



# Rainforest Action Group

Committed to the defence of rainforests worldwide

## Jiangxi Copper

江西铜业

### Research Snap Shot



**FEBRUARY 2023**

<https://rainforestactiongroup.org>

# Table of Contents

Jiangxi Copper Overview .....	p 3
Jiangxi Copper Guixi Smelter .....	p 4
Jiangxi Copper Mining Overviews .....	p5
Recent Developments .....	p 6
Corruption and Embezzlement .....	p7
Jiangxi Copper Operational Mines Dexing .....	p8
Jiangxi Copper Operational Mines Yongping .....	p11
Jiangxi Copper Operational Mines Yinshan .....	p12
Jiangxi Copper Operational Mines Chengmenshan .....	p13
Jiangxi Copper Operational Mines Wushan .....	p14
Jiangxi Copper Operational Mines Maoniuping .....	p15
Jiangxi Copper Operational Mines Bukata .....	p16
International: Ecuador, First Quantum Canada, Chile.....	p 17
International: Afghanistan .....	p18
International: Albania/Malaysia .....	p19
International: Burma/Zambia .....	p20

**JIANGXI COPPER IS THE LARGEST INTEGRATED COPPER PRODUCER IN THE PEOPLE'S REPUBLIC OF CHINA.**

**ITS PRINCIPAL BUSINESS INCLUDES: COPPER, GOLD AND SILVER MINING, DRESSING, SMELTING, PROCESSING, EXTRACTION AND PRODUCTION OF SULPHURIC ACID.**

**JIANGXI PRODUCE MORE THAN 50 PRODUCTS INCLUDING COPPER CATHODE, COPPER ROD, COPPER TUBE AND COPPER FOIL.**

**AS OF LATE 2022, JIANGXI WAS THE 46TH LARGEST MINING COMPANY IN THE WORLD.**



**GUIXI COPPER SMELTER, JIANGXI CHINA.THE LARGEST COPPER SMELTER IN THE WORLD**

**JIANGXI COPPER COMPANY LIMITED WAS FORMED BY PARENT JIANGXI COPPER CORPORATION, WHICH IS OWNED BY THE CHINESE GOVERNMENT, IN 1997.**

**China is the world's top user of copper and relies on imports for about 25% of its consumption.**

**In terms of carbon emissions, copper smelting is one of the most polluting processes carried out by the non-ferrous metals industry, second only to aluminium production.**



**The world's biggest copper smelting and refining complex at Guixi was established in the 1980's. It has discharged significant pollution to the local environment, particularly metals (copper, cadmium, arsenic, lead and others) and acid gases sulfur dioxide and sulfuric acid).**

**Fifteen villages with a total population of 10,000 people have been affected. The affected rice farmland area has been estimated at 132 hectares and vegetable farmland at 6 hectares. High levels of heavy metals resulted in much higher concentrations in hair and urine samples than those of normal Chinese residents, showing that residents around the smelter have potential health risks through daily food intake. The main sources of these heavy metals were from the consumption of rice and vegetables. Jiangxi's other 5 smelters are likely to have similar issues in the areas that they are operating.**



# **JIANGXI COPPER OPERATES 6 MINES IN CHINA AND ONE IN KAZAKHSTAN:**

**1. DEXING COPPER MINE:** LOCATED NEAR DEXING CITY, SHANGRAO CITY, JIANGXI PROVINCE. (INCLUDES COPPER FACTORY MINING AREA, FUJIAWU MINING AREA AND ZHUSHAHONG MINING AREA)

**2. WUSHAN COPPER MINE:** LOCATED IN RUICHANG CITY, JIANGXI PROVINCE.

**3. YINSHAN MINING:** LOCATED IN JIANGXI PROVINCE , LOCATED IN DEXING CITY, SHANGRAO CITY, JIANGXI PROVINCE.

**4. YONGPING COPPER MINE:** LOCATED IN QIANSHAN COUNTY, SHANGRAO CITY, JIANGXI PROVINCE.

**5. CHENGMESHAN COPPER MINE:** (INCLUDING JINJIWO SILVER-COPPER MINE), JIANGXI PROVINCE

**6. KAZAKHSTAN BAKUTA TUNGSTEN MINE:** A KEY PROJECT UNDER THE BELT AND ROAD INITIATIVE.

**7. MAONIUPING RARE EARTHS MINE:** SICHUAN PROVINCE, CHINA. JIANGXI IS CONTROLLING SHAREHOLDER

## **SMELTERS INCLUDE:**

GUIXI SMELTER (THE LARGEST SMELTER IN CHINA), SHANDONG HUMON SMELTING CO LTD, JCC HONGYUAN, JCC GUOXING, JIANGXI COPPER (QINGYUAN) COMPANY LIMITED AND JIANGTONG FUYE HEDING COPPER CO LTD.

## **COPPER PROCESSING PLANTS INCLUDE:**

JIANGXI COPPER PRODUCTS COMPANY LIMITED, JIANGXI COPPER (GUANGZHOU) COPPER PRODUCTION COMPANY LIMITED, JIANGXI COPPER YATES COPPER FOIL COMPANY LIMITED, JIANGXI COPPER – TAIYI SPECIAL ELECTRICAL MATERIALS COMPANY LTD, JIANGXI COPPER (LONGCHANG) PRECISE COPPER PIPE COMPANY LIMITED, JCC COPPER PRODUCTS COMPANY LIMITED, JCC HUABEI (TIANJIN) COPPER CO., LTD. AND JCC HUADONG (ZHEJIANG COPPER) CO., LTD.

# Recent Developments

**In late 2022 Chinese mining companies urged the Chinese Government to mine more minerals in China, due to disruptions to the global supply chain.**

**In November 2022, Canada ordered three Chinese companies to give up their investments in Canadian minerals, citing national security.**

**In September 2022 Jiangxi and China Rare Earth Group signed a strategic cooperation agreement to promote integration in the rare earths industry. This followed on from an announcement in July 2021 that Jiangxi would invest (\$1.76 bn) to make 100,000 tonnes of copper foil per year for lithium batteries.**

**In August 2022, almost 295,000 tonnes (\$710 million) of copper concentrates went “missing” from the merchant Huludao Ruisheng of the port city of Qinhuangdao. Jiangxi Copper was impacted.**



**How does 295,000 tonnes of Copper Concentrate go "missing"?**

**July 2022: Jiangxi Provincial Enterprise Voluntary Pollution Alliance created to reduce pollution and emissions. Jiangxi Copper Group, Jiangxi Building Materials Group Co., Ltd., China Huaneng Group (Jiangxi branch), State Power Investment Corporation, Jiangxi Fangda Steel Group, China Petroleum & Chemical Corporation (Jiujiang branch) and other key enterprises within the Jiangxi Province joined the alliance.**

# Corruption and Embezzlement

**On the 30th of January 2019, Li Yihuang, the chairman of Jiangxi Copper and the former vice-governor of Jiangxi Province was sentenced to 18 years in prison for corruption, taking bribes and embezzling 51.19 million yuan of public funds between 2004 and 2017 whilst Chair of Jiangxi and embezzlement of 147.3 million yuan in public funds whilst being vice-governor between 2013-2016.**

**In 2008, Li acquired prospecting rights at a silver mine in Jiangxi and paid an inflated price, prompting the loss of 20.87 million yuan in state-owned assets, the court said.**

**He was expelled from the Chinese Communist Party in April 2018.**



**LI YIHUANG, THE EX-CHAIRMAN OF JIANGXI COPPER AND THE FORMER VICE-GOVERNOR OF JIANGXI PROVINCE**



# Jiangxi Operational Mines

## Dexing Copper Mine, Jiangxi Province

“When the farmers of Zhujia village learned in 1956 that their beautiful valley was home to one of the world's biggest copper reserves, they organised a three-day ritual to pay tribute to heaven's generosity. The farmers' roots in this isolated, mountainous area in northeast Jiangxi were centuries deep, but it took nothing more than the arrival of a letter from the government to tear them up - the order to vacate the site was delivered before the villagers could finish their ceremony. Over the next 50 years, the displaced residents of Zhujia village took refuge in the mountains. Their compensation, they say, has been sulphurous air and heavy metal in the water, the monstrous roar of mining machinery and an exodus of young people out of their once idyllic village. The rice paddies, rapeseed crops and water buffalo are now the stuff of memories...Zhujia is not the only village to have been uprooted by the mining companies - at least four other villages have been buried by tailings.”



The Dexing Copper Mine. Asia's largest copper mine with the largest tailings dam in Asia, seen top left of image

The Dexing Copper Mine, located in Shangrao, Jiangxi Province, China, is Asia's largest open-pit copper mine and second largest in the world (4,000ha in size).

The copper mine was built in 1958 and started production in 1964. Dexing produces over 100,000 tons of copper/yr which accounts for one quarter of China's copper needs. It will operate until 2082. The mine also has the largest tailings reservoir in Asia.



**The Dexing mine has created a host of serious environmental issues. In 1996 UNESCO found that the mine had seriously polluted the Le'an River which provides drinking water for over 400,000 people (mainly in Leiping City) and is upstream of China's largest freshwater lake, Poyang Lake.**



**Jiangxi's Dexing copper mine is located approximately 60km upstream from the city of Leiping (population 420,000). Jiangxi's Yinshan lead mine is located about 45km upstream of Leiping. The Le'an River flows past Leiping and drains into Poyang Lake, China's largest freshwater lake. Poyang Lake drains into the Yangtze River about 600km upstream of Shanghai.**

**Scientists in 2019 found that in the Poyang Lake main channel (120km downstream of Dexing) concentrations of copper, lead and zinc were above the threshold effects level and that the potential ecological risk index showed copper posed moderate ecological risks. Another scientific report (2020) found that 25% of the sediments of Poyang floodplains were strongly polluted with copper and arsenic and that 50% were moderately polluted. About 33% of the sediments were slightly polluted with lead.**

**In 1996 UNESCO found that 60 million tons of wastewater containing 20 kinds of toxic metals and pollutants were being dumped by the Dexing Mine into the Le'an River annually. Nine villages downstream of the mine could no longer fish in the river and that drinking water wells had been polluted.**



**Further research found that Dai village, located 20km downstream of Dexing Mine, is now listed as a cancer village with 71 people succumbing to the disease between 1993-2012. 617 ha of farmland is no not farmable due to pollution. At Daican Village 187ha of crops were killed by copper waste pollution. A 2011 study of metals in hair of the residents of Dai showed elevated levels of cadmium, chromium, copper, lead, and zinc linked to the Dexing mine. Another study found that the considerable copper contamination in the area was vertically mobile and capable of bioaccumulating in plants. High blood lead levels were found in children in Wuxing – a village near the Dexing mine where a JCC subsidiary operates a lead smelter.**



**Dexing Mine Tailings Dam. Note stockpiles of fill on dam wall**

**In 2012, researchers at Donghua University estimated that 40,000 tonnes of acid mine drainage and 332,000 tonnes of alkaline flotation waste water are discharged out of the Dexing mine each day.**





# Yongping Copper Mine, Jiangxi Province



**Yongping in Jiangxi Province is reported to be the second largest operating open pit mine in China and makes up about 8% of Jiangxi Copper's total mining capacity in China. It is located about 90km south of Dexing Copper Mine. Copper concentrate is processed at the Jiangxi Copper's Guixi smelter approximately 50km away to the west. In 2021 Jiangxi suffered yuan impairment due to setting aside future expenditure on environmental protection at Yongping.**

**In March 2013 operations at the mine were suspended after an explosives accident killed three people and injured nine. A mix-load vehicle explosion occurred in the open pit of the mine.**

**A 2015 study found contamination of the Yongping waste dump. The results indicated that copper was the dominant metal contaminant, cadmium the second. The comprehensive evaluation of heavy metal contamination showed that all the areas of the waste dump were polluted seriously. Another report revealed that the main mining areas had serious heavy metal contamination from intensive mining activity.**



**Copper in an electric car engine**



# **Yinshan Lead Mine, Jiangxi Province**



**Yinshan Lead Mine - note tailings dam on left**

**Yinshan is the largest lead mine in China produced an estimated 322,616 tonnes of lead in 2020. The mine will operate until 2069. Yinshan is a lead-zinc-copper-gold ore field that has been mined since the 1960's.**

**Mine drainage from waste dumps and low grade stockpiles is acidic and contains copper and zinc. The resulting water is toxic to the environment and has to be treated.**

**In 2013 scientists found that the Jishui River has been seriously polluted by non-ferrous heavy metal mining activities, and long-term irrigation using Jishui River water has caused severe heavy metal pollution of soil. Acid Mine Drainage from the mine site has also been reported.**

**The Jishui River flows into the Le'An River about 30km upstream of the city of Leping. Yinshan mine is located about 15km south west of the Dexing mine, near Dexing City.**

**Mining has gradually shifted underground so as to limit the impact of mine dust. The surface soils near Yinshan mine has also been contaminated by cadmium, copper, lead, and zinc, with concentrations higher than the guideline values of China.**

# Chengmeshan Copper Mine, Jiangxi Province



**Chengmeshan open pit mine 2022 with Sai Lake in the foreground. The mine area to the right of the photo actually consists of 1.2 square km's of Sai Lake that had to be back filled.**

**The Chengmeshan open pit, located 15km east of Jiujiang City in Jiangxi Province will eventually be the biggest copper mine pit in China.**

**It is located in the middle-lower reaches of the Yangtze River and the open pit is beside Sai Lake whose main water source is the Ruichang River. The mine is located about 7km south of the Yangtze River and 30km west of Poyang Lake.**

**Due to complicated geology, including partial filling of Sai Lake, the mine was not developed until the mid to late 2000's. The majority of deposits are surrounded by a lake on three sides. Most of the deposits lie at the bottom of the lake which require 1.2sq km of the lake being backfilled.**

**With the rainy season, the water level of the Ruichang River will rise which will also mean that the Sai Lake water level will also increase. In April 2016, Jiangxi Copper began design work to increase daily ore processing capacity to 18,000 tonnes.**



# Wushan Copper Mine, Jiangxi Province



Wushan Mine, with Chengshesan 17km away. In the distance is Poyang Lake, the largest freshwater lake in China. The Yangtze River flows through centre of the image

**The Wushan Copper Mine construction was between 1966 and 1985 with the goal of developing the largest copper mine in Jiangxi, China. It is located 17km north west of Chengmeshan Copper Mine**

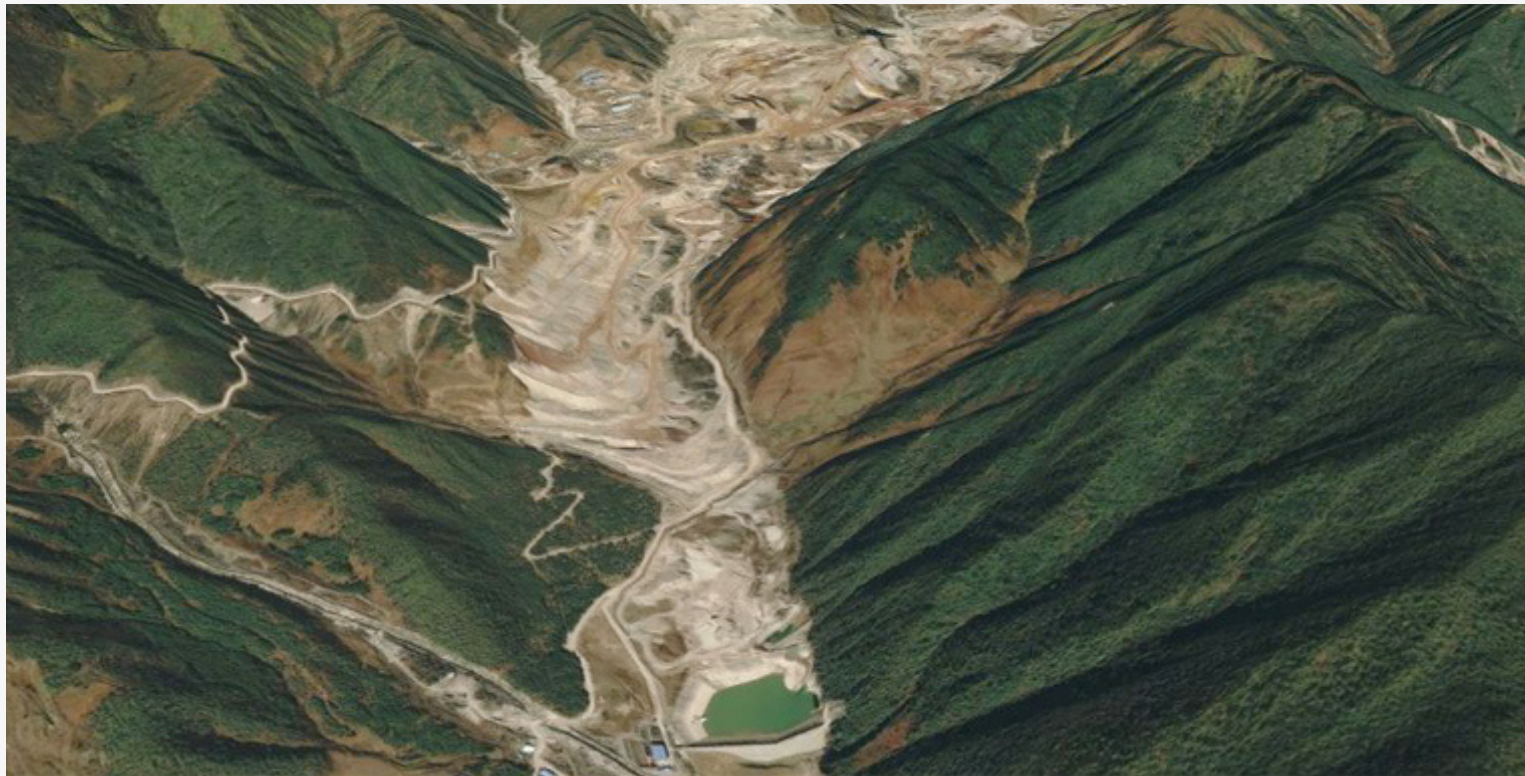
**The tailing reservoir for the mine was established in 1970 with a storage capacity of 460,000m<sup>3</sup>, with waste water from mine waste and spoil discharged into Chihu Lake. 30 tons of copper loading in waste water, ended up in Chihu Lake in 1989.**

**By 1990, 845,500 tons of waste rock had been deposited in the tailings reservoir. Very high levels of copper was detected leaching from these tailings during rainfall events. Lead, copper, zinc, cadmium, copper and nickel content increased with the highest levels recorded in the 1990's.**

**Reduced loading of heavy metals from mining waste has occurred since the late 1980's with the implementation of environmental protection measures.**



# **Maoniuping Rare Earths Mine, Sichuan Province**



**Jiangxi is the controlling shareholder of the second largest rare earth miner in China and had been involved in rare earth mining since 2008 at Maoniuping, Mianning County, Sichuan Province.**

**Maoniuping is located in south west China and has rare earth reserves of 3.17 million tonnes. Maoniuping is located in the Jinsha River catchment. Rare earth mining at Maoniuping has been associated with environmental pollution including an event in 2013 where heavy rains washed 100,000 tonnes of mineral waste into a tributary of the Jinsha River.**

**Sichuan produces about 29% of China's "Light Rare Earth Elements (LREE).**

**Many small scale mines in the Sichuan Province have contaminated rivers and agricultural fields. Rare earths also leave behind a radioactive legacy in mine tailings with one tonne of rare earths producing an equivalent amount of radioactive waste. There is also a massive problem with illegal mining in China fuelling black market demand.**

**Rare earth mining at Maoniuping has been associated with widescale environmental pollution. The company mainly produces rare earth concentrate, cerium enrichment, lanthanum oxide, lanthanum carbonate, cerium oxide, praseodymium neodymium oxide, yttrium-samarium-europium collecting substance, praseodymium neodymium, lanthanum cerium metal and NdFeB metal.**

# **Bakuta Tungsten Mine, Kazakhstan**



**The Bakuta Tungsten Mine (Boguty) is located east of Almaty a central city in Kazakhstan.**

**Bakuta apparently started production in 2020 and will be completed in 2022.**

**The mine is a large opencast mine and one of the top ten tungsten mine projects outside China. It was developed by former Soviet experts in the late 1960s.**

**Proven reserves are between 270,000 – 280,000 tons. In April 2019, Jiangxi signed an agreement to invest in the mine. China controls 83% of the world's Tungsten production. Tungsten waste contamination to the environment is a major problem.**

**China has about 51% of the world's Tungsten reserves and Bakuta is expected to supply about 10% of the world's annual output of Tungsten.**

# **Jiangxi International Operations**

## **Ecuador**

**Jiangxi purchased 6.3% of Solgold's share capital (\$155m shares) in November 2022. Solgold has the largest number of mining concessions in Ecuador and is planning the Cascabel Copper mine in the north of the country. Solgold also has interests in the Solomon Islands and Australia. The share purchase is Jiangxi's first entry into Ecuador**

## **First Quantum (Canada)**

**Jiangxi is the biggest shareholder (18.3%) of First Quantum Minerals Ltd who control Panama's controversial Cobre Mine. First Quantum and the Panamanian Government have been at loggerheads over mining royalties from the mine for some time.**

**First Quantum also operate Kanshanshi and Sentinel Copper Mines in Zambia, Cobre Las Cruces mine in Spain, Cayeli mine in Turkey, Guelb Moghrein mine in Mauritania, Ravensthorpe mine in Western Australia and Pyhasalmi mine in Finland. First Quantum also have interests at Haquira area in Peru and Taca Taca area in Argentina.**

**Jiangxi and First Quantum have also had a somewhat acrimonious relationship since Jiangxi bought a \$1.1bn equity stake in First Quantum in December 2019. First Quantum was seen as being a takeover target. Seven months later Jiangxi sold 1.2 million shares.**

## **Chile**

**Jiangxi, along with China Copper, Tongling Nonferrous and Jinchuan Group are supplied copper from Chile's Antofagasta company. Antofagasta has been the target of protests in Chile from both community and worker groups. Impacts on water resources and air pollution from tailings dams from been highlighted.**



# Afghanistan



**On September 13 2021, Taliban officials visit Mes Aynak copper mine with China's Jiangxi Copper and Metallurgical Corp of China representatives in Logar province, Afghanistan. Photo: Reuters**

**In 2007, Jiangxi Copper, partnered with Metallurgical Corporation of China (MCC), a subsidiary of state miner-trader Minmetals, signing a \$2.83 billion deal with the Afghan government to mine the Mes Anyak project for 30 years extracting an estimated \$100bn worth of copper.**

**Mes Anyak is located 40km southeast of Kabul and is reported as being the world's second largest copper deposit. Jiangxi holds a 25% interest in the project.**

**The Mes Aynak deposit sits underneath sites of national and cultural heritage going back 5000 years. Highly significant buddhist monuments are present and excavation of archaeological sites has taking longer than expected.**

**Infrastructure for the mine could take 5-6 years to build and there are ongoing safety concerns. Eight security force members were killed at a checkpoint at the mine in 2020.**

**Mes Anyak has also been under contractual disagreements and there have been problems with securing phosphate sources which are required for processing of copper ore.**

**Problems with resettling people that live in the mining area have been ongoing due mainly to lack of resources to build a new town.**

**The mine will also require a railway to be built between the mine and Kabul and from Kabul to Torkham on the Pakistan border. Transporting coal for the use on a new constructed coal-fired plant is also a major issue.**

**A documentary film '<http://www.savingmesaynak.com/> was released in 2014 winning a number of awards around the world.**

## **Albania**

**In 2014 Jiangxi Copper, partnered with CRM International (Beijing) and Beijing Metal Challenge Trading Co purchased a 50% interest (\$65 million) in Turkey's Nesko Metal Sanayi Ve Ticaret Anonim Siketi for \$65mn. In 2017 the Albanian Government extended the concession agreement until 2043. The 2017 concession agreement also included a copper enrichment facility at Mjeda, Shkodra.**

**Nesko Metal mines copper in Albania through a locally registered company Beralb SHA. Copper is regarded as the second most important mineral in Albania and this new deal meant that most of the Albanian copper reserves are now controlled by Jiangxi including mines at Munela, Lakros, Karma and the copper enrichment facility at Fush-Arzi.**

**Beralb SHA produce about 50,000 tonnes concentrates per year. The high environmental impact and river pollution of copper mining and copper separation plants in the Northern Albania mining region have been confirmed by scientists.**

## **Malaysia**

**In 2019, Jiangxi announced plans to build a scrap copper processing plant in Sabah, in the Malaysian island of Borneo, but these plans were terminated in 2021.**

# Burma

In 2012 two staff members from Myanmar Jiangxi Copper Ltd in a joint venture with the Burmese Military owned Myanmar Economics Holding Company were alleged to have been arrested over the production of 338 tonnes of copper.

Relatives alleged that the two staff were detained at Sarlingyi police station. The Sabetaung and Kyaysintaung copper mines are located to the west of Monywa where local residents have complained about environmental and health problems caused by the mining for more than 4 decades.

It appears that Jiangxi no longer has an interest in Burma.

# Zambia

Oct 14 2019: China Minmetals, Jiangxi Copper and Zijin Mining are among the firms weighing to bid for Canadian mining firm Barrick Gold’s Lunwana copper mine in Zambia.

