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China's Rapacity for Mining in Tibet: An Indian Perspective

Sriparna Pathak

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China's rapacity for mining in Tibet has unfortunately become a permanent feature of its occupation. There are several reports on the environmental degradation caused by China's activities in Tibet. What, however, is not explored is how and why China mines what it mines the most in Tibet. In order to understand the all-pervasive and permanent nature of China's rapacity for mining in Tibet, it is pertinent to analyze the phases in which Chinese mining in Tibet has become as extensive as it is today. It is also pertinent to understand the problems it causes to downstream countries, in order to create more awareness, to push back against China's unchallenged mining in Tibet. An understanding of what China seeks to mine next in Tibet is also important. With the discovery of rare earth metals in Tibet in 2023, the challenge is set to skyrocket. In this context, what lies in store for India also becomes crucial.

Introduction

China's mining in Tibet has a long history, given that Beijing sees the region as a major source of resources. Before China's occupation of Tibet in 1950, it had little industrialization. Immediately after the People's Liberation Army (PLA) marched into Tibet and occupied it, the Chinese government started investing in infrastructure to exploit the natural resources. By the late 1990s, Chinese geologists discovered large deposits of minerals including copper, zinc, iron, uranium, borax, and potash and there was an uptick in mining activities in Tibet. In 2006, the construction of the Qinghai-Tibet railway connected Tibet to China, allowing the quicker transportation of resources, and by 2016, Tibet had close to 100 mining sites. In 2007, Chinese state media reported that Chinese geologists have discovered more than 600 new sites of copper, iron, lead, and zinc ore deposits on the

Qinghai Tibet plateau, since 1999. According to Zhang Hongtao, the vice director of the China Geological Survey Bureau, the plateau has reserves of 30-40 million tons of copper, 40 million tons of lead and zinc, and billions of tons of iron.[1] The discovery only increased China's rapacity for mining in Tibet.

As such, mining has displaced Tibetan nomads from their grasslands, disrupted their traditional agricultural practices, led to their social exclusion, caused loss of land tenure, and added to food insecurity. In 2008, a Chinese mining company carried out a water diversion project in the upper Gyama region, leading to a forceful confiscation of agricultural lands. The mining which was ongoing in the upper hills of Gyama for nearly two decades also led to toxic wastes being dumped into the Gyama Shingchu River, which resulted in the deaths of a large number of cattle.[2]

Mining has also led to environmental degradation including nuclear dumping and water pollution.

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Through uranium mining, nuclear research and design, and subsequent nuclear dumping, the Tibetan Plateau has been transformed from being ecologically balanced and independent to an area so environmentally degraded that the water that flows through Tibet has affected surrounding countries.[3] Mining close to the upper reaches of the Yangtse, Mekong, and Yarlung Tsangpo, (which flows into India as Brahmaputra), leads to an increase in the danger of toxic runoff. There have been several instances when downstream countries, particularly India have measured high levels of toxins in the Yarlung Tsangpo, or the Brahmaputra.

In 2023, Chinese scientists discovered huge potentials of rare earth minerals in the Himalayas that could give a boost to its position as the leading global supplier. Researchers from the China University of Geosciences in Wuhan, used artificial intelligence (AI) to locate the deposits, that are spread across 1,000 kilometers in the Tibetan plateau.[4] To understand the damage caused by the mining to Tibet and to neighboring countries, it is first pertinent to understand the minerals and the plausible usage of the minerals for China, which can lead to an understanding of whether China's rapacity for mining in Tibet can ever end. This issue brief analyses the minerals discovered so far in Tibet, China's need for the minerals and the impacts of the mining of those minerals on India. The research relies on both primary as well as secondary resources.

Tibetan Minerals and China's Plausible Need for Them

Tibet, which includes the Tibetan Autonomous Region (TAR), as well as parts of Yunnan, Gansu, Qinghai and Sichuan, is believed to possess huge quantities of some of the world's most highly prized minerals.[5] Because of its tectonic formation and settings, Tibet has 132 mineral resources, including gold, copper, crude oil, natural gas, chromite, lithium, among others.[6]

In the 1930s and the 1940s, surveys of the Kailas and Mapam districts in western Tibet led to the discovery of extensive goldfields and huge deposits of borax, along with reserves of radium, iron, titanium, lead and arsenic.[7] Subsequent investigative teams dispatched from the 1950s onward reported the existence of a huge variety of minerals and ores. Gabriel Lafitte's division of China's exploitation of Tibet's natural resources into four periods is pertinent to understand China's rapacity for mining in Tibet (see Table 1).

Table 1: **The Four Periods of China's mining activities in Tibet**

1950s-1970s	Largest exploitation of chromium and bauxite in the Tsaidam Basin.
1980s-1990s	An extensively damaging gold rush, involving small-scale private individuals in the rivers of Kham and Amdo.
2000s onwards	Large-scale mining by government organizations such as the People's Armed Police or by state-owned enterprises.
2010 onwards	Natural-resource mining in Tibet for minerals like copper, with necessary requirements of a large amount of electricity and a good network of roads.

Source: Gabrielle Lafitte, *Spoiling Tibet, China and Resource Nationalism on the Roof of the World*.[8]

After the forcible takeover of Tibet by the PLA in 1950, China's mining activities in the Tsaidam Basin began almost immediately. The basin, located in the Qinghai province is rich in mineral resources, including in magnesium, potassium, lithium and sodium. It is in fact home to China's largest center of onshore oil production, with proven reserves of 375.65 million metric tons of petroleum and

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306.6 billion cubic meters of natural gas.[9] Mining in the basin has been going on for decades, with the Qinghai oilfield being exploited since 1954. The basin is also home to several other mines, including the Shengligou Mine, which is known for its gold deposits.[10] Other notable mines in the area include the Chulutaohai deposit, rich in copper, lead and zinc.[11] The basin and the surrounding region is home to several sensitive ecosystems, including saline lakes and playas, which are extremely vulnerable to pollution and disruption. China's mining in the Tsaidam Basin have also raised concerns about environmental degradation and human rights abuses. There also have been reports of forced labor and cultural subjugation of local Tibetan populations, who have been coerced into working in the mines and related industries.[12]

In the 1980s and 1990s, small-scale private miners, mostly Chinese flooded into the Kham and Amdo regions of Tibet. They had little to no regard for environment regulations or for local sentiments, and the mining they engaged in caused huge destruction to rivers and streams. Tibetans protested in vain to local officials.[13] The gold rush has been extremely damaging to the environment as well as to the local Tibetan community.

The Chinese government eventually took control of the gold mining operations and put the People's Armed Police (PAP) in charge. This was of no use to address the environmental damage caused or to address locals' concerns. The PAP prioritized gold extraction over environmental and social considerations.[14] As such, the gold rush is now part of a broader pattern of Chinese resource extraction in Tibet, channeled by China's forever increasing demands for energy and minerals, and has led to substantial environmental degradation, cultural destruction and human rights abuses in the region.

From the mid-2000s, the PAP also began mining operations through companies like the People's Armed Forces of Huatailong Mining Development Co. Ltd.[15] Since 2010 onwards, China has significantly increased its mining activities in Tibet, with a focus on extracting valuable minerals like copper, lithium and gold. The uptick in mining is part of China's broader efforts to become a global leader in renewable energy and industrial growth.[16] The Chinese government has been actively promoting mining in Tibet through various policies and initiatives. Many Chinese companies including Zijin Mining Group Ltd. and China Gold International Resources have established significant mining operations in Tibet. These companies have also been accused of environmental degradation, poor working conditions and human rights abuses. Table 2 lists some of the policies of the Chinese government to promote mining in Tibet.

China's Need for Tibet's Minerals

China mines several key minerals from Tibet including copper, lithium, gold, chromium, zinc, lead, silver, and rare earth minerals. Tibet has significant copper deposits, in the Ngari and Shigatse prefectures in particular, and China's Zijin Mining Group and China National Gold Group operates major copper mines in the region. In 2024, the Fujian based Zijin Mining Co. stated that it would pay 3.88 billion yuan (USD 548 million) to acquire

Table 2: **PRC Policies to Promote Mining in Tibet**

No.	Policy	Brief description
1.	The 13th Five-Year Plan (2016-2020)	This plan emphasized the development of Tibet's mining industry, with a focus on copper, gold, and other precious metals.
2.	The Tibet Autonomous Region (TAR) Mining Industry Development Plan	This plan, released in 2013, outlined strategies for promoting mining development in Tibet, including investment incentives and infrastructure development.
3.	Tax incentives and subsidies	The Chinese government has offered tax breaks and subsidies to mining companies operating in Tibet, aiming to attract more investment to the region.
4.	Infrastructure development	China has invested heavily in infrastructure development in Tibet, including roads, railways, and airports, to facilitate mining operations and transportation of minerals.
5.	Relaxation of environmental regulations	China has relaxed environmental regulations in Tibet to facilitate mining development, which has raised concerns about environmental degradation and pollution.
6.	Labor transfer policies	The Chinese government has implemented policies aimed at transferring labor from rural Tibet to mining jobs, which has raised concerns about forced labor and exploitation.
7.	Establishment of special economic zones (SEZs)	China has established SEZs in Tibet, offering favorable policies and incentives to attract mining investment.
8.	Support for state-owned mining companies.	China has provided support to state-owned mining companies, such as China National Gold Group and Zijin Mining Group, to expand their operations in Tibet.

Source: Various news reports

a majority stake in a mining firm with rights to two copper deposits in Tibet. Zijin stated it would pay for the 50.1 percent stake in Tibet Julong Copper Co. Ltd., operator of the Qulong mine, one of the biggest copper deposits, and the Zhubula mine.[17]

Tibet is also home to significant lithium deposits, in the Qinghai-Tibet Plateau, and the mineral is a key component in batteries for electric vehicles (EV) and electronic devices. China's market is expected to reach 50 percent EV sales in 2025.[18] EV supply chains are already well developed in China, and the government continues to push ahead with EV subsidies to boost consumer demand. This makes it amply clear that there is going to be only more mining for lithium in Tibet.

As far as gold is concerned, the mining of it is widespread in Tibet. Significant deposits of gold are found in Ngari, Shigatse, Nyingchi prefectures and the China National Gold Group is a major player in Tibet. The state-owned company developed the Jiama copper-gold polymetallic mine in Tibet, which is the largest mining project there.[19]

Chromium deposits are to be found in the Nagchu and the Shannan prefectures in Tibet, and the metal is primarily used in stainless steel production. China's annual production of the metal is estimated to be around 100,000 tons, marking a significant increase from the smaller output seen before the 2000s. In January 2025, China's National Development and Reform Commission and the Ministry of Finance introduced policies aimed at boosting stainless steel demand through equipment upgrades and consumer goods recycling. These policies provide stronger support than in 2024, particularly for home appliances. Stainless steel demand in washing machines, TVs, refrigerators, and air conditioners rose by 21.89 percent in 2024 and is expected to grow by an additional 9.96 percent in 2025 to 3.38 million tons.[20] This makes it adequately clear that China's rapacity for mining chromium in Tibet will only increase further.

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Shigatse and Ngari prefectures also have major deposits of zinc and lead. China is one of the world's largest consumers of zinc, with the construction industry being the primary driver of demand.[21] As per recent reports, China's construction industry is expected to only continue expanding further, driven by major investments in infrastructure projects, urban development and a focus on so called green construction technologies. Thus, China will only mine further in Tibet.[22] Silver is mined in Tibet, as a byproduct of gold and copper mining. Most importantly, Tibet possesses rare earth elements (REEs), which are crucial for high-tech industries, including for renewable energy technologies and electronics. These minerals are crucial for continuing the economic growth in China, pushing its industrial development and its transition to a high-tech economy.

In 2023, Chinese geologists discovered huge potential reserves of rare earth minerals in the Himalayas which could significantly strengthen China's position as the leading supplier. The deposits are believed to exist along a more than 1,000 kilometres (600 miles) long belt, and it raises the possibility that the

deposits may also be located within Indian territory.[23] This simply means that mining and search for all the deposits of REE in Tibet will only increase, and that the Chinese PLA will only transgress further into Indian territory and make newer and more frequent claims on India's territories. Besides military aggression, India anyways faces the brunt of China's mining activities in Tibet.

Impact of China's Mining in Tibet on India

The Siang River, a major tributary of the Brahmaputra River has often turned black, and instances have been observed in 2017, 2020 and in 2022.[24] Yarlung Tsangpo, which begins in Tibet is a transboundary river which runs through downstream countries– India and Bangladesh. The Yarlung Tsangpo is known as the Brahmaputra in India. Owing to China's mining activities in Tibet, the river suffers water contamination and environmental degradation.[25] In 2017, when the Siang's water turned black, as per a report by the state's public health engineering department, the turbidity level of the Siang's waters was several times higher than the permissible limit; fish had died and even buffaloes that consumed the water died. A report submitted by the State Water Quality Testing Laboratory in Itanagar confirmed that the waters of the Siang became unfit for human consumption. The turbidity level of the water, according to this report, stood at 482 NTU.[26]

Arunachal Pradesh's Member of Parliament, Ninong Ering, in a letter to Prime Minister Narendra Modi had written about the "serious matter", and how a few months earlier, after a report that was denied by the Chinese government, regarding the diversion of a channel over the Yarlung Tsangpo in Tibet, the Siang River turned muddy and black.[27] Thousands of fish were found floating dead in the Kameng river in Arunachal Pradesh's East Kameng district after the waters turned black.[28]

As such, in 2022, it was reported that the once blue Siang river had almost completely turned black, making it unfit for human usage in any way.[29] By destroying Tibet through its rapacity for mining, China kills two birds with one stone: On the one hand, it exploits Tibet for China's development and on the other, impacts downstream countries. Considering China's ever-increasing need for so-called development, the rapacity for mining in Tibet, as seen through history is never coming to an end. The affected parties need to understand the pattern of exploitation in Tibet and come up with policy solutions to defend themselves.

Author –

Dr. Sriparna Pathak *is a Professor and the founding Director of the Centre for Northeast Asian Studies in the Jindal School of International Affairs (JSIA) of O.P. Jindal Global University, (JGU) Haryana, India. She also serves in the capacity of the Associate Director of the Jindal India Institute. Her areas of interest are China's domestic economy, trade and economic relations between India and China, and China's foreign policy and economic linkages with the world. She is currently working on a project on China's influence operations in India.*

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