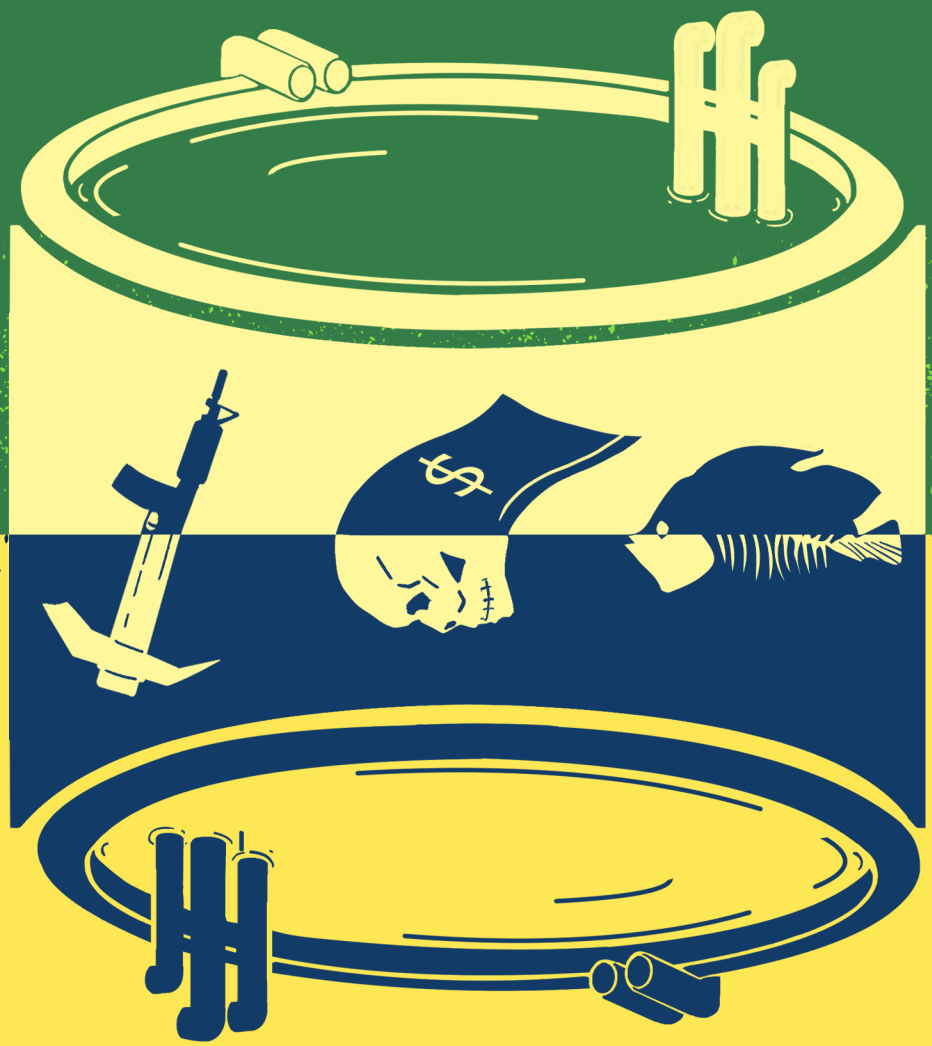
UNEARTHING THE COST

Rare Earth Mining in Myanmar's War-Torn Regions

June 2025



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1. EXECUTIVE SUMMARY

Over the past eight years (from 2017 to 2024), Myanmar has become China's primary external source of rare earth minerals, with a total Myanmar export value exceeding USD 4 billion. Following the 2021 military coup, Myanmar's exports of rare earths saw a significant surge, with USD 3.6 billion worth of rare earth minerals shipped during the post-coup period 2021-2024. This 2021-2024 post-coup surge in rare earth exports constitutes 84% of the total value of Myanmar's rare earth exports to China across the wider 2017-2024 eight-year period. The peak year was 2023, when exports reached USD 1.4 billion, largely driven by an expansion of mining activities in conflict-affected regions, particularly in Kachin State. Satellite imagery confirms a marked rise in illegal, unregulated mining activities, involving both military-backed entities and ethnic armed organizations (EAOs), exacerbating environmental and social challenges.

A group of 17 elements is collectively known as rare earth elements. These 17 elements are generally categorized into two main groups based on their atomic weight: Light Rare Earth Elements (LREE) and Heavy Rare Earth Elements (HREE). LREEs are found more commonly and tend to be less valuable, while HREEs are rarer and typically more expensive. HREEs are especially important in the production of high-value, advanced technology products.

In Myanmar's Kachin State, two key HREEs—Dysprosium (Dy) and Terbium (Tb)—are primarily extracted. These elements play a critical role in high-tech manufacturing, particularly in defense and military technologies, aerospace equipment, and green technologies. They are essential for the production of high-temperature-resistant permanent magnets. Over the eight year period from 2017 to 2024, roughly two-thirds of China's annual imports of rare earth elements (mostly HREEs), by volume, originated in Myanmar. This highlights Myanmar's significant role in supplying rare earth raw materials to China.

A geospatial analysis of mining operations in Kachin State reveals a striking increase in mining activity since the coup. In areas like Chipwi and Momauk, the number of mining sites has surged, with Chipwi alone seeing sites more than tripled from around 100 to 357 and the number of in-situ leaching collection pits rising by 150 % from 1,000 to over 2,500. Overall, mining activity has expanded by 194%, spanning 13 village tracts and covering at least 36 villages. The rapid proliferation of unregulated mining has caused severe environmental degradation, including water and air pollution, chemical contamination, and the destruction of local ecosystems. Agriculture has suffered as well, with soil contamination rendering crops unsellable to China and livestock farming collapsing due to water pollution and lead contamination.

The health and social consequences of these mining operations are equally concerning. Workers exposed to harmful chemicals, such as ammonium sulfate and oxalic acid, face serious health risks, including respiratory diseases, long-term health problems, and miscarriages among female workers. Communities near mining sites, particularly in Chipwi and Momauk, reported widespread suffering from skin diseases, cattle are found with tumors, and a lack of access to clean water. Social instability has also increased, with drug abuse, human trafficking, and gender-based violence rising in mining areas. Coercion from armed groups and mining companies has left local communities vulnerable, as they are often forced into unfavorable land deals. The absence of a formal regulatory framework has allowed exploitation and environmental damage to continue unchecked, further deepening the social and economic crisis in the region.

The situation in Kachin State underscores broader trends in rare earth mining, where environmental and social instability often go hand in hand. This highlights the urgent need for responsible mining practices that prioritize the welfare of local communities, transparency in land transactions, and stronger regulatory oversight to mitigate exploitation and social ills. Addressing these issues is essential not only for protecting the environment but also for fostering long-term peace and stability in conflict-affected regions, where the exploitation of natural resources continues to drive social and political unrest.

2. KEY FINDINGS

(A)

Sharp Increase in Rare Earth Exports to China: Since Myanmar's 2021 military coup, rare earth shipments to China have totaled USD 3.6 billion, accounting for 84% of Myanmar's total rare earth exports over the past eight years (from 2017 to 2024).

(B)

Myanmar's Dominance in China's Rare Earth Import Supply: Between 2017 and 2024, Myanmar's participation in China's rare earth imports, in terms of volume, ranged annually between 60% and 87%, contributing significantly to the global rare earth supply.

(C)

Record-High Export Value in 2023: Myanmar's rare earth exports peaked in 2023, reaching USD 1.4 billion, the highest annual figure on record.

(D)

Expansion of Mining Sites and Collection Pits since the Coup: The number of mining sites rose from 126 sites existing pre-coup to an additional 245 sites being developed between 2021 and 2024—an increase of 194.4%.

(E)

Illicit Rare Earth Trade and Lack of State Revenue: Rare earth mining has operated largely outside state legal and fiscal oversight, with no clear evidence that the state benefits from export revenues. Although companies held permits for other minerals such as lead, zinc, tin, iron, and marble, many of these licenses appear to have been used as cover for unregulated rare earth extraction, bypassing formal taxation and state budget contribution.

(F)
Severe Health Impacts on Local Communities: Affected areas have reported a sharp increase in respiratory and skin diseases among residents. Mine workers suffer from pulmonary illnesses, chronic fatigue, and other long-term health complications linked to exposure to hazardous chemicals such as ammonium sulfate and oxalic acid. In Chipwi Township, an increase in miscarriages among female workers has been attributed to environmental contamination.

(G)
Widespread Environmental Degradation: Mining operations have caused extensive environmental harm, including the contamination of water sources with chemical waste, leading to unsafe drinking and household water supplies. Mass fish deaths and livestock health issues, such as tumors, have been reported due to polluted water. Air pollution from rare earth processing activities has also caused a significant decline in crop yields and quality.

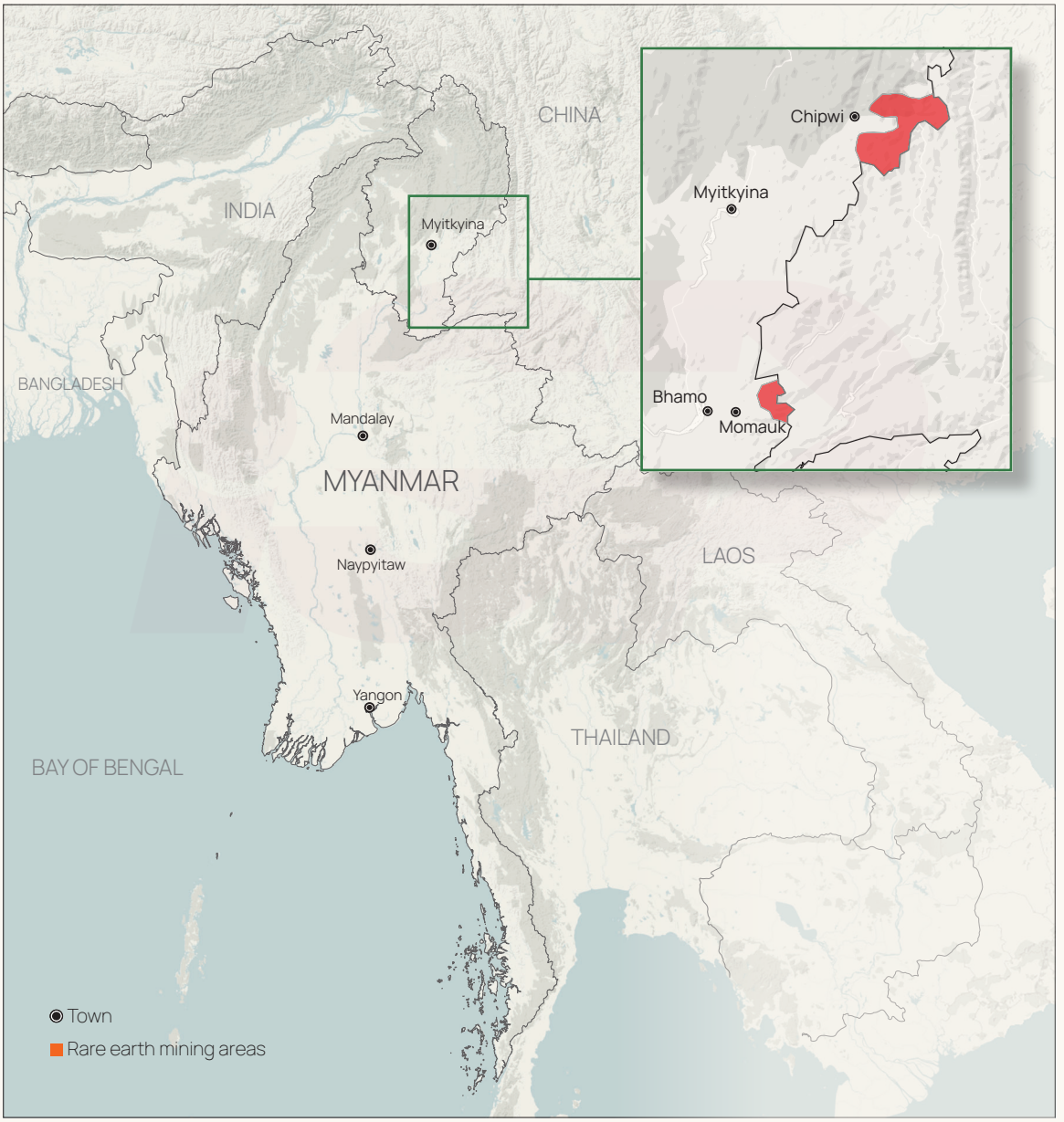
(H)
Collapse of Traditional Livelihoods: The expansion of mining activities has resulted in the loss of ancestral farmlands and severe soil contamination. Farmers now face economic hardship as contaminated crops are not accepted for export to China. Livestock farming has also collapsed due to water pollution and lead contamination.

(I)
Forced Displacements and Rising Social Tensions: Mining expansion has displaced many people from their towns and villages, triggering conflicts over land ownership, compensation disputes, and concerted pressure from armed groups. Incidents of drug abuse and sexual violence have reportedly increased in mining areas.

(J)
Lack of Transparency and Community Marginalization: Compensation processes are often opaque, and locals do not directly receive any benefits from mining profits. Initial claims that profit would be used for local community development were not followed through on. Local communities also face threats and intimidation from armed groups and private companies if they stand in the way of mining projects, with their grievances often overlooked or dismissed.

Map 1: Location of Rare Earth Mining Sites in Kachin State

This map shows the selected study area—Kachin State, located in northernmost part of Myanmar. It borders China to the east and India to the west, with most rare earth mines concentrated along the China-Myanmar border.



Data as of December 2024, is based on ISP-Myanmar's research and may vary from other sources due to differences in methodology and data availability.

3. INTRODUCTION

The ongoing crisis in Myanmar is a multifaceted conflict which is deeply intertwined with the environmental degradation caused by irresponsible natural resource extraction along with diminishing state control. This degradation not only exacerbates the humanitarian situation but also acts as a catalyst for further violence and instability, creating a vicious cycle of conflict and environmental destruction. The relationship between severe environmental degradation and conflict is becoming increasingly evident, for example, barren land caused by both climate change and overexploitation of natural resources, which has led to resource depletion, environmental damage and which also fuels tensions between communities and armed groups. ISP-Myanmar highlights the critical need to recognize and address the links between man-made environmental degradation and the climate–conflict nexus within the Myanmar context.

The extraction of rare earth minerals in Myanmar has surged dramatically in recent years, emerging as a critical factor driving environmental degradation, social harm, and geopolitical tension. Rare earth resources, essential to the global supply chains required for the green energy transition, have become a focal point for exploitation, particularly in conflict-affected regions. The environmental impacts of rare earth mining—exacerbated by weak regulation and oversight—are devastating local ecosystems and communities.

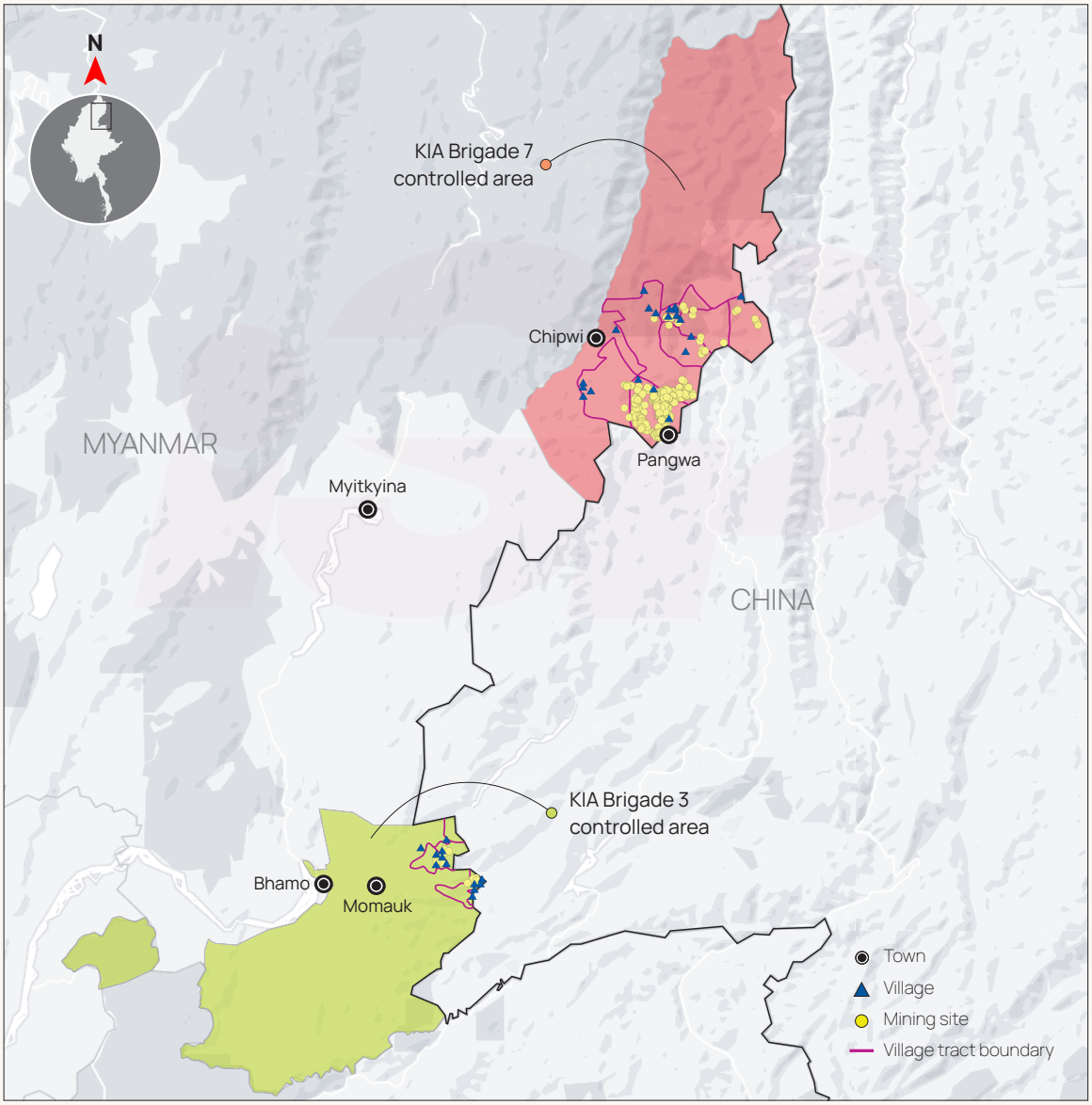
At the same time, competition over mining areas has fueled armed conflict, intensifying both environmental and social instability.

These developments have elevated the strategic importance of Myanmar's rare earth elements within the broader context of China's geopolitical and geoeconomic interests. Rare earth elements (REEs)—a group of 17 atomically similar metals—are indispensable in a wide range of high-tech applications. Research by ISP-Myanmar highlights that two heavy rare earth elements in particular, Dysprosium (Dy) and Terbium (Tb), primarily extracted in Kachin State, hold significant strategic value. Both are categorized as critical minerals due to their essential role in the production of high-performance permanent magnets, which are vital for technologies such as electric vehicles (EVs), advanced defense systems, and renewable energy infrastructure.
As global demand for these technologies grows, access to and control over rare earth minerals have become central concerns for states with technological and industrial agendas. For China, Myanmar's rare earth supply serves not only as a crucial resource base but also as a strategic asset. REEs have increasingly become tools of geopolitical leverage, strengthening China's position in international markets and negotiations, particularly amid intensifying competition among major powers. Continued reliance on Myanmar's rare earth resources reinforces the country's role in China's resource security strategy and underscores the minerals' broader influence in shaping regional power dynamics.

In Myanmar, the areas in Kachin State where rare earth minerals are extracted are heavily influenced by various armed groups with intertwined economic interests. These regions were previously dominated by the Border Guard Force (BGF), the People's Militia, and the New Democratic Army-Kachin (NDA-K), an ally of the Myanmar military. However, following the coup, the Kachin Independence Organization/Kachin Independence Army (KIO/KIA) has become increasingly involved. Local communities opposing rare earth mining operations have been subjected to continuous arrests and threats by armed groups. Conflicts have arisen between local residents and the KIA due to ongoing rare earth mining activities. Since November 2024, Pangwa and Chipwi townships—key areas for rare earth extraction in Kachin State—have come under the control of the Kachin Independence Army (KIA). With this development, the KIA has taken full control over the rare earth mining operations in these regions. This change in control may have led to rising tensions between the KIA and local communities opposing rare earth mining. Reports indicate that civilians resisting mining operations have faced arrests and threats from armed groups. Now that the KIA fully manages these operations, conflicts over environmental degradation and local opposition are expected to persist.

Map 2: Rare Earth Mining Sites Spread Across 13 Village Tracts

Rare earth mining sites in Chipwi and Momauk Townships spread across **13 village tracts** covering **36 villages**. Rare earth mining sites in Chipwi Township are under the control of KIA Brigade 7 following the capture of Pangwa region by KIA from NDA-K in October 2024. KIA Brigade 3 controls rare earth mining sites in Momauk Township.



Data as of May 28, 2025 is based on ISP-Myanmar's research and may vary from other sources due to differences in methodology and data availability.

4. METHODOLOGY

This study employs a mixed-methods approach to analyze rare earth mining activities in Kachin State, combining geospatial analysis, quantitative data, and qualitative research to comprehensively understand the sector's impacts and dynamics. Analyses of these methods are described in the following.

4.1 Geospatial Analysis

We used geospatial analysis, utilizing remote sensing and GIS tools to map and monitor mining operations. These included identifying active mining sites, documenting site quantities, and quantifying the number of open pits within mining sites. Google Earth satellite imagery was used to track the temporal changes in rare earth mining operations across Kachin State from 2013 to 2024. A mining site is defined as a location with at least one visible open pit or a cluster of open pits. It is important to acknowledge the limitations associated with the use of Google satellite imagery in this analysis. Google Earth and Google Maps often rely on composite images that are generated from multiple satellite passes taken over time. This method is primarily used to reduce cloud cover and enhance visual clarity, especially in regions with frequent cloud coverage. However, this process can result in images that do not represent a single moment in time, potentially affecting the accuracy of spatial and temporal observations. Consequently, certain features visible in the imagery may have limitations reflecting the current or actual conditions on the ground at a specific date. Therefore, these limitations should be considered when interpreting the findings based on these Google satellite imagery.

4.2 Quantitative Analysis

Our quantitative analysis focused on the economic scale and trade flows of rare earth elements (REEs). We assessed both the volume and value of Myanmar's REE exports to China. These figures were then compared with global trade patterns, particularly against China's total imports of REEs. Data sourced from the General Administration of Customs of China (GACC) was processed using statistical tools to identify trends and discrepancies in Myanmar's REE exports.

Our research focused on two Townships, Chipwi and Momauk, where the number of mining sites and pits has significantly increased since the military coup.

In Chipwi Township, 98% of the population are ethnic Kachin, with 21,450 residents spread across 42 village tracts and 118 villages. Nearly 86% of the population live in rural areas, and agriculture remains the primary livelihood, with 8,288 acres of farmland producing crops such as coffee, tea leaves, potatoes, walnuts, and Sichuan peppercorns. Based on the 2014 Census, at least 5,000 people reside in eight of the village tracts where mining activity has been identified by ISP-Myanmar. Momauk Township has a more diverse population, with 52% Shan and 41% Kachin. It comprises 53 village tracts and 273 villages, and has a total population of 85,772, of which 78% reside in villages, based on 2019 data from the General Administration Department of Myanmar. Agriculture is also the primary economic activity, with 44,371 acres of farmland used to grow coffee, corn, bananas, rice, sugarcane, and rubber trees. According to the 2014 Census, at least 1,200 people live in the five village tracts identified by ISP-Myanmar as containing mining sites.

4.3 Qualitative Analysis

Qualitative research provides deeper insights into the socio-economic, political, and environmental impacts of rare earth mining by engaging with key stakeholders. ISP-Myanmar conducted interviews with ethnic armed organizations (EAOs) to understand their involvement or control over mining areas, local governance impacts, and regional security concerns. Civil Society Organizations (CSOs) were consulted to explore the social and environmental implications, particularly in relation to human rights and environmental degradation. Local residents were also interviewed in order to better understand the direct impacts on their livelihoods, health, and environment.

Additionally, local stakeholders, including community leaders and environmental activists, provided critical perspectives on how mining activities are affecting local governance, resource distribution, and community well-being. Researchers who have previously reported on rare earth mining in the region also contributed their findings, adding valuable context to the ongoing investigation. This qualitative research complements the data gathered through geospatial and quantitative methods, offering a holistic view of the broader socio-political and human dimensions of rare earth mining in Kachin State. Through focused group discussions, ISP-Myanmar interviewed 18 stakeholders (see Figure 1), including local residents, civil society organizations (CSOs), and representatives of armed groups.

This report then provides a comprehensive analysis of rare earth mining in Kachin State through an integrated research framework that combines geospatial mapping, economic data analysis, and stakeholder-driven insights. We used satellite imagery to track the expansion of mining sites from 2013 to 2024, examined the scale and trade dynamics of Myanmar's rare earth exports to China, and investigated the socio-political and environmental impacts of the rare earth mining industry through interviews with key actors, including Ethnic Armed Organizations, civil society groups, and local

Figure 1: List of Interviewees in Interviews and Focus Group Discussions

ID	Gender	Background	ID	Gender	Background
1	Male	Local Journalist	10	Female	Local CSO representative
2	Male	Local CSO representative	11	Female	Local CSO representative
3	Female	Local CSO representative	12	Female	Local CSO representative
4	Female	Local CSO representative	13	Male	Local CSO representative
5	Female	Local CSO representative	14	Male	Local CSO representative
6	Female	Local from Chipwi Township	15	Male	Local CSO representative
7	Female	Local from Chipwi Township	16	Male	Representative of KIO/KIA
8	Male	Local from Momauk Township	17	Male	Local Researcher
9	Female	Local Activist from Momauk Township	18	Male	Local Researcher

Interviewees include local journalist, researcher, CSO representative, KIO/KIA representative, and civilian from Kachin State.

communities. Together, these approaches offer a nuanced understanding of how rare earth extraction intersects with conflict, governance, and regional power dynamics.

4.4 Research Limitations

This study faced some significant limitations, primarily due to security challenges and restricted access to the research area.

Security Risks, Access Restrictions and Communication Barriers : A major obstacle was the presence of armed groups, which posed substantial security risks and severely limited access to rare earth mining sites and related activities. Consequently, only a small number of local contacts were available, many of whom were reluctant to engage with researchers due to fears of possible repercussions. Only a few outspoken individuals consented to participate. To protect their safety, interviews were conducted in secure, off-site locations. Internet and phone line shutdowns in Kachin State further complicated participant recruitment and communication. Researchers were limited to interviewing individuals with access to Chinese phone networks, significantly narrowing the pool of respondents.

Limited Fieldwork and Observation : Due to these security and logistical constraints, direct field research at mining sites was severely restricted. While some residents were reachable close to mining sites, on-site visits and in-depth, on-the-ground interviews were largely impossible.

This limitation reduced opportunities for firsthand observation and may have impacted the depth and accuracy of the findings.

Technology, Data and Health Assessment Constraints : The research relied on Google Earth and Google Maps for geospatial analysis of rare earth mining areas due to restricted field access. However, these tools have limitations in positional accuracy and often lack up-to-date imagery, especially in conflict-affected or remote regions. Consequently, the resulting maps may not fully capture the current on-ground situation of mining operations.

The study also faced technical limitations in evaluating the full extent of residents' health impacts. A lack of systematic health data and scientific studies, combined with limited medical access and documentation, prevented thorough investigation of illnesses potentially linked to rare earth mining.

4.5 Future Study Directions on Rare Earth Mining

Future research on rare earth mining should prioritize overcoming the significant access and security challenges encountered in this study. The use of remote sensing or satellite technologies could enable safer and broader data collection. Systematic health studies in partnership with medical professionals are essential to thoroughly assess the health consequences faced by affected communities.

Moreover, future studies should explore sustainable and innovative extraction methods, including the recovery of rare earth elements from mine tailings, coal ash, and recycling streams, to minimize environmental harm. Investigations into the socioeconomic trade-offs between the growing global demand for rare earths—driven by renewable energy and advanced technologies—and local community well-being will be critical. Employing longitudinal and multidisciplinary approaches will further enhance understanding of the evolving impacts of rare earth mining, supporting the development of responsible mining practices that balance technological progress with environmental stewardship and social equity.

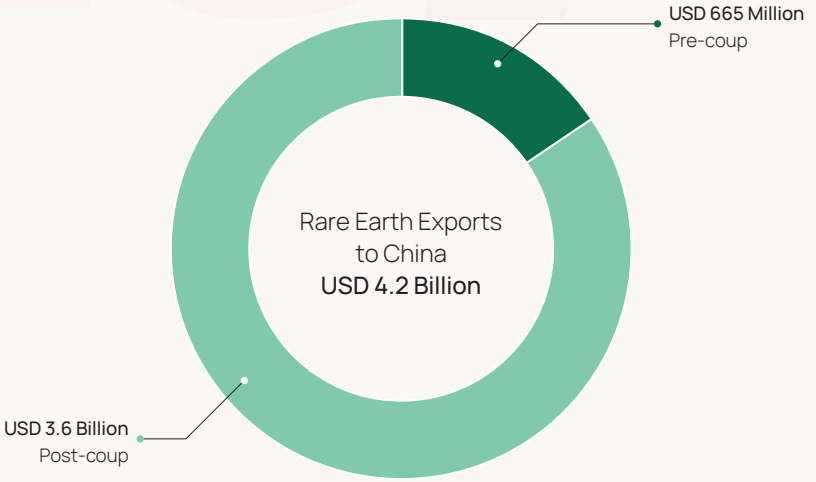
Previous studies suggested that rare earth mining was primarily concentrated in Kachin State. However, recent developments indicate that rare earth deposits may also exist in the Wa Self-Administered Region of Shan State, along the Thailand-Myanmar border. It has been reported that the mining activities in this area are affecting rivers that flow into Thailand, resulting in genetic mutations in fish as well as water pollution. In response, the Thai government has formally requested an urgent investigation into the matter. These developments suggest the need for further study of rare earth mining activities in Shan State, particularly to better understand potential cross-border environmental impacts and the expansion of extraction beyond previously known areas.

5. THE POST-COUP SURGE IN RARE EARTH MINING AND EXPORTS TO CHINA

Myanmar has emerged as China's dominant foreign supplier of rare earth minerals over the past eight years. Between 2017 and 2024, the total global export value of rare earth minerals to China amounted to USD 6 billion. In that period, Myanmar surpassed all other global suppliers to China, singularly accounting for over USD 4 billion in rare earth shipments.

Figure 2: Rare Earth Exports to China Increased Fivefold

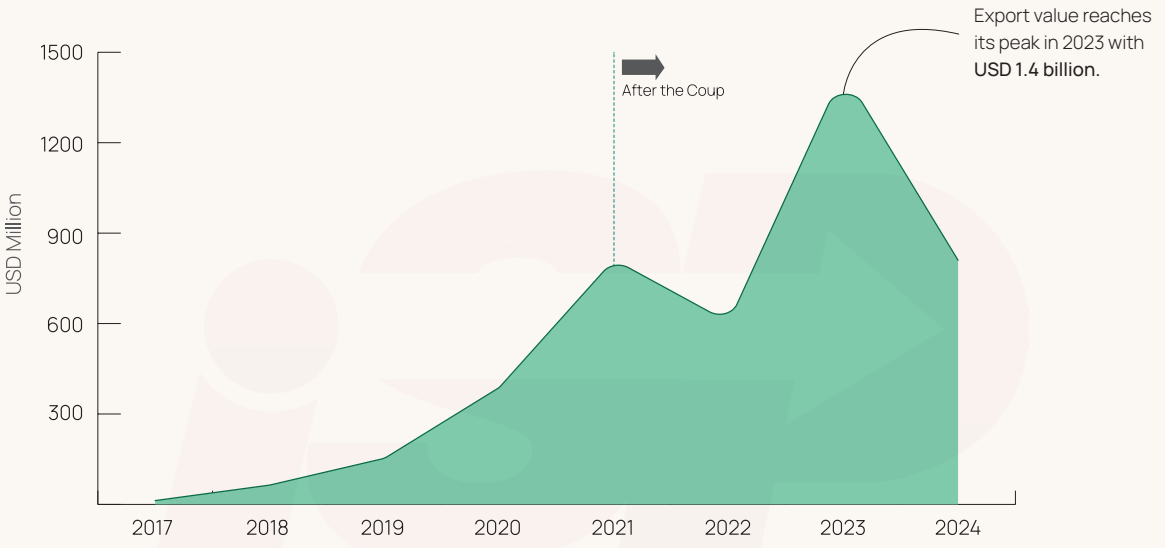
Rare earth exports to China have increased **fivefold** in the four years since the coup, reaching **USD 3.6 billion**. During four years before the coup, **USD 665 million** worth of rare earth minerals were exported to China.



The data, covering March 2017 to December 2024, is based on the data from the General Administration of Customs of China (GACC).

Figure 3: USD 4.2 Billion Worth of Rare Earth Minerals Exported to China

In the eight years from January 2017 to December 2024, rare earth exports from Myanmar to China reached a total of **USD 4.2 billion.** Among them, 84 percent of the total exports, **USD 3.6 billion**, were exported following the military coup in 2021.



The data, covering January 2017 to December 2024, is based on the data from the General Administration of Customs of China (GACC).

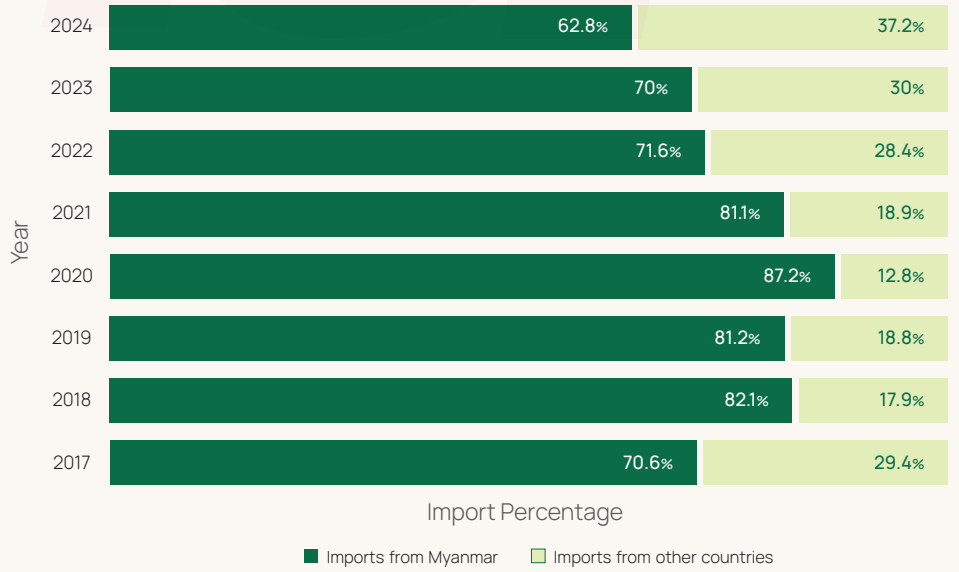
Following the military coup in Myanmar, rare earth exports to China surged fivefold (see Figure 2). In particular, rare earth shipments from Myanmar to China since the coup accounted for USD 3.6 billion, representing 84% of total rare earth exports over the eight year period (see Figure 3). The highest annual export value was recorded in 2023, reaching USD 1.4 billion, primarily due to Ethnic Armed Organizations' expansion of mining operations in conflict-affected areas in Kachin State in order to sustain their military activity. These extractive activities have played a critical role in funding and sustaining the ongoing violence. Satellite imagery and field reports indicate a sharp rise in illegal and unregulated mining activities, particularly in Kachin State, where both military-affiliated entities and ethnic armed organizations (EAOs) have exploited booming demand.

6. MYANMAR'S DOMINANCE OF CHINA'S RARE EARTH IMPORT SUPPLY

Myanmar has consistently remained the largest supplier of rare earth minerals to China in terms of volume for eight consecutive years. Between 2017 and 2024, Myanmar's participation in China's rare earth imports, in terms of volume, ranged annually between 60% and 87%, contributing significantly to the global rare earth supply. During that period, China imported a total of over 390,000 metric tons of rare earth minerals from around the world.

Figure 4: Myanmar: China's Largest Supplier of Rare Earths

On average, Myanmar was the largest supplier of rare earth minerals to China from 2017 to 2024 by volume. Myanmar's rare earth minerals account for approximately **two-thirds** of China's annual rare earth imports. From January 2017 to December 2024, Myanmar exported **over 290,000 tonnes** of rare earth to China. Of these, **over 170,000 tonnes** were exported after the coup.



The data, covering January 2017 to December 2024, is based on the data from the General Administration of Customs of China (GACC).

Of this, more than 290,000 metric tons—approximately 74%—came from Myanmar (see Figure 4). Rare earth exports to China continued to increase in 2020 and 2021 despite the military coup and China's border restrictions due to the COVID-19 pandemic. According to GACC data, these exports were disrupted for only a few months in 2021 following the coup and China's border closure.

Myanmar is the source of approximately two-thirds of China's annual rare earth elements imports, mostly HREEs, measured by volume. Two key elements—Dysprosium (Dy) and Terbium (Tb)—play a critical role in high-tech manufacturing, particularly in defense and military technologies, aerospace equipment, and green technologies. They are essential for producing high-temperature-resistant permanent magnets. Following the military coup, more than 170,000 metric tons were shipped between February 2021 and December 2024, accounting for nearly 60 percent of Myanmar's total exports over the eight-year period. This indicates the rapid expansion of mining activity. The highest annual export volume was recorded in 2023, with over 70,000 metric tons shipped to China.

7. GEOSPATIAL ANALYSIS OF RARE EARTH MINING EXPANSION

According to geospatial analysis conducted by ISP-Myanmar, rare earth mining activity has been identified in Chipwi and Momauk Townships in Kachin State. Preliminary analysis using Google Earth satellite data reveals that Chipwi Township is home to more than 357 rare earth mining sites, with over 2,500 mining pits. In Momauk Township, there are more than 14 mining sites with more than 200 pits.

Figure 5: Expansion of Mining Sites and Collection Pits Across the Years

A total of **371** mining sites and **2,795** rare earth collection pits were developed over 12 years, from 2013 to 2024. The highest number of new mining sites were observed in 2021 with **135** new mining sites.

Year	New Mining Sites Observed	New Pits Observed
2013	4	58
2014	2	27
2015	2	23
2016	8	114
2017	2	18
2018	95	825
2019	2	59
2020	11	115
2021	135	1,047
2022	11	90
2023	86	268
2024	13	151
Total	371	2,795

The data, covering 2013 to 2024, is based on ISP Myanmar's research and may vary from other sources due to differences in methodology and data availability.

Additionally, local residents report mining activities in Mansi and Tsawlaw Townships.[1] However, due to geospatial technological limitations, the mining sites in these areas have not yet been officially documented.

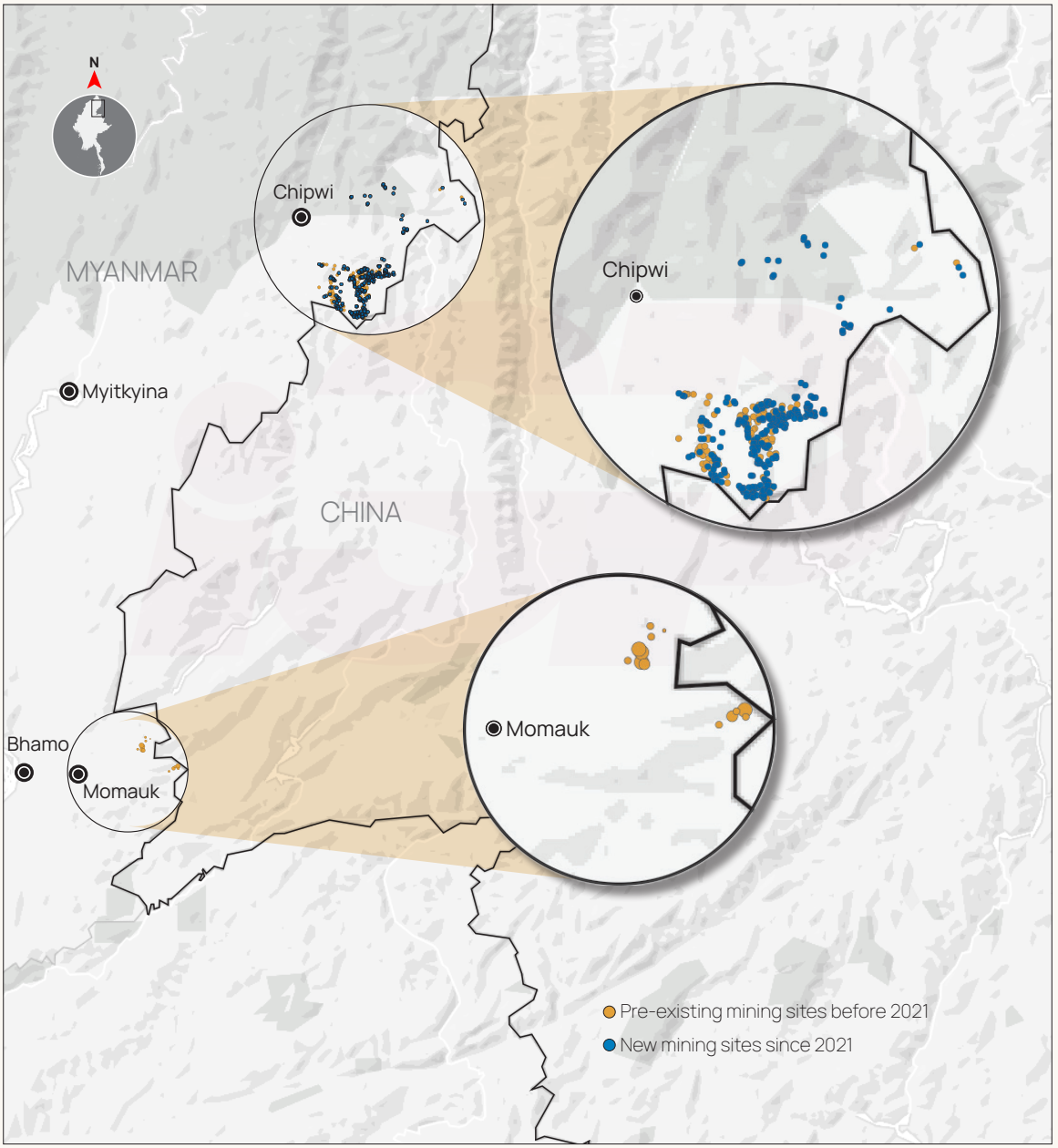
Between 2016 and 2020, before the military takeover, Chipwi Township had around 100 mining sites and over 1,000 pits. However, in the nearly four years since the coup, the number of mining sites has more than doubled, while the number of pits has increased nearly one and a half times. Mining operations are spread across eight village tracts in Chipwi Township, with the Lu Pi and Lang Yang village tracts near Pangwa town hosting a total of 325 sites. These mining sites are located approximately 15 miles from the N' Mai Kha River, a tributary of Myanmar's lifeline river, the Irrawaddy.

In Momauk Township, mining activities are concentrated in five village tracts—Ba Lwang Kawng, Kawng Hsa, Kun Shee, Man Maw Kawng, and Wein Hkam—comprising 14 mining sites and over 200 pits. Across Chipwi and Momauk Townships, mining operations span 13 village tracts, covering at least 36 villages. Between 2013 and 2020, before the military takeover, there were 126 mining sites and 1,239 pits. In the four years following the coup (2021–2024), an additional 245 mining sites and 1,556 pits were developed, representing a 194.4% increase in the number of mining sites and a 125.6% rise in the number of pits compared to the pre-coup period (see Figure 5 and Map 3). Reportedly, rare earth minerals extracted from Chipwi Township are exported to China via the Pangwa, Phimaw, and Kangfang border gates and the Kan Pike Ti trade station. Rare earths from mining sites in Momauk Township are transported through the Mai Ja Yang gate to the Chinese cities of Longchuan and Yingjiang (see Map 4).

[1] Interview with locals from Chipwi Township, 2025.

Map 3: Over 245 New Mining Sites in Kachin Since the Coup

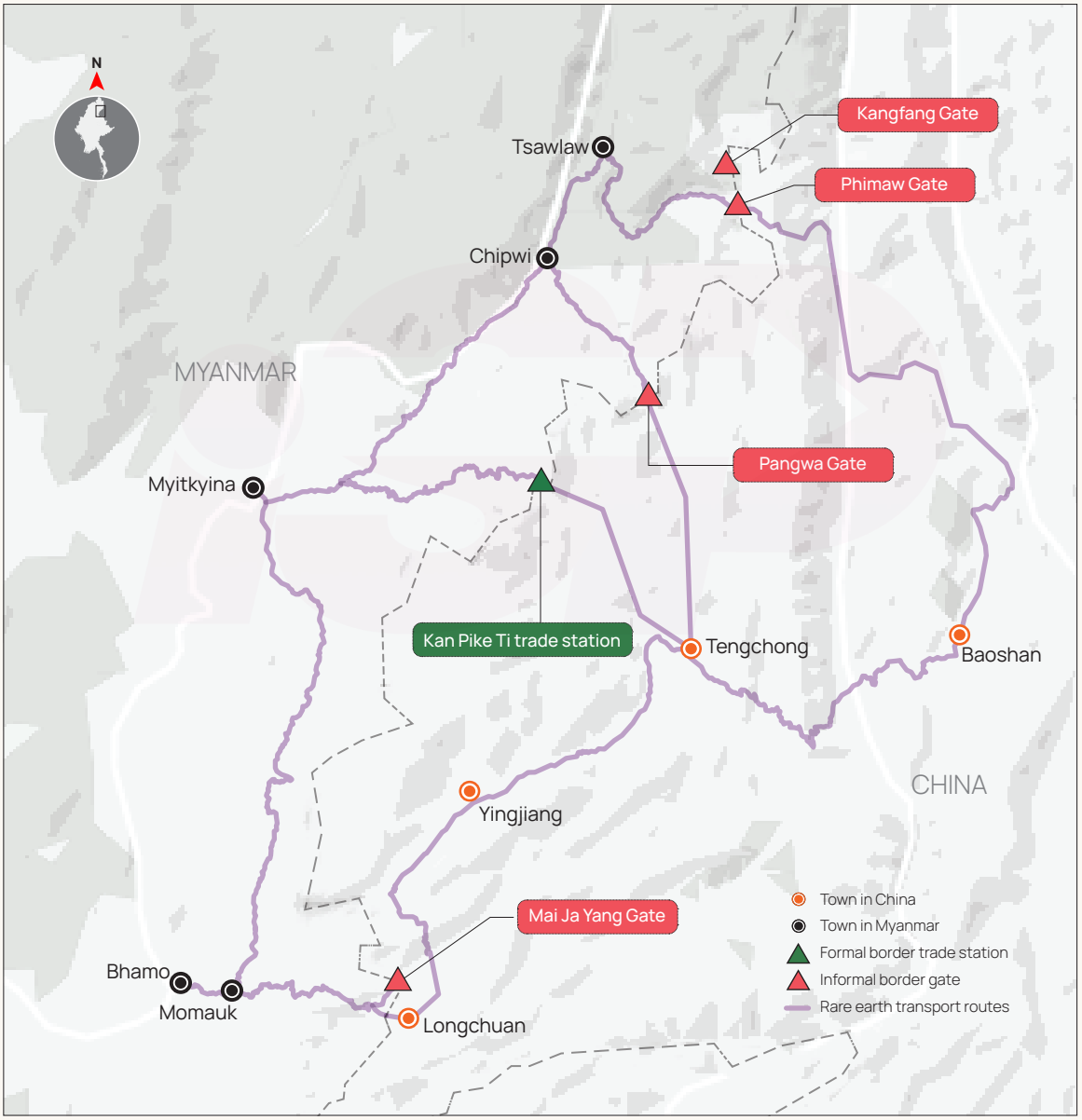
Following the 2021 coup, the number of rare earth mining sites in Kachin State rose from **126** to **over 371**—an increase of **245** sites, nearly twice the original of the pre-coup period.



Data as of December 2024, is based on ISP-Myanmar's research and may vary from other sources due to differences in methodology and data availability.

Map 4: Border Checkpoints Facilitating Rare Earth Exports

Reportedly, rare earth minerals extracted from Chipwi township are exported to China's Tengchong region via the **Pangwa, Phimaw, Kangfang gates** and **Kan Pike Ti trade station**. Rare earth from mining sites in Momauk township are transported through the **Mai Ja Yang gate** to the Chinese cities of Longchuan and Yingjiang.



Data as of December 2024, is based on ISP-Myanmar's research and may vary from other sources due to differences in methodology and data availability. Rare earth exports to China are transported through both formal (e.g., the Kan Pike Ti border trade station) and informal border crossings. These exports are not known to be recorded in the state's official tax revenue.

8. ACTORS INVOLVED IN MINING

The majority of rare earth extraction in Myanmar is explicitly illegal. The main armed groups involved in rare earth mining activities are the New Democratic Army-Kachin (NDA-K), which operates under the command of the central military junta as a Border Guard Force, and the Kachin Independence Organization/Kachin Independence Army (KIO/KIA), which is fighting against the central government. In the Chipwi and Pangwa areas, mining is largely controlled by companies linked to NDA-K leader Zahkung Ting Ying and his sons. Myanmar companies reportedly involved in rare earth mining include Myanmar Myo Ko Ko, San Lin, Bawm Myang, Sin Kyaing, and Chang Yin Khu (see Boxes 1 and 2 for further information on the NDA-K and the conflict dynamics in rare earth mining areas).

In 2016, China enforced restrictive domestic environmental policies, prompting some Chinese mining companies to look for new external frontiers in Myanmar's border region through illicit investment. However, some Myanmar mining companies did apply for mining permits from the Myanmar government around 2019, during the National League for Democracy (NLD)-led administration, under the guise of exploring for other minerals. For example, Myanmar Myo Ko Ko Company applied for a gold mining license from Kachin State's Mining Department, covering at least five work-sites in Chipwi, totaling around 140 acres, while Shwe Sapar Mining Company applied for licenses covering 150 acres of mining sites in Lweje. After government authorities inspected the work-sites, the central government approved the permissions with recommendations from the State government. Nevertheless, inspections were hindered by security concerns and later halted due to the COVID-19 pandemic.[2]

Rare earth mining appeared to continue throughout the COVID-19 pandemic shutdown. Rare earth exports to China increased in 2020 and 2021 despite the military coup and China's border closure during the pandemic. According to data from the General Administration of Customs of China (GACC), these exports were only disrupted for a few months in 2021 following the coup.

[2] BBC Burmese, 2019.

Box 1: New Democratic Army-Kachin (NDA-K)

The New Democratic Army - Kachin (NDA-K) was formed by Zahkung Ting Ying, a former KIA commander after he split away from the KIA in 1989. The NDA-K later entered into a ceasefire agreement with the Myanmar military. In 1994, Kachin State Special Region-1 was established by the military regime and placed under the control of the NDA-K. In 2009, the NDA-K was ordered to transform into the Kachin Border Guard Forces (Kachin-BGF) under the command of the Myanmar military. With three battalions based in Kan Pike Ti, Pangwa, and Phimaw towns, they controlled Kachin State Special Region-1, encompassing Chipwi, Tsawlaw, Kan Pike Ti, and some areas in Waingmaw Townships. In November 2024, the KIA captured the entire region and abolished Kachin State Special Region-1, ending the NDA-K's rule. ■

Box 2: Conflict Dynamics in Rare Earth Mining Areas

The Kachin Independence Organization (KIO) was formed in 1964, calling for greater autonomy from the central government of Myanmar. The Kachin Independence Army (KIA) is its armed wing, operating mainly in Kachin State and Northern Shan State. Throughout the guerrilla warfare period, the KIO led several Ethnic Armed Organizations (EAOs) alliance movements and was engaged in heaving fighting. After 1989, when the then State Law and Order Restoration Council (SLORC) initiated ceasefires with ethnic groups, some factions splintered and formed a new group called the New Democratic Army - Kachin (NDA-K), which entered into a ceasefire agreement with the junta in 1989. Subsequently, the region was acknowledged by the junta as Kachin State Special Region No. 1. The main body of the KIO/KIA entered a ceasefire agreement with the junta on 24 February 1994, under pressure from neighboring countries, particularly China.

The KIO/KIA ceasefire with the junta lasted until 2011, when the junta attempted to seize KIA-controlled areas after the breakdown of compelled negotiations to transform the KIA into a subdivision of the Border Guard Forces. Despite a presidential order in December 2011 to cease Myanmar armed forces' offensives in Kachin State, the conflict continued into 2012. Later, in 2013, KIO leaders participated in ceasefire negotiations with the Myanmar government alongside multiple EAOs under the banner of the Nationwide Ceasefire Coordination Team (NCCT). The NCCT represented sixteen EAOs. However, when negotiations concluded with the Nationwide Ceasefire Agreement (NCA) in October 2015, the KIO and a few other EAOs remained non-signatories, claiming that the NCA was not comprehensive.

Despite the lack of either a full peace or an overt war, semi-official trade and illicit mining for jade and other minerals continued. Fighting between the KIA and the Myanmar government intensified again after the 2021 military coup, with the KIA gaining more territorial control. In November 2024, the KIA reclaimed the entire region previously controlled by the NDA-K and expelled the Border Guard Forces (BGF) under NDA-K command. Mining businesses formerly controlled by the NDA-K are now reportedly operating under the command of the KIO. ■

The Myanmar companies involved in rare earth mining were granted significant legal permissions between 2015 and 2018, not specific to rare earth mining, but rather for extraction of other minerals, such as lead, zinc, tin, iron, and marble. Additional companies like Alwan Taung, Lan Chaw Pwan, Kyar Shein, and Nga Maw also received mining rights, though not specifically for rare earths,[3] and some were later delisted from registration. These companies were reportedly associated with NDA-K leader Zahkung Ting Ying's family members. Although these permits were issued by the Myanmar government, possibly as a cover for rare earth extraction, it remains unclear whether any revenue generated from rare earth mining in the Chipwi area has been officially recorded or contributes to state revenue through taxation. Benefit sharing between the Myanmar mining companies and Chinese partners are unknown.

In October 2024, the Kachin Independence Army (KIA) seized control of the Pangwa region; NDA-K leadership fled, and its militia forces disbanded or surrendered to the KIA. Subsequently, mining businesses seemingly came under KIA control. It remains unclear whether the previously operating Myanmar companies and Chinese partners are still active or extracting minerals.

However, according to some locals, rare earth mining continues at certain sites formerly operated by these companies. In areas such as Hpare–La Gway within Chipwi Township, some battalions under KIA Brigade 7 are reportedly involved in rare earth mining. Similarly, KIA Brigade 3 is said to be active at some mining sites around Momauk Township. Some Chinese companies, locally referred to as Wa-affiliated firms, are also reportedly participating in rare earth mining activities in the region. Rare earth mining sites in Myanmar produce rare-earth oxide equivalent (raw materials), which are then processed in facilities in China. Larger companies process rare earth minerals in facilities in China, overseen by two state-owned enterprises: China Northern Rare Earth Group and China Rare Earth Group. Subsidiaries of the latter, such as Ganzhou Rare Earth Group, China Minmetals Rare Earth Company, and Guangdong Rare Earth Group, are reportedly involved in purchasing and importing rare earth minerals from Myanmar.

[3] 'MEITI-Map', 2022.

9. HEALTH AND ENVIRONMENTAL IMPACTS

Mining activities in Kachin State have led to significant environmental consequences, particularly air and water pollution, according to a series of focus group discussions (FGDs) conducted by ISP-Myanmar in collaboration with local CSOs, activists, and residents. Prolonged exposure to these polluted environments has resulted in health issues among mine workers and local residents. Interviews with community members reveal a rise in respiratory and skin-related illnesses.

9.1 Impacts on the Environment and Water Resources

The main environmental impacts observed in relation to mining include air pollution caused by rare earth processing and water pollution due to the unregulated disposal of chemical waste. Chemical by-products from mining and refining processes contaminate both surface and underground water sources, posing serious challenges for communities that rely on streams as their primary water source. The unregulated dumping of waste into these streams has made access to clean drinking and household water a major concern. In Lahkum Bang, a region in Momauk Township, residents are facing severe difficulties in accessing clean household and drinking water due to mining operations.

Chemical waste from rare earth mines in Chipwi Township flows into the N'Mai River through Chipwi Creek. According to local residents, the creek has become heavily contaminated, emitting foul odors, with reports of fish dying and rocks becoming eroded or damaged (see Maps 5 and 6). There have also been cases of buffalo and cattle dying after drinking from the creek. Locals claim that even the turbines at the Chipwi Creek hydropower plant have been damaged due to water pollution.[4]
In Momauk Township, mining activities along the Tapain River (see Maps 5 and 7) have caused water levels to drop and fish populations to decline, with fewer species now found compared to the past. Additionally, residents have reported that buffaloes and cattle living near the mining areas are suffering from unusual swellings and lumps resembling tumors.[5]

In addition, air pollution caused by rare earth processing is also having a significant impact on the local environment. During the raw rare earth materials purification process, the rare earths are scorched with acids at extremely high temperatures, releasing smoke and fumes that contribute to air pollution. Residents in Chipwi and Momauk Townships report that this polluted air has led to a decline in both the yield and quality of their crops.[6] Despite these concerns, scientifically monitoring the extent of environmental damage remains a major challenge. Many of the rare earth mines are located in remote mountainous areas, and access is restricted due to the activity of armed groups. These restrictions have made it difficult for civil society organizations to independently assess and monitor the environmental degradation caused by mining operations.

9.2 Health Issues Among Local Communities and Mine Workers

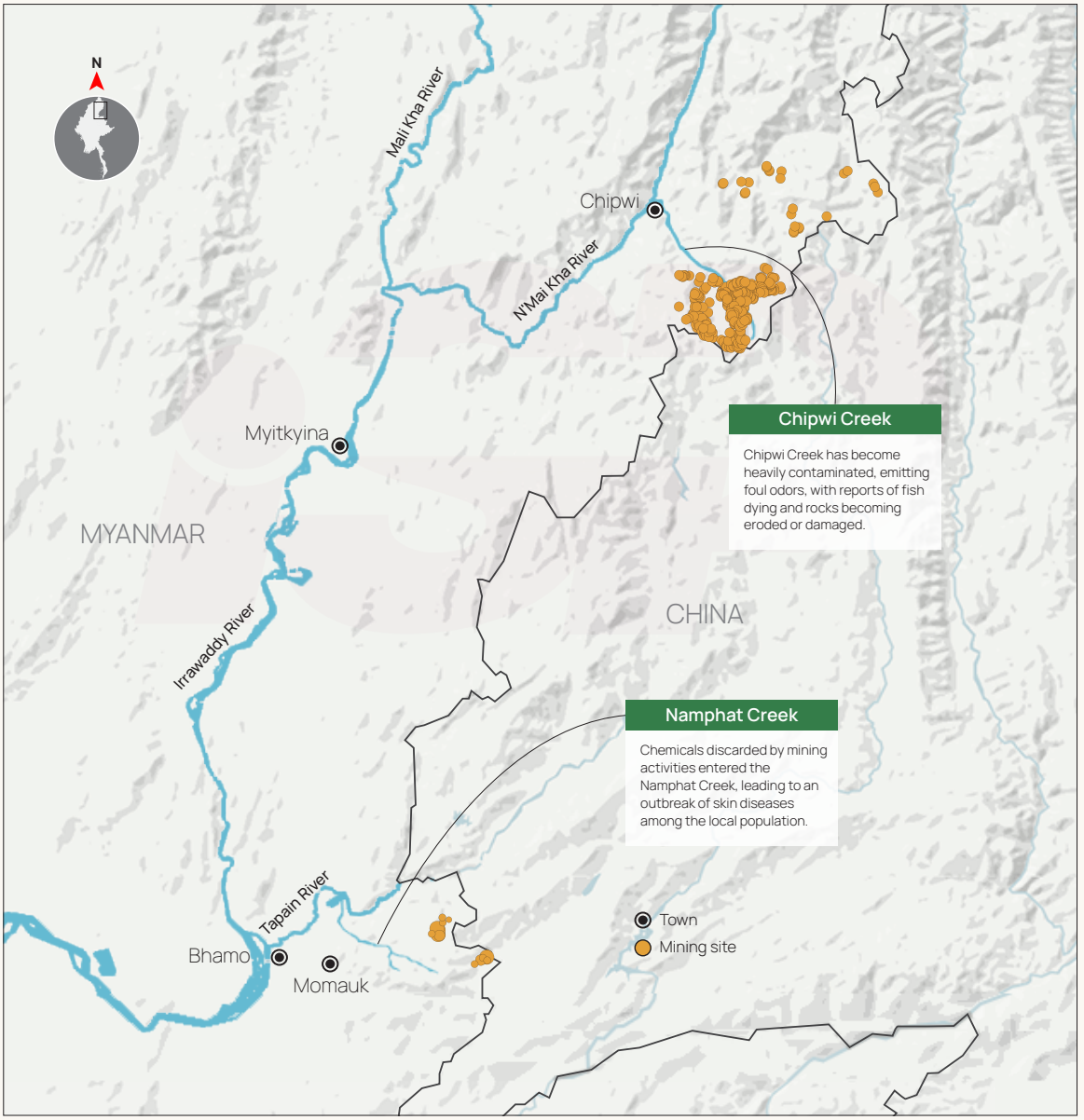
Communities and Mine Workers
The individuals most severely impacted in terms of health by rare earth mining operations are the mine workers themselves. The extraction techniques employed in Kachin State closely mirror those utilized in China. Specifically, the "in-situ leaching" method is used, which involves injecting chemical agents such as ammonium sulphate and oxalic acid directly into the soil to extract rare earth elements. These substances pose significant health risks, as prolonged exposure can lead to their gradual absorption into the human body.

Focused group discussions with local sources revealed that Myanmar nationals employed in these mining operations are often assigned the most labor-intensive and hazardous tasks, including direct handling of chemical substances.[7] The lack of adequate occupational safety measures, combined with prolonged chemical exposure, has led to a rising incidence of chronic health conditions among these workers.

[4] Interview with locals from Chipwi Township, 2025.
[5] Interview with locals from Momauk Township, 2025.
[6] Interview with locals from Momauk and Chipwi Townships, 2025.
[7] Interview with locals from Momauk and Chipwi Townships, 2025.

Map 5: Threat of Rare Earth Mining Sites to the Local Waterways

Expansion of rare earth mining sites in Chipwi township threatens the local waterways including the N'Mai river which flows into the important lifeline river of Myanmar, the Irrawaddy. Mining sites in Chipwi and Momauk townships are situated approximately **10 - 15 miles** from the important local waterways.

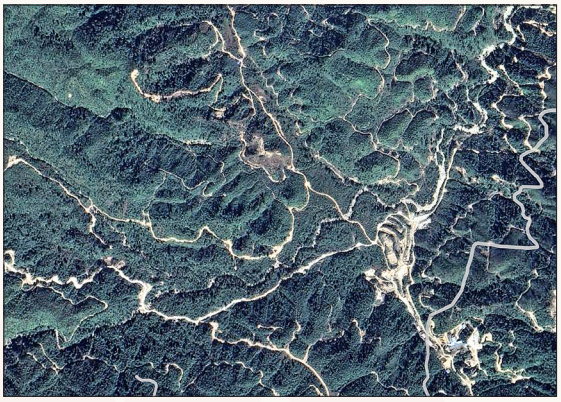


Data is based on ISP Myanmar's research and may vary from other sources due to differences in methodology and data availability.

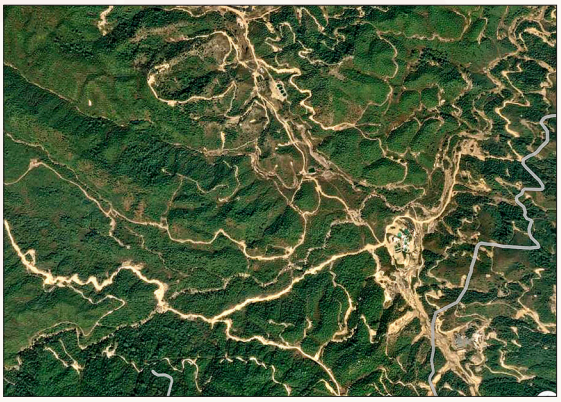
Map 6: Geographical Changes in Rare Earth Mining Sites in Pangwa

The following images show the transformation of mining sites in Pangwa, Chipwi Township, between 2018 and 2025. Mining activities expanded significantly following the 2021 coup.

2018



2021

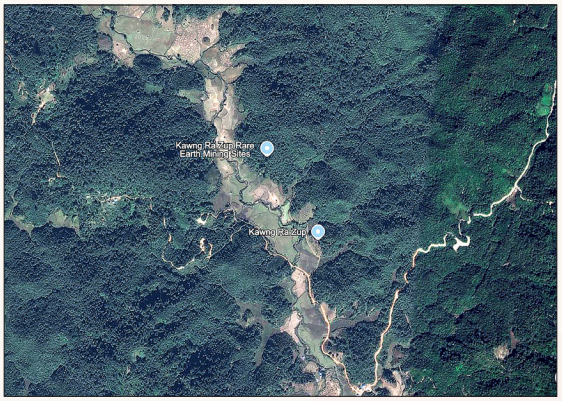


2025

Data as of April 25, 2025, is based on ISP-Myanmar's research through Google earth satellite images. It may vary from other sources due to differences in methodology and data availability. Please note that analyses based on Google satellite imagery may have limitations for time-sensitive assessments, as the images are composites generated from multiple satellite passes over time.

Map 7: Geographical Changes in Rare Earth Mining Sites in Momauk

The following images show the transformation of mining sites in Momauk, Momauk Township, between 2018 and 2020.



2018

2019

2020

Data as of January 19, 2020, is based on ISP-Myanmar's research through Google earth satellite images. It may vary from other sources due to differences in methodology and data availability. Please note that analyses based on Google satellite imagery may have limitations for time-sensitive assessments, as the images are composites generated from multiple satellite passes over time.

Residents in areas such as Chipwi and Momauk Townships have reported that some mine workers are suffering from respiratory and pulmonary illnesses, which are believed to be associated with exposure to the hazardous substances used in rare earth mining operations. Many former workers who have left the mining sector continue to endure long-term health complications, including chronic fatigue, and also face considerable challenges in securing alternative employment due to persistent medical expenses and declining physical well-being. The air and water pollution caused by rare earth mining operations has led to significant health issues for the local population, who are exposed daily to these pollutants. In Nhkawng Pa village, located near Mai Ja Yang Township, residents reported that chemicals discarded by mining activities entered Namphat Creek, leading to an outbreak of skin disease among the local population.[8] Similarly, residents near Lahkum Bang in Momauk Township have also experienced skin irritation due to contamination from nearby mining operations.[9]

While those with the financial ability to relocate have managed to move to larger towns like Myitkyina, those unable to afford such moves continue to live in the polluted environment, enduring the adverse health effects. Although the pollution of both water and air is immediately visible in the mining areas, tracking the widespread dispersal of these pollutants through air currents and waterways proves difficult. Due to ongoing armed conflicts and access restrictions, conducting an accurate assessment of the environmental damage remains impossible.

9.3 Impacts on Reproductive Health

Rare earth mining has had a profound impact on women, particularly concerning reproductive and maternal health. The extraction and processing of these minerals releases hazardous substances—including toxic heavy metals and radioactive materials—into the environment. These pollutants contaminate the air, water, and soil, exposing nearby communities through inhalation, consumption of polluted water, or ingestion of contaminated food. In Chipwi Township, residents have reported a sharp rise in miscarriages among female workers, which they attribute to environmental contamination linked to mining activities.[10]

During a focus group discussion with residents, community members emphasized that health risks are particularly severe for pregnant women and children, underscoring the urgent need to strengthen safety measures and protect populations living near mining sites. However, accurately determining the number of affected women requires scientific studies and reliable data collection.

[8] RFA Burmese, 2023.
[9] Interview with locals from Momauk Township, 2025.
[10] Interview with locals from Chipwi Township, 2025.

10. SOCIAL AND ECONOMIC IMPACTS OF RARE EARTH MINING

The socio-economic impacts of land degradation and loss of livelihoods due to rare earth mining have been previously observed in China, particularly in the Inner Mongolia Autonomous Region. In 1958, the Baotou Iron and Steel Company, based in Baotou city, commenced large-scale rare earth mining operations. Within two decades, the surrounding villages experienced significant agricultural decline, including widespread crop failure and reduced yields, ultimately leading to the abandonment of these communities by local residents.[11]

In addition to environmental degradation, rare earth mining has had significant social and economic impacts on local communities. ISP-Myanmar research involved in-depth interviews with local residents, active community leaders, and Civil Society Organizations based in the mining areas of the Momauk and Chipwi Townships. This study highlights how the social and economic stability of local communities has been severely affected by both the destruction of the environment and pressure from armed groups. These factors have led to social conflicts within the community. As a result of rare earth mining operations, a rise in drug abuse and social issues in the affected areas has been noted, reflecting broader societal challenges resulting from the adverse impacts of the mining industry.

In the aftermath of the military coup, the Kachin Independence Organization/Army (KIO/KIA) significantly expanded rare earth mining operations in the rural areas of Momauk and Mansi Townships. Although these activities have generated revenue, particularly for armed actors and associated businesses, the long-term socio-economic consequences for local communities have become increasingly pronounced. Residents of affected villages report growing economic instability, social fragmentation, and heightened security risks. Furthermore, there are recurring allegations of human rights violations committed by both KIO/KIA authorities and Chinese companies involved in the extraction and trade of rare earth minerals.

As a consequence of expanding rare earth mining activities, local communities have suffered the loss of traditional livelihoods and ancestral farmlands. In particular,

[11] Bontron, 2012.

residents of Momauk and Mansi townships report that crops historically cultivated in the area can no longer be exported to China due to soil contamination caused by chemical seepage from mining operations. Local residents say that Chinese traders no longer buy produce such as walnuts, quince, and Sichuan peppercorns from Chipwi Township, which is known for its rich deposits of rare earth minerals, without the crops undergoing any scientific testing.

According to focus group discussions organized by ISP-Myanmar, residents from Chipwi also reported that Chinese traders refuse to purchase crops grown in areas surrounding the mines and within a five-mile radius of the mining sites.[12] This has further exacerbated the economic hardship for residents who depend on farming for their livelihood. This has resulted in significant economic losses for smallholder farmers. Over time, the inability to sustain agricultural activities has forced many to sell their farmland—often to Chinese companies—and relocate to other areas in search of alternative means of survival. These developments highlight the deepening socio-economic vulnerability of communities in mining-affected zones.

In addition to the collapse of traditional agricultural practices, livestock farming has also come to a halt in areas affected by rare earth mining. Communities report increased levels of lead contamination and water pollution in rivers and streams near mining zones. As a result, water sources have become unsafe for both human and animal use. This has led to illness and death among cattle and buffalo populations, severely impacting the viability of livestock-based livelihoods. The cumulative effects of these environmental hazards have forced many households to abandon long-standing economic activities central to their way of life.

Similar socio-economic impacts have been observed in rare earth mining areas across Kachin State. Due to widespread habitat destruction, ancestral lands traditionally held by local communities have been degraded or lost, forcing residents to abandon their customary livelihoods. As a result, many have been compelled to relocate to other areas or seek employment as manual laborers in rare earth mining operations. For instance, in villages such as Nhkawng Pa, Mung Hka, Chyari, Ma Htawng, Shakai, Kawng Ja Yang, and Ran Hu Dung. In Momauk Township, the majority of residents have been displaced due to the expansion of rare earth mining sites. Those who remain have adapted by engaging in support roles for mining operations—cutting and supplying bamboo and firewood, transporting and selling food through nearby hubs such as Mai Ja Yang and Lweje (Loije), or working directly as laborers for Chinese-owned rare earth companies. These shifts reflect significant changes in local socio-economic structures, driven by the pressures of extractive industry expansion.

[12] Interview with locals from Chipwi Township, 2025.

10.1 Social Conflicts Resulting from Rare Earth Mining

Rare earth mining operations have contributed to escalating social tensions within affected communities, particularly in relation to land transactions, displacement, and compensation practices. In several cases, land was sold or transferred under duress, often through coercive or opaque negotiations. Local administrative authorities have been accused of corruption, especially in relation to compensation payments, leading to grievances and disputes among community members.

In areas formerly controlled by the NDA-K, such as Chipwi Township, and in areas currently under the control of the Kachin Independence Army (KIA), including Momauk and Mansi Townships, various forms of conflict have emerged. These include tensions between villagers and local authorities, disputes between Chinese employers and local laborers, as well as interpersonal conflicts among laborers and within local households. These conflicts reflect the growing strain placed on community cohesion due to the influx of mining activities. In territories under KIA control, permits for rare earth mining operations are issued by the Kachin Independence Organization (KIO) Central Committee. Chinese companies are required to obtain formal approval from the committee, which subsequently delegates authority to relevant KIA battalion or brigade level units. Once this administrative approval is secured, companies must then obtain consent from local communities and provide compensation for the use of their land.

However, it has been reported that both the KIO Central Committee and subordinate military units have applied pressure on villagers to consent to land transfers for mining purposes. Local KIO/KIA party members[13] and administrative officials have acted as intermediaries between companies and residents, often pressuring villagers through influence or coercion to sell their land. Disputes have arisen due to a lack of fairness and transparency in compensation processes, fueling localized social unrest. Momauk Township has seen three such notable incidents, which indicates the recurring nature of community-level disputes arising from the conduct of rare earth mining activities.

Although the KIO/KIA has adopted a policy stating that rare earth mining will only be carried out with the consent of local villagers, in areas such as Mai Ja Yang, Nhkawng Pa, and Muang Hka, KIO/KIA Brigade 3 has been exerting pressure—either directly or through official letters—for land plots to be allocated for mining. On the other hand, according to a resident of Momauk, the KIO/KIA often urges Chinese company representatives, locally referred to as "laoban" (老板) or "bosses," to start negotiations with local villagers.[14] In Hpare village in Chipwi Township, there

[13] KIO/KIA maintains a cadre network that extends from the central to the local community level. Party members are tasked with lobbying KIO's policy directives to the local populace, implementing local governance, fundraising, combat logistics and security. Party members are not necessarily military personnel although the majority are former KIA personnel.

[14] Interview with locals from Momauk Township, 2025.

- have been conflicts between local villagers and the KIO/KIA due to land being seized without prior notice or compensation from internally displaced persons (IDPs).[15]

In cases of fatalities caused by mining collapses, although companies provide compensation—set at 80,000 Chinese yuan—locals reportedly face deductions at multiple levels of authorities, including by central and Township offices, significantly reducing the amount they ultimately receive. One major cause of dissatisfaction among locals is the lack of transparency from KIO/KIA regarding the profits generated from rare earth mining and how these profits are utilized. Citing security and military concerns, KIO/KIA has restricted IDPs and locals from entering mining areas or returning to their original homes, which has led to social tensions between local communities and authorities.

Another key issue is the conflict between Chinese mining companies and local residents. These disputes primarily stem from unfair compensation for land, lack of transparency, and the failure to publicly disclose standard compensation rates. Although it is said that there are set rates for land and crops—depending on the number and type of plants per acre—no official or standardized compensation rates are publicly issued. As a result, negotiations are often conducted directly with individual villagers. This absence of standardized compensation guidelines on both sides often leads to conflict between locals and companies.

Conflicts also arise among local residents due to land sales, leading to disputes and tensions between family members and villagers. Differences exist in attitudes towards land excavation, disagreements over land sales, and the lack of a clear policy for land acquisition, resulting in various conflicting views among the local population. Additionally, conflicts often emerge between villagers and Chinese companies due to intermediary KIO/KIA party members and brokers, who exert influence over the villagers. In rural areas, the KIO/KIA party members who are assigned to communicate and transmit the various roles and regulations set by the KIO/KIA on local villagers play a significant role in the local power dynamics. These party members, acting as intermediaries between Chinese companies and locals, create conflict due to the nature of their profit-driven exploitation activities and the lack of transparency governing their actions, which then leads to disputes with and among local residents.

The town of Chipwi and its village of Hpare—home to Kachin people displaced by the civil war—are also areas where the KIO/KIA has permitted rare earth mining. As mining operations have expanded, pressure has reportedly increased on internally displaced people to sell their land. Land sales are often conducted through negotiations between local intermediaries appointed by the KIO/KIA and Chinese companies operating under KIO/KIA's control.

[15] Interview with locals from Chipwi Township, 2025.

These transactions usually do not involve direct compensation for the mining activity itself but rather result from land being sold due to outside pressure. Locals, unable to return to their original villages and facing financial hardship, have been compelled to sell the land upon which they once relied for their livelihoods—often under pressure from the KIO/KIA.

10.2 Drug Use and Social Issues

In areas of rare earth mining in Chipwi and Momauk townships, drug-related problems and sexual violence issues have become increasingly prevalent. At Chinese-run mining sites, the widespread use of illicit drugs, including the provision of drugs to workers, has led to significant issues with drug use in the workplace. Since the military coup, consumption of substances such as cigarettes, heroin, yaba, and opium has increased, particularly among young people and workers.

A resident from Momauk Township noted that Chinese "laoban" bosses involved in the mining industry encourage drug use by supplying drugs to workers as part of their employment arrangements. This has contributed to an alarming rise in drug abuse within the community. However, it is understood that many workers also use drugs of their own volition — to either cope with physical exhaustion or to enhance their work performance. Many reportedly use these drugs conservatively, but there are also cases of excessive use, which have led to serious health problems.[16] Subsequent problems arising from drug use include an increase in violent crimes such as murder, knife attacks, gambling, as well as marital issues, all of which contribute to a rise in social instability.

The exploitation of local workers, particularly women, at Chinese-run companies is another serious concern. Sexual exploitation and abuse have become frequent occurrences in mining areas. Women seeking employment at mining sites are often coerced into sexual relationships with supervisors or company officials in exchange for work opportunities. In some cases, women are forced to work as "rented wives" (a term used locally for women who are coerced into sexual relationships with men in exchange for employment).[17] These incidents highlight the prevalence of gender-based violence and exploitation in the region, further compounding the social and human rights issues surrounding the mining industry.

[16] Myitkyina News Journal, 2022.
[17] Interview with local CSOs from Kachin State, 2025.

11. TRANSPARENCY AND ACCOUNTABILITY: A RESPONSIBILITY VOID

The influence of armed groups controlling the region plays a critical role in local communities' well-being in the context of rare earth mining. These armed groups are involved in a range of practices that undermine transparency and accountability. There is often a lack of dialogue regarding policies related to the mining industry, with local communities not being informed or consulted on decisions. Additionally, armed groups use coercion and threats to pressure local people into compliance, often leaving them without alternative options or any method for voicing their concerns. These groups have been reported to engage in exploitative practices within their own ranks, further complicating the social and ethical landscape. Workers employed by mining companies are also frequently subject to rights violations. The mining companies often fail to provide adequate safety measures, healthcare, or fair compensation in the event of accidents or injuries. The lack of proper care for workers' rights exposes exploitative practices and serious breaches of labor standards within the industry.

Armed groups involved in rare earth mining do not seem to have established clear policies or regulations for the industry. This lack of policy guidance exacerbates the absence of responsibility that results in environmental destruction and community welfare erosion. Both armed groups and their illegal business partners have shown little regard for transparency, accountability, or the environmental and economic damage their actions cause.

Yet mining operations continue without proper consideration for the consequences on the people, the economy, or the environment, reflecting a systemic failure of the industry to uphold ethical standards and protect vulnerable communities.

The NDA-K was involved in controlling rare earth mining in Pangwa town until 2024, after which the KIO/KIA took control of mining operations in Momauk and Mansi Townships. The NDA-K did not have a policy framework for rare earth mining and operated solely through illegal companies. These illegal Chinese companies exploited workers, neglected their responsibilities to provide health and social welfare, and the local population suffered the consequences. From 2017, the NDA-K extensively carried out rare earth mining in Pangwa town, illegally operating on farmland seized from locals.[18] The NDA-K received tax revenues derived through the Myanmar–China border trade and rare earth exports, but did not publicly disclose the revenue from illegal rare earth mining. The Kachin Special Region (1) NDA-K Development Administration Committee's Vice Chairman Wanghte Brang Awng denied any NDA-K links to rare earth mining operations.[19]

The NDA-K has also been accused of threatening and silencing Civil Society Organizations that have expressed opposition to their mining activities. These actions include intimidation and violence aimed at those who have voiced concerns over the environmental and social impact of mining operations. Local communities working under NDA-K control in Pangwa have been subject to abuse by illegal Chinese companies that operate without any protective policies for workers. Types of abuse have included physical violence, sexual exploitation, and the neglect of workers' rights. Similarly, the KIO/KIA, after seizing control in post-coup Myanmar, began mining rare earth minerals in areas such as Momauk and Mansi, but they too failed to implement or announce any clear policies regarding mining operations. Civil society groups in Kachin state have claimed that the KIO/KIA had policies in place for mining, but these claims remain unsubstantiated, as no official documents or transparency have been provided.[20] Local groups have pointed out that the KIO/KIA's practical execution of mining policies has been weak, with little oversight or accountability for the workers involved.

In some cases, the KIO/KIA restricted access to mining areas, even for local civil society groups, activists, and journalists, preventing them from monitoring the situation or reporting on the environmental and human rights abuses taking place. For example, local authorities cited the use of armed conflict between the SAC and the KIO/KIA in Momauk Township to block communities from accessing mining sites, further worsening transparency and accountability issues in the sector.[21]

[18] Global Witness, 2022.
[19] Moon Moon Pan, 2019.
[20] Interview with local CSOs from Kachin State, 2025.
[21] Interview with local CSOs from Kachin State, 2025.

Figure 6: Obstructing Awareness Campaigns of Rare Earth Mining Impact

Members of KIA removing posters protesting the rare earth mining in Momauk township, Kachin State on January 27, 2025. (Photo by a Local Activist)

Additionally, the KIO/KIA has strictly prohibited any efforts to educate, mobilize, or engage in discussions with local communities regarding the mining of rare earths (see Figure 6). Those who challenge this ban by organizing opposition to rare earth mining face warnings, threats, and even arrests. In villages within Momauk Township, KIO/KIA soldiers have been seen burning or tearing down educational posters placed by civilian groups used to raise awareness about rare earth mining.[22] In April 2023, KIA Brigade 3 detained three active protesters against rare earth mining, accusing them of being military informants, and held them for three days in Seinlon village. In October 2023, KIO/KIA also detained civilians from Hpare village.[23] Justifications for rare earth mining are framed around the industry being necessary due to the ongoing conflict, which the KIO/KIA claims is essential for strengthening their military power and funding reconstruction efforts.

[22] Interview with locals from Momauk Township, 2025.
[23] Myitkyina News Journal, 2023.

KIA Brigade 3 officials in Momauk township have stated that rare earth mining should not be opposed, as it will help the KIO/KIA grow and develop, and they have made speeches in villages advocating this view. Due to the rising intensity of the conflict, the KIO/KIA has employed various methods to gain consent from local populations for rare earth mining. For instance, members of the KIO party have mobilized the Lisu ethnic group in Seinlon village, promising that granting permission for rare earth mining would exempt them from conscription into KIA forces. Although the Lisu people agreed to allow the mining to avoid military conscription, they were later forced to join the military when the fighting intensified.[24]

The KIO/KIA, which is in effective control of the region, has ensured that no direct financial investments are made in rare earth mining but has maintained its own involvement in rare earth mining activities through indirect profit-making connections. KIO/KIA units provide security for mining companies, collect taxes, and are involved in land confiscation and land purchases for mining operations. Local residents from Momauk Township have reported that the KIO/KIA is also involved in collecting taxes on rare earth exports to China, with KIO/KIA units providing security along the transportation routes.[25] Rare earth minerals mined from villages near Myitkyina and Inkhaungpar are transported through the Mai Ja Yang border gate to Chinese cities such as Yingjiang and Jiangfeng. KIO/KIA battalions collect taxes on these shipments, which vary depending on the tonnage of the rare earths being transported.

There have also been incidents of exploitation within the KIA's subordinate military units authorized for rare earth mining activities.[26] KIO/KIA Central Committee reports have found discrepancies, such as military units under the KIO/KIA not providing accurate information about the locations of rare earth mining field-sites or reporting fewer field-sites than actually exist. In some cases, certain units under Brigade 3, including Battalion 1, Battalion 15, and Battalion 16, have avoided tax payments to the Central Committee by conducting illegal shipments of rare earths via unregistered routes to the Myanmar–China border crossings. Despite Brigade 3 reporting to the Central Committee that rare earth mining covers an area of 30 acres, locals from the Momauk region have confirmed the actual mining area to be between 50 to 100 acres. Moreover, there is no official disclosure by the KIO/KIA regarding income from rare earth mining and how it is managed. The KIO/KIA claims that revenues from rare earth mining would be used for state-building and the management of administrative machinery, but no transparent accounting or reporting of the funds' usage has been made public.

[24] Interview with locals from Momauk Township, 2025.
[25] Interview with locals from Momauk Township, 2025.
[26] Interview with locals from Momauk Township, 2025.

In Momauk and Mansi Townships, both the KIO/KIA and Chinese companies have shown a lack of responsibility and accountability towards the miners. Although the work is potentially life-threatening, adequate protections in the workplace are not in place, there is no access to healthcare, and in the event of a fatality, no proper compensation is disbursed. Workers are exposed to hazardous chemicals like sulfuric acid in rare earth mining, but the Chinese companies fail to consider workers' safety. Necessary protective equipment (such as rubber boots, gloves, and face masks) are also often not provided. Due to their prolonged exposure to chemicals and hazardous conditions, workers' health is severely impacted, but companies often fail to provide any healthcare, and sick workers are merely dismissed from their jobs. Additionally, if a fatality occurs in the workplace, neither the company nor the KIO/KIA takes responsibility. In KIO/KIA-controlled areas, locals also face human rights violations, abuse, and other losses, but no accountability or action has been taken by the KIO/KIA.

As a result, the rare earth mining industry, since its inception in Kachin state, continues to operate without transparency, benefiting only authorities and business owners. The local population has not seen any positive outcomes; instead, they have faced social, economic, health, and environmental degradation, without seeing any benefits from mining activities.

12. POLICY IMPLICATIONS AND RECOMMENDATIONS

The vast majority of rare earth extraction in Myanmar is conducted illegally. The Myanmar state plays a minimal role in the production of rare earth minerals and derives no significant revenue for the state treasury, while numerous territories are under the control of non-state actors engaged in ongoing conflict. This dynamic exacerbates the conflict economy and is likely to have profound long-term consequences for the country's economic stability and peace.

Kachin State is recognized as a biodiversity hotspot that has been preserved for generations. Kachin Special Region No. 1, where rare earth mining is predominantly conducted, is home to approximately 15,000 rare species. The environmental degradation caused by mining operations poses severe threats not only to conservation efforts but also to the livelihoods of local communities. Mitigating the 'resource curse' will prove challenging unless the conflict economy is addressed and replaced with robust environmental governance. The principal armed groups involved in rare earth mining receive only negligible royalty payments, while mining activities inflict significant harm on both the environment and local populations. Conversely, mining investors continue to reap exploitative profits. Given the local population's strong sympathy for the Kachin Independence Organization's liberation movement and their kinship ties to ethnic Kachin communities, calls for a complete cessation of mining activities are unlikely to be feasible.

According to focus group discussions, local residents demand transparency regarding mining projects, equitable treatment by companies and investors, and active collaboration to ensure fair compensation and support for their livelihoods. Promoting local welfare and sustainable development is imperative.

A comprehensive framework for the equitable sharing of benefits derived from natural resources must be established. Armed groups involved in rare earth mining, in coordination with local civil society organizations, should develop governance policies aimed at long-term sustainability, enhanced environmental regulations, and strengthened community protection. Furthermore, several advocacy groups have called for the promotion of ethical sourcing within global supply chains. These groups advocate for certification and traceability mechanisms to guarantee that rare earth minerals are mined responsibly, akin to initiatives discussed at the Organisation for Economic Co-operation and Development's (OECD) Forum on Responsible Mineral Supply Chains held in May 2024. However, the involvement of profit-oriented companies in mining operations and the prevalence of illicit trade present significant challenges to the effective implementation of such measures.

In the case of Kachin, rare earth extraction has entrenched a conflict economy where armed actors profit from unregulated mining. This has deepened local militarization, weakened civilian governance, and diverted natural resource revenues away from public benefit. The sustained conflict economy not only hinders peace and sustainable development in Kachin but also poses long-term risks to neighboring countries, particularly China through illicit trade flows, and regional instability. Policy responses should prioritize demilitarizing natural resource governance and establishing transparent, community-led oversight mechanisms to prevent the cross-border spread of conflict-driven resource exploitation. ■

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