [mineral] mining?
    - Are they involved in any indirect roles?
    - Are there any differences between boys and girls?
    - Are there any differences in ages?
- How do children enter mining work?
    - Are there any recruitment processes? To what extent are they informal?
    - Are they working alone, with families or for third parties?
- What are the main reasons that children work in mines? (e.g. economically, socially, culturally, societally)
    - What are some reasons that children involved in mining can sustain? (e.g. who facilitates the involvement of children in mining)
- Are there any specific times of the year when children are more involved in mining?
- What are the consequences of children working in mining?
- Are there any other (indirect) ways that children are impacted by [mineral] mining outside of child labour (e.g. abuse, migration, impact on community, health, education, child right violations)?



Stakeholder mapping and next steps

- What would be some interventions to keep children from working in mining?
    - What would need to happen on different levels?
    - What are some challenges and facilitators to stop child labour?
- Are there organisations, unions, or initiatives trying to prevent or stop children being involved in [mineral] mining?
- What other actors do you think have insight into the involvement of children in [mineral] mining?
    - Do you have one or two organisations or people in mind that you can link us to?
- What reports, data or other sources would you recommend looking into for a better understanding of the involvement of children in [mineral] mining?
- Is there anything else you would like to share?