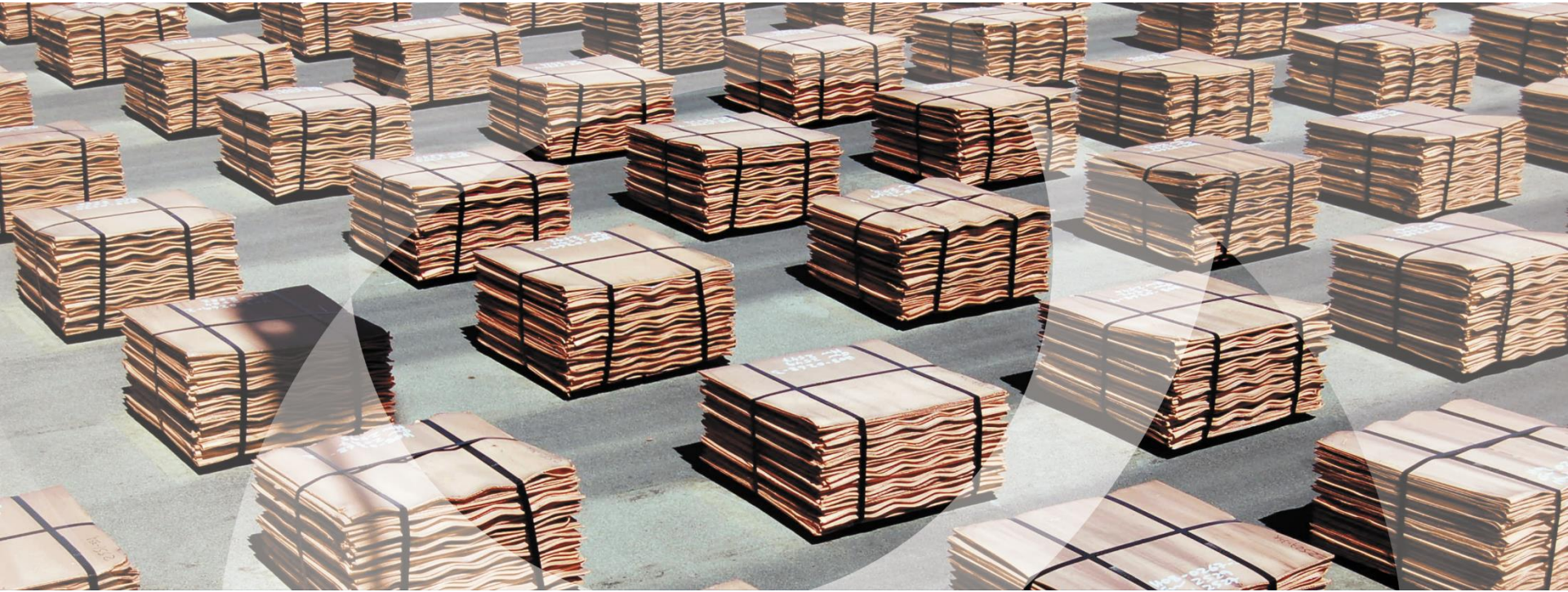
Copper Social Sustainability Potential



Antitrust Guidelines for Copper Industry Trade Association Meetings

The following guidelines with respect to compliance with antitrust laws of the United States, Japan and European Community[1] are intended to govern the conduct of participants in copper industry trade association meetings, both at the meeting itself and in informal discussions before or after the formal meeting.

Price: Competitors should not discuss future prices (including terms of sale) of their products. There is no blanket prohibition against the mention of or reference to current or past prices but limits must be observed. Such references or mentions should occur only when necessary in connection with the development of association programs. For example, reference to a particular price level in comparing the cost of a copper product to a competing product is permitted. Whenever possible, such references should be discussed in advance with legal counsel.

Competitive Information: Competitors should not discuss the market share of a particular copper producer or copper fabricator's products. Furthermore, nothing should be said at a meeting which could be interpreted as suggesting prearranged market shares for such products or producer production levels. The overall market share of copper products may be discussed with regard to competition with non-copper products and general market acceptance.

New Products: Competitors should not encourage or discourage the introduction of a new product by another competitor or reveal a particular copper company's plans to change the production rate of an existing product or to introduce a new product. No company should disclose to another company whether it is in a position to make or market a new product. New products may be discussed in a technical manner or from the standpoints of competition with non-copper products and general market acceptance. In addition, proposed methods for and results of field and laboratory testing can be considered.

The Role of Legal Counsel: Legal counsel attends association meetings to advise association staff and other meeting attendees regarding the antitrust laws and to see that none of the matters discussed or materials distributed raise even the appearance of antitrust improprieties. During the course of a meeting, if counsel believes that the discussion is turning to a sensitive or inappropriate subject, counsel will express that belief and request that the attendees return the discussion to a less sensitive area.

A paper entitled 'Copper Industry Trade Associations and Antitrust Laws' is available upon request.

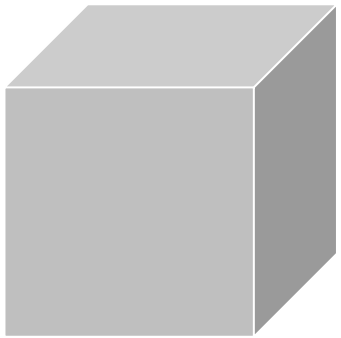
10/92, 5/93, 10/10

1. Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.

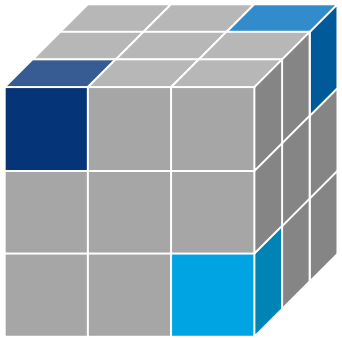
This study aims to assess the socio-economic impact of the copper mining sector in areas of influence

We have followed a methodological approach to assess the global impact of the sector

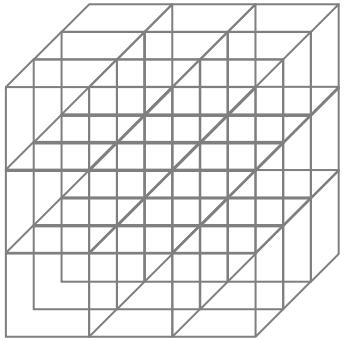
Context of the copper mining sector



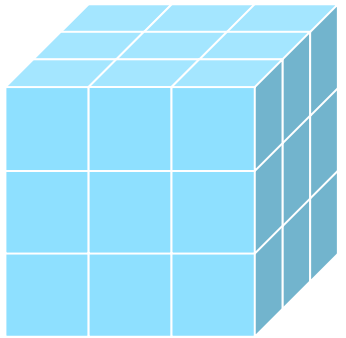
Socio-economic impact assessment



Enabling socio-economic policies & practices



Socio-economic impact extrapolation

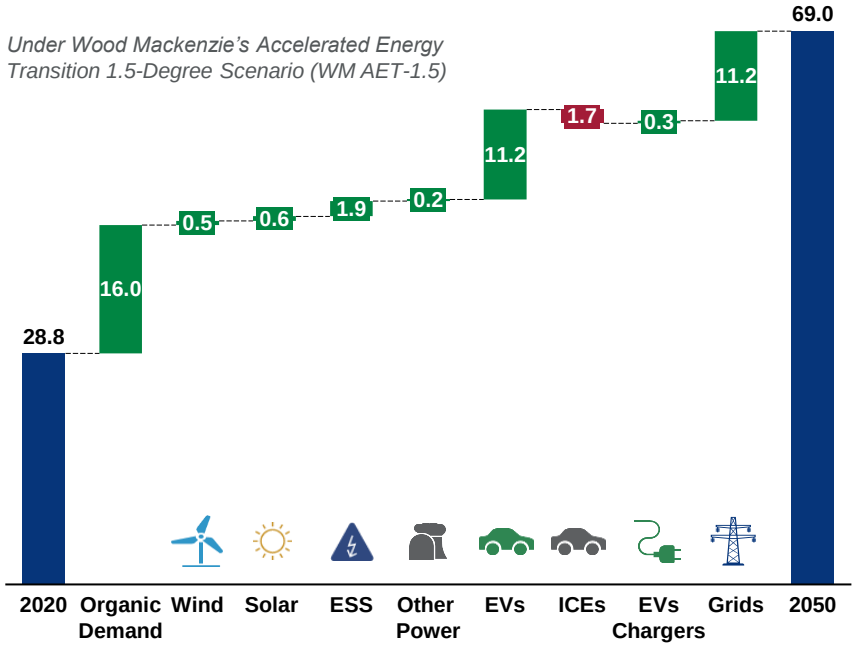


1. Context of the copper mining sector

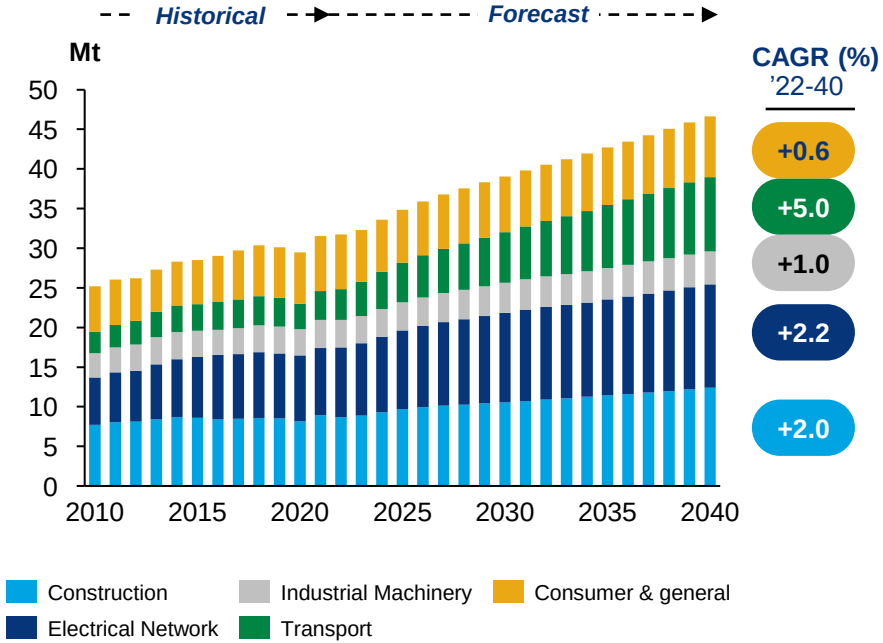
While organic growth will remain, global copper demand is expected to be driven by energy transition-related sectors especially EVs and Grids

Copper consumption in the transport sector is expected to accelerate through to 2040

Copper demand growth by sector (in Mt)



Copper consumption by industry sector

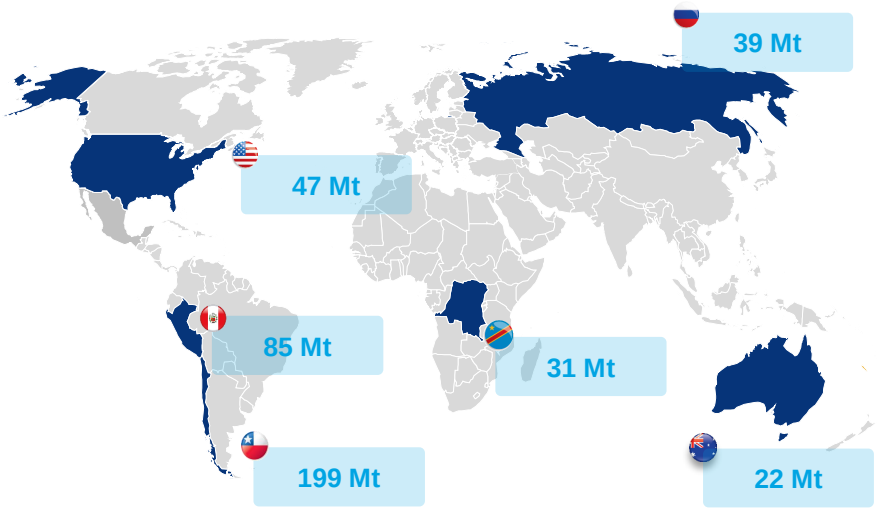


Source: Wood Mackenzie analysis

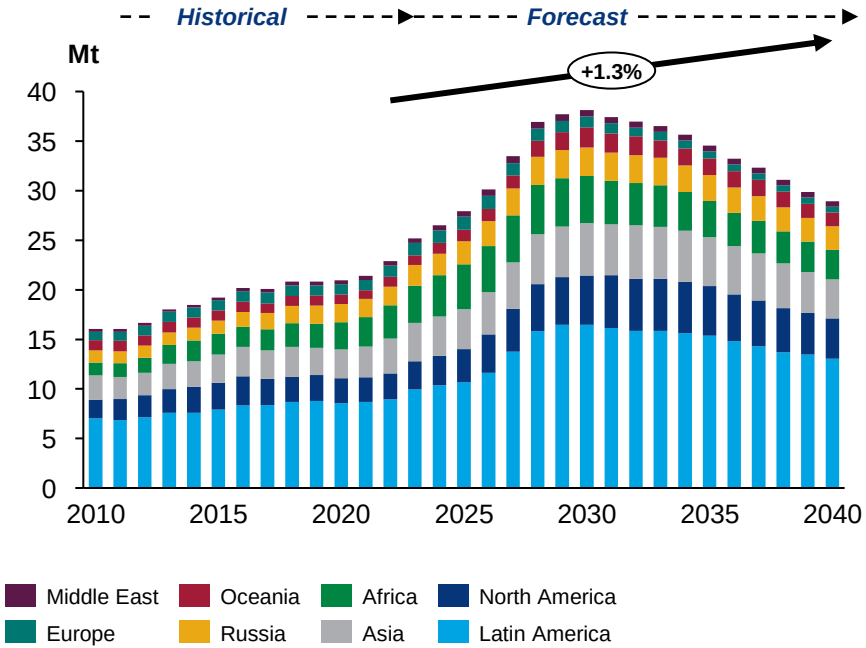
Copper mine production is dominated by Latin America, with the region accounting for ~39% of global supply in 2022 as it holds most reserves

The total primary copper production is expected to grow at ~1.3% per year through 2040

Global copper reserves, top-ranked countries, 2022



Copper mine production by region



Source: Wood Mackenzie analysis

Meeting future copper supply requirements will entail investment in countries that exhibit significant ESG risk with long lead times

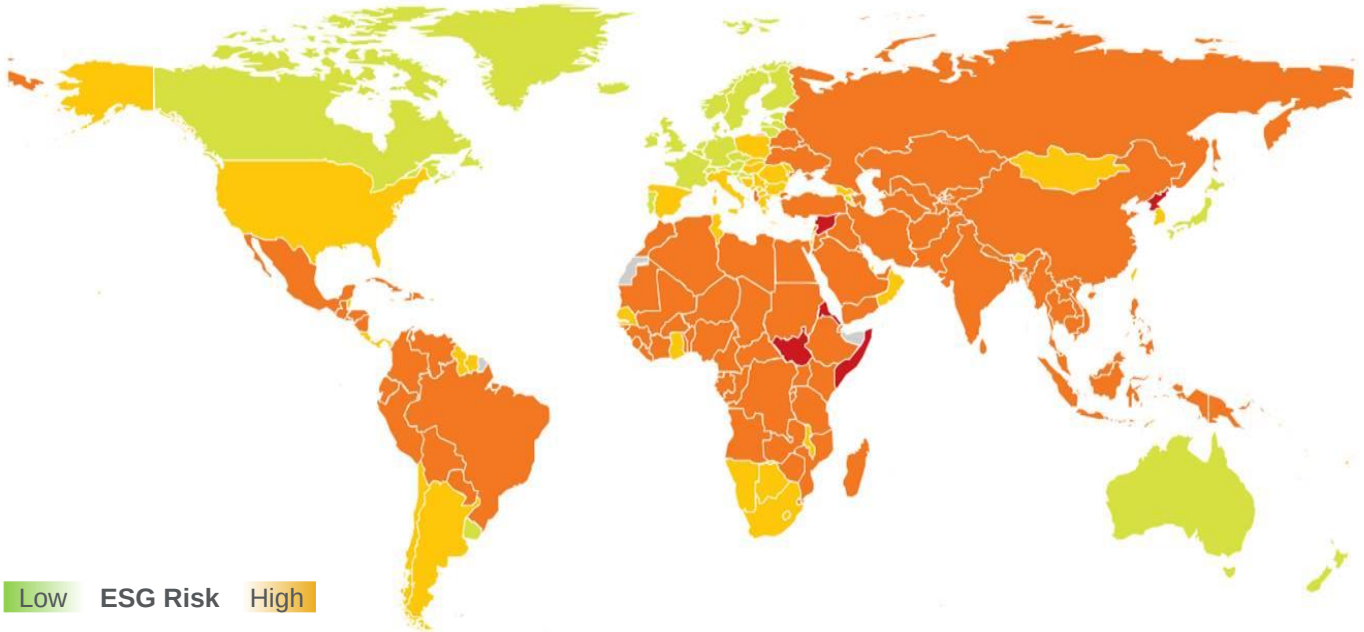
Few mining jurisdictions offer low ESG risk opportunities

Key ESG factors impacting the copper mining industry

Environmental:
- Biodiversity disruption
- Deforestation
- Water stress
- Climate change

Social:
- Indigenous people
- Human rights
- Child labour
- Freedom of association

Governance:
- Democratic governance
- Public corruption
- Property rights
- Judicial independence



Source: Wood Mackenzie Analysis. Verisk Maplecroft, 2022

In the process, the copper mining industry generates significant socio-economic value with a long-lasting impact on our society

Impacts can be grouped in two categories: elevating livelihoods & distributing economic value

Key socio-economic impacts of copper mining

Elevating Livelihoods 	**Employment Quality**	**Provide equal & safe employment**	1	Create jobs which **promote gender diversity, social inclusion, and best-in-class occupational health & safety**
	Household Income	**Increase household income & benefits**	2	**Provide financial security & social stability** to the workforce and their families, hence lifting the economic standing of the community
	Capacity Building	**Advance workforce' skillset & careers**	3	**Develop the workforce's knowledge & know-how**, allowing to grow within the company and transfer those skills to other sectors
Distributing Economic Value 	**Institutional Reinforcement**	**Contribute to government revenues**	4	**Reinforce government's stewardship** over the country's mineral resources, and the economic value their extraction generates
	Industrial Diversification	**Support the local industrial ecosystem**	5	Leverage mining-related investments to **catalyse the sustainable development and economic diversification** of the region
	Community Development	**Sustain the community's development**	6	**Establish a positive footprint on the community** with lasting benefits on infrastructure, health, education and the economy

Source: Wood Mackenzie analysis

2. Socio-economic impact assessment

We have taken a closer look at three operations to assess operational best practices and determine the socio-economic value distributed

We have established a screening methodology to narrow down the most relevant operations

Criteria 1

Is the asset part of a global company or a national champion?

724 assets ▼ 524 assets

Criteria 2

Is the LOM > 15years with a production capacity > 150ktpa?

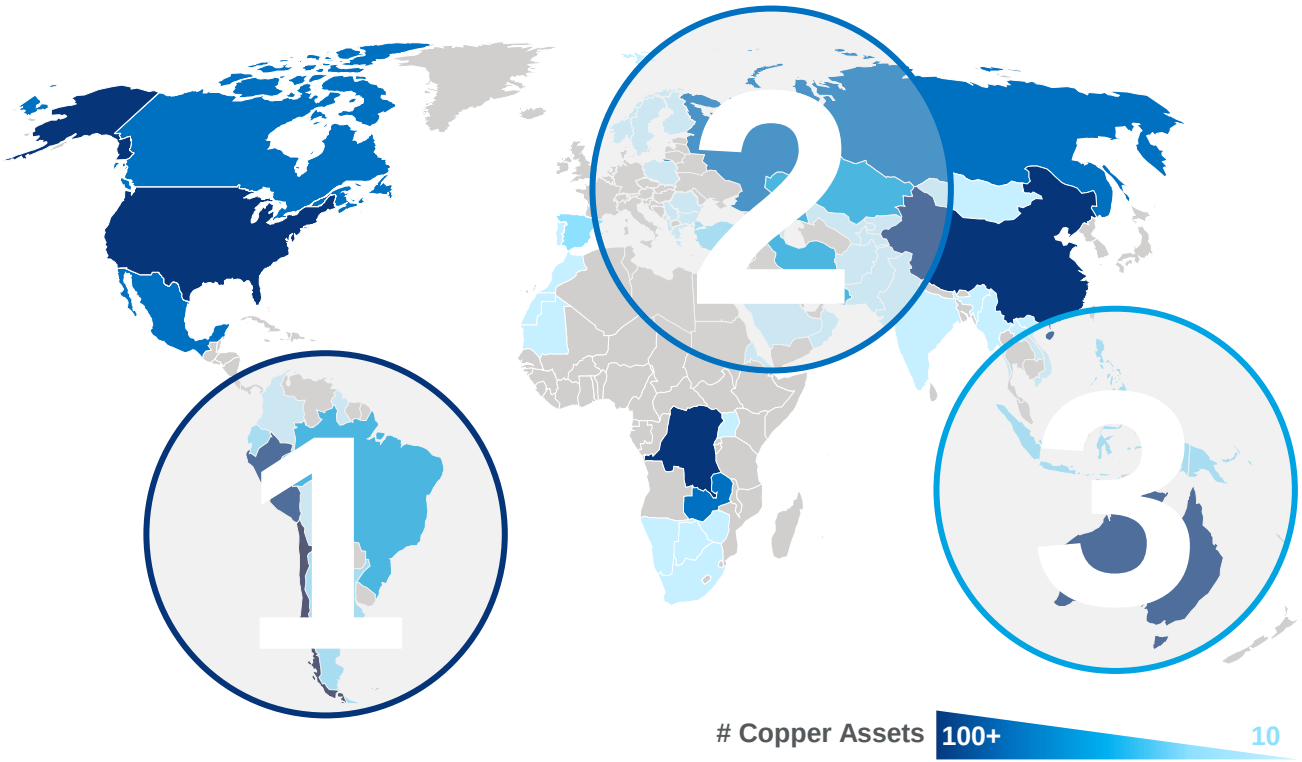
524 assets ▼ 43 assets

Criteria 3

Is the company part of the International Copper Association?

43 assets ▼ 3 assets

Other considerations:
- Regional diversity
- Data availability
- Data segregation
- …



Source: Wood Mackenzie analysis

Our two-step assessment will aim to demonstrate the positive socio-economic trend and estimate the subsequent lifetime benefits

We will highlight success stories which could inspire replication across the sector

1 Establish positive socio-economic impact over time

2 Estimate lifetime socio-economic benefits

Socio-economic Impacts

- Employment Quality
- Household Income
- Capacity Building
- Institutional Reinforcement
- Industrial Diversification
- Community Development

Business Disclosures

Absolute Metrics

Precise measures of key parameters

Relative Metrics

Calculated measures based on different figures

Selected Benchmarks

Government

THE WORLD BANK

Industry

ICMM International Council on Mining & Metals

Natural Resource Governance Institute

Responsible Mining Foundation

Infrastructure Development

Railways
Ports
Airports
Roads

Health Facilities

Hospitals
Clinics
Beds
Landfills
Doctors
Patients

Educational Resources

Schools
Classrooms
Teachers
Students
Scholarships

Economic Diversification

Agriculture
Fishery
Textile
Carpentry

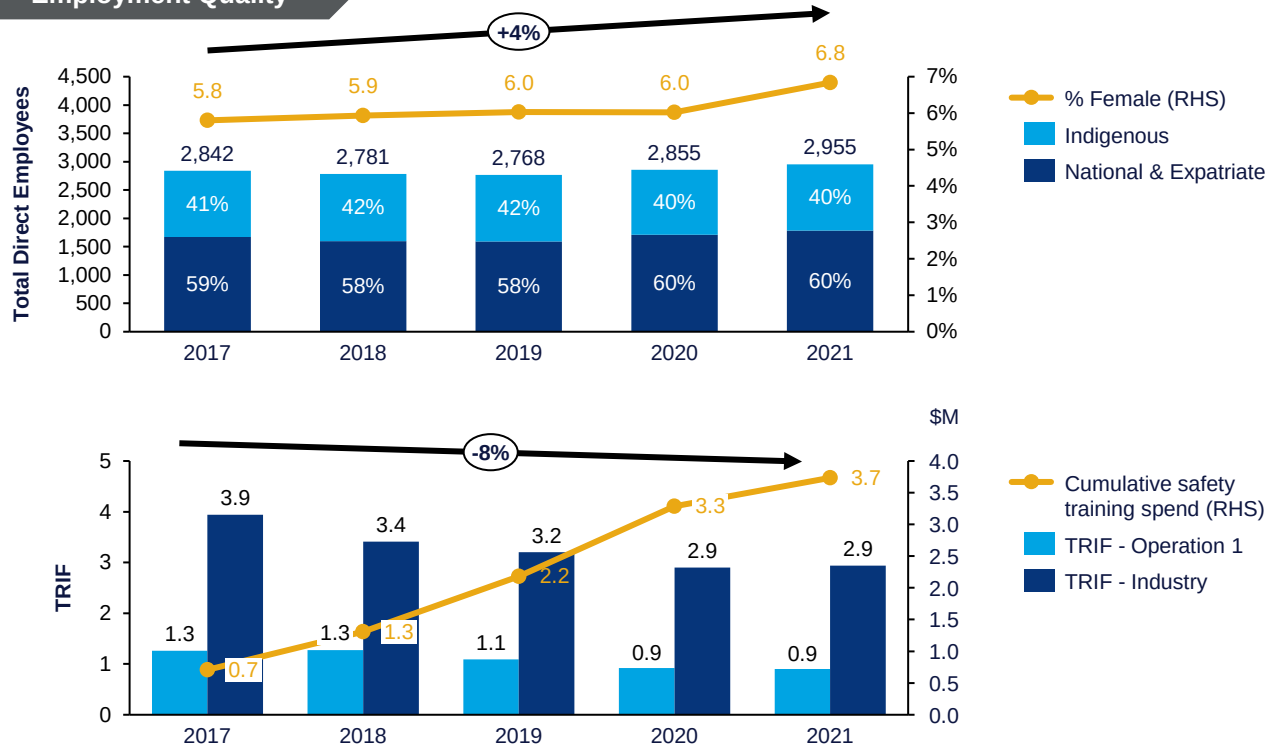
Source: Wood Mackenzie analysis

Operation 1 displays consistently growing indigenous employment figures with best-in-class safety records

Female employment is growing, but remains relatively low at ~7%

1

Employment Quality



Relevant metrics

- Total number of direct employees
- Proportion of female / indigenous / national / expatriate workforce
- Cumulative safety training spend
- Total recordable injury frequency (TRIF) rate

Key takeaways

- Direct employment has been consistently increasing (~4%)
- 40% of employees are indigenous to the specific region
- The female workforce makes up 7%; relatively low but growing
- Safety spend has been steadily increasing, totaling $3.7M
- The TRIF is below industry average and has been steadily decreasing (~8%)

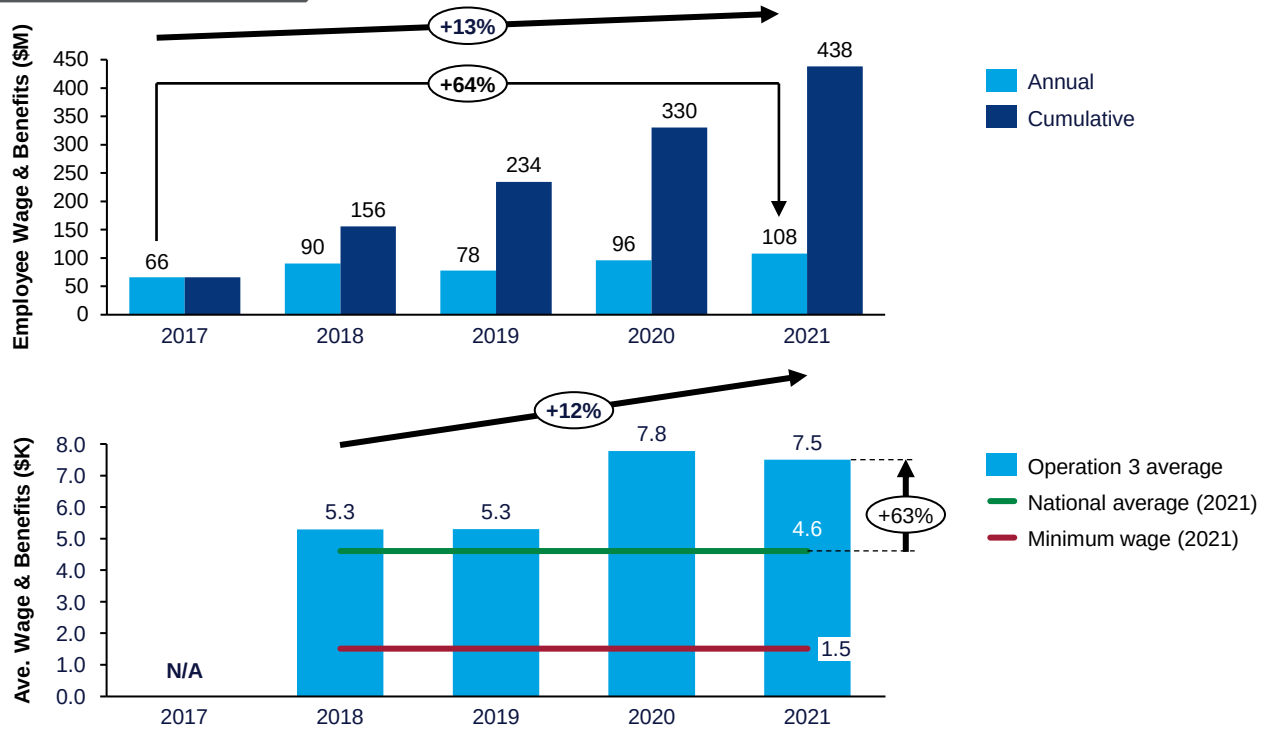
Source: Wood Mackenzie analysis, ICMM - Safety Performance Report 2021. Note: TRIF = Total Recordable Injury Frequency rate

Between 2017–2021, Operation 3 has contributed over $400M in wages & benefits, with the 2021 wage ~63% greater than the national level

Operation 3 was able to increase wages in 2020, despite the impact of COVID-19

2

Household Income



Relevant metrics

- Employee wages & associated benefits spend
- Average employee wage & associated benefits (calculated)
- Average national wage
- Minimum national wage

Key takeaways

- Employee wages & associated benefits have been consistently increasing (~13%)
- The 2021 spend is 64% greater than the 2017 spend
- The (calculated) average wage & associated benefits per employee is 63% greater than the national average wage, and significantly above the national minimum wage

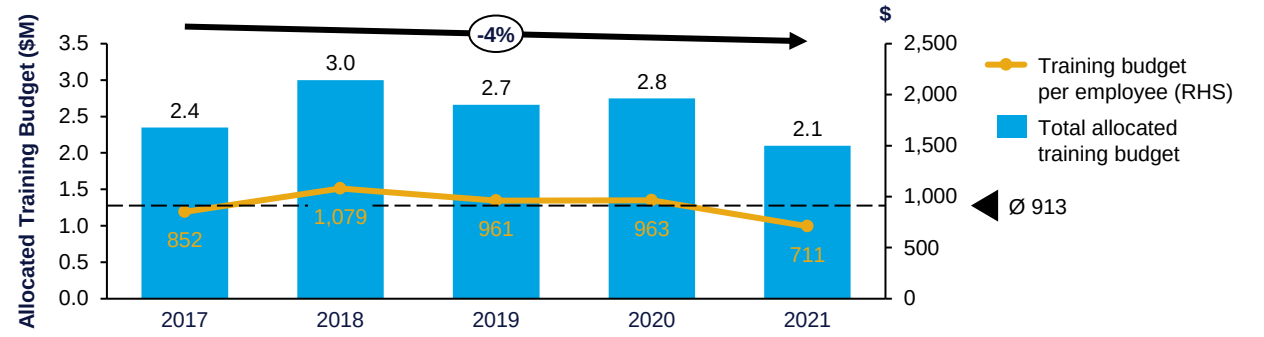
Source: Wood Mackenzie analysis, The World Bank

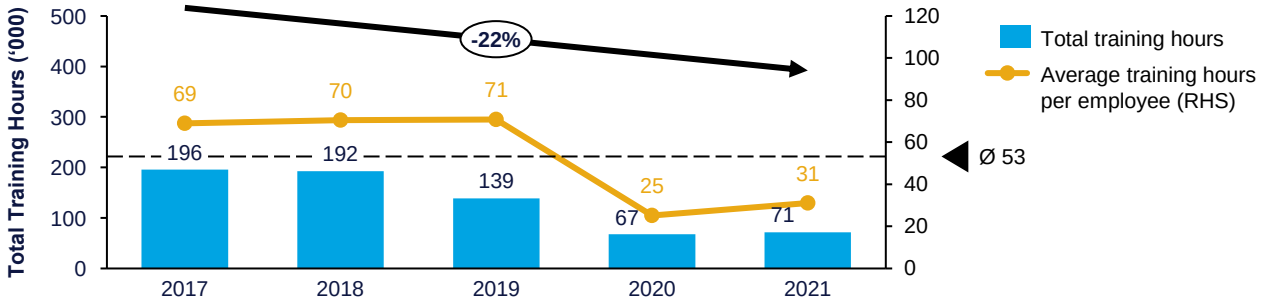
Cumulatively, Operation 1 has invested over $13M in employee trainings over 2017-2021, or average of ~$913 per employee per year

COVID-19 has triggered a revision of the learning plan, with a shift to virtual delivery

1

Capacity Building





Relevant metrics

- Total allocated training budget
- Average allocated training budget per employee
- Total training hours
- Average training hours per employee (calculated)

Key takeaways

- An average of $900/year is being spent to train each employee
- The training budget allocation has remained relatively stable despite the impact of COVID-19
- Post-COVID, traditional learning plans have shifted from in-person to virtual, which optimized costs
- Each employee spends an average of 53 hours in training per year

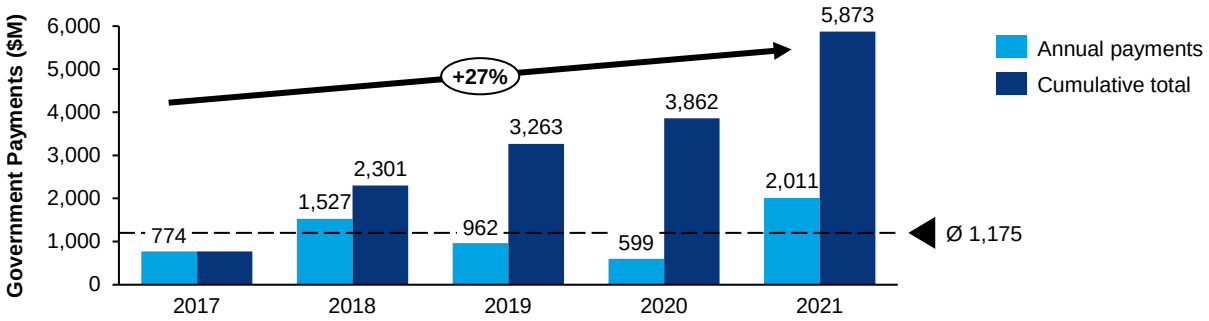
Source: Wood Mackenzie analysis

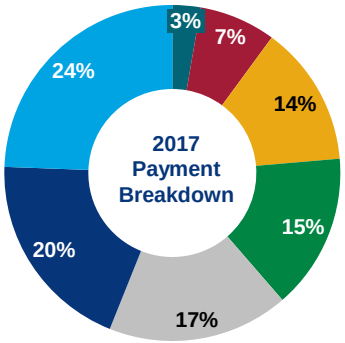
Between 2017–2021, Operation 2 has contributed ~ $6B in payments to the government, predominantly as taxes and royalties

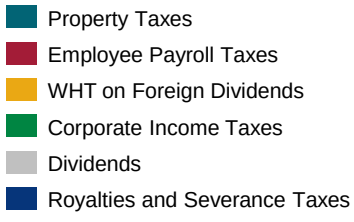
Corporate income taxes accounted for ~37% of government payments in 2021

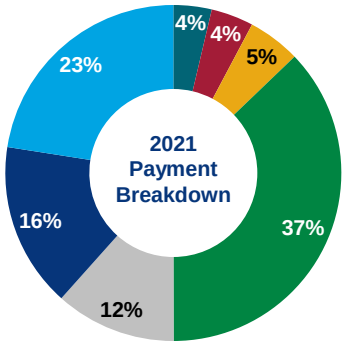
3

Institutional Reinforcement









Relevant metrics

- Total government payments (annual and cumulative)
- Government payments breakdown (2017 vs. 2021)

Key takeaways

- A total of ~$5.9B has been paid to the government over 5 years, or an average of $1.2B per year
- Yearly payments have been steadily increasing (~27%)
- Income tax in in 2021 represented 37% of government payments compared to 15% in 2017.
- After income tax, the largest contributors are Royalties and Dividend payments, respectively

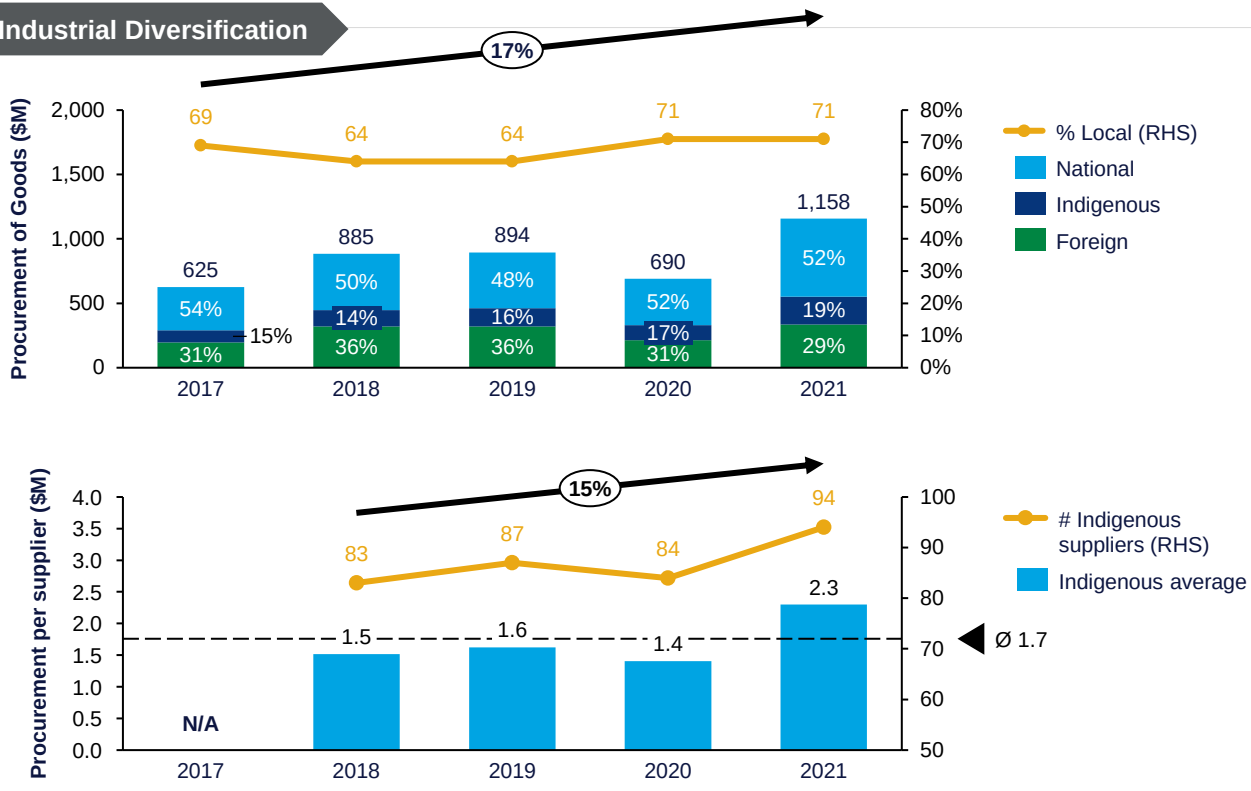
Source: Wood Mackenzie analysis

Operation 3 has procured almost $4B worth of goods & services for its operations since 2017, the majority of which is sourced locally

Operation 3 procures from over 94 local suppliers and has spent ~$1.7M per year with each

2

Industrial Diversification



Relevant metrics

- Total procurement spend
- Proportion of indigenous / national / foreign procurement spend
- Number of indigenous suppliers
- Average indigenous suppliers spend

Key takeaways

- Total procurement spend has been steadily increasing (~17%)
- The local procurement spend (national + indigenous) has remained relatively stable (~68%)
- The number of indigenous suppliers has been consistently growing (from 83 to 94 in 2021)
- An average of $1.7M has been spent on indigenous suppliers, a steadily growing figure (~15%)

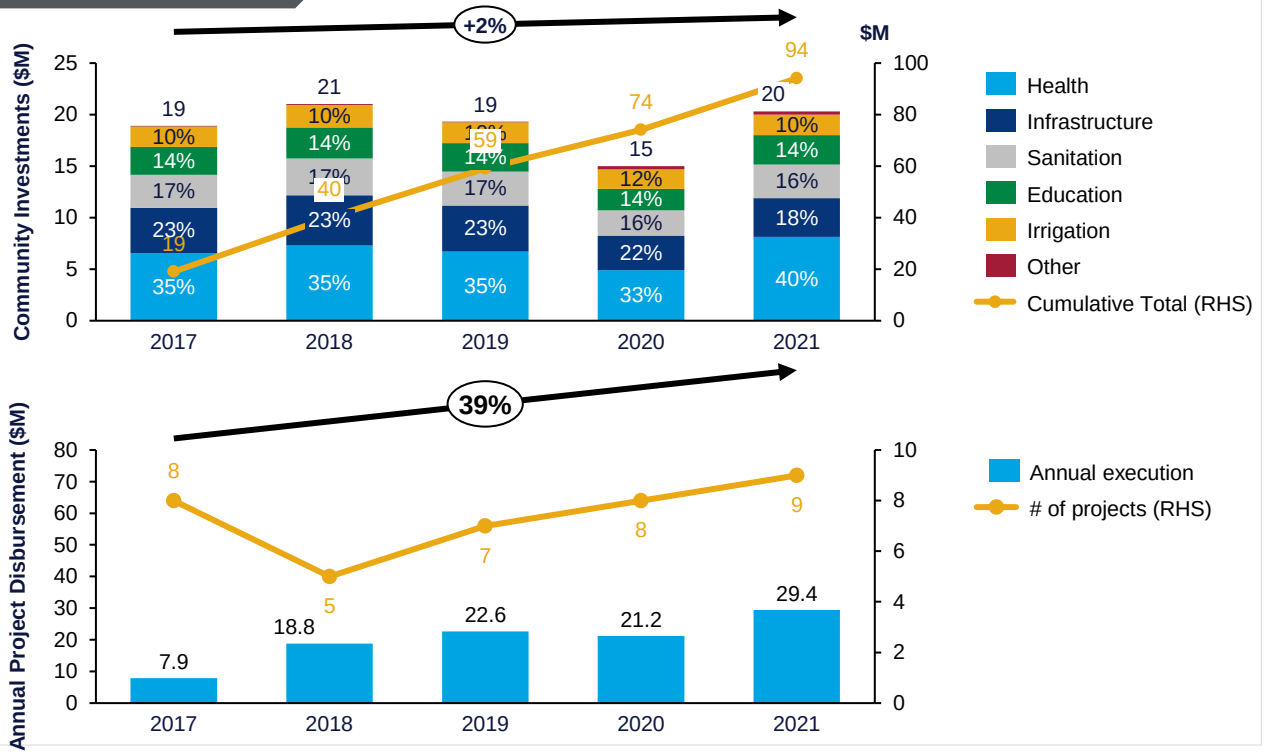
Source: Wood Mackenzie analysis

Between 2017-2021, Operation 1 has invested ~$94M in the community across sectors, of which health, infrastructure, sanitation, education

Those investment commitments consistently translate into practical projects executions

1

Community Development



Relevant metrics

- Total community spend
- Community spend breakdown
- Community projects disbursement
- Community projects execution

Key takeaways

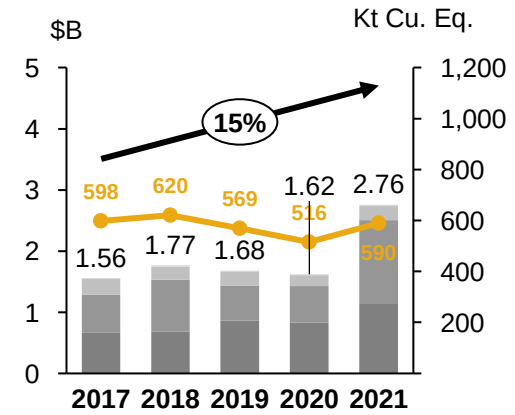
- Community investments totaled ~$94M over the 5-year timeframe, and have remained relatively stable over that period
- A total of 37 projects have been executed over that timeframe
- Annual project disbursements have been consistently growing (~39%)

Source: Wood Mackenzie analysis

Across the last five years, Operations 1, 2 & 3 have distributed over $30B in socio-economic value, an average of $4,143/t Cu Eq. produced

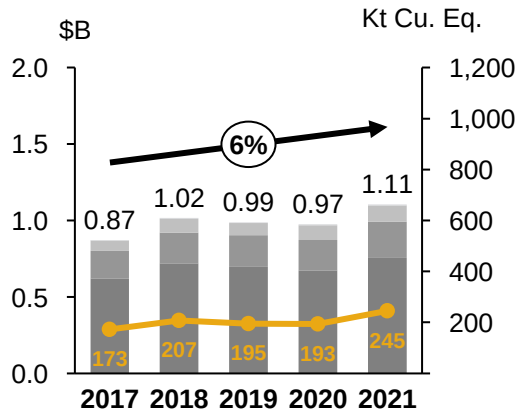
Generally, we notice an overall positive trend across the 2017-2021 timeframe

Operation 1



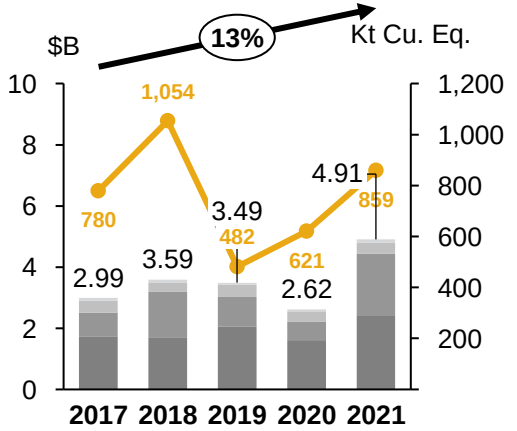
1.89 $B Avg.	9.39 $B Cumul.	3,243 $/t Cu. Eq.

Operation 2



1.00 $B Avg.	4.96 $B Cumul.	4,892 $/t Cu. Eq.

Operation 3



3.52 $B Avg.	17.6 $B Cumul.	4,633 $/t Cu. Eq.

Operational Costs
Employee Benefits
Metal Production
Government Tax
Community Investments

Source: Wood Mackenzie analysis

Those significant investments have contributed to developing lifetime benefits across the communities where they operate

The three operations have enabled lasting socio-economic benefits for generations to come

	Infrastructure Development	Health Facilities	Educational Resources	Economic Diversification
1	• 135km roads • 183,428m2 pavements • 46,443m2 sidewalks • 180km irrigation pipe	• 3 hospitals • 3 clinics • 144 beds • 1 sanitary landfill	• 7 schools • 130 classrooms • 65 teachers • 5,631 students	• 1 food market • 15 market stalls • 1 fishing pier
2	• 35km roads • 1 airport • 1 community hall	• 1 hospital • 1 clinic • 10 beds	• 37 classrooms • 840 students • 1,000 scholarships • 4 vocational centres	• Economic development programme • Herder livelihood support programme
3	• 119km roads • 1 port • 1 airport • 1 sports complex	• 2 hospitals • 3 clinics • 110 beds	• 11,000 scholarships • 5 dormitories • 1 mining Institute	• Agricultural and food security programmes • An economic development program

Source: Wood Mackenzie analysis

3. Enabling policies & practices

Across the mine lifecycle, multiple stakeholders come together in defining, validating and enforcing the mine' social license to operate

The mine operator and regulator interact closely with the society across the lifecycle

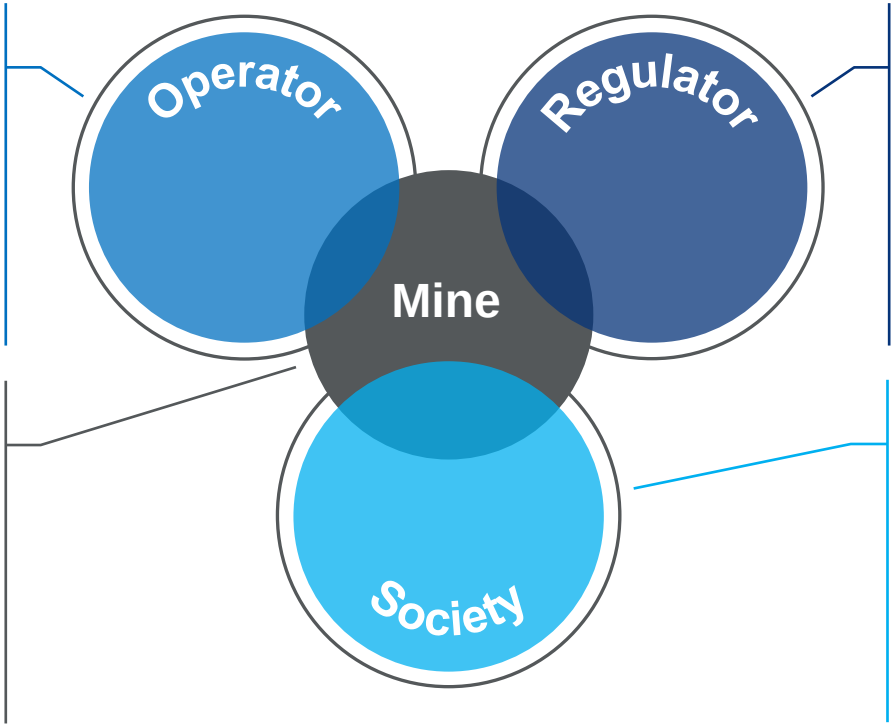
Operator

The mine operator is responsible for controlling any activities taking place as part of mining operations

- **Shareholders**
- **Executive management**
- **Employees / Contractors**
- **Business suppliers**

Mine

From exploration through closure, mining operations generate significant socio-economic impacts due to their capital intensity, extended lifecycle and complex stakeholder matrix. The mine operator, regulator and society come together in enforcing sustainable practices.



Regulator

The public regulator is responsible for setting-up legal institutions for supervising the mine operator

- **National public institutions**
- **Local public institutions**

Society

The society includes all third-parties which may be influenced by the impact of the mining operations

- **Indigenous community**
- **Local industrial ecosystem**
- **Local industry associations**
- **International community**
- **Advocacy organizations**
- **Customers**

Source: Wood Mackenzie analysis

The Operator and Regulator have a particularly decisive power and are responsible & accountable for the mines' socio-economic impacts

Consulted and informed parties are strategic influencers

Focus of the enablement analysis

R — Responsible
Responsible parties are in charge of completing the tasks and producing the expected outcomes. Without responsible parties, activities would not be assigned and the relevant tasks would not get done.

- Shareholders
- Executive management
- Employees / Contractors
- Business suppliers

A — Accountable
The accountable party ensures the tasks are successfully completed and expectations are being met. The accountable party owns the outcomes, and is being held accountable of the consequences (positive or negative).

- National public institutions
- Local public institutions

Decision makers
While the mine operator is responsible for the economic development of a mineral deposit, the public regulator remains the steward of those resources, and is accountable towards their sustainable extraction.

C — Consulted
Consulted parties have a stake in the outcomes, and provide input & feedback on the tasks being done. Typically, the *responsible* and *accountable* parties go to the *consulted* parties for advice and validation.

- Indigenous community
- Local industrial ecosystem
- Local industry associations

I — Informed
Informed parties should remain aware of the progress, although they typically have little interest in influencing the outcomes. It is the duty of the *responsible* and *accountable* parties to keep *informed* parties in the loop.

- International community
- Advocacy organizations
- Customers

Strategic influencers
Society encompasses several parties, some local other global, more or less involved in day-to-day mining operations, but all impacted to some extent – so they should be consulted and continuously informed.

Source: Wood Mackenzie analysis

Responsible mining practices protect the interests of the local community, ensuring the extraction of natural resources leave a positive footprint

The Responsible Mining Index (RMI) provides a consistent proxy to benchmark companies

Index Overview

- **The RMI assesses the extent to which mining companies' corporate policies and practices address the economic, environmental, social and governance topics**
- The index covers 44 areas, grouped into 6 topics: economic development, business conduct, lifecycle management, community wellbeing, working conditions, environmental responsibility

Topics	Descriptions
1 Economic Development	Strategic role to national economic development within producing countries and the wider supranational regions
2 Business Conduct	Implementation of supportive governance mechanisms and safeguard against negative EESG outcomes
3 Lifecycle Management	Integration of EESG considerations across the entire project lifecycle, from exploration through closure
4 Community Wellbeing	Engagement in protecting the social and economic wellbeing of locally affected communities
5 Working Conditions	Efforts in providing decent, safe and healthy working conditions for all works
6 Environmental Responsibility	Addressing the environmental risks and impacts from the operations, and achieving a positive legacy

Assessment

Commitment
- Formally committing to objectives, and assigning resources to achieve the targets

Action
- Systematically putting in place measures to improve and maximize EESG benefits

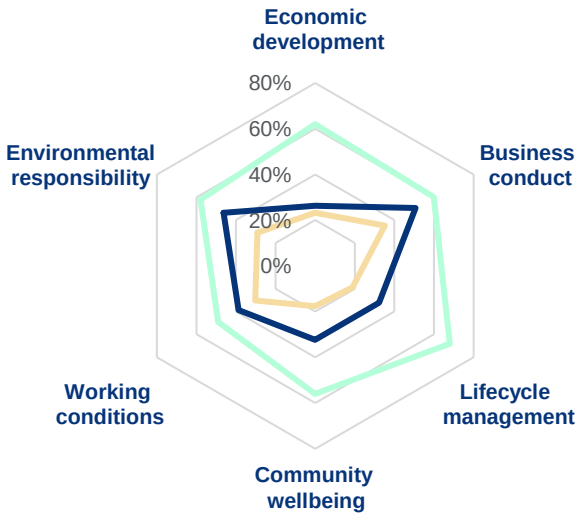
Effectiveness
- Consistently tracking, reviewing and action to improve performance in managing EESG issues

Source: Wood Mackenzie analysis, RMI

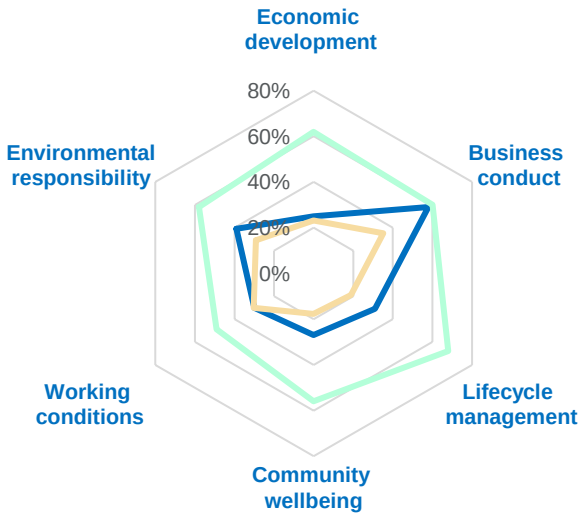
We have mapped the most recent RMI scores of the mine operators for each of the selected operations, against global benchmarks

Generally, those operators' practices tend to score above the industry average

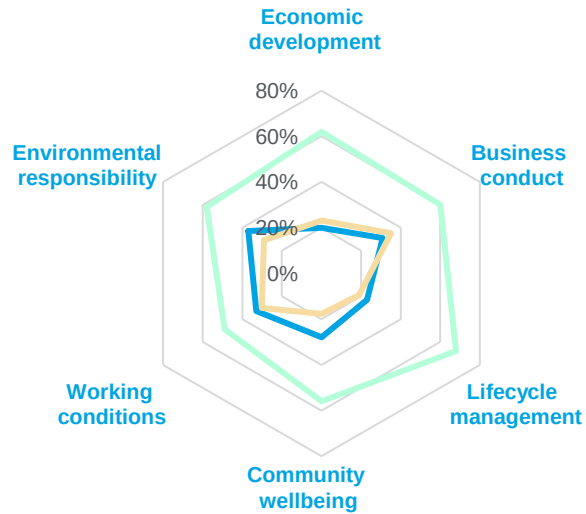
Operation 1



Operation 2



Operation 3



Operator Average Collective Best

Source: Wood Mackenzie analysis, RMI

Resource governance is a key factor in determining whether a community benefits from its resource extraction

The Resource Governance Index (RGI) provides a consistent proxy to benchmark countries

Index Overview

- **The RGI assesses the governance of oil, gas, and mining sectors in resource producing countries around the world.**
- It evaluates the extent to which these sectors are governed in a manner that is transparent, accountable, and participatory.
- The index takes into account three key topics: value realization, revenue management and enabling environment.

Topics

Descriptions

Value Realization	1	Addresses the governance of allocating extraction rights, exploration, production, environmental and social impacts, revenue collection and SOEs
Revenue Management	2	Addresses the governance of national budgeting, subnational resource revenue sharing and sovereign wealth funds (SWFs)
Enabling Environment	3	Addresses the broader governance environment in terms of the set of conditions, policies, and institutions that facilitate or support the development and implementation of each project

Assessment

Assessed directly through the standard RGI questionnaire, which consists of 136 scored and 13 information-onlyquestions (relating to laws & regulations, disclosures, oversight)

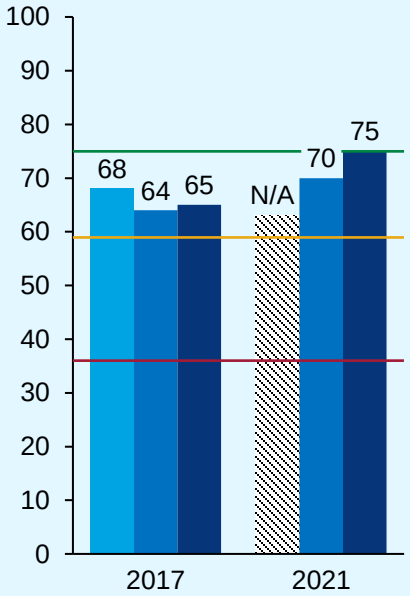
Assessed through the Worldwide Governance Indicators (World Bank), and Open Data Inventory (Open Data Watch)

Source: Wood Mackenzie analysis, RGI

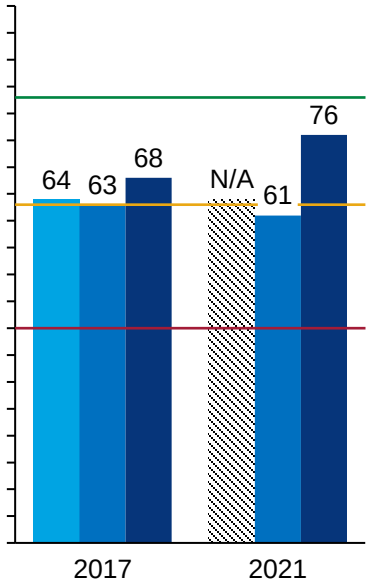
We have mapped the most recent RGI score for the countries in which the selected operations are located, against global benchmarks

Generally, there is a marked improvement in performance for each country between 2017-2021

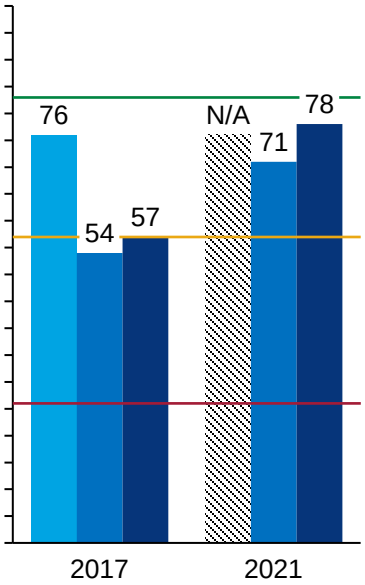
Composite



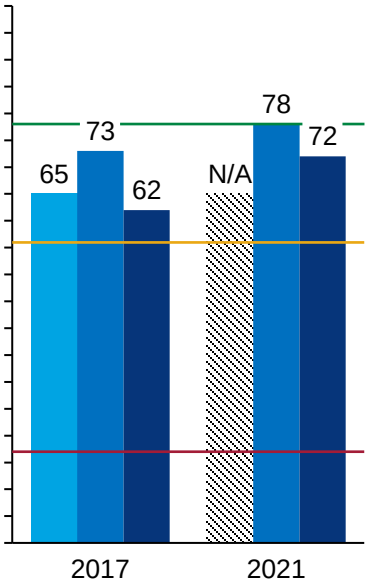
Value Realization



Revenue Management



Enabling Environment



Best Average Worst Country 1 Country 2 Country 3

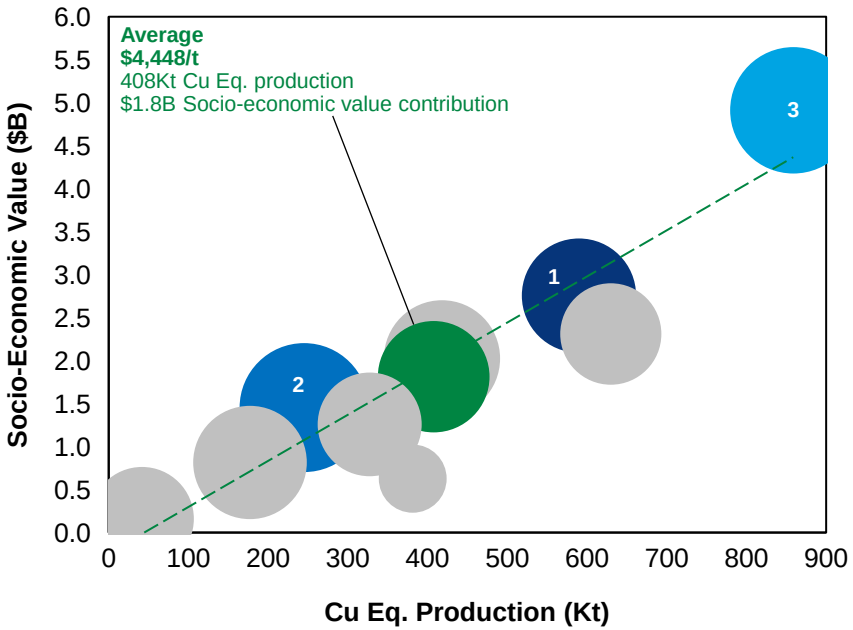
Source: Wood Mackenzie analysis, RGI

4. Socio-economic impact extrapolation

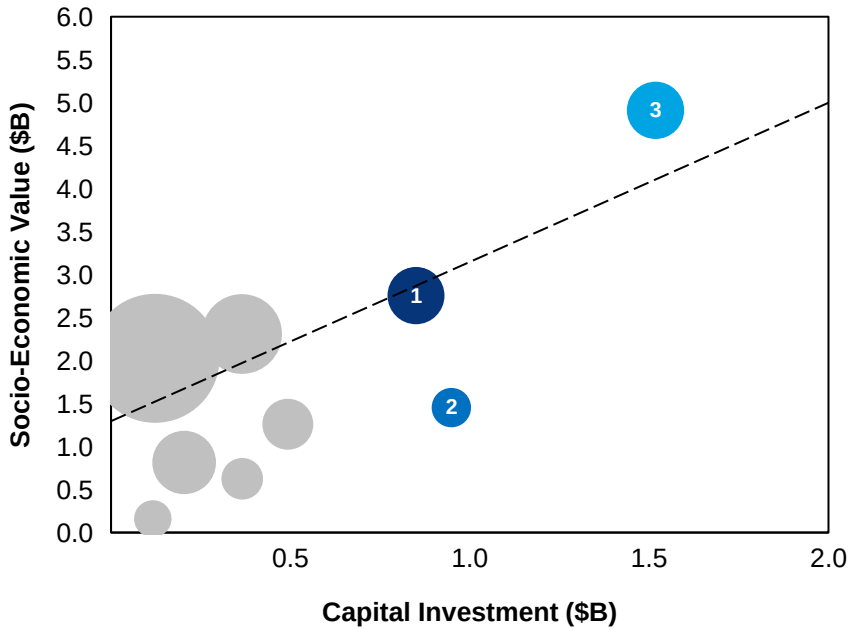
A correlation appears between socio-economic value creation and copper production, with an average multiplier of $4,448/t

Capex does not appear to correlate consistently with the socio-economic contribution

Socio-Economic Value vs. Copper Production (2021)



Socio-Economic Value vs. Capital Investment (2021)

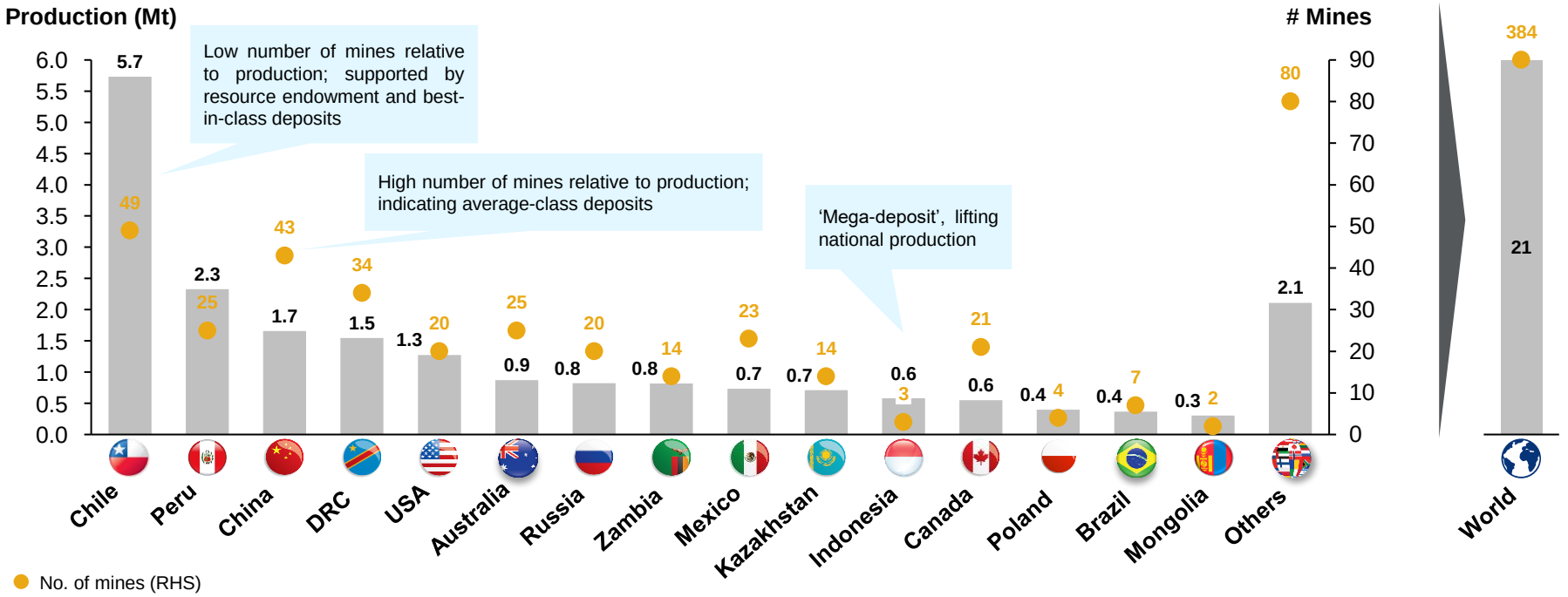


Source: Wood Mackenzie analysis. Note: The bubble size is representative of the average socio-economic value creation per Cu Eq. production (in t) and Capital Investment (in $)

Ranking the copper-producing countries globally based on production, we find that Chile comes largely on top, followed by Peru, China, the DRC

Peru, Indonesia and Mongolia have a relatively lower number of mines, but top-class deposits

Average annual copper production and number of operating mines per country (2017 – 2021)

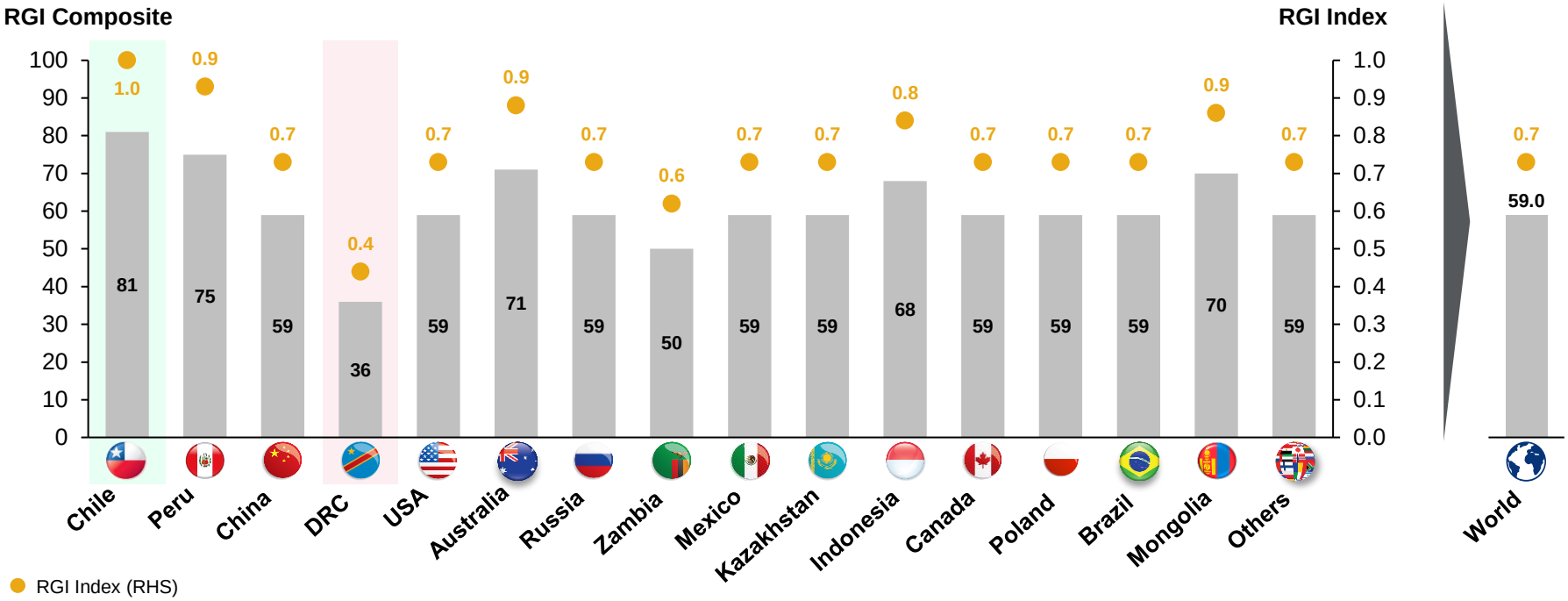


Source: Wood Mackenzie analysis. Note: Copper production is based on Wood Mackenzie's base case coverage, which might not include all of the actively operating mines

Expectedly, different regions will not realize the full value of their natural resources to the same extent, due to varying governance practices

We have referred to the Resource Governance Index as a proxy to benchmark countries

Resource Governance Index (RGI) composite and indexed scores (2017 – 2021)

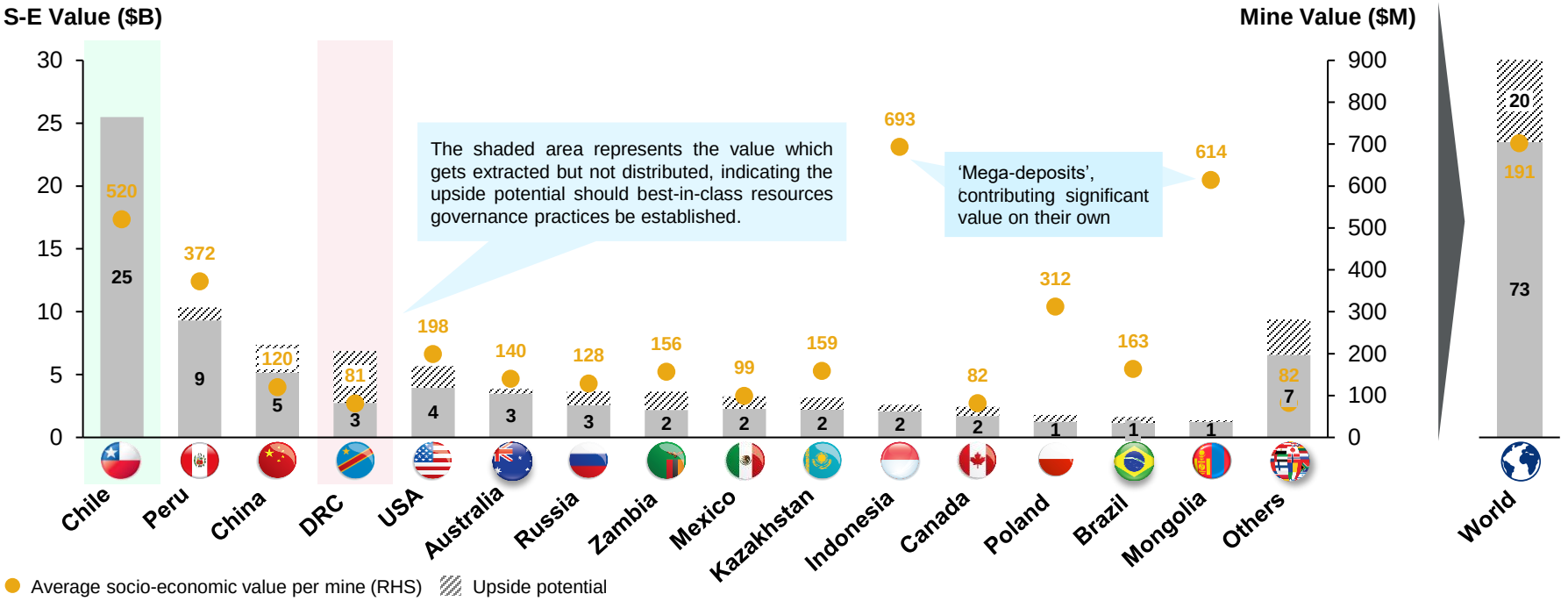


Source: Wood Mackenzie analysis, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place

Based on production figures tempered by the RGI index, we can estimate that the sector contributes $73B annually, or $191M per mine on average

Countries with poor governance practices will not realize the full value of their resources

Average annual socio-economic value contribution per country and per mine (2017 – 2021)

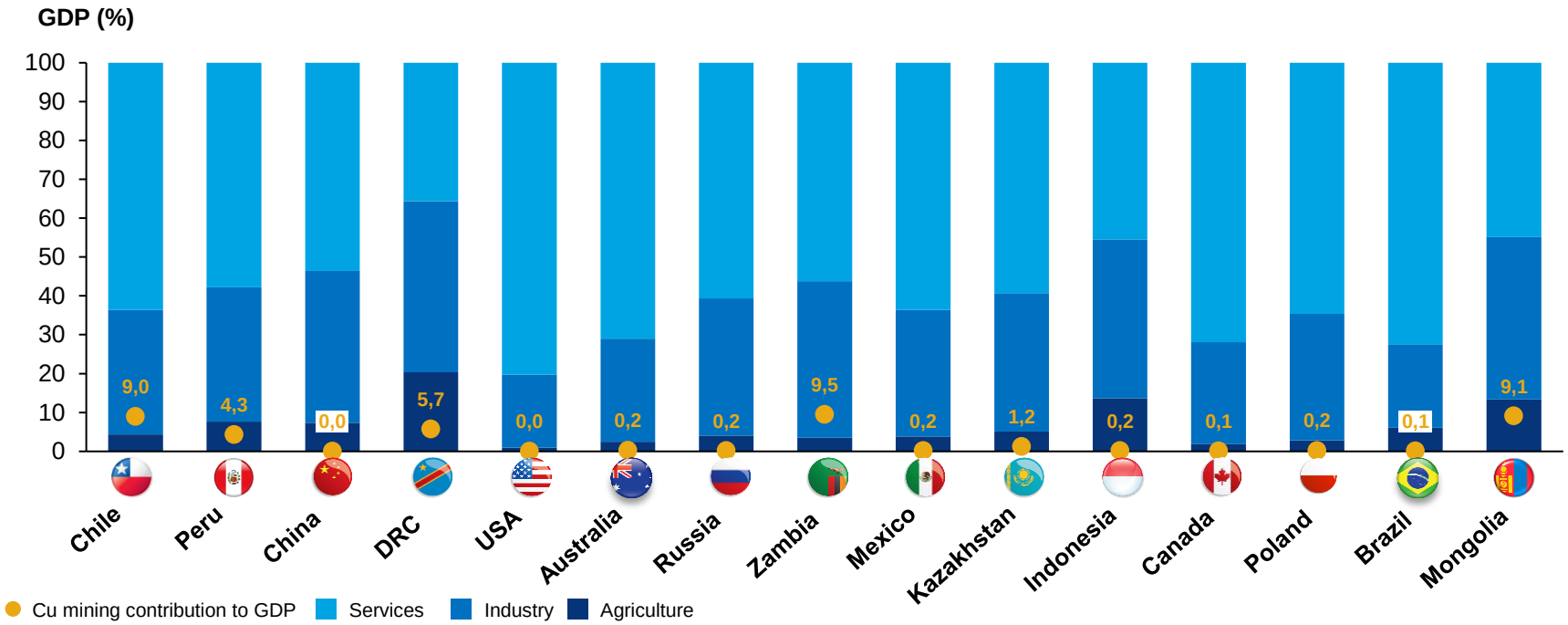


Source: Wood Mackenzie analysis, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place

The copper mining sector can contribute as much, if not more, than Agriculture in some countries which rely strongly on the sector

The impact is minimal in developed countries which rely mostly on Services and Industries

Average GDP breakdown by sector and Cu mining socio-economic value contribution per country (2017 – 2021)

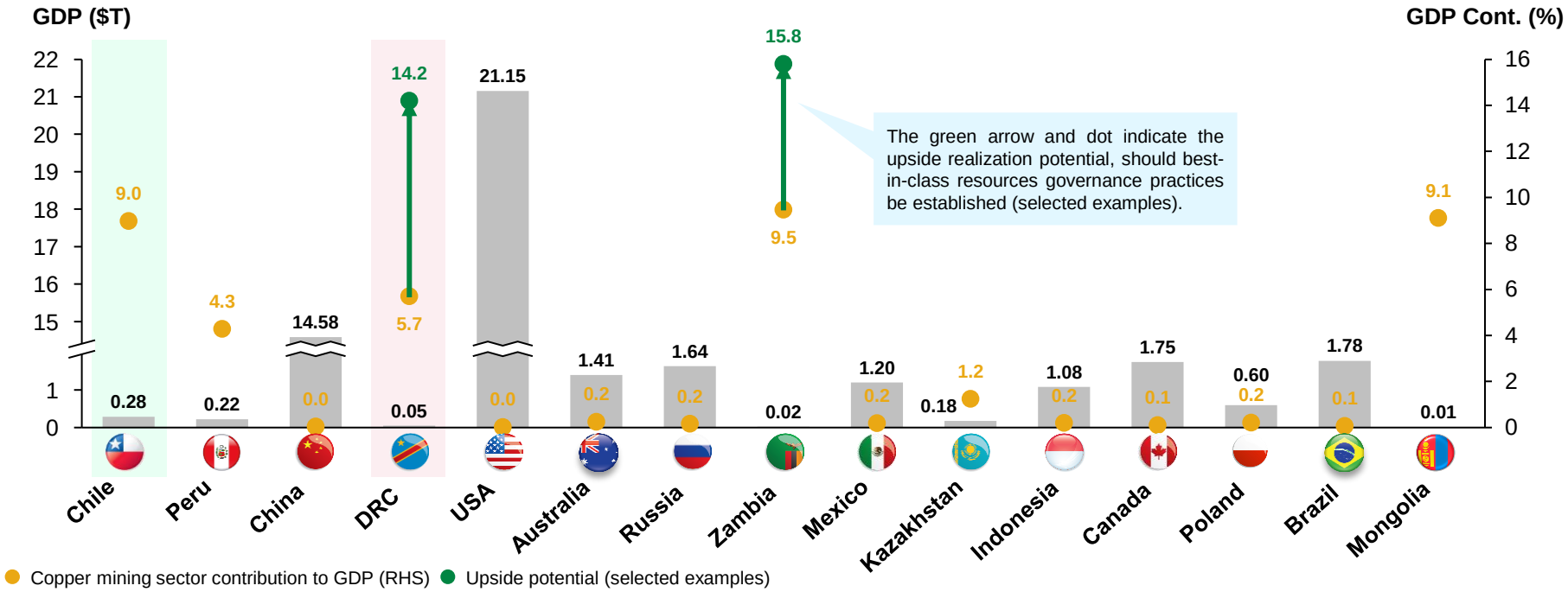


Source: Wood Mackenzie analysis, World Bank, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place

The impact on GDP is particularly important in emerging countries where mining is a pilar of the economy, such as Zambia, Mongolia and the DRC

Best-in-class resource governance practices ensure a full realization of the extracted value

Average annual GDP and copper mining socio-economic value contribution per country (2017 – 2021)

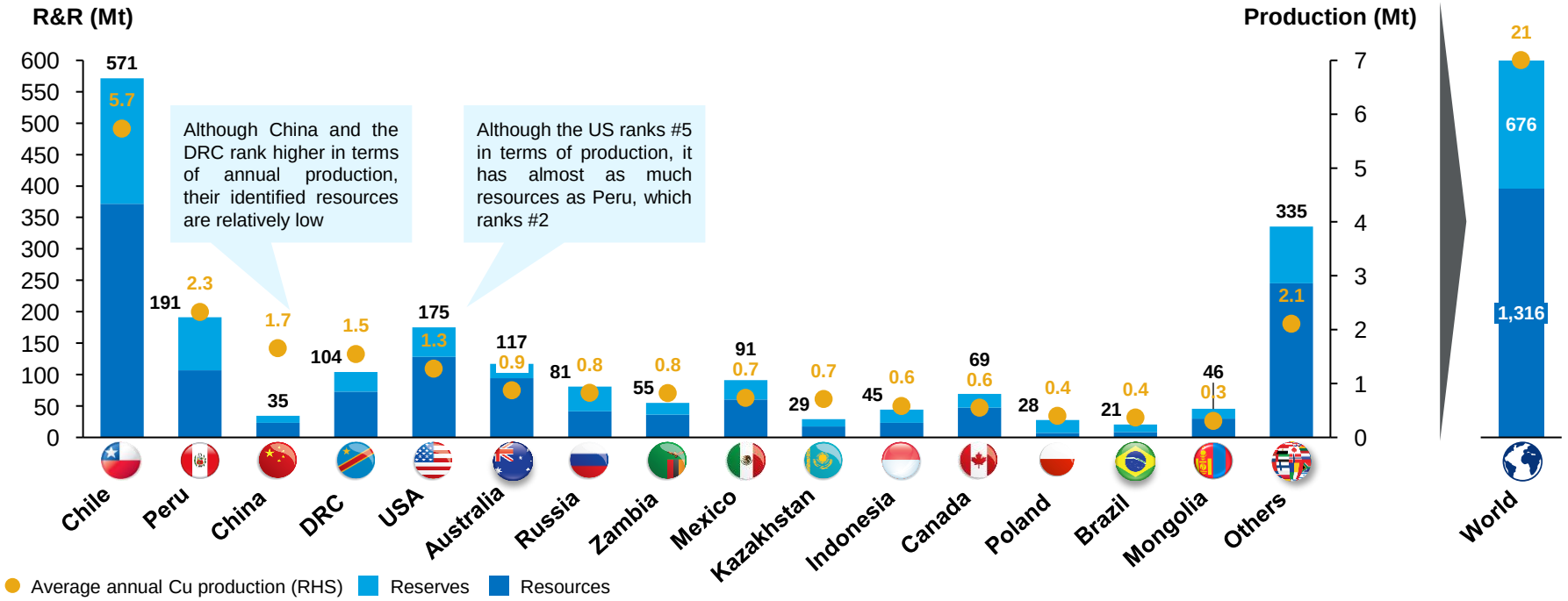


Source: Wood Mackenzie analysis, World Bank, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place

From another perspective, we can consider the identified resources & reserves as a proxy to estimate the untapped value yet to be realized

Keeping the ranking based on production, we have mapped the countries' resources & reserves

Identified copper resources & reserves (2021) and average annual production per country (2017 – 2021)

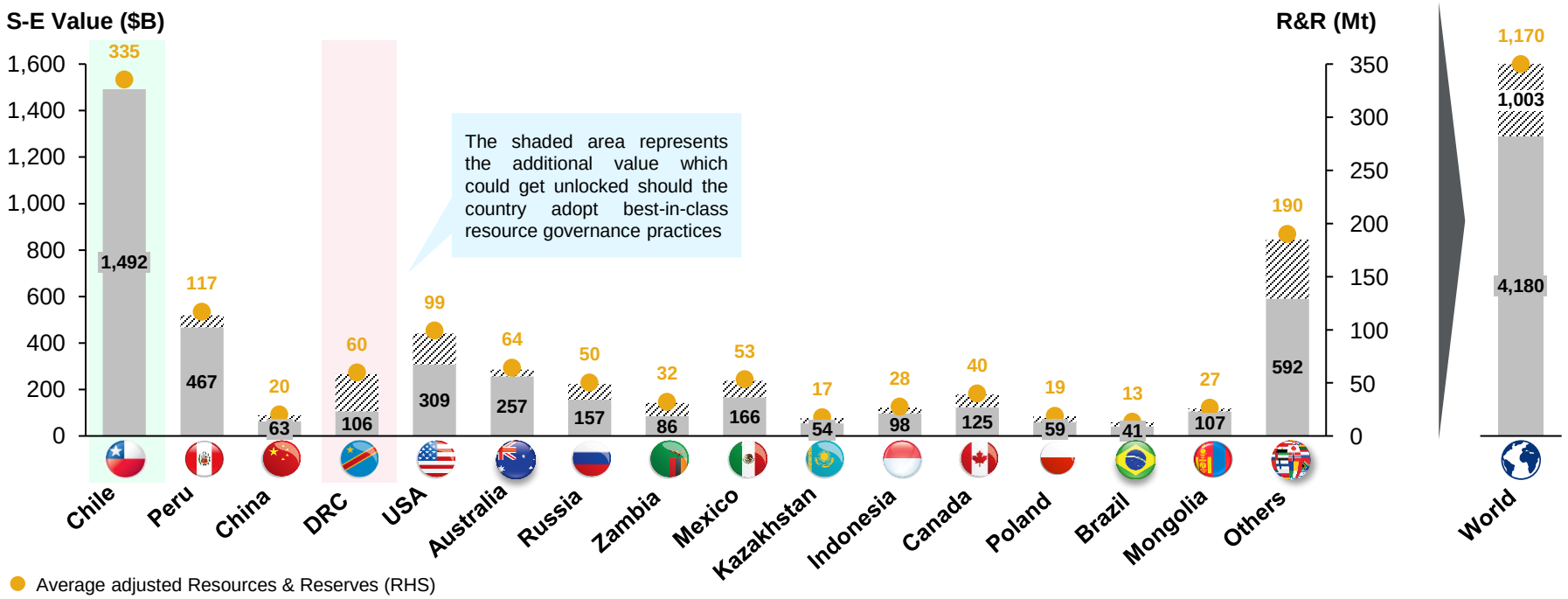


Source: Wood Mackenzie analysis. Note: Copper reserves & resources are based on Wood Mackenzie's base case coverage, which might differ sightly from other views

Similarly, we can apply the socio-economic value multiplier along with the RGI index, to estimate the untapped potential value yet to be realized

We assumed that 75% of reserves and 50% of resources can eventually be extracted

Untapped potential socio-economic value and adjusted Resources & Reserves per country (2021)



Source: Wood Mackenzie analysis, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place

From our analysis, we have derived key thought-leading facts about the socio-economic value contribution of the copper mining sector

Those facts shed light on the ongoing and potential future impact of the sector

The copper mining sector distributes an average of ~$73B per year in socio-economic value globally, where Latin America contributes over 50% of that value (with Chile unlocking ~35% on its own)

A copper mine contributes an average of ~$191M per year in socio-economic value at the national level, which gets distributed in the form of operational costs, government taxes, employee wages & community investments

There is ~2Bt of identified copper resources remaining in the ground globally, which at the current production rate, is sufficient to address our society needs for over 100 years

That resource, yet to be mined, is worth ~$4T in potential socio-economic value to be realized, with ~55% of it located in the Americas (notably Chile, Peru, USA, Mexico, Canada), of which ~30% sit in Chile only

The copper mining sector can contribute as much as ~9.5% of a country's GDP, sometimes more than Agriculture, especially in regions where mining is a pillar of the economy (e.g. Zambia, Mongolia, Chile, DRC)

There is additional ~$20B worth of socio-economic value which gets extracted on a yearly basis as a result of copper mining, but is not distributed due to poor governance practices in selected jurisdictions (e.g. DRC, Zambia)

Source: Wood Mackenzie analysis

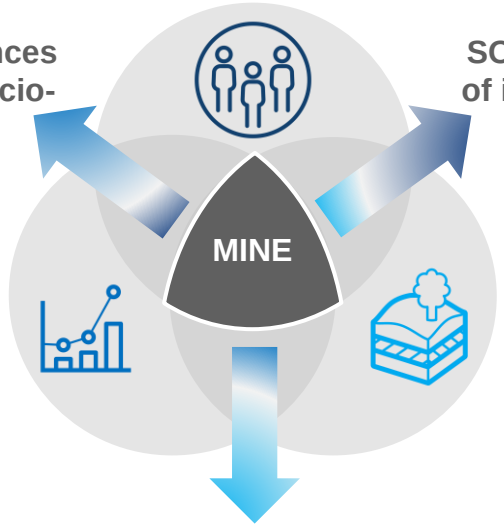
Ultimately, copper mining does not only play a role in enabling the energy transition, but also holds great promise in lifting emerging economies

Stakeholders should strike a balance between social, economic & environmental sustainability

Socially Equitable
Elevate livelihoods through enabling quality employment

The public REGULATOR influences socio-economic returns and socio-political stability

SOCIETY influences the protection of indigenous communities and the environmental ecosystem



Economically Beneficial
Distribute financial value fairly across stakeholders

Environmentally Sustainable
Make the best use of our collective natural capital

The mine OPERATOR influences financial sustainability while fulfilling the supply of strategic minerals

Source: Wood Mackenzie analysis

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Appendix

Mining is the initial stage of the copper value-chain, and is currently responsible for the extraction of ~23Mt of primary copper globally

The focus of our socio-economic impact analysis is on the mining aspect of the value-chain

Recycling

Mining & Processing

The first step comprises identifying copper-bearing resources, mining sulfidic **ore** and concentrating it, which involves enriching the Cu content from ~0.3-1% to ~25-35% typically, by flotation, to produce copper **concentrate**. Oxidic **ore** can be processed by leaching & electrowinning (SX/EW), producing copper **cathodes** directly.

Smelting & Refining

Most of the copper **cathodes** from this step are produced from sulfidic **ore**, by smelting, converting & electrorefining, in a tank-house. By-products of this process include sulphuric acid and silicate stone. Copper **scrap** processing (or recycling) is an increasingly important contributor, especially 'complex scrap' (from residues).

Semi Production

The main first-use of copper cathodes is the production of standardized **wire rod,** from the production of copper **wires**. Another important first-use of copper cathodes are **billets** and **cakes**, for the production of copper **strips** and **tubes**. They come in a variety of dimensions and chemical composition.

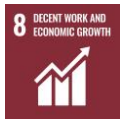
Final Production

Copper wires, **strips** and **tubes** are used in fabrication to create various copper end-products such as electrical components, copper foil and piping. They can also be alloyed to produce materials with specific properties. These products include electronics, construction materials, and industrial machinery components.

Source: Wood Mackenzie analysis.

We have identified relevant business disclosures to assess the copper mining industry's impacts in terms of elevating livelihoods

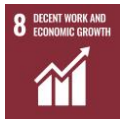
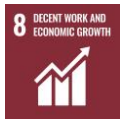
The UN SDG provides a consistent framework for mapping and tracking the impacts

Impacts	SDGs	Description of the targets	Relevant business disclosures
1 **Employment Quality** Provide equal & safe employment		**Target 8.5** - By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.	**Absolute metrics** ▪ Total employment (#) ▪ Recordable injury frequency rate (#) **Relative metrics** ▪ Proportion of female / indigenous employment (%)
2 **Household Income** Increase household income & benefits		**Target 1.2** - By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	**Absolute metrics** ▪ Payments to employees ($) **Relative metrics** ▪ Average employee wage & benefits ($)
3 **Capacity Building** Advance workforce' skillset & careers		**Target 4.4** – By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.	**Absolute metrics** ▪ Allocated training budget ($) **Relative metrics** ▪ Average training investment per employee ($) ▪ Average hours of trainings per employee (Hours)

Source: Wood Mackenzie analysis, UN, GRI

We have identified relevant business disclosures to assess the copper mining industry's impacts in terms of distributing economic value

The UN SDG provides a consistent framework for mapping and tracking the impacts

Impacts	SDGs	Description of the targets	Relevant business disclosures
4 **Institutional Reinforcement** Contribute to government revenues		**Target 8.1** – Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent GDP growth per annum in the least developed countries	**Absolute metrics** ▪ Payments to government ($) **Relative metrics** ▪ Split of government payments (%)
5 **Industrial Diversification** Support the local industrial ecosystem		**Target 8.3** – Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of SMEs.	**Absolute metrics** ▪ Payments to suppliers ($) **Relative metrics** ▪ Proportion of in-country procurement (%) ▪ Proportion of local (regional) procurement (%)
6 **Community Development** Sustain the community development		**Target 9.1** – Develop quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being, with a focus on affordable and equitable access for all	**Absolute metrics** ▪ Community investments ($) ▪ Executed disbursements ($) **Relative metrics** ▪ Split of community investments (%)

Source: Wood Mackenzie analysis, UN, GRI

For each of the socio-economic impacts which were defined previously, we have identified relevant RMI policy & practice enablers

Those enablers are put in place at the corporate level (global and/or local)

Socio-economic Impacts	Description of relevant policy & practice enablers
1 **Employment Quality** Provide equal & safe employment	▪ **Working conditions**: The company has systems in place to ensure its operations base their recruitment practices on the principle of equal opportunity, to **prevent all forms of discrimination** in the workplace & promote workforce diversity ▪ **Working conditions**: The company has systems in place to ensure its operations engage with worker representatives to collaboratively identify, assess, avoid, and **mitigate health and safety risks to its workforce**
2 **Household Income** Increase household income & benefits	▪ **Working conditions**: The company tracks, reviews and acts to improve its performance on **ensuring that its workers' wages meet or exceed verified living wage standards**, or legal minimum wage, whichever is the highest ▪ **Community wellbeing**: The company tracks, reviews and acts to improve its performance on respecting the rights and aspirations of Indigenous Peoples and avoiding adverse impacts on their livelihoods and heritage
3 **Capacity Building** Advance workforce' skillset & careers	▪ **Economic development**: The company has systems in place to ensure its operations **support STEM education and technical / vocational skills development among the wider population** ▪ **Economic development**: The company has systems in place to ensure its operations **support technical and managerial skills development of its local workforces**
4 **Institutional Reinforcement** Contribute to government revenues	▪ **Business conduct**: The company publicly **discloses all payments it makes to sub-national and national governments,** providing disaggregated data on a project-level basis ▪ **Business conduct**: The company tracks, reviews and acts to improve the effectiveness of its whistleblowing mechanisms for **reporting concerns about unethical behaviour (e.g. anti-bribery and corruption)**
5 **Industrial Diversification** Support the local industrial ecosystem	▪ **Economic development**: The company has systems in place to ensure its operations **develop procurement opportunities for suppliers at national and supranational levels** ▪ **Economic development**: The company has systems in place to ensure its operations **encourage local entrepreneurship and support local business development,** including for women
6 **Community Development** Sustain the community's development	▪ **Economic development**: The company has systems in place to ensure its operations **work collaboratively with sub-national producing country governments on socio-economic development planning** ▪ **Lifecycle management**: The company has systems in place to ensure its operations plan and **manage post-closure transition in collaboration with affected communities,** to seek to ensure continued viability of their livelihoods

Source: Wood Mackenzie analysis, RMI

For each of the socio-economic RGI which were defined previously, we have identified relevant RGI policy & practice enablers

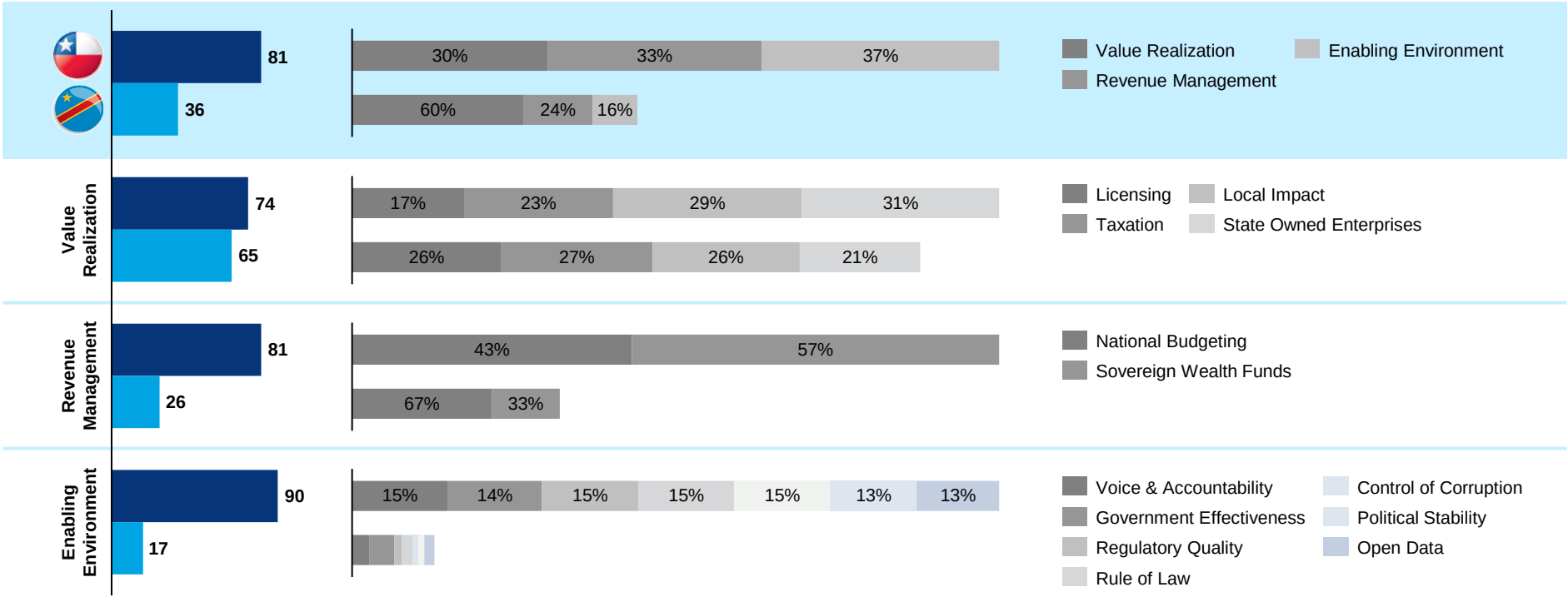
Those enablers are put in place at the governmental level (national and/or local)

Socio-economic Impacts	Description of relevant policy & practice enablers
1 **Employment Quality** Provide equal & safe employment	▪ **Revenue management**: Local content practice; is local content promoted? Are there rules in law / public policy which require public reporting of local employment statistics? Has the government published local employment statistics? ▪ **Revenue management**: Extractive revenues; does the government publicly disclose projections of extractive resource revenues? For the most recent year, did the government publicly disclose the total resource revenue received?
2 **Household Income** Increase household income & benefits	▪ **Value realization**: Landowners compensation requirement; are there rules governing expropriation, compensation and resettlement to landowners or users of land when project development interferes with the land they own or use? ▪ **Value realization**: Sovereign wealth fund; does the country have a natural resource fund which is funded by extractive resource revenues? If so; is the sovereign wealth fund required to produce & disclose annual financial reports?
3 **Capacity Building** Advance workforce' skillset & careers	▪ **Revenue management**: Local content practice; is local content promoted? Are there rules in law / public policy which require public reporting of local employment statistics? Has the government published local employment statistics? ▪ **Value realization**: Economic linkages; is the development of forward linkages promoted in laws, policies or by state equity? has the government published a baseline assessment informing the forward linkages policy?
4 **Institutional Reinforcement** Contribute to government revenues	▪ **Value realization**: Public officials asset disclosure requirement; are senior public officials required to publicly disclose their financial holdings in extractive companies? ▪ **Value realization**: Payment disclosure requirement; is the government required to publicly disclose data on payments from extractive companies to the government?
5 **Industrial Diversification** Support the local industrial ecosystem	▪ **Revenue management**: Subnational resource revenue transfer; does the central government transfer extractive resource revenues to subnational governments? Are these rules specific (distinct) for the extractive resource industry? ▪ **Revenue management**: Subnational resource revenue sharing; does the resource revenues sharing formula (if it exists) specify the amount of revenue received by each subnational government, either by amount, indicator or share of resource revenues?
6 **Community Development** Sustain the community's development	▪ **Value realization**: Social impact assessment requirement; are extractive companies required to prepare an SIA prior to development? Is there a requirement for the SIA to be publicly disclosed? ▪ **Value realization**: Environmental impact assessment requirement; are extractive companies required to prepare an EIA prior to development? Is there a requirement for the EIA to be publicly disclosed?

Source: Wood Mackenzie analysis, RGI

Comparing Chile and the DRC's RGI scores, respectively the highest and lowest ranked, provides a perspective on best practices

The Enabling Environment is critical to realizing the full value out of extracted resources



Source: Wood Mackenzie analysis, 2021 RGI data. Note: Where 2021 data is unavailable for selected countries, 2017 data has been used in place