

TREAD LIGHTLY

Why IFIs should put people and the environment at the centre of the transition mineral supply chain



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and the environment at the centre
of the transition mineral supply chain

“If we don’t solve climate change with an eye towards environmental justice, we could create more social and environmental crises for ourselves down the road. So we have to do it carefully, contemplatively and intelligently.”

- Scott Odell, MIT Environmental Solutions Initiative¹

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OVERVIEW

The urgent need to keep temperatures below 1.5°C of global warming will require a rapid transition from fossil fuels to a renewable energy powered energy system. Recent experience of extreme temperatures, wildfires and floods show the energy transition is more urgent than ever. However, in the rush for renewable energy technologies it is essential not to replicate the destructive extractive practices of the fossil fuel era.

This report explores the reality for mining and supply chains of transition minerals needed for renewable energy expansion in coming decades. It shows that taking the current approach to mineral mining will set up new social and environmental crises for countries in the Global South, adding to the climate emergency instead of solving it. We ask, how can the just transition to renewable energy ensure careful, contemplative, and intelligent development of mineral supply chains so that it treads lightly on people and planet?

And specifically we ask, how can International Finance Institutions (IFIs) play a role in ensuring human rights and environmental justice are at the heart of the transition mineral supply chain, so that mineral rich communities and countries can benefit from their natural resources, and not be harmed?

Already some IFIs have started to respond to the call to support the transition mineral supply chain, including the World Bank Climate Smart Mining Initiative (CSMI), the European Bank of Reconstruction and Development (EBRD) mining strategy consultation and the African Development Bank (AfDB) Approach Paper on Green Minerals. The Asia Development Bank (ADB) recognises the need for an accountable supply chain as it invests in new renewable energy projects. These initiatives primarily view environmental and social governance (ESG) measures as a commercial risk to be managed or to be used by private companies to access emerging sources for funding sustainable development, or to access new 'ethical' markets. IFIs also give priority to and invest in large mining companies, many of which have a record of undermining fundamental social and environmental standards.

An imbalance of power and the rise of green extractivism

Expansion of renewable energy technologies – battery storage, power grid upgrades, green hydrogen, and electric vehicles – will require a huge increase in mining for the transition minerals such as nickel, copper, lithium, bauxite, cobalt, and rare earth elements. There is growing political tension over mineral rights and access to these minerals across the globe. Many of the countries rich in mineral resources are in the Global South, but China has dominant control of the market for these resources. In response, the G7 has called on the WB and other IFIs to take a lead in financing mineral supply chains to secure their own needs.

However, there is growing concern that this rush for transition minerals is a new 'green extractivism' with communities, ecosystems and countries of the Global South being asked to assume the role of exporter of raw materials as an environmental and social sacrifice zone to provide for wasteful over consumption of energy in the Global North. Those who have done the least to cause climate change and suffer the most from its impacts are being asked to pay the highest price, in terms of sacrifice of their lands, forests and resources, for the transition.

Impact of current transition mineral mining – time to learn lessons

Recent experience of IFIs' investments in the mining sector have raised concerns about social, environmental, and human rights abuses in mining and processing operations. There are a number of documented cases of significant impacts from mining, with outcomes including Indigenous and human rights abuses, forced displacement, loss of land rights, deforestation, over-extraction or pollution of water, conflict and corruption, and sexual and gender-based violence in the mining sector. Often impacts are cumulative, with several mines in the same area causing multiple problems.

This paper highlights the following case examples to illustrate these concerns in projects supported by the International Finance Corporation (IFC).

☉ **IFC's support for the nickel industry is devastating Obi Island, Indonesia**

The IFC's Green Equity Approach contains a loophole that allows support for captive coal power plants used for industrial applications such as mining and smelters. The IFC is involved in the development of a project in the Obi Island nickel industrial park through a number of financial intermediaries that have made loans to the mine and smelter operator, which includes an estimated 2,984MW of captive coal plants to power the nickel smelters. Obi Island nickel industrial park has suffered environmental and social impacts, such as damaged marine ecosystems, polluted springs, dirty air for the community, threats to the diversity of birdlife, land disputes, and forced eviction.

☉ **Guinea bauxite for electric vehicles**

The West African nation of Guinea holds the world's biggest reserves of bauxite, the main source of aluminium, used in wind turbines and electric vehicles (EVs) to keep the car lighter. Hundreds of square miles of farmland have been acquired by mining companies for their operations, but villagers say they have received little or no compensation. Mining company CBG received a debt facility of up to \$200m from the IFC to support the expansion of the Sangaredi bauxite mine, processing plant, and associated infrastructure. Local communities have filed a formal complaint against the IFC to its watchdog, the Compliance Advisor Ombudsman, seeking redress for the decades-long legacy of land-grabbing, pollution and livelihood destruction caused by CBG and demanding that the operation comply with the IFC Performance Standards moving forward.

☉ **Lithium mining in Argentina creating water scarcity and excluding community engagement**

In 2023 the IFC announced a loan of up to \$180m to Allkem to support the development of the Sal de Vida² lithium extraction operation located in Catamarca. However, the Catamarca region is already over exploited by lithium mining, with 20 existing projects in the high plateau area of Catamarca province. Communities say lithium brine mining is a 'mega-mining of water' due to its high water footprint, which has been developed without restriction in the territory. Studies have shown that communities in lithium mining areas were not properly informed about company activities, with reports and presentations from representatives and companies not fully disclosing all the relevant information about foreseeable risk factors and their potential environmental impacts.

☉ **IFC's investment in DRC cobalt mining leaving communities exposed to corruption**

In 2007 the IFC invested CAD \$4m equity into Africo Resources Limited, a Canadian mining company which had stakes in copper and cobalt mining concessions in post-conflict DRC. IFC was an important seed investor. In 2016, however, a corruption scandal³ broke when a bribery scheme to take over the shares of Africo's stake in DRC mining was exposed. But IFC had divested from the project a few years earlier, so that when corruption hit, the IFC failed to support the impacted Congolese people when they needed help to recover from the losses resulting from the corruption. IFC refused to publicly denounce the corruption scandal, and did not debar the companies involved in the scandal from engaging the World Bank Group (WBG) in future investments.

Responding to the transition mineral dilemma – where are the potential solutions?

There are different ways that IFIs can respond to the dilemma of the pulling demand for minerals from the Global North, and the threat to people and nature in mineral rich countries of the Global South.

Minimise demand: It will be important to plan for less mineral resource consumption across the energy system. While it is inevitable that mineral demand will rise as renewable energy systems expand, it will be critical to plan energy systems that are as resource-light as possible. Technologies should be designed and manufactured for easy recycling. Technological choices should look to minimise mineral consumption, choose the least impactful mineral sources, and maximise equipment lifespans. Energy planning must prioritise sufficiency and efficiency, and penalise waste and excessive technology expansion in pursuit of profit. Recently, WWF commissioned research demonstrated that the demand for transition minerals can be reduced by 58% from now to 2050 by proactively implementing innovative technologies, circular economy models and recycling.

Due diligence: Low- and middle-income countries need the capacity to regulate and the authority to hold companies and investors to account for social, environmental, and human rights violations that occur from mining operations, with enforcement of compensation and remediation measures. There are a number of tools and guidance for due diligence on human rights, decent work, land rights, environmental regulation, and community benefit sharing. For example, the Initiative for Responsible Mining Assurance (IRMA), United Nations Guiding Principles on Business and Human Rights (UNGPR) or the Extractive Industries Transparency Initiative (EITI), to name just a few. Most of these are voluntary, or are used to access ethical market opportunities, while a few are linked to regulation. Further analysis of best practice approaches will be needed to identify those that are the most inclusive, effective, transparent, independent and binding. It will be important for IFIs to support countries to raise their capacity to legislate for, monitor, and enforce good practice.

Mineral sovereignty: Mineral-rich countries should be supported in building out their own mineral sectors as part of just transition plans and creating sustainable industrial strategies to develop their own renewable technologies. This should allow them to retain the benefits of transition mining nationally and maintain control of resources locally. There is growing interest in building mineral sovereignty for resource rich countries through effective taxation and local ownership, with technology transfer to utilise the resources nationally to benefit national just transition outcomes for the country. Recently, African stakeholders have been calling for technology transfer for mineral processing and innovation methods to support Africa's green industrialisation and energy transition to renewable energy.

Putting communities at the centre: Exploitation of fossil fuels should not give way to exploitation for the energy transition. As the G7, World Bank (WB) and IFIs make plans to secure transition mineral supply chains, it is time they took a perspective that considers and engages with those people whose lands are being earmarked for mineral extraction and whose resources (such as water or air quality) may be impacted. This is not the time to exploit people already feeling the effects of the climate crisis. Or to perpetuate the extractivist models IFIs have supported to date. Instead, local communities should be active partners in decisions made about their land and resources, and should directly benefit from any mining operations. IFIs urgently need to engage in an open and transparent dialogue with country stakeholder, civil society and impacted communities to ensure their interests are put at the heart of the solution to the transition mineral dilemma for renewable energy transition.

1. INTRODUCTION

For decades, demand for fossil fuels has led to the devastation of communities and the environment due to the relentless development of coal, oil and gas extraction sites in the Global South. As the race gears up to secure minerals for the transition to renewable energy, will similar social-ecological destruction be excused in the name of delivering climate action?

This report explores why international finance institutions (IFIs) should put people and the environment at the centre of the transition mineral supply chain so that the renewable energy era can avoid the damage and extractivist approach of the fossil fuel era.

1.1 Extractivist legacy of fossil fuels, a warning for transition minerals

The series of record breaking global temperatures and spread of wildfires across many parts of the world just this year has explicitly demonstrated the urgency of stopping the climate crisis. There can be no doubt that halting the climate crisis requires the global phase out of all fossil fuel combustion (the main source of greenhouse gas emissions) in the coming decades, and a commensurate, extensive expansion of clean renewable energy technologies.

The International Energy Agency (IEA) estimates that for every gigawatt of clean energy technology installed, millions of tons of CO₂ emissions from fossil fuels can be avoided^{4,5}. They predict that keeping global temperature rise below the 1.5°C threshold will need global investment in renewable energy technologies to triple over this decade⁶. This will require the transition of public finance investments through IFIs including the WB to rapidly shift out of fossil fuels and towards a fully renewable energy global economy⁷.

“World Bank⁸: “While increasing the share of renewable energy is one of the most effective ways of decarbonizing the electricity sector, the countries who have committed to the Paris Agreement need to address the mineral intensity of clean energy technologies.”

However, reducing greenhouse gas (GHG) emissions, mitigating climate change, and driving the renewable energy transition, will require the extraction and use of vast quantities of minerals such as nickel, copper, lithium, bauxite and aluminium, cobalt and a number of rare earth elements. These are essential components in many of today’s rapidly growing clean energy technologies, including wind turbines, solar panels, battery storage, electricity networks, electric vehicles and green hydrogen. A typical electric car requires six times the mineral inputs of a conventional car⁹ and an offshore wind plant requires thirteen times more mineral resources than a similarly sized gas-fired plant¹⁰.

The scale of the current use of coal, oil and gas requires vastly greater quantities of extraction than the amount of clean energy minerals the world will need in the future. In 2021 over 7.5 billion tonnes of coal were extracted from the ground¹¹, while by contrast there are projections that the total minerals needed for clean energy technology by 2040 will be under 30 million tonnes¹². Fossil fuel extractivism has led to devastation for communities and the environment around fossil fuel extraction sites in the Global South, such as oil extraction devastating the Niger Delta¹³, a rise of terror attacks in response to foreign gas developments in Mozambique, or systematic violations of environmental, human and cultural rights related to coal exploitation in Colombia¹⁴.

However, the new mining boom for transition minerals brings its own threats. Projecting from current energy and policy trends, the IEA estimate that the total mineral demand for clean energy technologies is set to quadruple by 2050¹⁵. The IEA suggests that by 2040 the demand for copper could more than double, while the demand for lithium could grow over 40 times. Mining companies estimate they will need to invest nearly \$1.7tn in the next 15 years to help supply enough copper, cobalt, nickel and other metals needed for the shift to a low carbon world¹⁶ if the current energy consumption trends prevail.

But for every tonne of cobalt, on average there is 860 tonnes of mined rock waste¹⁷. Huge farming land areas in Guinea are being commissioned to be blasted for strip mining of Bauxite to provide aluminium¹⁸. Lithium mining from salt flats in Chile and Argentina involves considerable extraction of scarce water resources¹⁹. Waste sediment from nickel mining in Indonesia has polluted the oceans with devastating impacts on coral reefs and local fishing communities²⁰.

A substantial proportion of these minerals will be sourced in from the Global South, often from areas with vulnerable ecological systems or where communities, in particular Indigenous communities, already have their home and make their living. About 54% of mining concessions today overlaps with Indigenous lands, with as much as 85% of the world's lithium reserves and resources located within traditional Indigenous areas²¹. At the COP26 United Nations Climate Change Conference in 2021, Indigenous groups and civil society from around the world signed a declaration calling on climate negotiators to commit to sourcing transition minerals more responsibly, calling on governments and corporations to obtain the "free, prior and informed consent" of Indigenous peoples in decisions that affect them²².

The threat of green extractivism

Civil society organisations (CSOs) who work with communities in mining areas call this race for minerals as a new 'green extractivism'²³, with arguments of climate protection used to justify social-ecological depletion and destruction. Some say that the Global South is being asked to assume the role of exporter of raw materials as an environmental and social sacrifice zone²⁴, justifying highly damaging extraction and mining to feed a growing green consumer demand in the Global North²⁵. There is concern that much of the new green energy demand will feed excessive consumption by a wealthy minority, rather than prioritise energy access for the energy poor. The climate imperative could in effect legitimise large-scale resource extraction, acceptance of social inequality and environmental destruction²⁶.

In countries with large mineral resources there are concerns from CSOs that mining expansion will increase the legacy of damage to the natural environment, the taking of land rights and the undermining of human rights of communities in the mining areas. Ultimately, large-scale mining implies the extraction of large amounts of limited resources, high levels of energy consumption (in areas where local populations often suffer from energy poverty) and water use (in regions with natural water stress). Biodiversity suffers, the area is polluted, and there are negative social impacts. Additionally, there is growing commercial interest in highly damaging practices such as marine dredging for minerals^{27,28} which would threaten marine ecosystems.

“Leandro Gomez, FARN²⁹: *“The Global South is seen by MDBs as a sacrifice area in pursuit of an energy transition model that reduces climate crisis to greenhouse gas (GHG) emissions and that limits its fight to technological responses that demand large amounts of minerals... a transition model that ignores planetary limits and environmental democracy”*

To those who have seen their lives and their environment damaged by mineral mining, terms such as 'sustainable mining' and 'climate smart mining' are oxymorons. Mining and extraction is by its nature damaging to the earth. In our rush for clean energy we need to ensure we are not creating a rush for more and more unsustainable, uncontrolled mining, following the extractivist approach of the fossil fuel era. It is necessary to acknowledge that any mining supply chain will have impacts on the planet and communities, and to proactively ensure that every effort is made to keep this impact to an absolute minimum.







1.2 The geopolitics of transition minerals

The main minerals required in current renewable energy technologies are explored in the figure below, showing a range of minerals and where they are extracted. The mineral reserves tend to be concentrated in just a few key countries, with 15³⁰ countries producing over 70% of mined production of the main transition minerals for low-carbon technologies in 2022³¹. Over two-thirds of the world's

known lithium reserves are in Argentina, Bolivia, and Chile—in the Puna de Atacama, the so-called “lithium triangle”. The Democratic Republic of Congo holds the world's largest cobalt reserves. Bauxite reserves are highly concentrated in Brazil, Guinea, Indonesia and Jamaica. The Philippines is the fifth most mineral rich country in the world, with the third largest deposits of gold, fourth for copper, fifth for nickel and sixth for chromite. Indonesia has the world's largest nickel reserves³² and the IEA expects Indonesia to meet two thirds of the world's needs for the metal³³.

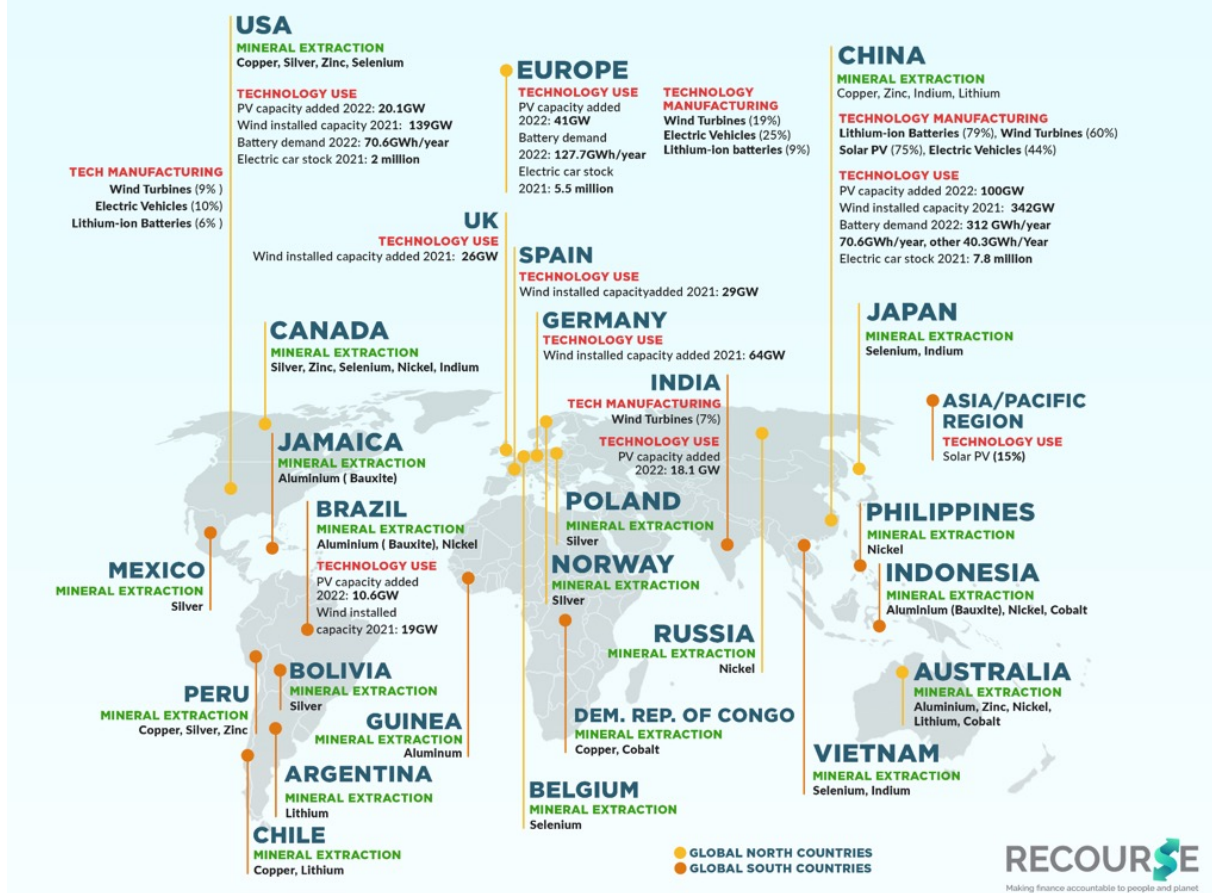
Some minerals such as copper, chromium, and molybdenum are used across a wide variety of clean energy technologies so do not depend on the deployment of any one specific technology within the clean energy transition. However, others, such as lithium, graphite, and cobalt, are needed only for one or two technologies, meaning future demand will depend on future technical and technological innovations. While overall the mineral demand is likely to increase, there are potential future risks for countries that are heavily investing in extraction of one mineral to meet the demand for current technologies. The development of new technologies in the coming decades could cause a rapid decline in demand for that mineral.. For example, the preference for lithium-ion batteries over nickel cadmium for electric vehicles led to a huge increase in lithium extraction; but potential a shift to sodium-ion or iron redox³⁴ batteries in the future could put the future of lithium mining in question.

KEY MINERALS USED IN RENEWABLE ENERGY TECHNOLOGIES

 <p>SOLAR PV Aluminium, Copper, Silver, Selenium, Gallium, Nickel, Indium, Tellurium, Silicon</p>	 <p>WIND POWER Copper, Nickel, Manganese, Cobalt, Zinc, Chromium, Molybdenum, Rare Earth Minerals</p>
 <p>BATTERIES Lithium, Cobalt, Manganese, Nickel, Graphite</p>	 <p>ELECTRIC VEHICLE Aluminium, Copper, Lithium, Nickel, Manganese, Cobalt, Graphite, Zinc</p>
 <p>GREEN HYDROGEN Platinum, Iridium, Cobalt</p>	 <p>HYDROGEN FUEL CELLS Lithium, Graphite, platinum, Palladium, Titanium Strontium</p>

Sources³⁵

THE GEOGRAPHY OF CRITICAL MINERALS FOR RENEWABLE ENERGY



Sources³⁶

Global political tension

While many of the extraction hubs for transition minerals are located in the Global South, mineral processing and product manufacturing of key components using these minerals is predominantly in the Global North and China. Additionally, the dominant use of the technologies is concentrated in the Global North, China, India and Brazil.

There is already tense international competition to secure transition mineral resources for the renewable energy transition, with China having a dominant role in the supply chain^{37,38}. China refines 68% of the world's nickel and 59% of its lithium, and is responsible for 78% of the world's lithium battery capacity and 84% of global solar panel manufacturing capacity³⁹. In addition to being a major producer of many transition minerals, China holds considerable financial interests in mineral production in the Democratic Republic of the Congo (DRC) and Brazil, among other countries. Interestingly the Chinese mining companies were the first to develop a grievance and accountability mechanism for mineral mining, ahead of western competitors⁴⁰, though how effective this will be remains to be seen. China also produces more electric vehicles, solar panels and wind turbines than any other country or region.

China's leadership of transition minerals is exacerbating geopolitical tension⁴¹, with the Chinese control on the market viewed by the G7 and others as an energy security risk. This is highlighted by China's recent export controls on gallium and germanium (used in solar panels and other electronic equipment) in response to Dutch restrictions on exports of advanced microchips⁴².

With dependence on imports for the majority of transition minerals, the US and Europe have moved to build out their own minerals supply chains. In response to this, the recent U.S. Inflation Reduction Act (IRA) includes tax incentives for producing transition minerals at home⁴³ or through free trade agreements. There is a race for countries in the Global North to secure deals for transition minerals from resource-rich countries in the Global South, such as the UK's recent deals with Zambia⁴⁴ and Mongolia⁴⁵, and new deals announced at the African Climate Summit⁴⁶.

G7 calling on the IFIs to secure supply chains

IFIs are being called on to support countries in the Global South to exploit these minerals to supply the demands from wealthy countries. This year's G7 leaders' summit in May 2023 saw the launch of the G7 Clean Energy Economy Action Plan⁴⁷, which sets out a strategy to secure mineral supply chains, stating it will *"support local value creation in critical minerals supply chains, including processing and refining, based on our commitment to our multilateral trading system to make them robust, resilient, responsible, and transparent"*. Specifically, the G7 leaders called on the WB to develop a Partnership for RISE (Resilient and Inclusive Supply-chain Enhancement) in collaboration with interested partners and international organisations. This partnership was officially launched in October 2023 at the World Bank Annual Meeting in Marrakech⁴⁸.

It is notable that the G7 Clean Energy Economy Action Plan specifically identifies Environmental and Social Governance (ESG), community benefit sharing and due diligence for transition mineral supply chains, saying *"We will promote supply chains in line with high ESG standards that ensure benefits to local communities and advance a just energy transition rooted in social dialogue, social and environmental protection, rights at work and employment. We also promote the private sector's adoption of due diligence requirements."* There is clear recognition in this statement of the very challenging and damaging impacts of mining and processing of transition minerals, and the need to address these.

Similarly, this year's G20 Energy Transitions Ministers meeting in Goa⁴⁹ stated that they *"reiterate the need to reduce the potential negative impacts on people and the environment and intend to leverage multilateral cooperation as well as cooperation between the G20 member"* and took note of the Indian G20 presidency 'Voluntary High-Level Principles for Collaboration on Critical Minerals for Energy Transitions'.

1.3 Recent IFI initiatives on transition minerals, what do they say on social and environmental impacts?

Mining has been a core investment sector for many MDBs, but in recent years there has been increased focus on how the mining sector can respond to the climate crisis and deliver the Paris Agreement. This has taken two approaches, first what is labelled 'climate smart mining', addressing the carbon and material footprint of the mining and mineral processing sectors and promoting lower carbon approaches. The MDBs have developed a set of common MDB Principles on climate finance for mitigation⁵⁰ which includes transition mineral mining. This is focused on ensuring climate mitigation benefits. The second, and increasingly important, component is to secure the supply routes and new production for transition minerals for renewable energy and related technology manufacture.

Some MDBs are producing strategies and guidance aimed at enhancing countries' ability to extract and process minerals and financing private sector actors to access new mineral streams. The MDB transition mineral strategies acknowledge the need for ESG, though some put more importance on this than others. Much of this is being driven by regulation in the purchasing country or demands from companies or private investors for higher standards and accountability. For example, the European Union is strengthening its social and environmental due diligence regulations over supply chains^{51, 52}, and car manufacturers are being pushed by consumer demand to be responsible for the human rights and environmental impacts of their supply chains⁵³. Most also recognise the need for a circular economy and recycling capability in the supply chain, though with very little focus on delivery or implementation.

Three IFIs have recently responded in different ways to the demand for transition minerals, the World Bank Group (WBG), European Bank of Reconstruction and Development (EBRD) and the African Development Bank (AfDB). The Asian Infrastructure Investment Bank (AIIB) has acknowledged the need for accountability of the supply chains for recent renewable energy projects. These are briefly reviewed here.

World Bank Group

The WBG Climate-Smart Mining Initiative (CSMI)⁵⁴ was launched jointly in 2019 by the WB and International Finance Corporation (IFC) to *"help resource-rich developing countries conduct sustainable mining, processing, and recycling of minerals needed for low-carbon technologies and other critical sectors while minimising climate and material footprints along their value chain"*. And claims *"The opportunities for growth around the green energy transition multiply and mineral-rich developing countries can play a crucial role in realising a low-carbon, inclusive, and resilient future."* It specifies that *"While the growing demand for minerals and metals provides economic opportunities for resource-rich developing countries and private sector entities alike, significant challenges will likely emerge if the climate-driven clean energy transition is not managed responsibly and sustainably"*.

The environmental concern of the World Bank Climate Smart Mining Initiative focuses on reducing the carbon and material footprint by reducing emissions from mineral production through 'climate-smart mining practices', with stakeholders to include climate, energy and mining 'communities', while impacted communities are not mentioned. It says it will support 'sustainable' extraction and processing of minerals and metals to secure supply for clean energy technologies while minimising the climate and material footprints throughout the value chain of those materials by scaling up technical assistance and investments in mineral-rich developing countries.

The CSMI's flagship report 'Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition' is somewhat dismissive of the role of recycling in the mineral cycle, saying there are technical barriers, and some technologies may not be easily recyclable due to design. It also states that *"two crucial areas, supply and wider environmental and social risks, are not covered, but they are important in understanding the wider context of the report"*. It frames the environmental and social imperatives of mining as reputational risks, saying: *"failure to address these wider environmental and social risks could facilitate a backlash against renewable electricity generation and energy storage technologies needed to mitigate GHG emissions"*.

IFC Climate Smart Mining

The recent IFC Climate Smart Mining report on a Net-zero Roadmap for Copper and Nickel⁵⁵ was sponsored by mining giants RioTinto and AngloAmerican and involved advisors from other big mining companies, including mining giant BHP, indicating the prioritisation given to big multinational corporations, some of whom have a poor record on environmental impacts, human rights and social outcomes from their mining operations (see box). The roadmap *"addresses GHG from mining and processing operations, outlining tangible decarbonization actions the industry can take to cut emissions by 90 percent and reach net-zero emissions goals by 2050"*.

It also *"identifies ways to capture potential environmental and social benefits and highlights opportunities to invest in technology innovation"*. It recognises that there are ESG risks associated with rising mineral demand, for example copper and nickel reserves are located in high water risk and high biodiversity areas respectively, necessitating proactive and responsible management. It goes as far as stating *"new paradigm is required to facilitate a just transition to net zero emissions"* and that a *"just mining transition enables communities to reimagine their future at the centre of a new climate economy"*.

But ESG is presented as a voluntary approach (not compliance based) for embedding in company policy and procedures, with encouragement to use best practice, such as the United Nations Guiding Principles on Business and Human Rights (UNGPR) and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals frameworks. The incentive for companies to do this is to gain access to 'sustainable finance', such as sustainable investments and green bonds.

It is notable that the IFC's green equity investments exclude 'coal related projects' from investments, but include a loophole that allows captive coal-fired power plants used for industrial applications such as mining and smelters⁵⁶. Therefore the IFC continues to fund financial intermediaries investing in nickel mining in Indonesia with captive coal power with very high climate emissions (see case study in section 2.1)⁵⁷.

Mining companies' record on environment, human rights and social standards

The companies the IFC is working with on its CSMI work have a poor track record when it comes to human rights abuses, environmental damage, and social damage.

Rio Tinto: human rights groups say the company's 150 years of history is littered with examples of environmental pollution, dispossessing people of their lands and destroying valuable cultural heritage⁵⁸. For example, the company has been accused of contaminating downstream waterways and lakes in southern Madagascar with its QIT Madagascar Minerals (QMM) uranium and lead mine's wastewater, causing harm to local communities and negatively impacting their livelihoods and local aquatic life⁵⁹. Rio Tinto came under fire last year for destroying a 46,000-year-old sacred Indigenous site in Australia⁶⁰. It is also accused of being responsible for "multiple human rights violations" at its Panguna mine on the Island of Bougainville, Papua New Guinea, leaving people with a dangerous legacy of poisoned water, polluted fields and a ruined river valley⁶¹. They are also planning for a copper mine that would destroy national forests and scared native American lands in Arizona, USA⁶².

AngloAmerican: this year an unprecedented class action lawsuit has been filed on behalf of a group of Zambian children and women against the mining giant Anglo American in South Africa for "suffering injury from lead exposure as a result of century-long mineral extraction near their homes", with the South African court hearing from United Nations experts who argued that Anglo American was acting contrary to its professed commitments to human rights in business⁶³. And in 2022, the OECD accepted complaints against Anglo American, BHP and Glencore at the Cerrejón Colombian coal mine⁶⁴, with the complaints centred on condemning the companies' "participation in and direct responsibility for a litany of serious and systematic violations of environmental, human and cultural rights related to coal exploitation".

BHP: the world's largest mining group was also implicated in the Cerrejón coal mining complaint and has a similar record of safeguarding complaints against it⁶⁵. This includes multiple deaths from the catastrophic collapse of the Fundão tailings dam in Brazil in 2015. BHP and Rio Tinto were both implicated in a report on "prevalent" sexual harassment and assault in the state's mining industry in Western Australia⁶⁶.

European Bank of Reconstruction and Development consultation

The EBRD⁶⁷ is consulting on a new mining strategy which is centred on delivering its Paris Alignment commitment. It recognises that "As the world transitions to a low carbon and digital economy, the mining sector is entering an era of significant opportunities and complex challenges". And that mining companies "face pressure to decarbonise their operations".

While the consultation document recognises the increasing level of stakeholders' scrutiny on ESG matters as a challenge to the sector, the EBRD has been criticised by civil society groups who are calling for greater stakeholder and community engagement with the new strategy⁶⁸

"Various stakeholders from investors, workers and communities (including indigenous peoples) to governments, civil society and end users are expecting high ESG standards and performance and are seeking increased access to information. Investors are looking beyond financial statements and want to consider how companies are managing ESG risks and promoting benefits and how this forms part of company governance structures and policies". European Bank of Reconstruction and Development⁶⁹

The EBRD talks of the social contract of mining operators being further redefined, saying that the capacity of a mining operation to secure and maintain informal acceptance of its activities by local communities and wider society has become an increasingly critical source of risk for mining companies. They recognise the increasing expectations for the consideration and mitigation of human rights risks, and the need for benefit sharing with local communities and local value addition. The test for their strategy will be the level of enforcement, accountability and remediation they put in place to ensure this becomes integral, and not optional, to the EBRD approach.

The EBRD mining sector strategy is more dismissive of managing the life cycle of the minerals, saying *"Recycling volumes will not be sufficient to supply the increasing demand of critical raw materials in the short term"*.

African Development Bank

The AfDB Approach Paper⁷⁰ was published in December 2022 as the precursor study to a fully-fledged African Green Mineral Strategy (AGMS), which will be available in due course. The AfDB strategy presents its vision to guide Africa to strategically exploit the continent's green mineral resources for industrialisation and to assert control over its destiny to create an African presence in emerging green technologies.

One of its four pillars is on 'stewardship' of the green mineral supply chain. It acknowledges that *"Africa is endowed with many of the most important minerals, and the increased demand makes it imperative that stewardship of these resources be guided to maximise the benefits of their exploitation to the continent and her people"*. However, the Approach Paper gives just a few short paragraphs to the Stewardship pillar and calls for what it calls a 'pragmatic' approach to ESG, responding mainly to European Union proposals for due diligence in the battery supply chain to Europe. It includes just one paragraph on the circular economy and recycling.

Asian Infrastructure Investment Bank

The AIIB has started to recognise the potential for harm in the supply chain⁷¹ when investing in renewable energy projects, with a recent project⁷² assessment concluding that *"For potential supply chain related labour and working conditions issues in solar PV subprojects, AIIB will conduct prior E&S review and approval of relevant projects, and will take measures as appropriate, such as (i) reviewing whether subprojects have supply chain policies to address labor and working condition issues, (ii) reviewing whether the Bank has rights to information regarding labor and working conditions in the supply chain, and (iii) if following the results of E&S diligence, reviewing whether the Bank has appropriate contractual remedies to avoid/mitigate/address such risks in subprojects"*.

2. SOCIAL, HUMAN RIGHTS AND ENVIRONMENTAL LEGACY OF IFI INVESTMENT IN TRANSITION MINERALS

MDBs' climate smart mining approaches present transition mineral mining as a huge economic opportunity for low-income and vulnerable countries. But past experiences of IFI support for mineral mining show a very poor track record, and it is essential to learn from these failures, to be accountable and to make remediation.

In this section we consider the very real impacts of transition mineral mining, and present four case studies of transition minerals in Indonesia, Argentina, Guinea and the Democratic Republic of the Congo which have demonstrated a range of impacts from mining and processing operations.

Transition mineral mining raises a number of historic concerns which need to be addressed:



Climate impacts: As the case example below shows, Indonesia has 15 nickel smelters and plans to build at least six more. These smelters demand a lot of energy to process low-grade nickel into battery-grade nickel, which the country plans to provide through captive coal power plants. Therefore processing minerals for 'green technology' will be powered by the worst fossil fuel⁷³. While most IFIs have ruled out investments in coal for the power sector, industrial coal such as this could slip through the MDBs' policy loopholes for investment.



Human rights: Research from Amnesty International suggests children as young as seven are working in cobalt (used in lithium-ion batteries) mines of DRC, and are being paid for less than \$2 a day. The miners also face constant risk and exploitation, working in inhumane conditions often without safety equipment and protective clothing⁷⁴.



Indigenous peoples and FPIC: It is estimated that 54% of transition minerals extraction projects overlap with Indigenous peoples' lands, with 85% of the world's lithium reserves and resources overlapping with Indigenous peoples' lands, 75% for manganese and 57% for nickel reserves⁷⁵. This accentuates the importance of Free, Prior and Informed Consent (FPIC) for transition mining in many countries and locations. In the Philippines there are indigenous gold mining systems which mine for the benefit of the community and have lower impacts on nature. However, these have been threatened as commercial mining is introduced, with commercial mining often displacing indigenous mining⁷⁶.



Meaningful community engagement: The Argentina lithium mining case example below shows that the engagement process and relationship between the community and the companies wanting to extract lithium was more of a one-sided communication than a two-way process, so community members could not freely express their opinions to reach mutual understanding. It also shows that communities were not properly informed about company activities, with communities finding it difficult to understand companies' reports and presentations from representatives. It also finds that companies not fully disclosing all the relevant information about foreseeable risk factors and their potential environmental impacts. Meaningful engagement requires full information disclosure which is accessible to communities in the local language, and a full right to respond.



Land-use, land rights and displacement: In the Guinea bauxite mining case study below, hundreds of square miles of farmland have been acquired by mining companies for their operations, but villagers say they have received little or no compensation. Government studies suggest that more than 200,000 acres of farmland and 1.1 million acres of natural habitat will be converted to bauxite mining.



Forests: The WBG's own Forest Smart Mining Initiative has shown declining forest health in a circle of influence of at least 50 kilometres from mine sites⁷⁷. While the direct impacts of the sector on forests are relatively well understood, the indirect and cumulative impacts of projects and associated infrastructure can be much more significant and are frequently unrecognised or not addressed.



Water extraction: In the Argentina case example below, the communities say lithium brine mining is a 'mega-mining of water', due to its high water footprint, which has been developed without restriction in the territory, and there is a cumulative impact of multiple mines. There is growing evidence that this process has resulted in the salt flats drying up, fresh water sources being salinated, and local communities forced to relocate due to the lack of fresh water.



Water and air pollution The nickel rush in Indonesia threatens the health and environment of Obi Island's people⁷⁸. In just 14 years, a community that was mainly reliant on fisheries has been industrialised and is now suffering the impacts of mining and smelter pollution. There have been reports of increased levels of respiratory infections and there is concern for the safety of their drinking water and the state of local fisheries.



Conflict and corruption: A recent study showed that the EU's supply of minerals is highly dependent on countries that have a low governance level, based on indicators including political stability, rule of law and corruption control⁷⁹. For example, the DRC, whose governance indicators are among the lowest in the world, supplies 63% of the EU's cobalt, which is essential for manufacturing batteries for electrical vehicles. The DRC cobalt mining case study below shows the consequences of corruption in a fragile state and the vulnerability of the communities impacted.



Sexual and gender based violence (SGBV) in the mining sector: A number of studies are giving evidence on the scale of sexual and gender-based violence in the mining sector. For example, in a study of women working as large scale mine employees in Tanzania, Uganda and South Africa⁸⁰ provided evidence of women having to provide sexual services to men in return for assistance. There are also noted cases of rape and sexual violence and murder of women working in mines in South Africa. This study concluded that "the masculine nature of the mining sector is offered as an explanation for much of this violence". Similar experiences have been documented in Australia where women miners were abused⁸¹, and in Canadian⁸² mining sectors where indigenous communities were especially vulnerable.

Additionally, among artisanal mining workers, women's experiences within the sector are gendered: cultural beliefs around women, as well as gendered constraints to access and control over resources concentrate women in lower paid and often more hazardous tasks in the sector – which itself may constitute a form of socio-economic violence. SGBV appears to be one means through which norms of women's roles in artisanal mining are maintained. A study of 'conflict mining' in the Kivus and Maniema regions of DRC has shown that the risk of experiencing sexual violence is particularly high for women that live close to artisanal mines with the presence of an armed actor⁸³.



Accountability, transparency and remediation: While highlighting the very different impacts that mining can have on communities and their environment, the case studies presented here aim to highlight the need for accountability, effective communication and community engagement, and remediation for damage by the IFC and the companies they invest in. The case in DRC shows that responsibility from the IFI's should extend well beyond the initial financial investments, as often public finance is an instigator or seed funder of a project. IFC itself has recognised that 'responsible exit' from projects is a problem, and is this year developing a framework for both remedy and responsible exit⁸⁴.

As IFIs take a growing interest in the mineral supply chains of the future, it will be essential first to hold them accountable, alongside the mining and processing companies, for reparations for harm suffered in past and ongoing engagement in the mining sector. Acknowledgement and reparations are needed to build trust and to learn from for the future. Further, it is important to question the IFI's continued investment in major mining companies that have a legacy of abuses.

2.1 Case examples of harms from IFC financed mining practice

IFC's support for the nickel industry is devastating Obi Island, Indonesia⁸⁵

Nickel is a key element in battery production, solar cell manufacturing, and geothermal facilities. Indonesia has the largest nickel potential in the world, and is trying to capture the full value of its minerals by processing nickel itself, not exporting raw material.

Kawasi village became the location of Obi Island nickel industrial park that is surrounded by nickel mines and is the hub for numerous nickel ore smelters and other industrial zones. The IFC is involved in the development of a project in the Obi Island nickel industrial park through a number of financial intermediaries that have made loans to the mine and smelter operator Trimegah Bangun Persada (TBP) and its subsidiaries. TBP has secured a long-term supply of nickel reserves and

resources on the island, and has begun to expand the integration of the nickel industry from upstream to downstream by investing or joint venturing with several strategic partner associations to establish nickel ore processing plants (smelters).

The IFC's Green Equity Approach - which was developed in 2019 to help IFC's equity clients to exit support for coal by 2030 - contains a loophole that allows support for captive coal power plants used for industrial applications such as mining, and smelters. Electricity demands for mining are met by diesel generators. But for processing operations at the nickel smelters the demand is met by the captive coal power plants, with plants estimated to be 2,984MW either in operation or under construction across multiple facilities. The greenhouse gas emissions generated from the Obi Island nickel industrial park reached 3,489,944 tons of CO_{2e} in 2022, equivalent to six times the emissions of Timor Leste in 2021.

Obi Island nickel industrial park has suffered environmental and social impacts, such as damaged marine ecosystems, polluted springs, dirty air for the community, threats to the diversity of birdlife, land disputes, and forced eviction. The results of sample tests from the sea around Obi Island showed that all samples contaminated heavy metal waste from nickel mining. Samples of drinking water sources near the nickel mine were found to contain hexavalent chromium (Cr⁶⁺) levels above the allowable safety limit permitted by Indonesian law.

The construction and development of industrial estates has made TBP and its businesses increasingly thirsty for new land, resulting in land disputes with the local community. The suffering of the community is further compounded by efforts to criminalise land ownership. Those who refuse to release their land and accept cheap compensation are often intimidated and some have even been imprisoned for six months. The eviction plan puts the residents of Kawasi village under threat of losing the village inherited from their ancestors and being driven from their home.

The promise of the nickel industrial area on Obi Island was that it would bring prosperity to the community. However, the percentage of poor people in the region has steadily increased over the past few years. The presence of the nickel industrial area in South Halmahera, particularly on Obi Island, has led to structural poverty, because the community is forced to depend on living in a damaged environment, breathing polluted air that causes respiratory problems, using water sources that are contaminated by waste, and losing its main sources of livelihoods from farming

and fishing, which ultimately leads to cases of respiratory illness. Incomes are declining at the same time the cost of living is rising.

On Obi Island, the IFC has not successfully ensured that its clients implemented an Environmental and Social Management System (ESMS) that adhered to the Performance Standards to manage risks, and has therefore failed to fulfil its commitment to reduce GHG emissions.

Guinea bauxite for electric vehicles⁸⁶

While aluminium is relatively easily recycled, with over 75% of the aluminium that has ever been produced is still in use today⁸⁷. Expansion of the electric vehicle fleet is already demanding that increasing quantities be extracted.

Guinea, a West African nation of more than 13 million people, is home to the world's biggest reserves of bauxite – a reddish-brown rock that is the main source of aluminium, used in EVs to keep the car weight lighter. Bauxite exports from Guinea increased almost fivefold from 2015 to 2020, with the main mining centre in the northwestern region of Boké.

Hundreds of square miles of farmland have been acquired by mining companies for their operations, but villagers say they have received little or no compensation. Government studies suggest that more than 200,000 acres of farmland and 1.1 million acres of natural habitat will be converted to bauxite mining. There is evidence that the mining operations are damaging local livelihoods

and food security from farming and fishing, but promised jobs and development benefits from the mining operations have not been delivered.

The biggest bauxite mine in Guinea is owned by a Chinese company, to supply the huge and growing demand for EVs in China. But US auto manufacturers, Ford, General Motors and Tesla, are also sourcing parts made of bauxite from Guinea from the Compagnie des Bauxites de Guinée (CBG) owned mines. CBG is owned by a consortium involving Rio Tinto, Alcoa, Dadco and the Guinean government, and has received a debt facility of up to \$200m from the IFC to support the expansion of the Sangaredi bauxite mine, processing plant, and associated infrastructure.

While mining in the country has created thousands of jobs and millions of dollars in annual tax revenue, there is evidence that the government lacks the means to protect the environment or funnel the revenue to areas most affected by the mining.

Strip mining for bauxite is known to cause widespread loss of arable land, disturbance of wildlife habitats, noise and dust, and pollution of rivers and other local water systems. Mitigating the damage requires effective regulation, community involvement and aggressive oversight. According to the report from Human Rights Watch and Inclusive Development International (IDI), the world's major car companies do not monitor their aluminium supply chains back to the mine level and as a result do not adequately police them for abuses.

The CBG mine has recently undergone an audit of their governance and environmental and social performance by the Aluminium Stewardship Initiative (ASI), with the aim of attaining ASI certification. Aluminium buyers—including major car brands—are increasingly relying on certification bodies like ASI to assess whether the mines, refineries and other facilities in their supply chains are complying with human rights and environmental standards. IDI is concerned that weaknesses in ASI's performance standards and auditing processes, including a lack of meaningful community involvement and a focus on procedures rather than outcomes, is likely to lead to greenwashing of the companies it certifies.

IDI supported local communities in filing their complaint to the IFC's Compliance Advisor Ombudsman (CAO) in 2019 and has been accompanying them in mediations with the company since that time. The communities are seeking redress through this process for decades of harm that CBG has caused by taking and destroying their agricultural land, blasting dynamite next to their homes and farms, polluting their rivers and streams with bauxite sediment and severely impacting the rich biodiversity of the region. They are also seeking benefit-sharing from the mining of their land through jobs, infrastructure, education and improved basic services. So far, through the CAO mediation process, CBG has agreed to stop dynamite blasting within a kilometre of inhabited areas and to compensate communities for the damage caused by past blasting activities. The company has also taken action to improve access to clean water and to prevent further pollution of natural water sources. Negotiations are ongoing on the other issues raised in the complaint.

Lithium mining in Argentina creating water scarcity and excluding community engagement

In South America, the salt flats of the Puna de Atacama has been dubbed the 'Lithium triangle'. Intersecting Chile, Bolivia and Argentina, they hold the richest deposits of lithium in the world. The World Bank views the salt flats of the Puna de Atacama as a critical area for its Climate Smart Mining Initiative.

The World Bank Climate Change Development Report for Argentina says that lithium from Argentina could cover almost 20 percent of the global demand in 2030, in particular from the provinces of Jujuy, Salta and Catamarca in the north of Argentina⁸⁸. Mining companies from the US, China, South Korea and Australia are lining up to expand or open new mines, with 15 planned in the Catamarca province alone. The Argentine government is looking to exploit this lithium, estimating

that Argentina's current 40,000 tonnes of lithium carbonate production could triple by 2024/2025 to 120,000 tonnes, comparable to Chile which currently produces some 180,000 tonnes per year⁸⁹.

In 2023 the IFC announced a loan of up to \$180m to Allkem to support the development of Sal de Vida⁹⁰, an operation located in Catamarca. This disbursement includes \$100m from IFC and up to \$80m in funds mobilised. This is the first time that the financing of a greenfield mining project is structured as a supposed 'green loan'. Project goals in this area include increasing women's participation in the Sal de Vida workforce from 10% in 2022 to 26% by 2030 and expanding the use of renewable energy in the production cycle to 50% by 2030.

However, according to the Fundación YUCHAN⁹¹, the Catamarca region is already over exploited by lithium mining, with twenty projects already in the high plateau area of Catamarca province (nine lithium mining projects already in the Salar del Hombre Muerto basin alone). They say lithium brine mining is a 'mega-mining of water', due to its high water footprint, which has been developed without restriction in the territory of Catamarca. So far in the region, the environmental impact studies lack an ecosystem approach which takes account of the cumulative impact of the mines. It underestimate the direct and indirect area of influence of each project, and does not include analysis of alternatives, environmental sensitivity or impact assessment. Fundación YUCHAN says, "It is necessary to take into account the existence of protected areas, the will of local communities and other existing and planned uses, strictly regulating mining activity through participatory socio-environmental monitoring of its impacts".

The salt flats of Argentina are mined for lithium mainly by the water intensive method of evaporating salt brines. Pumps are used to suck out brine rich in lithium and other minerals, and pour it into pools to evaporate until the concentration of lithium reaches 3–4%. It will then be transported by truck to a plant for a chemical process that results in lithium carbonate. There is growing evidence that this process has resulted in the salt flats drying up, fresh water sources being salinated and local communities being forced to relocate due to the lack of fresh water⁹².

A FARN study⁹³ has found that there are now around 46 different projects of lithium extraction at different stages. It found that little consideration has been given to the local impacts of lithium extraction, such as human rights and the social and environmental sustainability of the projects.

A study of two mines in the Olaroz-Caucharí salt flat in Jujuy Province identified several problems with the engagement and relationship between companies and communities, and implementation of the process for Free, Prior and Informed Consent (FPIC). Community members highlighted the significant impact of lithium mining projects on water resources and the lack of information on this matter, both from the companies and the State.

Community members described the engagement process and relationship with companies wanting to extract lithium as more of a one-sided communication rather than a two-way process in which both sides could freely express their opinions to reach mutual understanding. It also shows that communities were not properly informed about company activities, with communities finding it difficult to understand companies' reports and presentations from representatives. Companies not fully disclosing all the relevant information about foreseeable risk factors and their potential environmental impacts. For example, a study conducted by the Catholic University of Argentina revealed that more water is being taken from the watershed than is coming in naturally, hence signalling the possibility of a severe water stress situation if measures are not taken immediately.

Community members highlighted the significant impact of lithium mining projects on water resources and the lack of information on this matter, both from the companies and the State. The State has a responsibility for implementing the FPIC process to guarantee participation rights – a responsibility that cannot be transferred or delegated to a third party. However, the study highlighted the absence of State representatives throughout the whole engagement process.

As it looks to IFC and World Bank support to develop new lithium mines, Argentina must ensure compliance with national and international regulations, reinforcing existing legal frameworks and standards and ensuring capacities and resources are in place to strengthen the role of the State; and that companies disclose all relevant information in a timely, accurate, and clear manner, while

also respecting local context, customs and language. Companies should uphold and respect international labour, environmental and human rights standards, and demand that suppliers and contractors all comply with ESG standards.

IFC's investment in DRC cobalt mining left communities exposed to corruption

The Democratic Republic of Congo (DRC) holds a significant share of the world's transition mineral resources, including cobalt, tantalum, tungsten, and tin. For instance, more than half of the world's cobalt supply is mined in the DRC. However, despite being a naturally resource-rich country, DRC is also the second poorest economy in the world, with extremely fragile governance structures and a very poor reputation for corruption⁹⁴. The mining sector in the country relies heavily on at least 100,000 artisanal cobalt miners, 40,000 of which are children according to estimates by UNICEF. Research from Amnesty International suggests children as young as seven are working in the mines and are being paid for less than \$2 a day. The miners also face constant risk and exploitation, working in inhumane conditions often without safety equipment and protective clothing⁹⁵.

In 2007, IFC invested \$4m in equity in Africo Resources Limited, a Canadian mining company which had stakes in copper and cobalt mining concessions in DRC. The investment was meant "to set a positive example for the local mining sector" by supporting the Kalukundi Cobalt-Copper Project⁹⁶. IFC was an important seed investor, seeking to encourage economic growth and poverty alleviation in DRC after years of devastating conflict. The project involved the construction of a green-field open pit mining operation, cobalt-copper solvent extraction and electro-winning plant to produce cobalt and copper over a 10-year mining lifespan.

In 2016 however, a corruption scandal broke when a bribery scheme to take over the shares of Africo's stake in DRC mining was exposed. The bribery was orchestrated by Och Ziff Capital Management Group LLC owned by an Israeli businessman Dan Gertler in collusion with high-ranking Congolese public officials⁹⁷.

Instead of publicly denouncing the scandal and fulfilling its responsibility to compensate Congolese residents, the IFC forfeited its right to a \$50m compensation. The IFC had quietly divested in 2009 and sold its shares. As a result, the IFC effectively lost \$2.7m from its initial investment in addition to millions more in compensation if the project had continued.

In 2019, the IFC responded to an information request from the UK-based corporate watchdog Rights and Accountability in Development (RAID) saying that it had transferred its rights to a 'third party.' RAID further notes that IFC declined to identify this 'third party' and did not explain the reason behind its refusal to claim compensation. According to Anneke Van Woudenberg, Executive Director of RAID UK, "The Bank (IFC) could have recovered millions for new development projects in Congo to rectify the wrongs, but instead IFC officials stayed quiet and failed the Congolese people when they needed them the most".

In addition, the WBG did not debar Gertler and companies associated with his corruption schemes from doing any future business with the Bank and other development finance institutions. "It is scandalous that Gertler and his companies have never been blacklisted by the World Bank Group, despite officials having seen the corruption up close on their own investment deals," added Van Woudenberg.

The IFC's sudden and irresponsible exit from investment in a fragile country without regard to harms caused to project-affected communities, and its refusal to publicly denounce the corruption scandal and debar Gertler and his companies from engaging the WBG in future investments, leave a stain on the reputation of transition minerals mining in general. As a public finance institution, the WBG must address these concerns and fulfil its commitment to support just transition efforts in the Global South, in particular, in countries like the DRC where governance structures are still developing and corruption is a constant challenge.

3. RESPONDING TO THE TRANSITION MINERAL DILEMMA

The urgent need to phase out all fossil fuels is an existential imperative. However, the energy system we move to does not have to replicate the damages of the past. Now is the time to act carefully, contemplatively, and intelligently as we look towards a renewable energy future.

This section explores the options IFIs have for abating the impact of their investments and technical advice for transition minerals as part of a just energy transition. Here we look at minimising impact through product design, recycling and reducing wasteful energy consumption; the usefulness and limitations of due diligence tools available for managing environmental, social and human rights impacts; the need for increased mineral sovereignty in the Global South; and the imperative of putting impacted communities at the centre of decision making.

3.1 Minimise, recycle, design for less

Leandro Gomez from NGO FARN⁹⁸ proposes that “[IFIs] could reorient their efforts towards the promotion of recycling and reuse of minerals and metals, the decrease in demand for energy, the increase in energy efficiency, the development of collective transport, the reduction of energy poverty and the democratisation of planning and decision-making spaces, among other actions”.

Many factors along the transition to renewable energy will determine the actual demand for renewable energy technologies and the minerals they rely on. These include:

- the energy demand, consumption patterns, and energy efficiency;
- the scale of recycling built into the mineral life cycle, and
- technology choices and design in the coming decade.

The primary means to reduce mineral demand is to ensure energy planning, particularly in the Global North, prioritises energy sufficiency and efficiency, and penalises wasteful energy use and excessive technology expansion in pursuit of profit. It will be important to ensure minerals are part of a circular economy where extracted materials remain in society for longer and that at the end of a technology's lifespan, the materials are recovered and looped back into the production of new products and technologies. There are three broad circular economy approaches: reduced demand, lifetime extension, and recycling.

The IEA's projections⁹⁹ for mineral demand for energy transition⁹⁹ recognise that there are a number of bottlenecks in the supply of minerals, including the geographic concentrations of many minerals in specific countries and the risks posed by the environmental and social impacts of mineral mining. The IEA concludes that efforts to scale-up investment in mineral supply chains should go hand-in-hand with a broad strategy that encompasses technology innovation, recycling, supply chain resilience and sustainability standards.

While some IFIs recognise the need to look at the life cycle of the mineral supply chain and to recycle minerals, they are often dismissive of the idea that this approach can dramatically reduce the demand for transition minerals. The WBG CSMI¹⁰⁰ analysis plays down the role of recycling and re-use claiming there is a “*lack of existing material to recycle and reuse, along with costs and technological barriers (for example, some technologies may not be easily recyclable due to design)*”. Rather than looking to encourage recycling and re-use in product design, manufacture and waste management, they look to source more virgin minerals.

However, WWF commission research, '*The Future is Circular*' shows that the demand for transition minerals can be reduced by 58% from now to 2050 with new technology, circular economy models and recycling¹⁰¹. This requires a proactive approach that considers the full lifecycle of mineral supply chains. The research shows that the first step towards a responsible green transition is reducing the reliance on virgin minerals by including a mix of technological innovation and changes to our current patterns of consumption and waste; and that for seven transition minerals studied (lithium, cobalt, nickel, manganese, rare earth elements, platinum and copper), application of existing and innovative technologies can have a real impact on mineral demand:

- ⦿ Shifting to new technologies with less transition minerals can reduce total demand for the seven minerals considered in this report by 30%.
- ⦿ The adoption of different chemistries for electric vehicle batteries and moving away from lithium-ion batteries for stationary applications could reduce the total demand for cobalt, nickel, and manganese by 40–50% of cumulative demand between 2022 and 2050 compared to current technologies and business-as-usual scenarios.
- ⦿ Increasing the use of electric traction motors and wind turbine generators with low or no rare earth elements could cut the cumulative demand of these minerals by 20%.

The WWF report shows that a range of circular economy strategies can decrease total mineral demand by 18% between 2022 and 2030. Given the lifespan of many new renewable energy technologies, recycling minerals will start playing a significant role in supplying transition minerals after 2040, and mineral recovery from low-carbon technologies could supply 20% of the total mineral demand between 2022 and 2050. The WWF report recommends that technological innovation and circular economy should form the backbone of the green transition.

It will be essential to mandate that renewable energy technologies be designed for disassembly and recyclability (see box on the European regulation).

European Council new regulation on batteries and waste batteries¹⁰²

As the EU shifts towards zero-emission modes of transport, the European Council this year adopted a new regulation that strengthens sustainability rules for batteries and waste batteries. The regulation will control the entire life cycle of batteries – from production to reuse and recycling – and ensure that they are safe, sustainable and competitive.

The new rules will promote the competitiveness of European industry and ensure new batteries are sustainable and contribute to the green transition as well as aim to promote a circular economy by regulating batteries throughout their life cycle. This establishes end-of-life requirements, including collection targets and obligations, targets for the recovery of materials and extended producer responsibility.

The regulation sets targets for producers to collect waste batteries for light means of transport (51% by the end of 2028 and 61% by the end of 2031); a target for lithium recovery from waste batteries of 50% by the end of 2027 and 80% by the end of 2031, and it sets mandatory minimum levels of recycled content for industrial, SLI batteries and EV batteries. The recycling efficiency target for nickel-cadmium batteries is set at 80% by the end of 2025, and 50% by the end 2025 for other waste batteries.

The new regulation aims to reduce environmental and social impacts throughout the life cycle of the battery. To that end, the regulation sets tight due diligence rules for operators, who must verify the source of raw materials used for batteries placed on the market.

3.2 Due diligence

Considering the social and environmental consequences of historic and on-going mining and processing operations presented in the previous section, it is clear there are basic principles needed to safeguard social and human rights and environmental integrity including:

- ⦿ a precautionary principle to avoid the most damaging mining practices and excluding poor performing mining companies;
- ⦿ respect for free, prior and informed consent (FPIC) for Indigenous and local communities and prioritisation of Indigenous knowledge;
- ⦿ community engagement and benefit sharing;
- ⦿ gender analysis and implementation of safeguarding against gender-based violence;
- ⦿ strengthened environmental standards and accountability for mining operations and monitor activities, including the cumulative impacts of multiple mines in one ecological area;
- ⦿ regulated and monitored air and water pollution and accessible and transparent data about local resources.

A number of organisations and regulating bodies have produced guidelines and mechanisms for due diligence and accountability which can be used by mine operators and across the mineral supply chain to manage impacts on communities, human rights and the environment. Many of these are voluntary measures, some have certification processes, and some have a level of enforcement or regulation attached. Applying a combination of these guidelines can help mining companies access financing from specific sustainable development funds or help open new 'ethical' markets.

There is a wide range of due diligence tools currently in use include to manage human rights, environmental and social impacts of mineral mining and processing operations (note these are for illustration of prominent examples, not an exhaustive list):

- ☑ IFI Performance standards and environmental and social frameworks
 - ▶ the IFI's own Performance Standards and accountability mechanisms
 - ▶ Joint MDB Principles for Climate Mitigation¹⁰³
- ☑ EU Regulations and Directives
 - ▶ EU Corporate Sustainability Due Diligence Directive¹⁰⁴
 - ▶ EU Regulation on Batteries and Waste Batteries¹⁰⁵
- ☑ UN Guidance
 - ▶ Business and Human Rights Guidelines United Nations Guiding Principles on Business and Human Rights (UNGP)¹⁰⁶
 - ▶ 10 Principles of the UN Global Compact¹⁰⁷
 - ▶ International Labour Organisation (ILO) Guidelines for a just transition¹⁰⁸
- ☑ Supply chain sustainability certification
 - ▶ Copper Mark¹⁰⁹
 - ▶ Aluminium Stewardship Initiative¹¹⁰
- ☑ OECD Guidance
 - ▶ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals frameworks¹¹¹
 - ▶ OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas¹¹²

- ☑ Independent guidelines
 - ▶ Extractive Industries Transparency Initiative (EITI)¹¹³
 - ▶ IUCN Nature Based Solutions Standards¹¹⁴

- ☑ Mining sector guidance
 - ▶ Initiative for Responsible Mining Assurance (IRMA)¹¹⁵
 - ▶ International Council on Mining and Metals (ICMM) mining principles¹¹⁶ and Readiness Assessment¹¹⁷
 - ▶ Responsible Mining Foundation Responsible Mining Index¹¹⁸

The EU is often held up as a leader on regulating for human rights and sustainability due diligence in the supply chain for minerals, such as the European Council's new regulation on batteries and waste batteries and the proposed EU Human Rights Due Diligence Directive. However, this year the European Commission (EC) presented a proposal for a framework for ensuring a secure and sustainable supply of critical raw materials (the CRMR). Civil society groups have raised concerns that this legislation is primarily to ensure that the European Union has access to a secure and sustainable supply of critical raw materials, but implementing this will not lead to a sustainable supply of minerals for Europe because it will exacerbate human rights and environmental risks and undermine local stakeholder engagement¹¹⁹.

For their part, the IFIs need to consider how the development and implementation of the most effective of these due diligence tools to ensure best practice outcomes can empower the affected communities and give total transparency along the full mineral supply chain.

This report does not aim to scrutinise the methods for regulating and transparency, but there needs to be further analysis of these tools to ensure they are inclusive, effective, transparent and binding. It will be important to ascertain which of these mechanisms are effective and which are 'window dressing' processes with the potential for greenwashing a project, for example to be used in marketing. Additionally there is often an the 'implementation gap' where standards are simply not applied on the ground, for example in projects implemented through financial intermediary where IFI standards are not included in contracts at the sub-project level¹²⁰.

Many NGOs who engage in the mining sector in the Global South have concerns about certification schemes¹²¹, saying they are essentially developed in the Global North and serve the purpose of continuing the privilege of financial and managerial classes in the global powers. Also, they are not used to hold mining corporations accountable for their violations, to punish wrongdoings, but to make mining activities look cleaner and more acceptable to the buyers and processors along the supply chain of the minerals, which will then be used for marketing and profit-making purposes.

If mining is to go ahead as part of a just energy transition there will have to be effective good practice and due diligence. In assessing the effectiveness of the certification tools including those listed above, it will be important to consider:

- ☉ Is the certification or application of guidelines or standards verified by an independent body with no vested interest?
- ☉ Are they transparent and accountable to all stakeholders including impacted communities?
- ☉ Is there a penalty for not complying and remediation for social and environmental impacts?
- ☉ Is it perceived as legitimate by potential affected stakeholders who seek a fair and effective handling of grievances?
- ☉ Do they consider external impacts beyond the issue addressed (e.g. do environmental impacts assessments take into account land rights, human rights or health and cost implications of pollution?)

- ⦿ Are impacted communities, including women, indigenous and minority groups, engaged and consulted in a meaningful way in appropriate languages and with sufficient accessible information?
- ⦿ Is it operated transparently, keeping a registry of complaints and outcomes?
- ⦿ Are the time frames for accountability adequate to allow recompense after the IFI investment ends?

An issue which often hinders effective impact management is the capacity within the country to implement, monitor and enforce these approaches. Sometimes this will require national legislation to embed good practice in national law, as well as capacity building and resource allocation to implement. For example, in the Argentina lithium mining example above there was concern shown that capacities and resources need to be put in place to strengthen the role of the State in ensuring compliance with national and international regulations, reinforcing existing legal frameworks and standards. It is essential that IFIs do not invest in mining where the national capacities to regulate, monitor and enforce are not yet mature. Rather, it will be important for IFIs to invest and support countries to build capacity to implement and oversee due diligence in mining and mineral processing.

3.3 Mineral sovereignty

It is important to ask who benefits from the mineral life cycle, and how mineral rich countries and communities can benefit from the resource, not suffer harms as experienced in the past. This in turn asks how countries can retain greater sovereignty over the minerals and ensure they add value to national development. Can this be achieved through redistributive taxation and local ownership? How can technology transfer help utilise the resources nationally to benefit national just transition outcomes?

This is high on the agenda for African countries. Power Shift Africa¹²² says that African countries will *"need to move away from getting stuck as providers of raw minerals for the global green transition in order to become serious players across the renewable energy value chain. Manufacturing of renewable energy technologies can be a key driver for African industrialisation and constitute an effective pathway towards energy sovereignty."* Adding to this, the The African People's Climate and Development Declaration 2023¹²³ insists that *"African industrialisation must be a very different and gentle kind of industrialisation, that works for the common good with workers', social and environmental rights at the core"*.

At the recent African Climate Summit, the Leaders Declaration called for *"Shifting the energy intensive primary processing of Africa's raw material exports to the continent, also to serve as an anchor demand for our renewable energy and a means of rapidly reducing global emissions", including a "Call for access to and transfer of environmentally sound technologies, including technologies that consist of processes and innovation methods to support Africa's green industrialisation and transition"*.

This is echoed by AfDB mining approach paper, focused on building the continent's natural resource wealth to translate into industrialisation and development. It encourages countries with deposits of minerals to develop a sound governance environment that targets processing minerals in-country for consumption in domestic and/or regional markets and says that adding to the value chain at a national and regional level will require transparency of contracts, strong labour rights, and environmental sustainability and equitable knowledge transfer¹²⁴.

With a similar aim, Indonesia has fully banned exports of raw nickel ore since 2014, ensuring domestic processing or purifying of the raw materials in the country prior to export. However, in its efforts to secure its own mineral supplies, in July 2023 the European Commission launched public consultations on the Indonesian nickel export ban with a view to deciding on possible new punitive measures¹²⁵.

3.4 Concluding remarks – putting people and planet at the centre

Ultimately, we need a new energy system to challenge the neo-colonial extractivist models of the fossil fuel era. In pursuing minerals needed to transition to a renewable energy system, the Global North should not ask those communities who have done least to cause the crisis to pay the cost of solving it. We need a renewable energy transition that looks first to consume less and then addresses

the challenges of its supply chain openly and inclusively, so that it treads lightly on our planet and its people.

As the G7 with the WB and other IFIs make plans to secure transition mineral supply chains, it is time for them to engage with the people whose lands are being earmarked for mineral extraction and whose resources (such as water or air quality) may be impacted. From now on IFIs need to actively put the communities affected by the energy transition at the centre of decision making, including opening of political space for communities to be able to engage with both their government and private sector (including foreign companies) to safeguard their interests. Local communities should be active partners in decisions made about their land and resources, and should directly benefit from any mining and processing operations.

This will require open and transparent dialogue. The WBG should lead IFIs in a conversation with country stakeholders, civil society and impacted communities to ensure their interests are put at the heart of the solution to the mineral dilemma for renewable energy transition.

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