



What has changed in the copper industry:

Bumps, challenges or new trends?

Jorge Cantallopts, executive director CESCO
CEO Summit – Asia Copper Week 2023
November 16th.

CESCO

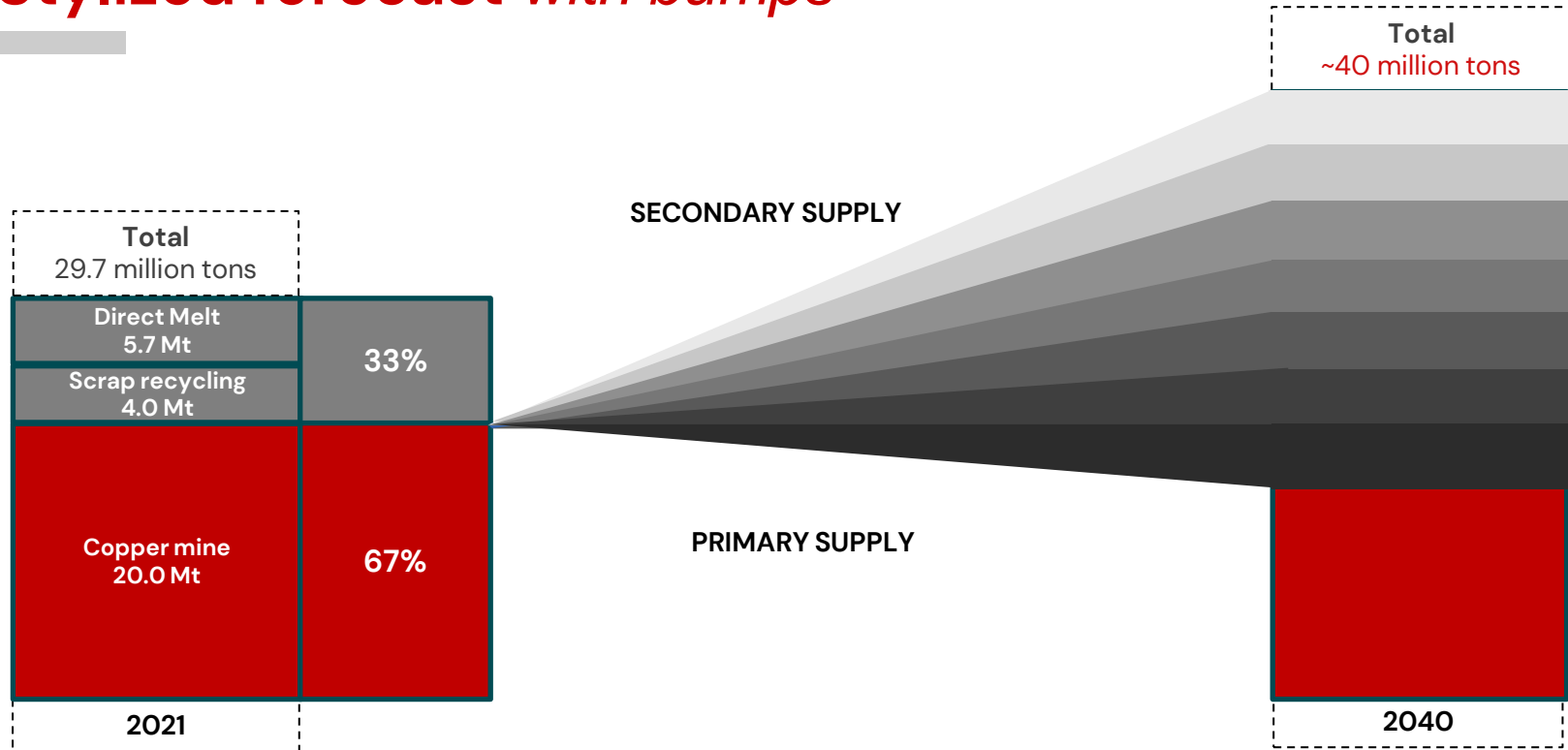
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Context

In a world of rapid and continuous change, understanding how the **copper mining industry** is **adjusting** is key. This presentation seeks to comprehensively analyze the **current bumps, challenges** and **trends** in a global scale. Moreover, it aims to foster a dialogue on the strategies employed by stakeholders, such as governments and mining companies, to effectively address these challenges.



Stylized forecast *with bumps*



Bumps, challenges, and trends



Geopolitical risks



Political uncertainty



Mergers and acquisitions



Financing projects



Artificial Intelligence



Mining permits



Value chain traceability



Sustainability and climate change impacts

Geopolitical risks

The screenshot shows a news article interface. At the top, there is a navigation bar with a hamburger menu icon, a search icon, and a 'Subscribe' button. Below the navigation bar, the article title 'Latin America could become this century's commodity superpower' is displayed in a large, black, serif font. Above the title, the text 'The Americas | Raw potential' is visible. Below the title, a sub-headline reads 'A growing, greening world will be ravenous for Latin America's commodities. Will it deliver?'. On the left side of the screenshot, there are several logos and text elements: 'Mining' at the top, 'GSCA' with a globe icon, 'The Economist' in a red box, 'Goldman', 'NDTV', 'News > Opinion >', 'Opinio', 'Coloni', and a profile picture of 'Bibek Det'.

Mining

GSCA

The Economist

Goldman

NDTV

News > Opinion >

Opinio

Coloni

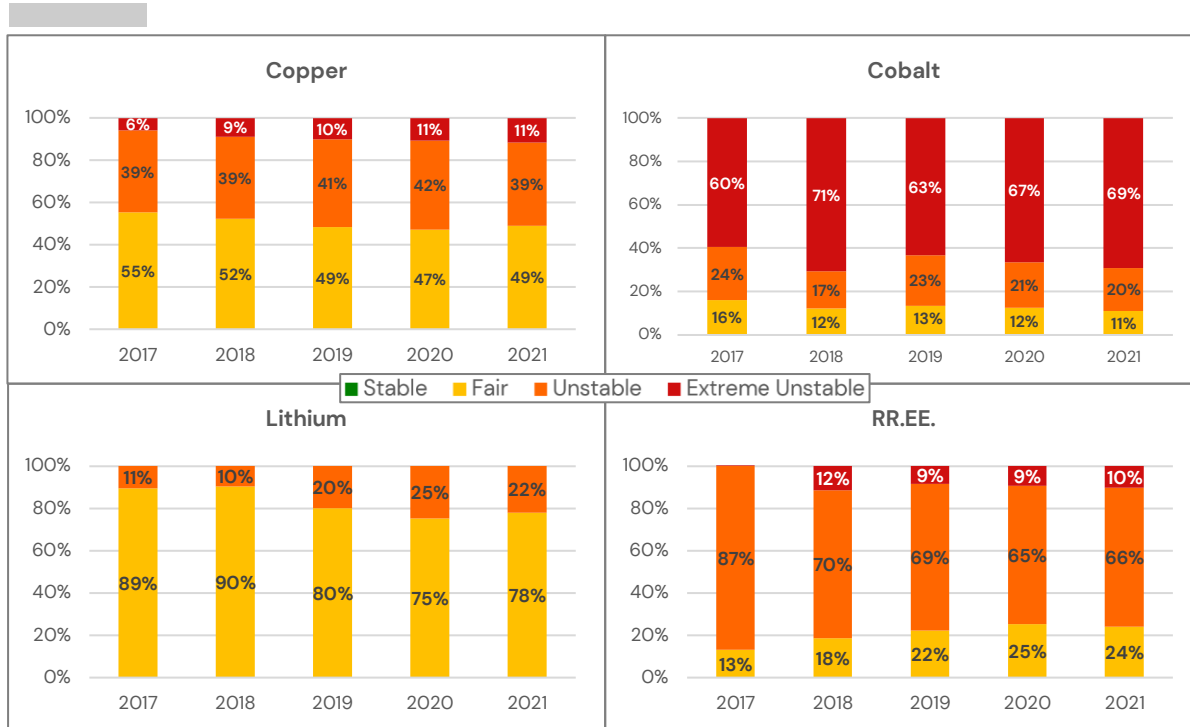
Bibek Det

The Americas | Raw potential

Latin America could become this century's commodity superpower

A growing, greening world will be ravenous for Latin America's commodities. Will it deliver?

Political uncertainty

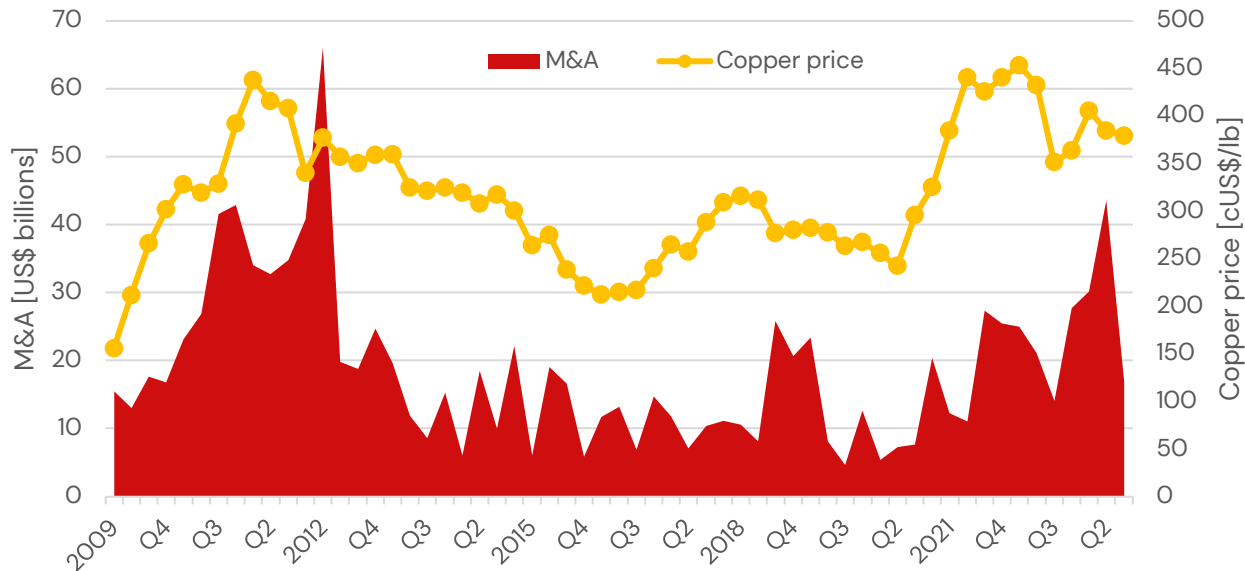


Principal trends:

- Participation of countries with political uncertainty in the production of critical minerals has increased.
- Today the need for new minerals is assuming that risk as part of mining development.
- Could investing in countries with political uncertainty reduce inequality and prevent mass migrations, for example?

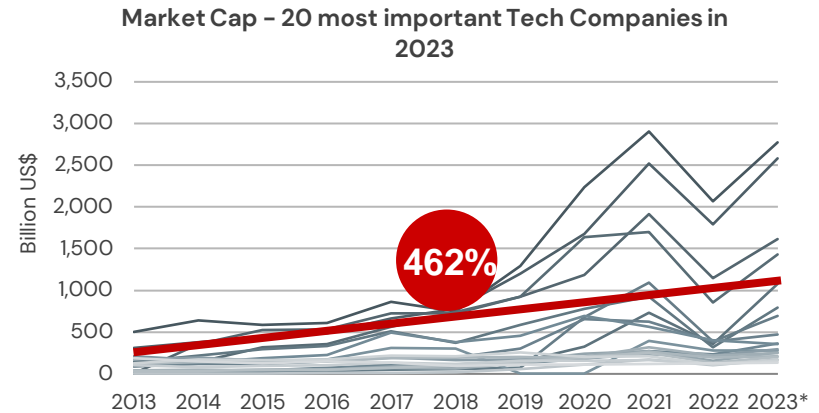
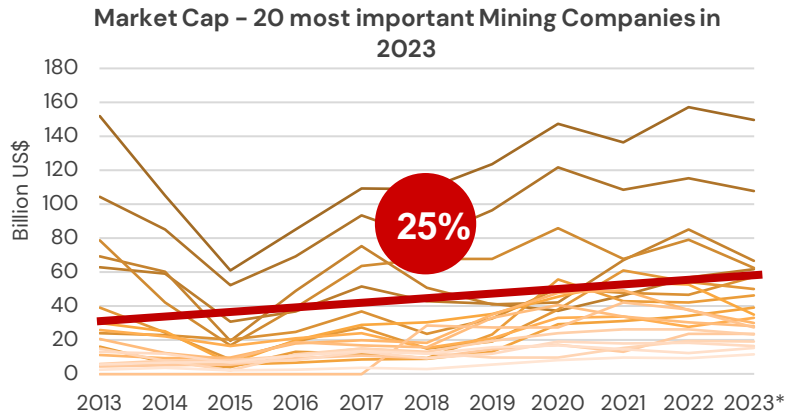
Mergers and acquisitions

M&A Q1 2019 – Q3 2023



Despite lingering demand weakness, market players are seeking deals to expand their copper portfolios with the expectation that lower levels of historic investment into the supply side will offer considerable future upside.

Financing projects



Source: Self-elaborated at CESCO, with data from Ycharts, 2023.

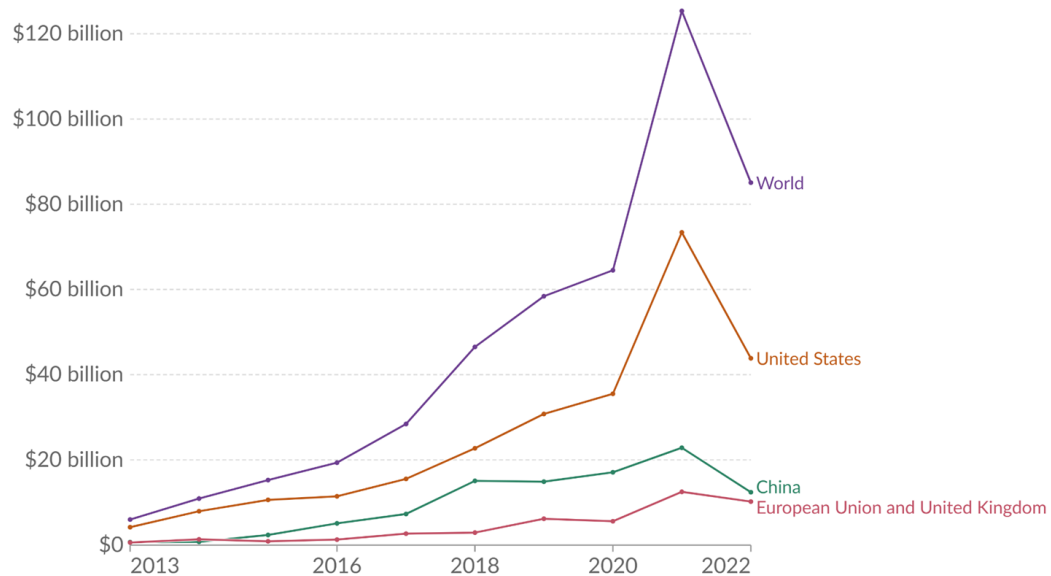
Recently, some investment groups have stated that the problem with mining activity is not the lack of projects, it is the lack of financing for them.

When reviewing how the market capitalization has grown in the last 10 years of the 20 main mining companies in the world, and comparing it with the 20 main tech companies, the former have remained relatively stable with a growth of 25%, while the second have increased almost 5 times.

Artificial Intelligence

Annual private investment in artificial intelligence

Includes companies that received more than \$1.5 million in investment. This data is expressed in US dollars, adjusted for inflation.



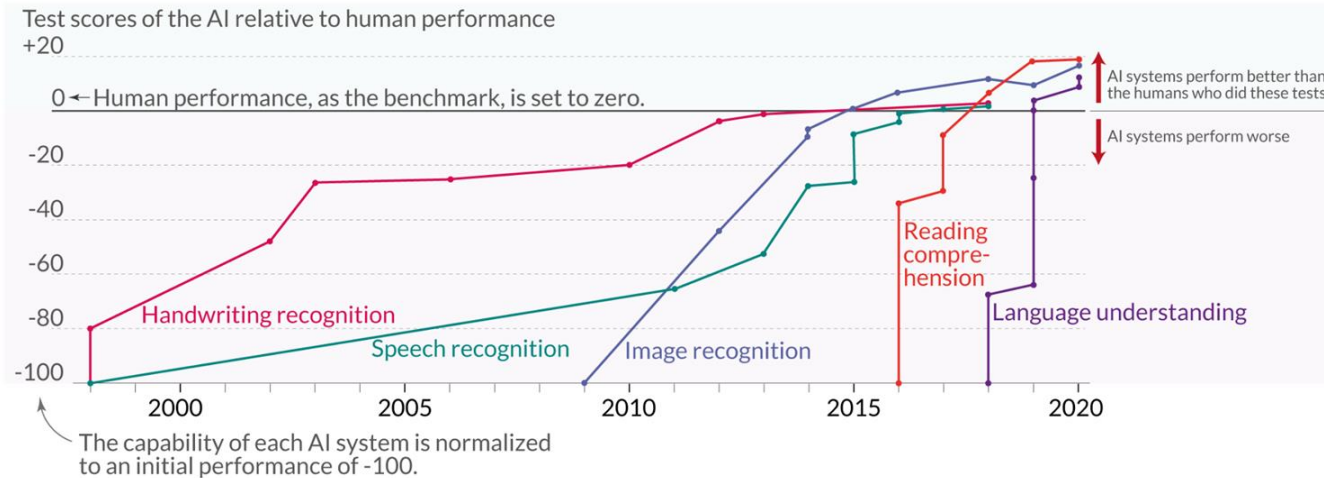
Data source: NetBase Quid via AI Index Report (2023)

[OurWorldInData.org/artificial-intelligence](https://ourworldindata.org/artificial-intelligence) | CC BY

Note: Data is expressed in constant 2021 US\$. Inflation adjustment is based on the US Consumer Price Index (CPI).

Artificial Intelligence

Language and image recognition capabilities of AI systems have improved rapidly

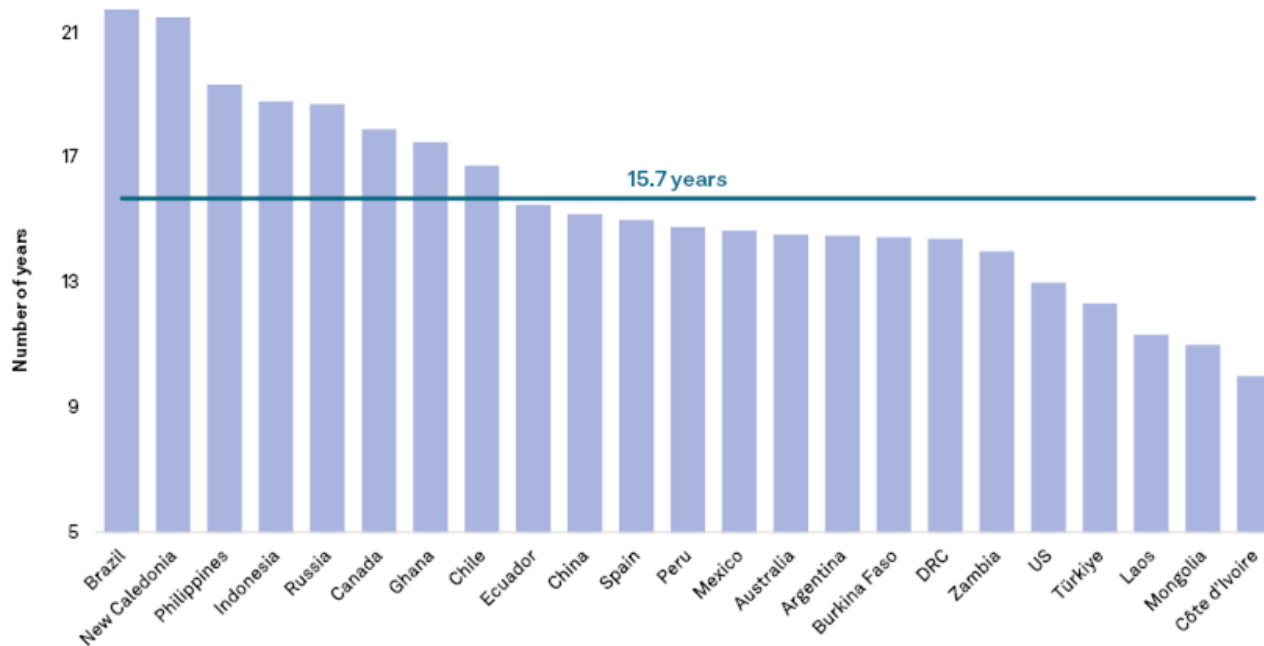


Trends for mining:

- Capabilities growth.
- Efficiency.
- Exploration.
- Optimization.
- Automation and robotics.

Mining permits

Discovery to production average time 15.7 years. Primarily because of permits.



As of Apr. 4, 2023.
DRC = Democratic Republic of the Congo.
Includes countries with at least two mines.
Source: S&P Global Market Intelligence.
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Value chain traceability

From extracting raw material to delivering products to customers. Seek to secure end-to-end standards.
Challenges:



Complex value chain in mining.



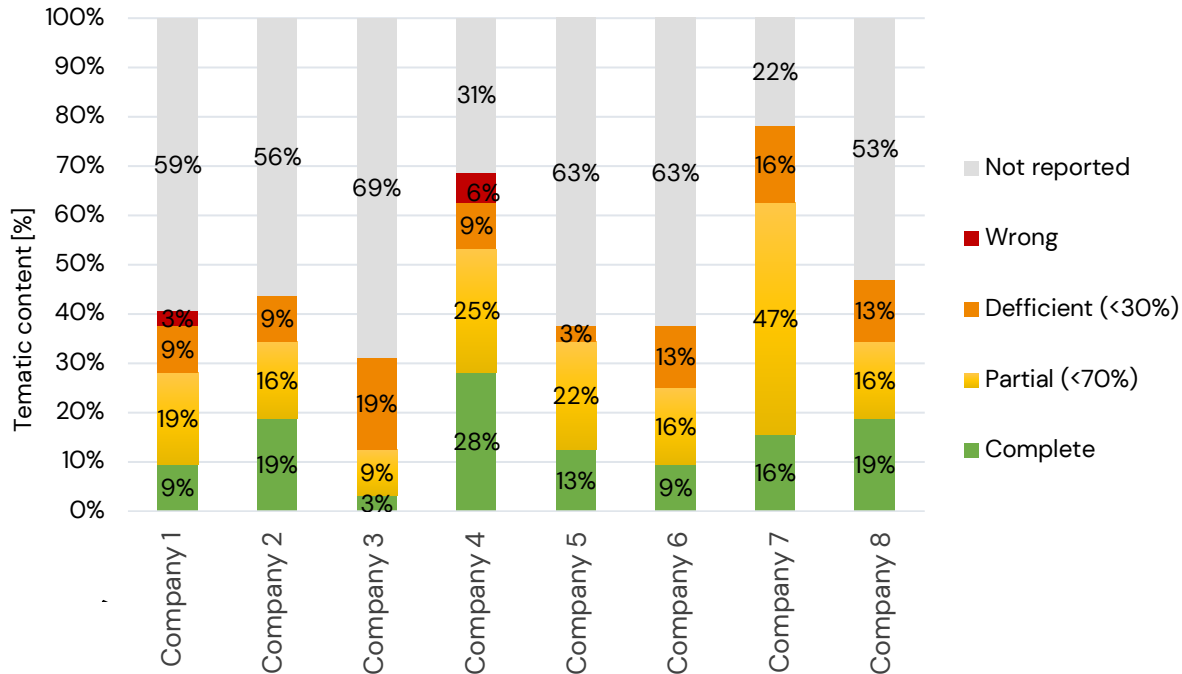
Global vs local impacts.



Standardization.



Sustainability



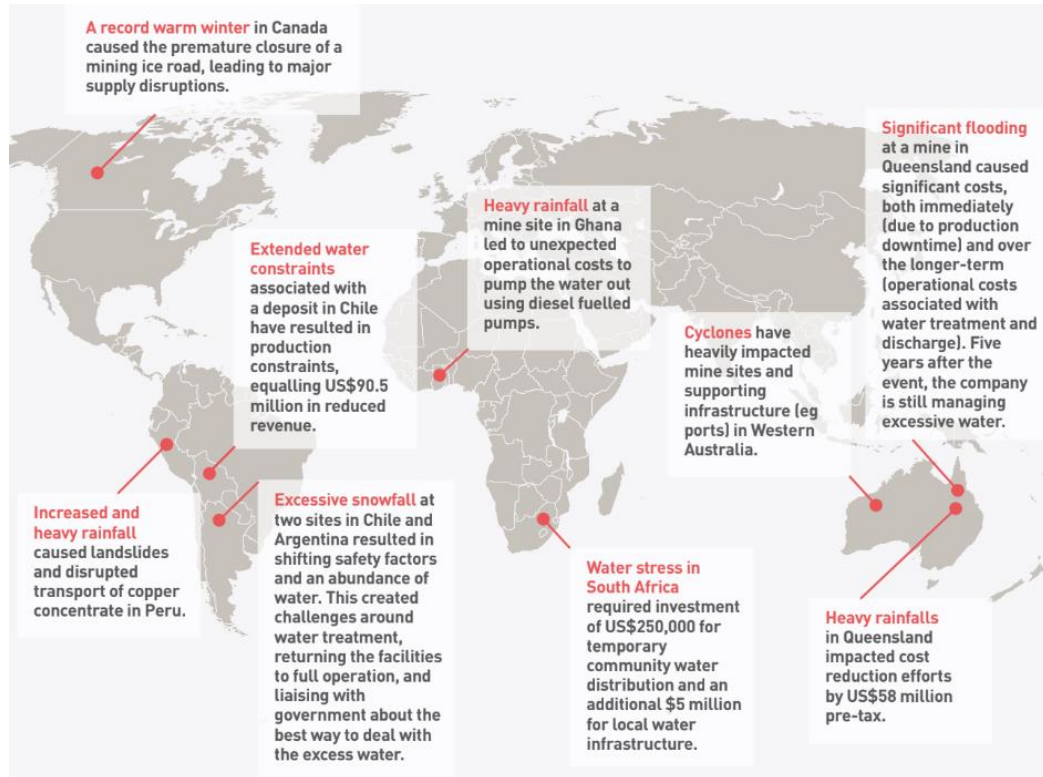
An analysis of sustainability reports conducted by CESCO showed that these reports do not provide complete data for each indicators.

The graph illustrates the reportability of environmental indicators for 8 copper companies in Chile.

Challenges:

- Transparency.
- Accountability.
- Stakeholders trust.

Climate change impacts



Source: ICMM. 2019.
Adapting to a
changing climate.

What has changed in the copper industry?

Question for the dialogue

- How these bumps, challenges, and trends **change the copper mining industry**?
- Are they **transitory** or **permanents** challenges?
- What **strategies** are countries or mining companies presenting to address these challenges?
- How the mining industry **adapts** to address these challenges?
- Is the copper mining industry able to adapt to an increase in the **secondary copper supply**?



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