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Rethinking Resource Enclivity in Developing Countries: Embedding Global Production Networks in Gold Mining Regions

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Abstract

This article explores how the gold mining sector has adapted and evolved in developing countries since the onset of the global pandemic. A major criticism of capital-intensive gold mines has been that they occur as enclaves which fail to catalyze local economic development. Pre-pandemic, the pressure applied by NGOs and donors on gold mining companies to 'de-enclave' was steadily building. It has since dissipated, however, because many governments have declared mining an 'essential' industry. This decision has further *entrenched* the sector's enclavity by justifying companies' moves to continue operating in isolation and abandon their traditional Corporate Social Responsibility (CSR) strategies.

1. Introduction

Over the past two decades, the enclavity thesis has become a popular explanation for why developing countries endowed with natural resource wealth perform so poorly economically. The idea that most capital-intensive natural resource extraction takes place in enclaves, disconnected from local economies, was heavily popularized by Ferguson (2005). Using the case of offshore oil production in sub-Saharan Africa, the author argued that ‘capital “hops” over “unusable Africa”, alighting only in mineral-rich enclaves that are starkly disconnected from their national societies’ (p. 380). Proponents of the enclavity thesis maintain that the resulting ‘fortresses’ are ‘insulated from their immediate environment’ (Rubbers, 2019, p. 89), within which booming industrial production is sustained by inflows of capital and supplies.

In the case of large-scale mining, as Côte and Korf (2018) explain, ‘concessions have emerged as “extractive enclaves” or government-sanctioned spaces of mineral exploration and extraction’ (p. 466). Mine enclavity is now widespread across the developing world, the result of sizable concessions being awarded to mining and mineral exploration companies.¹ Within these territories, there are contiguous enclaves, each containing pockets of large-scale mining activity and interconnected spaces demarcated specifically for mineral exploration. The mechanization of large-scale mining operations and the international marketization of private security are typically cited as the driving forces behind the formation of these enclaves (Rubbers, 2019). A case can be made, however, that the globalization of mine support services, provided by corporations which, in many instances, are as transnational as the companies they have forged contracts with, has also played a major role in fuelling resource enclavity in the large-scale mining sector (Hilson, 2019).

Despite broad recognition of its merits as a conceptual framework, the enclavity thesis, at least in the context of large-scale mining, has been heavily scrutinized for depicting areas of resource production as *isolated* and *disconnected* (Arias et al., 2014; Breul et al., 2019). For example, Côte and Korf (2018) concluded, based on research conducted in gold mining areas of Burkina Faso, that ‘[mining] enclaves are not actually discrete spaces – for here capitalism is entangled in much more nuanced ways in local political economics and social relations’ (p. 467). Similarly, Rubbers (2019) argued that in DR Congo, ‘in order to isolate a pocket of production from the society where it is established, companies must actively engage with various of social actors – including local elites, surrounding communities, police forces, and so on’, which, consequently, implies that ‘As a result, extractive enclaves are inevitably more embedded in local society than Ferguson’s thesis would suggest’ (p. 89). In short, many scholars, it would appear, take the view that capital ‘hopping’ into mineral-rich territories in the developing world is grossly overexaggerated, contesting that mining companies must engage and ultimately build rapport with local-level actors in order to operate, regardless of the setting.

Ferguson’s (2005) reluctance to connect with the formative works on the international political economy of mineral production has exposed the enclavity thesis – at least as it applies to large-scale mining – to such criticism. The author makes few connections with the landmark works of Singer (1950) and Prebisch (1950) on which, as Radley (2020) rightly points out, ‘The enclave thesis was initially established’ (p. 795). The former in particular offered detailed accounts of global economic trends mid-twentieth century, including how, at the time, ‘the industrialized countries have had the best of

¹ For example, in Ghana, as much as 28 percent of its territory; in neighbouring Côte d’Ivoire and Burkina Faso, an estimated 19 percent and 20 percent of land, respectively; in Ecuador, at least 13 percent of the country’s continental area, Peru, 21 percent and more than 18 percent of the entire Amazon Basin; and 10 percent of Mongolia (Akforte et al., 2014; Doso et al., 2015; Bebbington et al., 2018; Roy et al., 2018; Vallejos et al., 2018; Hilson et al., 2020).

both worlds, both as consumers of primary commodities and as producers of manufactured articles, whereas the underdeveloped countries had the worst of both worlds, as consumers of manufactures and as producers of raw materials' (Singer, 1950, p. 479). Ferguson (2005) also skips over the work of Hirschman (1958), one of the first scholars to stress how important it was for developing countries to 'do what they were good at', including forging 'linkages', which, he argued, are the keys to accelerating economic development (Ackah-Baidoo, 2020). At the heart of this landmark literature was the theme of 'core-periphery', which it uses to articulate patterns of global mineral production, and to reflect on the implications this imbalance had for global development. The core-periphery theme brought into sharper focus the power emerging within global mining networks at the time, a phenomenon which continues to persist: specifically, how many developing countries are the locations of major operations owned by multinational companies, on which their governments have grown overdependent, economically. The continued success and profitability of large-scale mining, even in the face of adversity, is owed largely to the preservation of the sector's international decision-making apparatus, ability to harness innovative technologies, and financing structure (Ernst, 2002; Iammarino et al, 2008; Diemer et al, 2022). These dynamics became more pronounced and visible in early-2020 at the onset of the COVID-19 pandemic (Lawreniuk, 2020).

The purpose of this article is to reexamine how mining companies have adapted, evolved and managed to continue operating at such high levels in developing countries during the global pandemic. In doing so, it reengages with the enclivity thesis as well as interrogates the aforementioned formative political economy literature to explain why large-scale mining companies were uniquely positioned to navigate the initial challenges presented by the pandemic, as well as how the changes they made have influenced Corporate Social Responsibility (CSR) strategies at their operations moving forward. The article focuses on gold, the price of which surged in 2020, opening the year at US\$1520.55/oz and closing at US\$1895.10/oz, reaching a record US\$2063/oz on 6 August 2020. A combination of a global economic slump, uncertainty surrounding coronavirus infections and containment of the disease, and a weakened US dollar buoyed gold's high price throughout 2020. The world's largest gold mining companies spent the initial months of 2020 adjusting their budgets and redesigning their strategies in line with policies and rules rolled out by governments across the world to contain the spread of the virus. Following this short readjustment period, however, globally, gold mine production began to show signs of recovery, bolstered by the 3 percent rise in the number of active exploration companies, to 1762 – most were new or were reactivating programs that had targeted gold, the global – in 2020. Mine financing hit an eight-year peak in 2020, rising 25 percent from 2019, with gold outpacing all other commodities because of its high price, increasing 40 percent to US\$6.22 billion across 1620 investments (S&P Global, 2021a, b).

Revisiting Ferguson (2005), the pandemic has illuminated the subtleties of gold mining enclaves and the unique network they have long been at the heart of, to which these achievements, during a year (i.e. 2020) in which the volume of world trade declined by 8.5 percent and global GDP dipped 3.3 percent (IMF, 2021), are owed. The continued success of the gold mining sector amid any type of adversity is due in large part to the preservation of its unique core-periphery setup: secured areas of the globe where major investment and operations-related decisions linked to production take place on the one hand, and the locations of operations and accompanying exploration activities on the other hand. These are, and remain, 'discrete points'.

2. Resource Enclivity in a Globalized Gold Mining Sector

One phenomenon relevant to enclivity that has attracted the attention of scholars is 'linkages' (Ackah-Baidoo, 2020). As Phelps (2015) explains, building on Hirschman's (1958) seminal work, 'The literature on enclaves reminds us of the need to engage in the analysis of pecuniary externalities manifested in

a variety of different linkages (and leakages) such as the production linkages (backward and forward), the induced consumption linkages, and the fiscal or tax linkages...whose effects may not be captured locally' (p. 125). The catalyzation of local linkages is central to *de-enclaving* large-scale mining in developing countries (see e.g. Bloch and Owusu, 2012; Fessehaie, 2012; Figueiredo and Piana, 2016; Ackah-Baidoo, 2020). Enclavity and sizable periods of disassociation with, and often outright disconnection from, local economies are major reasons why so many gold mines in Latin America, Asia and sub-Saharan Africa have remained so productive over the years, as well as why large-scale mineral exploration activity in contiguous areas continues to flourish. This includes the time of the global pandemic, which the gold mining industry navigated successfully.

2.1 The Global Production Network for Gold Mining

The tightened borders, reduced transport and restrictions imposed on imports during the pandemic disrupted flows of goods and services in a world long connected through networks of traders, financiers, consumers and producers. For large-scale gold mining, however, the pandemic provided an opportunity to extend and consolidate its economic influence.

The pandemic illuminated the sector's two 'discrete points'. The first is what is referred to here as its 'finance enclave', or the collection of companies that mobilize investment and technical support for the (mining) sector, along with the corporations which undertake gold exploration and mining activity globally. For these actors, Q1 of 2020 was a turbulent period, marked by suspensions in gold production, closures and temporary cessations of exploration activity, and mergers and acquisitions. But the industry showed remarkable signs of recovery by Q2 2020, bolstered by – and as indicated earlier – high gold prices. The second discrete point encompasses the territories where gold production takes place (referred to here as the 'production enclave'), access to which is enabled by host governments that multinational mining companies broker agreements with. Many governments in Latin America, sub-Saharan Africa and Asia were desperate to keep gold mines functioning during the early stages of pandemic due to their dependency on the revenue they generate (see Table 1). This proved important in 2020 (see Table 2), when FDI flows and international project finance into developing countries would end up decreasing by 46 percent and 7 percent, respectively (UNCTAD, 2021). As will be explained using the Global Production Network (GPN), it is the relationships forged and subsequent transactions negotiated between the parties that populate these two enclaves which fuel the growth of the large-scale gold mining 'fortresses' found throughout the developing world.

[Insert Table 1 here]

The GPN is useful for *locating* actors in supply chains. It helps to facilitate the mapping of *both* the vertical and horizontal relationships between actors, emphasizing three attributes, namely *power*, *value* and *embeddedness*. The network metaphor, explain Henderson et al. (2002), 'is used to capture the multi-stranded connections between producers, traders, retailers and consumers'. This is what proponents of the GPN believe distinguish it from other frameworks, particularly the Global Commodity Chain (GCC) or Global Value Chain (GVC). Neither take stock of horizontal relationships or the 'three principal elements' of value, power and embeddedness on which the GPN is based.

[Insert Table 2 here]

When the GPN is employed as a framework to understand 'the globally organised nexus of interconnected functions and operations by firms and non-firm institutions through which goods and services are produced and distributed' (Coe et al., 2004, p. 471), the locations of the many significant nodes and networks, and positions assumed by the actors who populate them, in a globalized sector such as large-scale gold mining become clearer. The metaphor of the chain pushes scholars to rethink

how a commodity – in this case, the gold originating from large-scale, capital-intensive mines – is the culmination of a process ‘in which the flows of materials, semi-finished products, design, production, financial and marketing services are organized vertically, horizontally and diagonally in complex and dynamic configurations’ (Henderson et al., 2002, p. 444).

2.2 Locating Actors and Sources of Power: Gold Mining Companies and Finance

When mapping the large-scale gold mining sector, there are horizontal/non-linear relationships that must be considered (for analysis of these relationships in capital-intensive resource extraction more broadly, see e.g. Bridge, 2008 and Kudelko, 2013). What ‘distinguishes “producer-driven” production systems’, Gereffi et al. (1994, p. 97) explain, ‘is the control exercised by the administrative headquarters of the TNCs [transnational corporations]’. These ‘play the central role in controlling the production system (including its backward and forward linkages)’ (p. 97).

The GPN for gold mining has, at one extreme, the aforementioned ‘finance enclave’, which is comprised of the pockets of gold exploration and mining companies, and their investors. Their locations – to use Ferguson’s (2005) analogy – represent the *discrete* points from which capital and other resources ‘hop’ and where, reverting to GPN terminology, *value* is created. It begins with the London Stock Exchange (LSE), through which a sizable proportion of financing for global mining activity is raised. The LSE is also a listing venue for many of the world’s largest gold mining companies (Table 3).

[Insert Table 3 here]

An even more strategic location for mine finance, however, is Canada, where three-quarters of the world’s mining companies are headquartered. Vancouver is especially appealing to mineral exploration companies and Juniors – there were, at the time of writing, 1036 mining and mineral exploration companies headquartered here² – because of the generous tax concessions provided by the provincial and federal governments. The former offers a tax credit that allows a mineral exploration company to deduct goods-and-services costs from its payable provincial income taxes (including prospecting, drilling, geological surveys and sampling), whilst the latter provides a tax subsidy that enables these companies to transfer their undeclared business expenses to prospective shareholders.³ An additional 396 mining and mineral exploration companies are headquartered in Toronto, the locations of the Toronto Stock Exchange (TSX) and TSX Venture Exchange (TSXV).⁴ Over the past five years, 53 percent of all global financings were completed, and 37 percent of global mining equity were raised, by companies listed on the TSX and TSXV (TSX, 2020), making them the single-most significant sources of *value added* for the sector. Their popularity and cementation as the epicentre of global mining finance is attributable to a flexible regulatory regime, risk tolerance for investors in developing countries and the two-tier listing system which caters to companies of all sizes. Finally, there is the Australian Security Exchange (ASX), a critical source of finance for companies headquartered in Australia (487 at the time of writing in Perth alone),⁵ another global mining hub.

A burgeoning goods and services industry has evolved alongside and now dovetails the mining sector in all corners of the globe where operations are found. Its companies comprise one of mining’s more

² Data retrieved from S&P Global.

³ ‘Why is B.C. home to more mining exploration companies than anywhere else on earth?’ <https://thenarwhal.ca/why-is-b-c-home-to-more-mining-exploration-companies-than-anywhere-else-on-earth/> (Accessed 30 April 2021).

⁴ Data retrieved from S&P Global.

⁵ Data retrieved from S&P Global.

visible *horizontal* linkages but are also examples of what the architects of the GPN would consider *enhanced value*. Martinez-Fernandez (2010) chronicles the rise of Australia's multibillion dollar mine support services industry, which has existed for generations; it supports the country's largest companies and a multitude of Juniors. Australia's mine technology companies are most concentrated in Sydney and Perth due to their need for financial services but also have branches in the country's major mining towns. These findings speak to calls made by Todd et al. (2020) on the importance of considering multiple networks when studying the dynamics of the extractive industries. Reinforcing points raised by Coe and Yeung (2015), who stress that there exists an 'aggregation of multiple GPNs to form an industry; intra-industry intersection of GPNs through common strategic partners or specialised suppliers; and inter-industry intersection of GPNs through firms undertaking different roles in different GPNs' (p. 61-62), the authors point out how international mine suppliers such as Kamatsu and Caterpillar are 'truly global players with their own GPNs in manufacturing, dealerships and labour stretching across 180 countries' (p. 101).

For international gold mining corporations, Juniors and mineral prospectors, therefore, major suppliers as well as the other companies which make up this 'extensive network' are strategic partners. Their commitment to providing services to projects in all corners of the globe has undoubtedly de-risked financing for firms of all sizes listed in the likes of London, Toronto, Vancouver and Sydney, in the process, fortifying what proponents of the GPN would interpret as the *embeddedness* of major gold miners and Juniors in the finance enclave they are a part of. This dovetailing remained intact throughout the pandemic, sustaining gold exploration activity and mine production even when curfews, export restrictions and border closures were imposed.

2.3 Locating Actors and Sources of Power: Developing Countries

To better understand how the global pandemic influenced the managerial strategies adopted by large-scale gold miners with operations in developing countries, it is instructive to first revisit how the sector has become so globally-networked in such a short period. Today, gold mining is *truly* an international industry: over 90 countries now produce the precious metal. Many of these countries are the locations of 'discrete points' that comprise the sector's production enclave to which capital 'hops'; this capital ultimately catalyzes the exploration activity that nurtures the gold mining 'fortresses' which now dot the landscapes of Latin America, Asia and sub-Saharan Africa. The GPN framework is incapable of providing further clarity on how these enclaves emerge because, as Afewerki (2019) explains, despite having 'outlined the three overlapping conceptual categories of value, power, and embeddedness, it lacked an explicit depiction of the causal mechanisms through which global production networks emerge' (p. 1485).

The relationships that the management of gold mining, exploration, and industry services companies which now operate in developing countries have cultivated *can* be explained using Stakeholder Salience Theory. Building on Freeman's (1984) work, Mitchell et al. (1997) stressed the need to move beyond *listing* stakeholders, recognizing that managers 'prioritize stakeholder relationships' based on 'situational uniqueness' and 'perception'. Stakeholder salience, Mitchell et al. (1997) explain, should be seen as 'the degree to which managers give priority to competing stakeholder claims' and 'goes beyond the question of stakeholder identification, because the dynamics inherent in each relationship involve complex considerations that are not readily explained by the stakeholder framework as it currently stands' (p. 854).

[Insert Figure 1 here]

For mining companies operating in developing countries, the dominant stakeholder ‘who matters most’ is, indisputably, the host government, from which management must secure licenses/permits to explore and extract minerals (Tole and Koop, 2011). Several gold-rich developing countries, including Guyana, Ghana, the Philippines, Tanzania and Burkina Faso, offer mining and mineral exploration companies generous economic incentives (e.g. extended tax holidays, permission to repatriate profits and low royalty rates) to encourage investment in the sector (see Forster and Bills, 2002; Campbell, 2003; IMF, 2012 Caramento, 2020; Hilson and Ovadia, 2020; Maponga and Musa, 2021). In fostering relationships with specific gold mining companies and their suppliers, these governments have become *embedded* in a GPN in which they wield influence or *power*, in the process, enhancing *value*.

Multinational mining companies, through partnerships with these ‘dominant’ stakeholders, have galvanized the cycle of capital ‘hopping’ into gold-rich developing countries, in the process nurturing extractive enclaves. Gold mining and exploration companies are *embedded* in a GPN in which *power* is heavily concentrated among a small group of actors, the relationships between whom have created and enhanced the *value* associated with so many of the sector’s operations in developing countries; these dynamics remained intact throughout the pandemic. The next section of the paper examines how, against the background of its enclave-type design, the gold mining sector adjusted to the new rules and regulations implemented at the onset of the pandemic, using the GPN and Stakeholder Salience as guidance.

3. Gold mining during the pandemic: Strategizing from the enclaves

This section surveys major developments in the large-scale gold mining sector since the onset of the pandemic. It focuses on two consecutive phases, each of which, for the purposes of this analysis, has been assigned its own label. The first is ‘Phase 1: Adjustment and recalibration’, which covers the first half of 2020, a time when the sector was forced to comply with fresh regulations and restrictions. During the second period, ‘Phase 2: Insulate, Consolidate and Re-Optimize’, which spanned the second half of 2020 and most of 2021, the gold mining sector had recovered, having devised operational strategies that ensured its continued profitability.

The gold mining industry’s survival and continued *buoyancy* during this turbulent period is owed to its unique GPN and associated enclavity. At the same time, the changes made influenced CSR, an area which the executives and management of international gold mining companies have long maintained the sector prioritizes (Owen and Kemp, 2023). This has been particularly visible with Local content and the Social License to Operate,⁶ two cornerstones of a ‘shared value’ CSR strategy (Owen et al, 2021) in the gold mining sector, pre-pandemic. Whilst a critique of each is beyond the scope of this paper, champions of CSR in the mining sector maintain that both are integral to the long-term success of an operation, irrespective of setting. The analysis that follows, however, tells a very different story: how the gold mining sector’s insulated GPN, manifested as entrenched enclavity at strategic production points, enabled pronounced shifts in stakeholder salience – a ‘re-prioritization’ – to take place during a protracted time of crisis and readjustment. In this context, communities no longer had the ‘priority’ (dominant) stakeholder status gold mining companies portrayed them as commanding pre-pandemic.

⁶ The idea that – in this case – a mining company must ‘secure’ the broad, ongoing approval and acceptance of a society in order to conduct activities (see Prno and Slocombe, 2012; Owen, 2016).

3.1 Phase 1: Adjustment and Recalibration

3.1.1 Trends, data and rapid reflections

During the initial stages of the pandemic, the mining sector adapted quickly to the shocks induced by disruptions to global supply chains, abrupt factory closures, the cessation of businesses deemed ‘non-essential’, and restrictions imposed on movements of people (Ramdoo, 2020). The changes were indeed significant, altering the composition of the industry’s ‘discrete points’ pronouncedly. With capital and other crucial resources no longer flowing freely into the production enclave, many mining companies found themselves paralyzed and unable to operate. By March 2020, ‘Mobilizing exploration teams became difficult or impossible’ (S&P Global, 2021a, p. 2), perhaps most visibly in Africa, where, in May, borders were closed in 43 countries and consequently, ‘miners for months had to juggle a patchwork of border closures and travel restrictions, disrupting international staff rotations and creating wider logistical headaches’.⁷ Giants Rio Tinto and BHP Billiton immediately announced plans to halt development projects to minimize capital spending,⁸ headlining an emerging trend at the time: by mid-April 2020, globally, 1542 mines were on hold due to the effects of the COVID-19 pandemic.⁹

The gold mining sector proved to be an exception among extractive industries, displaying incredible resilience throughout 2020. On the one hand, there was, inevitably, an initial period of adjustment, during which several companies were forced to suspend major gold mining operations temporarily due to the pandemic. Gold production would consequently decline in a number of countries, including South Africa (10.9 percent), Guyana (15.9 percent), Ghana (7.5 percent), Mali (5.6 percent) and Indonesia (28.9 percent).¹⁰ Moreover, and as indicated, gold exploration companies suffered from 2020’s first-half lockdowns, which crippled fieldwork and severed access to *hitherto* free-flowing support services (S&P Global, 2021a, b). Overall, global gold production dipped 5.2 percent to 108 million ounces in 2020.¹¹

On the other hand, gold mining quickly regained its footing and eventually, *thrived*, even during periods of lockdown. Without the sector’s embedded enclave-type setup, this would not have been possible. Whilst the composition of its discrete points may have changed, capital flows from the finance enclave to the production enclave remained very much intact, buoyed by the consistently-high price for gold throughout 2020.¹² Within the finance enclave, there were several mergers and acquisitions, although as rightly pointed out by analysts, ‘the sudden rapid onset of the pandemic early

⁷ ‘For better ore worse – mining takes centre stage in Africa’s COVID-19 recovery’, www.controlrisks.com/our-thinking/insights/for-better-ore-worse-mining-takes-centre-stage-in-africas-covid19-recovery (Accessed 22 February 2022).

⁸ ‘Mining & metals in the COVID-19 world: Underlying resilience masks ESG concerns’, www.whitecase.com/sites/default/files/2020-07/mining-metals-mid-year-report.pdf (Accessed 2 April 2022)

⁹ ‘Number of mines on hold worldwide from April 2020 to October 2020 as a result of the coronavirus (COVID-19) crisis’, www.statista.com/statistics/1121208/global-number-of-mines-on-hold-covid-19-pandemic/#statisticContainer (Accessed 3 April 2022).

¹⁰ ‘GlobalData: West Africa gold output to grow 2.7% in 2021’, www.globalminingreview.com/special-reports/19022021/globaldata-west-africa-gold-output-to-grow-27-in-2021/ (Accessed 3 May 2022); ‘Global gold production to recover by 5.5% in 2021 after Covid-19 hit output in 2020, says GlobalData’, www.mining-technology.com/comment/global-gold-production-recovery-2021/ (Accessed 3 April 2022).

¹¹ ‘Global gold production to recover by 5.5% in 2021 after Covid-19 hit output in 2020, says GlobalData’, www.mining-technology.com/comment/global-gold-production-recovery-2021/ (Accessed 3 April 2022).

¹² The gold price reached an all-time high of US\$2,074.88 on 7 August 2020 (unadjusted for inflation).

in the year [2020] made mining M&A a story of two halves'.¹³ During the first half, into which Phase 1: Adjustment and Recalibration falls squarely, there were 2,271 transactions, although unsurprisingly, when compared to the same period in 2019, global mining deal value had dropped considerably (by over US\$18 billion to US\$46.6 billion).¹⁴ At the beginning of 2020, exploration activity and financing for mining was intermittent due to government responses to COVID-19 – specifically, border closures and announcements of lockdowns. Consequently, throughout Q1 2020, production at major gold refiners reduced, including Valcambi, Argor-Heraeus and PAMP, three of the world's largest, all of which suspended operations due to the spread of the virus. The Rand Refinery, the only LBMA-accredited refiner in Africa, also closed temporarily in response to the lockdown (World Gold Council, 2020).¹⁵ This was in part justifiable because diminished gold mine production due to COVID-19 meant less demand for refining: in the first half of 2020, six of the world's top-10 gold miners reported a collective 8.4 percent decline in production, including Barrick Gold (12.3 percent), Newcrest (15 percent) and Agnico Eagle (8.4 percent).¹⁶

For the gold mining sector, ensuring continued productivity of extractive enclaves amid economic uncertainty was the priority in Phase 1: Adjustment and Recalibration. Whilst major companies and investors may have found it challenging to navigate multiple border closures and lockdowns, their isolated and *faraway* positions also meant that they were well-equipped to adapt and reprioritize locations of production when the circumstances necessitated it. The data suggest that there were two significant developments responsible for pushing the gold mining sector through 'Phase 1: Adjustment and Recalibration.

The first was heightened gold production and exploration activity in West Africa, a direct result of COVID-19-related developments elsewhere, foremost other areas of the continent and Latin America. Whereas in Q1 2020, Asian gold mine production was hit hardest, by Q2, it was both Latin America and certain sections of sub-Saharan Africa where coronavirus-linked interruptions were impacting operations most noticeably. In Latin America, problems arose following a series of national lockdowns, most seriously in Peru, the region's largest gold producer (Teijlingen and van Hogenboom, 2020) but also in the likes of Guyana, Argentina and Chile,¹⁷ nearly one quarter of gold mines were on

¹³ 'Mining M&A in 2020 — Deal activity bounces back in H2 after disrupted H1', www.spglobal.com/marketintelligence/en/news-insights/research/mining-ma-in-2020-deal-activity-bounces-back-in-h2-after-disrupted-h1 (Accessed 2 February 2022).

¹⁴ 'Mining deal value fell by over \$18bn in first half of 2020, as COVID-19 disrupts flow of capital', www.globaldata.com/mining-deal-value-fell-18bn-first-half-2020-covid-19-disrupts-flow-capital/ (Accessed 4 March 2022).

¹⁵ The London Bullion Market Association (LBMA) is 'the pre-eminent body for the world's largest and most important market for gold and silver bullion'. Centred in London, the LBMA has a global client base that comprises all of the central banks that manage their gold reserves, private sector investors and mining companies and others (LBMA, 2017, p. 9).

¹⁶ 'Global gold production to recover by 5.5% in 2021 after Covid-19 hit output in 2020, says GlobalData', www.mining-technology.com/comment/global-gold-production-recovery-2021/ (Accessed 23 November 2021).

¹⁷ The data reveal that in 2020, Peru, at 98t gold production (down 40t or -28 percent from 2019), experienced the biggest decline, followed by Argentina at 44t (down 9t or -18 percent), Guyana (-15.9 percent), and Chile at 32t (down 6t or -15 percent). In 2020, gold production in Mali fell by 5.6 percent, due to COVID-19 causing disruptions at several mines, as well as the closure of the flagship Sadiola and Morila mines. Gold production in Ghana also declined in 2020, falling 7.5 percent, contributed in part by a 21-day mandatory lockdown instituted by the government in March. See 'West Africa gold production to bounce back with 2.7% growth in 2021 after Covid-19 hit output in 2020, says GlobalData', www.mining-technology.com/comment/west-africa-gold-production-growth-2021-covid-19/ (Accessed 2 April 2022); 'Gold Demand Trends Full year and Q4 2020',

hold at one point due to lockdowns in the latter. In sub-Saharan Africa, the majority (35 of 56) of gold mine closures occurred in South Africa.¹⁸ Gold mining multinationals, in turn, responded by rerouting capital to other production enclaves. This is precisely why gold production intensified in West Africa, including Ghana, where, following a 21-day lockdown in March 2020, operations resumed; Burkina Faso, where production increased by 2.1 percent over the year, chiefly due to higher outputs from the Mana Gold, Hounde and Karma mines (which experienced 36.3, 6.3 and 3.1 percent growth, respectively); and emerging Côte d'Ivoire, where there was a 35 percent increase in financing for gold exploration. More broadly, the industry was heavily propelled throughout 2020 by a buoyant exploration facility, which, following initial disruptions during Q1, regained its footing in most gold-rich developing countries (Table 4).

The second significant development was the ability of Australia's gold miners to remain productive throughout 2020, despite the country implementing what would become some of the most draconian lockdown measures in the world (Stobart and Duckett, 2022). Australia's state governments closed their borders in March, and imposed restrictions on domestic and international travel.¹⁹ Companies operating in Western Australia, where, in 2020, mining generated AUS\$174 billion or 60 percent of the sector's revenue in the country, were strategically placed to adapt to the isolation (Government of Western Australia, 2021). Bellevue Gold, for example, was able to raise AUS\$26.5 million to finance upgrades at its project in Kalgoorlie, and Melbourne-based Newcrest Mining, through its Perth office, would achieve, on an average gold price of US\$2228/oz, a profit margin of US\$742/oz, in part due to it being able to maintain production at its fly-in/fly-out operation in Telfer, Western Australia (Johnson et al., 2020). Alongside such companies, South African mining giants AngloGold Ashanti and Gold Fields, the domestic operations of which were heavily impacted by lockdown-induced suspensions, managed to maintain high levels of production at their Western Australian-based projects. Both coordinated mine work mostly from their Perth offices: in the case of the former, activity at Sunrise Dam Gold Mine (Laverton), and for the latter, that at the Agnew Gold Mine (Agnew), Granny Smith Gold Mine (near Laverton), St Ives Gold Mine (near Kambalda) and Gruyere Gold Mine (north of Laverton). Denver-headquartered Newmont followed the same blueprint, continuing operation at its Boddington Mine in Western Australia. Combined, these developments played major roles in transforming – albeit, temporarily – Australia's mining sector into a *regional* enclave, and facilitating an *increase* in the country's gold production between 2019 and 2020, from 325.1 tonnes to 327.8 tonnes, which generated AUS\$27 billion in revenue.²⁰

The shifts in gold production throughout Phase 1: Adjustment and Recalibration, however, triggered sweeping changes in managerial and community development strategies, which the discussion that follows weighs in on.

www.gold.org/goldhub/research/gold-demand-trends/gold-demand-trends-full-year-and-q4-2020/15507 (Accessed 3 April 2022).

¹⁸ 'Global gold production to recover by 5.5% in 2021 after Covid-19 hit output in 2020, says GlobalData', www.mining-technology.com/comment/global-gold-production-recovery-2021/ (Accessed 23 November 2021).

¹⁹ 'Global gold production to recover by 5.5% in 2021 after Covid-19 hit output in 2020, says GlobalData', www.mining-technology.com/comment/global-gold-production-recovery-2021/ (Accessed 4 August 2021).

²⁰ Data obtained from the World Gold Council.

[Insert Table 4 here]

3.2 Stakeholder Engagement and CSR

The evidence points to gold mining communities being heavily marginalized during Phase 1: Adjustment and Recalibration. This was inevitable, as companies and financiers navigated rule changes and regulations *en route* towards securing their investments. Actions which would marginalize communities were made possible by a broader movement – spearheaded by host governments – aimed at hastily assembling a list of ‘essential industries’ at this time.

It was, as officials at the OECD recounted, a period when, amid border closures and moves made to restrict mobility, governments were forced to ‘shut down entire sectors’ but at the same time, ‘explicitly authorised economic activities deemed essential to continue operating with weaker restrictions (e.g. workers were permitted on-site but needed to meet new safety requirements)’ (OECD, 2021, p. 46). Industries labelled ‘essential’ were those with a sizable proportion of their workforces (>40 percent of whom) unable to work remotely. Whilst the OECD includes mining on the list, as Grice (2020) explains, the decision of many governments to follow suit attracted its share of critics, many of whom argued that the sector’s stated ‘essentialism’ was ‘problematic when juxtaposed against restrictions in public gatherings and the lockdown protocols impacting other sectors’ (p. 8).

In the context of salience and the GPN, there are two points that warrant attention, the first being that host governments very *visibly* emerged as *the* ‘definitive stakeholder’ of gold mining companies operating in developing countries during this phase. Whilst this may have already been the case, rhetoric espoused by proponents of CSR in the sector, in particular those claiming the need for continued vigilance on the part of mine management to ensure that cordial dialogue and relationships with local communities were preserved, had long obfuscated this. Several mineral-rich developing countries ‘enacted sector-specific exemptions to allow mining projects to maintain business continuity amidst broader lockdowns and restrictions’ (Grice, 2020, p. 8). The list of countries included the Philippines, Brazil, Peru, Botswana and South Africa, each of which implemented specific policies permitting mining to continue, under the banner of an ‘essential industry’, subject to specific rules.

The second point concerns the salience of communities. It now seems farcical, given the haste with which so many host governments declared mining ‘essential’, to think that the SLO plays any meaningful role in facilitating companies’ access to orebodies. For the gold mining sector, during Phase 1, constituents of its finance enclave, bolstered by this narrative of essentialism, rapidly reshuffled capital across its GPN. This capital re-emerged at discreet points of production governed by newly-minted rules and regulations. Examples include the following:

- Argentina, where, in Q1 2020, the Canadian company Yamana Gold allegedly navigated lockdown measures to advance gold exploration interests at its Suyai project in Chubut Province (UNECLAC, 2021).
- South Africa, where gold mines were permitted to resume operation, on 14 April 2020, following a 21-day industry shutdown (MiningWatch Canada, 2020).
- Nueva Vizcaya Province, the Philippines, the location of the controversial Didipio gold and copper site, where a barricade, organized by local communities and supported by the provincial government, had existed since the permit of the mine’s operator, OceanaGold Philippines, expired 20 June 2019. On 6 April 2020, however, then-president Rodrigo Duterte issued a letter authorizing OceanaGold, with assistance from 100 police, to truck in 63,000

litres of fuel for its generators (to resume production) at a time when the country was locked down and all domestic land, sea and air travel was forbidden.²¹

In several other countries, such as Ghana²² and Mali (Ahadjie et al., 2021), currently the largest and third-leading producers of gold in sub-Saharan Africa, respectively, large-scale mining activities were exempted almost completely from lockdown measures that restricted the movement of people.

Companies found themselves in a position to renegotiate deals with governments in the above, and other, strategic locations where officials were desperate to resume/scale-up gold production and exploration activities. The momentum generated by a collection of development interventions made and ideas debated, pre-pandemic, to *de-enclave* gold mines began to dissipate. Replacing it was the energy created by host governments working to facilitate autonomous large-scale (gold) production and exploration, the result of which, ironically, led to the industry's operations becoming even *more* enclave-like. For example, many mining companies that regularly used commercial airlines to transport gold, were, at times when travel was banned, permitted to charter flights to ship product to refineries in Switzerland and China.²³ Further, and perhaps more significantly, the isolated gold mine production was fostered by social distancing and mobility rules (Bernauer and Slowey, 2020; Grice, 2020; Rojas and Moore, 2022); whatever salience local communities affected by gold mining may have had had disappeared by Phase 1. What Rojas and Moore (2022) refer to as the 'Economic and political power asymmetries between mining companies and local communities' (p. 4) had deepened, to the point where the latter had become a 'non-stakeholder' of the former.

A rapid appraisal of the press releases, data and reports that emerged during Phase 1 reveals gold mining companies having deemphasized community development, long the centrepiece of CSR programs implemented in the sector, altogether. The priority became health and safety of employees. Individual companies operating across the world hastily issued statements, devised protocols and formulated policies detailing how they intended to protect their workers, in response to 'governments...establishing strict rules as a condition for workers to get back to work, with some publishing safety guidelines for mines operating during COVID-19' (Ramdoo, 2020, p. 7). Gold mining companies would fabricate narratives of their own, including 'protecting production' and 'building [industry] resilience', which spoke to the broader discourse of essentialism. This culminated in the launch of a series of programs aimed at protecting workers from COVID-19 (Appendix I).

For many of these companies, however, employee-focused COVID-19 became a focal point of rebranded CSR agendas. Prominent examples at the time included Newcrest Mining's move to include 'COVID-19 Life Saving Behaviours', detailed under the 'Sustainability' section of its website;²⁴ Kinross's *COVID-19 Champions' Program*, 'a global employee recognition initiative dedicated to celebrating those who are making a difference during the COVID-19 pandemic by finding innovative ways to

²¹ 'Standoff over Philippines' Didipio mines escalates despite COVID-19 lockdown', <https://news.mongabay.com/2020/04/standoff-over-philippines-didipio-mines-escalates-despite-covid-19-lockdown/> (Accessed 4 April 2022).

²² 'IMPACT OF THE COVID-19 PANDEMIC ON THE GHANAIAN MINING SECTOR', See www.ghana.ahk.de/competence-centres/mining-and-mineral-resources; 'COVID-19 LOCKDOWN: PRESIDENCY CLARIFIES CATEGORY OF EXECUTIVE MEMBERS EXEMPTED FROM RESTRICTIONS', www.sendwestafrica.org/nu/blog/covid-19-lockdown-presidency-clarifies-category-of-executive-members-exempted-from-restrictions/ (Accessed 4 April 2022).

²³ 'Charter Flights are the Secret Transportation of the Rich and Powerful', <https://gen.medium.com/the-rich-and-powerful-are-unsurprisingly-bypassing-flight-restrictions-2a6c971bc728> (Accessed 4 April 2022).

²⁴ 'Sustainability: Safety and Health', <https://www.newcrest.com/sustainability/safety-and-health> (Accessed 3 April 2022).

support their colleagues, the Company and the community’;²⁵ and Barrick Gold, in its 2020 Sustainability Report, using the Sustainable Development Goals (SDGs) to frame a series of COVID-19 operations-specific targets (Barrick Gold, 2020). With employee health being paramount to the success of essentialism, adjustments to ‘fly-in-fly-out’ setups and rotational workforces were made. The scattering of COVID-19 outbreaks that occurred at major gold mines, most notably Mponeng (164 cases in April 2020) and elsewhere in South Africa but also at sites in the likes of Peru, Mali and Papua New Guinea, seemed inevitable (See reports in Benites and Bebbington, 2020; Ramdoo, 2020; MiningWatch Canada, 2020).²⁶ Claims made at the time that these mines were *spreading* the virus were likely overexaggerated because as production enclaves, they were well-positioned to do precisely the opposite in the event of an outbreak: contain it.

During Phase 1, the executives of most gold mining companies seemed intent on assuring shareholders that operations were secure and remained feasible despite the plethora of new restrictions and rules implemented in countries hosting their production enclaves. For a company such as Golden Star Resources, which had operated in Ghana since 2001, management updated a very detailed press release, issued 16 March 2020, sharing details about how it intended on addressing supply chain issues. This included detailing where it would source supplies of key mine consumables such as cyanide, lime, grinding media, fuel and lubricants, and medicines and protective gear.²⁷ Barrick Gold Mining and Kinross Gold Mining issued similar statements on 20 March 2020 and 1 April 2020, respectively, explaining that they had three months’ supply of key mine consumables on-hand and were therefore capable of producing.²⁸

3.2 Phase 2: Insulate, Consolidate and Re-Optimize

3.2.1 Trends, Data and Rapid Reflections

By the time ‘Phase 2: Insulate, Consolidate and Re-Optimize’ began, mid-2020, most major mining activity worldwide had resumed. By June (2020), all but 36 of the 275 mines forced to close because of national/international COVID-19 protocols had reopened,²⁹ a testament to the effectiveness of the rigorous testing and social distancing measures that companies had managed to institute in their production enclaves. By Q4 2020, pandemic-related disruptions at projects had reduced considerably and the management of most gold mining companies had a firm idea about where they would be prioritizing production in 2020 and beyond. Whilst certain countries such as Papua New Guinea and Argentina continued to struggle, others (e.g. Ecuador) thrived.³⁰ In Ghana, Burkina Faso and Mali,

²⁵ ‘Explore Stories’, <https://kinrossworld.kinross.com/en/explore-stories/?tag=COVID-19%20Champions> (Accessed 3 March 2022).

²⁶ See, in the case of Papua New Guinea, OK Tedi, a summary of which is available at ‘Papua New Guinea’s massive Ok Tedi mine closes as Covid cases spread to new areas’, www.theguardian.com/world/2020/aug/06/papua-new-guineas-massive-ok-tedi-mine-closes-as-covid-cases-spread-to-new-areas (Accessed 5 December 2021).

²⁷ ‘Golden Star provides update on COVID-19 management controls’, www.globalminingreview.com/mining/01042020/golden-star-provides-update-on-covid-19-management-controls/ (Accessed 13 April 2020).

²⁸ See ‘Kinross provides global update on COVID-19 response planning and financial position’, https://s2.q4cdn.com/496390694/files/doc_downloads/2020/COVID-19/KGC-NewsRelease-Covid-business-update-FINAL.pdf (Accessed 4 June 2020); ‘Emergency Covid-19 Response Plans in Place Throughout Barrick’, www.barrick.com/English/news/news-details/2020/emergency-covid-19-response-plans-in-place-throughout-barrick/default.aspx (Accessed 4 August 2021).

²⁹ Information extracted from S&P Global Market Intelligence, ‘COVID-19 mining impacts — Mines reopening as restrictions ease’, by Aly MacDonald, 26 June 2020.

³⁰ ‘Gold Demand Trends Full year and Q4 2020’, www.gold.org/goldhub/research/gold-demand-trends/gold-demand-trends-full-year-and-q4-2020/15507 (Accessed 3 November 2021).

developments on 12 projects, expected to be in operational by 2024 and account for more than 1500koz of gold production, continued unabated during Phase 2.³¹ Mergers and acquisitions, many of which were on hold during Phase 1 because of lockdowns, resumed: transactions in the entire mining sector in Q4 2020 alone amounted to US\$20.02 billion. The two major deals involving gold were the US\$1.86 billion acquisition of Teranga Gold by Endeavour Mining, and Orion Mine Finance's takeover of Greenstone Gold Mines GP, a transaction totalling US\$225 million.³²

During Phase 2, salience, along with power, value and embeddedness, became even more visible in the gold mining GPN. With investments secured, the sector's finance enclave, buoyed by government support, manifested as laws and policies declaring mining 'essential', funnelled capital into, and intensified activities at, priority gold production enclaves. Gold also continued to be a top exploration target throughout 2020, despite the setbacks in Phase 1, its share of holes drilled globally increasing from 69 percent in 2019 to 78 percent, the highest annual level recorded up to that point. This development mirrored a broader revival in activity, experienced across the industry, in Phase 2: after a turbulent first half in 2020, exploration recovered strongly, with a full-year total of 41,026 drillholes at 1,098 projects, up 5.3% and 0.5%, respectively, from the 38,958 drillholes at 1,093 projects in 2019 (S&P Global, 2021a, b).

3.2.2 Stakeholder Engagement and CSR

In the gold mining sector, during Phase 2, there were two discernible changes that took place on the CSR front. They were as follows: 1) a *re-emergence* of 'the community' as a stakeholder; and 2) a pronounced shift in the narrative on Local content, chiefly in response to gold mines becoming increasingly automated and, consequently, even *more* enclave-like. Each is examined in turn.

3.2.2.1 Re-emergence of 'the community'

Officials at the International Council on Mining and Metals (ICMM)³³ were quick to make the case that given 'its experience of managing other crises – including outbreaks of Ebola, tuberculosis and malaria, and catastrophic health and safety events – and supporting sustainable development often in remote contexts', the mining sector is well-placed to support local communities through organizing COVID-19 education, assisting with testing, and providing access to PPE and health facilities (ICMM, 2020a, p. 2). From the safety of their insulated enclaves, gold mining companies committed, throughout Phase 2, to 'building community resilience', a theme the ICMM spotlighted throughout the pandemic (ICMM, 2020b). They accomplished this by establishing dedicated coronavirus support funds, as well as providing in-kind donations (See Appendix II and III).

Throughout Phase 2, large-scale gold miners were surprisingly overt in communicating and making visible through a variety of media the details of these contributions: showcasing the *number* of disinfection units installed, the *quantity* of food baskets distributed, the *sizes* of the populations targeted, and the *frequency* of their support (e.g. weekly or monthly support).³⁴ It was a radical

³¹ 'West Africa gold production to bounce back with 2.7% growth in 2021 after Covid-19 hit output in 2020, says GlobalData', www.mining-technology.com/comment/west-africa-gold-production-growth-2021-covid-19/ (Accessed 3 April 2022).

³² 'GlobalData: Global metals and mining industry cross border M&A deals total US\$7.7 billion in 4Q20', www.globalminingreview.com/special-reports/10032021/globaldata-global-metals-and-mining-industry-cross-border-ma-deals-total-us77-billion-in-4q20/ (Accessed 3 November 2021).

³³ The ICMM is a mining industry body which focuses on sustainability issues in the sector. See 'International Council on Mining and Metals', www.icmm.com (Accessed 4 July 2022).

³⁴ See e.g. 'COVID-19: Recent donation in Ghana', www.goldfields.com/internal-news-article.php?articleID=10421 (Access 1 March 2021), and ICMM (2020b) for details of contributions made by

departure from how most engaged or portrayed their relations with local populations, and tackled community development challenges, pre-pandemic. Before the onset of COVID-19, the mining sector in general was routinely accused of implementing inappropriate projects in local communities; failing to dialogue with populations affected by its operations and involving them enough in key decisions linked to local development; and providing little clarity on how CSR programs are designed and operationalized (Banks et al. 2013; Devenin and Biachi, 2018; UNDP, 2018; Wilson, 2022). It was, as Mulligan (1999) pointed out over two decades ago, a case of ‘The ‘greening’ of one [mining] project may, intentionally or otherwise, divert[ing] attention from other less acceptable practices’ (p. 54). In the most extreme of cases, pre-pandemic, ‘The mining company could readily displace local communities, have significant negative impacts on local livelihoods and food security, and yet claim a “positive CSR contribution” through the program, whilst using it as a buffer to maintain the status quo’ (Kemp et al., 2017, p. 61).

In highlighting the funds they established for, and in-kind donations they provided to, local populations in remote areas of the developing world, gold mining companies conveyed, throughout Phase 2, the impression that ‘the community’ was a highly-salient stakeholder. The likely explanation for this shift is that host governments – again, gold mining companies’ *definitive* stakeholder – were complicit in facilitating this. Pre-pandemic, there were already major concerns being raised about mining companies operating in developing countries having been forced to take on responsibilities that are normally within the domain of government. To ensure that boundaries were drawn and to prevent confusion, there were calls (MMSD, 2002; Otto, 2018) for mining companies’ responsibilities to local communities to be inscribed in law. Yet, even in instances where community development plans emerged that made clear such roles and responsibilities, ambiguities remained, chiefly because of host governments’ prolonged neglect of local needs.

An acute shortage of basic infrastructure and services, from health care, through sanitation, to electricity, in many isolated communities in the developing world where mine enclaves are now rooted has sparked calls (Buhman, 2011; Lauwo et al., 2016; Mostert et al., 2016) for the sector’s CSR to be regulated. This, however, would be counterintuitive, given the *raison d’être* of CSR: it being a compilation of *voluntary* actions taken by companies *beyond* regulation.³⁵ Whilst there is scope for gold mining companies to do much more in developing countries, singling out the multinationals operating world-class mines, such as Obuasi and Ahafo (Ghana), Yanococha (Peru), Didipio (The Philippines), Grasberg (Indonesia) and Loulo-Gounkoto (Mali), as being solely responsible for communities’ plight obfuscates this neglect (see e.g. Hamann et al., 2005; Broad et al., 2018; Adebayo and Werker, 2021): specifically, how governments reinvest very little from the hundreds of millions of dollars in revenue they receive from these companies in the localities that host operations. The reason these governments have managed to escape criticism is, as scholars have consistently shown over the years (e.g. Filer, 1999; Garvin et al., 2009; Mzembe and Meaton, 2013; Adonteng-Kissi, 2015), because ‘local communities adjacent to mining projects...had the inclination for the developers to shoulder most of the responsibility for the adverse impacts occurring in their communities’ (Imbun, 2007, p. 183).

As isolated production enclaves, gold mines were strategically positioned to coordinate the delivery of COVID-19 support locally, perhaps even more so than even the most committed of host

AngloGold Ashanti, Newcrest Mining and Barrick Gold to COVID-19 mitigation across a range of gold-rich developing countries in which they are operating.

³⁵ ‘Regulate corporate social responsibility activities – DCEs’, www.graphic.com.gh/news/general-news/regulate-corporate-social-responsibility-activities-dces.html (Accessed 2 July 2022).

governments. The *scale* of the industry's involvement in supporting national COVID-19 responses was significant, as underscored by the following examples:

- Harmony Gold Mining assisting the Government of South Africa with the national vaccine rollout by granting local populations access to its health centres, as well as distributing PPE and test kits to communities.³⁶ By January 2021, the country's mining sector had pledged US\$20 million to the national COVID-19 response, funds that were used primarily to assist the government with vaccinating 60,000 people per day.³⁷
- Newcrest's US\$2.5 million contribution to support the rollout of vaccines in Papua New Guinea's New Ireland Province.³⁸
- OceanaGold doing much of the same in the Philippines, using its Didipio Mine as a platform for assisting the government with vaccinating local populations.³⁹
- The US\$250,000 contribution made by IAMGOLD, which operates in Burkina Faso (Essakane Gold Mine), Senegal (Boto Gold development project), Mali (Diakha-Siribaya exploration project) and Guinea (Karita exploration project), to UNICEF to support ACT-A/COVAX Emergency Response in West and Central Africa.⁴⁰

In these, and other, gold-rich developing countries, mining companies collaborated with host governments throughout Phase 2 to deliver this crucial COVID-19 support. The industry would, rather erroneously, portray this assistance as CSR. Moreover, the view that in doing so, gold mining companies are committed to 'building community resilience', as officials at the ICMM claimed (ICMM, 2020b), has proved little more than rhetoric because of the 'dormant stakeholder' or 'non-stakeholder' status local communities possessed at this time, a fact which, again, was firmly established in Phase I. Conversely, in showcasing this support, gold mining companies inadvertently reinforced claims made, pre-pandemic, that host governments are their only true 'definitive stakeholder' and that CSR is largely a façade – dynamics which become much more visible in enclave-type setups.

From the evidence, throughout Phase 2, essentialism was used by governments to engage gold mining companies to assist with administering COVID-19 support. Essentialism has gone a long way toward masking governments' own shortcomings on this front, specifically the continued apathy they have shown toward communities affected by gold mining activities. The decision of governments to involve gold mining companies to assist with vaccine rollouts and PPE distribution legitimized, in their eyes, the persistence of production enclaves. At the same time, for gold mining companies, governments' endorsement of their production enclaves legitimized communities' continued 'non-stakeholder' status.

³⁶ 'BEATING COVID-19 TOGETHER', www.harmony.co.za/sustainability/covid-19 (Accessed 12 April 2022).

³⁷ 'South Africa's mining industry prepares for \$20 mln COVID-19 vaccine rollout effort', www.reuters.com/business/healthcare-pharmaceuticals/south-africas-mining-industry-prepares-20-mln-covid-19-vaccine-rollout-effort-2021-01-28/ (Accessed 4 January 2022).

³⁸ 'UNICEF and Newcrest Mining support mission to vaccinate frontline workers', www.unicef.org/png/press-releases/unicef-and-newcrest-mining-support-mission-vaccinate-frontline-workers (Accessed 15 September 2021).

³⁹ 'OceanaGold supporting the equitable global distribution of COVID-19 vaccines', (Accessed 30 November 2021).

⁴⁰ 'IAMGOLD Announces Sponsorship of Key Community Initiatives', www.iamgold.com/English/investors/news-releases/news-releases-details/2021/IAMGOLD-Announces-Sponsorship-of-Key-Community-Initiatives/default.aspx (Accessed 3 December 2021).

3.2.2.2 Local content

Pioneered, popularized and implemented with some success in the oil sector (Hilson et al., 2019; Ayanoore, 2020; Hilson and Ovadia, 2020), Local content legislation and policies encourage companies to procure – and even assist with financing businesses that provide – goods and services in-country, wherever feasible. Many mining companies, accustomed to entering new settings alongside international suppliers, were being pressured, pre-pandemic, by NGOs, donors and even host governments to cultivate relationships with local businesses, with a view to catalyzing linkages, the importance of which Singer (1958) highlighted several decades ago. Their collective push to ensure that the value added or retained in the national or local economy when mining operations source inputs (goods, services, labour, capital and intermediate products) from within the host country was considerable even if it was unrealistic: as cases from West Africa and Latin America revealed (Lange and Kinyondo, 2016; Ackah-Baidoo, 2020; Kragelund, 2020; Atienza et al., 2020), a lack of finance, government support and labour put mining companies in uncompromising positions amid these growing demands, rendering their efforts to nurture local linkages near-impossible. The groundswell for change established a much-needed lens through which to monitor and critique efforts being made by mining companies to create employment and facilitate local development. Pre-pandemic, in the gold mining sector, debates around, and interventions made in the area of, Local content, were pushing the production enclave along a trajectory of ‘disentanglement’.

By Phase 2, however, few traces of Local content, as it was initially conceived for mining, remained. Decisions made by host governments to operate, on the grounds of the industry being essential, along with weakened community resistance, meant that gold mining companies were free to abandon the Local content strategies that they were being pressured to consider, pre-pandemic. This context provided mining companies with their own moment of pause, which many used as an opportunity to renegotiate relationships with suppliers. The most visible move made in Phase 2 was mining companies ‘reimagining their operating models to provide more productive and enjoyable remote work locations for employees’.⁴¹ This laid the groundwork for ‘Remote operating centres’ or ‘ROCs’, specifically, mines that are highly-automated and capable of being managed off-site. Pre-pandemic, the industry was already making strides with automation. The technologies being piloted included automated haul trucks, autonomous long-distance haul trains, tele-remote ship-loaders, semi-autonomous crushers and shovel swings, drilling and tunnel-boring systems, long-wall plough and shearers, GIS applications, autonomous equipment monitoring, and programmable logic controllers (Cosbey et al., 2016).

Whilst automating mines promises to yield marked increases in mineral production, facilitate reduced fuel consumption and lead to diminished maintenance costs for equipment, its impact on local employment, and goods and services delivery could be catastrophic. The concern, explain Holcomb and Kemp (2019) using the case of Australia, is that ‘routine jobs’, or the drilling, blasting and transport that constitute over 70 percent of employment at large-scale mines, ‘are the target for automation’ (p. 3). On the one hand, for management seeking to make operations ‘pandemic-proof’, aspiring to replicate a project such as Resolute’s Syama operation (Mali), where production was uninterrupted during the pandemic because of its high level of automation (IGF, 2020), would be seen as a priority, short-term. On the other hand, pursuing this goal in developing countries would eliminate the ‘routine jobs’ mostly filled by local people. The threat posed by automation to local employment intensified in Phase 2, when several commentators (e.g. IGF, 2020; Jowitt, 2020) began pointing out that ‘The

⁴¹ ‘Remote operating centers in mining: Unlocking their full potential’, www.mckinsey.com/industries/metals-and-mining/our-insights/remote-operating-centers-in-mining-unlocking-their-full-potential (Accessed 4 November 2020).

coronavirus lockdown is hastening digitalisation and automation in the mining industry..., helping to get more work done at remote mines, even if operators are far away'.⁴²

This 'hastening' was made possible by a discourse of essentialism. Individual mining companies used their increased isolation to *rethink* operational strategies by devising ways in which to operate more effectively remotely. For the gold mining sector, moving forward, the changes this promises to yield will be far more sweeping than the '10,000 employees [who] changed work locations from Newmont sites and offices to remote work environments' (Newmont Gold Mining, 2021, p. 4), or the permitting of 'all our employees who can work remotely to continue to do so', as Freeport-McMoRan proceeded to do in the second half of 2020.⁴³ A succinct projection of changes, based on the Australian experience, was provided by *Economist Impact* toward the end of 2020:

A fair share of [mine] work that required physical workers can now be comfortably executed using robotics and automation, and COVID-19 is accelerating this trend. For instance, operational uptimes of autonomous vehicles can be boosted by using energy harvesting and battery technologies. Separately, traditional on-site mining roles such as those of drill operators and geologists, may become redundant, with remote operators or geologists being able to fulfil these roles just as well.⁴⁴

Local content was, again, the most comprehensive effort made *hitherto* to try and de-enclave capital-intensive large-scale mines. One of the main areas in which this was attempted was equipment supply, likely for two reasons, the first being companies' continuous need for technology and therefore, the potential for suppliers to become readily-integrated into production. Proponents of Local content recognized that 'large mining companies no longer own big equipment – they either lease it or they buy blocks of operating hours'⁴⁵ – that, and reinforcing Todd et al. (2020), 'Mining equipment sourced from the likes of Komatsu and Caterpillar is increasingly connected and is part of the connected mine'. A path to nurture local equipment suppliers and facilitate their forging of partnerships with mines had been visualized, pre-pandemic.

The second reason was recognition of the potential economic gains for local businesses that managed to penetrate this market. In 2021, the mine equipment supply industry generated US\$114.61 billion in revenue, a figure that is expected to reach US\$151.25 billion by 2028.⁴⁶ Pre-pandemic, it was unclear how, with minimal support from governments, local start-ups and small businesses were going to wrestle control of a market long dominated by a core group of companies such as the aforementioned Caterpillar Inc. and Komatsu (Appendix IV). Nevertheless, at least some dialogue on Local content linked to equipment supply as well as other crucial mine goods and services such as food catering, clothing and transportation *was* taking place, pre-pandemic.

Since mining's cemented status as 'essential', however, enthusiasm surrounding Local content has dissipated markedly. In the case of equipment supply specifically, accelerated demand for automated

⁴² 'Miners say COVID-19 has accelerated move to digital, automation', www.reuters.com/article/us-australia-mining-idUSKBN2851DF (Accessed 4 December 2020).

⁴³ 'COMPANY COVID-19 INFORMATION', www.fcx.com/covid-info/070320 (Accessed 3 February 2022).

⁴⁴ 'The COVID-19 push: Accelerating change in Australian industries', https://impact.economist.com/perspectives/sites/default/files/vocus_eiu_mining_security_final_1.pdf (Accessed 3 January 2022).

⁴⁵ *Ibid.*

⁴⁶ 'Mining Equipment Market Size, Share & COVID-19 Impact Analysis, By Type (Excavators, Loaders, Dozers, Motor Graders, Dump Trucks & Others), By Application (Coal Mining, Gas & Oil Extraction, Metal Ore Mining & Non-metal Mining), and Regional Forecast, 2021-2028', www.fortunebusinessinsights.com/enquiry/request-sample-pdf/mining-equipment-market-104970 (Accessed 4 June 2022).

technologies at mines has complicated matters even further for local companies, which simply cannot compete without the assistance of host governments. In response to escalated demand for automated technologies, many of the globe's leading mine equipment companies have reinvented themselves. Reinforcing Coe and Yeung (2015), this has led to further 'aggregation' of the GPN for equipment supply on the one hand, and the GPN for gold mining on the other hand: it is an example of 'intra-industry intersection of GPNs through common strategic partners or specialised suppliers'. Caterpillar Inc., for example, worked throughout Phase 2 to become 'impervious to pandemics', in response to slumps in sales of tractors and bulldozers in Q1 and Q2 2020, the result of diminished demand during the height of the pandemic.⁴⁷ It achieved this by designing self-driving trucks, autonomous blast drills, loaders and other machines.⁴⁸ In what was perhaps the strongest indication of its commitment to automating its product line for mining, Caterpillar Inc. acquired, in June 2020, Marble Robot, a robot and autonomy and robotics technology solution company based in San Francisco.⁴⁹ Komatsu, Caterpillar Inc.'s primary competitor, has followed a similar path, having hatched plans to use Anglo American's Los Bronces Mine in Chile to showcase the autonomous technology it has developed, including the FrontRunner Haulage System to be deployed on 62 930E haul trucks by 2024.⁵⁰

4. Critical Reflections and Conclusion

This paper examined how the gold mining industry performed during the first two years of the global pandemic. It should not be viewed as a contribution that explores the impact of COVID-19 on an industry; rather the analysis presented here should be treated as an indictment of the way in which a sector functions, and, when faced with adversity, how its hierarchy of stakeholders change and becomes illuminated.

As is the case with most capital-intensive resource extraction, large-scale gold mines occurs as enclaves. The debate on this sector's contribution, developmentally, can be visualized using Ferguson's (2005) assessment, specifically the idea that capital 'hops' from the world's financial centres, over 'unusable' territory, and into mineral-rich enclaves that are otherwise geographically disconnected from society. The paper began by responding to the shortcomings of contemporary thinking around enclaves by devising a more robust conceptual framework capable of articulating more clearly the forces that have fuelled this phenomenon in the gold mining sector. Stakeholder Salience Theory and the GPN were introduced to help 'locate' the key actors found in the production chain that gold mining is a part of. The case made – recognizing that circumstances may have been different, pre-pandemic – is that there are, indeed, two 'discreet points' in the GPN for gold mining, labelled here the 'finance enclave' and 'production enclave'. The industry was propelled, throughout the pandemic, by a high gold price, which many developing world governments used to rationalize their decision to declare it 'essential', and permit it to continue operating amid lockdowns, curfews and border closures. Following an initial period of adaptation, labelled here as 'Phase 1: Adjustment and Recalibration', which spanned the first half of 2020, gold mining companies found themselves in

⁴⁷ 'Caterpillar bets on self-driving machines impervious to pandemics', <https://uk.finance.yahoo.com/news/caterpillar-bets-self-driving-machines-110506807.html> (Accessed 4 September 2021).

⁴⁸ 'Caterpillar bets on self-driving machines impervious to pandemics', www.reuters.com/article/us-caterpillar-services-technology-focus-idUSKBN26X1ET (Accessed 4 March 2021).

⁴⁹ 'Marble acquisition will drive Caterpillar's automation strategy', www.verdict.co.uk/marble-robot-caterpillar/ (Accessed 4 March 2021).

⁵⁰ 'Komatsu's autonomous system to operate at Chile copper mine', <https://miningdigital.com/automation-and-ai/komatsus-autonomous-system-to-operate-at-chile-copper-mine> (Accessed 12 July 2022).

an position to refocus. Gold mining would subsequently enter what was labelled here ‘Phase 2: Insulate, Consolidate and Re-Optimize’, during which, under a banner of essentialism, the sector would thrive.

The pandemic has provided a unique opportunity to study more closely how relations evolve between the stakeholders responsible for sustaining enclavity in the gold mining sector. What emerges from this analysis is that, in the case of most developing countries, there being inseparable partnerships among the gold mining companies, their investors and additional actors who populate the finance enclave on the one hand, and, on the other hand, the host governments which covet the revenue mineral extraction and exploration activity brings. These partnerships have long been intact, catalyzed at times by donor bodies such as the World Bank, which has assisted the governments of poor, resource-rich countries overhaul economic policies with a view to luring the investment needed to develop gold mines and expand mineral exploration facilities. But as this paper has shown, these partnerships truly galvanized, in the face of adversity, during the pandemic. Parties in both camps have revealed, through their actions, their opportunistic nature, using COVID-19 as a pretext to set new – or perhaps, *hitherto* concealed – goals and to justify moves which, pre-pandemic, would have been difficult to make because of the scrutiny they would have drawn. Bolstered by being a part of an ‘essential’ industry, gold mining companies had more freedom to pursue, from the beginning of Phase 2, opportunities to scale up production at selected production enclaves. Whilst analysis put forward by both Ferguson (2005) and his critics is incapable of explaining why this occurred, the conceptual framework developed by Mitchell et al. (1997) can: for multinational gold mining companies operating in developing countries, host governments are the sole ‘definitive stakeholder’.

The fate of communities affected by gold mining hangs in the balance. This reset effectively derailed what dialogue had taken place on Local content and CSR more generally. Pre-pandemic, gold mining companies were at least forced to be creative in their efforts to deflect criticism from the NGO community and general public about the perceived inappropriate CSR interventions they were pursuing. The weakened community resistance towards mining witnessed throughout Phase 2, however, afforded gold mining companies the flexibility to abandon traditional CSR in favour of other ideas which now resonate more favourably with the definitive stakeholder (i.e., governments). This included prioritizing the health and safety of employees, a move which positioned companies to continue producing at high levels, and supporting host governments with their COVID-19 responses. The changes which a discourse of essentialism ushered in stifled what little progress had been made to *de-enclave* gold mines, foremost interventions taken to operationalize Local content and create employment in-country. These changes included an accelerated push toward automating mines, and governments failing in their commitments to support under-resourced indigenous firms to gain a presence in the burgeoning mine services sector. Most gold mines in the developing world would emerge from Phase 2 even more ‘fortress-like’.⁵¹

A fitting point of departure here is a brief reflection on the future of CSR in the international gold mining sector. Did the pandemic simply legitimize behaviour which, pre-pandemic, corporate rhetoric, ‘greenwashing’ and skilful reporting helped to mask? A nuancing of Ferguson’s (2005) simplistic interpretation of enclavity, using conceptual and theoretical frameworks that help to contextualize stakeholder salience, the dynamics of industry networks, and the positions occupied by the different actors who populate them, would go a long way toward answering this question. If

⁵¹ Of course, context does matter: to claim that all companies disengaged completely from communities, particularly in instances where they have contracts in place with locals, would be incorrect. Geographic conditions, such as traditional forms of land tenure, can influence how corporations strategize and exert power within enclaves.

anything, the pandemic provided a moment of pause for scholars concerned about the impact of large-scale gold mining in developing countries. Overall, the behaviour of gold mining companies and governments during the pandemic makes a revisiting of ideas on which the case for CSR in the sector has been built – foremost, the SLO, Local content and accountable to a citizenry – a priority undertaking.

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Figure 1: The Stakeholder Salience Typology

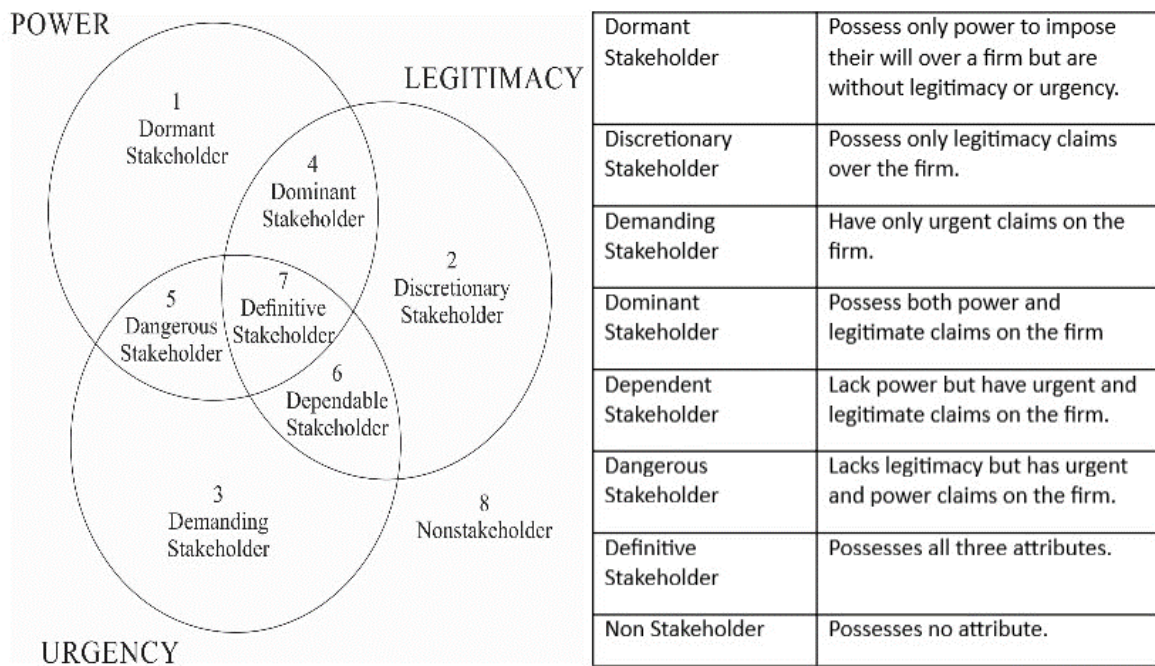


Table 1: Gold as a share of merchandise exports in selected developing countries

Country	Gold as a share of total merchandise exports, 2017	Real GDP growth (Annual percent change), 2020
Burkina Faso	62%	0.8
Dominican Republic	16%	-6.7
Ghana	40%	0.9
Indonesia	7%	-2.1
Mali	62%	-2
Philippines	7%	-3.9
PNG	18%	-9.5
Tanzania	29%	1
Advanced economies		-4.7
Emerging markets and developing economies		-2.2
World		-3.3

Sources: Data extracted from UNCTAD, 2019 and www.imf.org

Table 2: Royalties and taxes generated by gold mining projects in selected developing countries (USD)⁵²

Corporation	Country	Gold Mine	State revenue	2017	2018	2019	2020
Barrick	Dominican Republic	Pueblo Viejo	Royalties	45.5	42.6	43.4	56.2
			Taxes	149	122.4	149.1	225.4
	Tanzania	North Mara	Royalties	32.7	34.3	17.7	20.5
			Taxes	53.6	45.3	39	77.9
	Mali	Syama	Royalties	22.2	15.3	21.9	27.3
			Taxes	2.9	7.7	7.7	52.3
Kinross	Ghana	Chirano	Royalties	15.5	14.4	14	18.1
			Taxes	0	0	0	0
	Mauritania	Tasiast	Royalties	17.1	15.9	27.2	35
			Taxes	0	0	0	0
IAMGOLD	Suriname	Rosebel	Royalties	21.7	21.2	21.1	21.2
			Taxes	23.5	10.3	8.7	51.2
	Burkina Fasso	Essakane	Royalties	22.2	24.5	24.4	25.3
			Taxes	18.5	24.2	3.9	51.6
Newmont	Peru	Yanacocha	Royalties	16.8	15.2	22.7	4.9
			Taxes	0	17	36.9	0
	Suriname	Merian	Royalties	38.6	40.7	43.6	68.2
			Taxes	97.4	96.6	106	260.5
	Mexico	Penasquito	Royalties	170.4	108	88	208.8
			Taxes	146.4	7.2	0	208.8
AngloGold Ashanti	Guinea	Siguiri	Royalties	32.7	24.9	23.9	24
			Taxes	46.2	26.1	8.2	17.8
	Argentina	Cerro Vanguardia	Royalties	22	21.5	19.5	17.2
			Taxes	42.2	49.7	33.1	51.8

⁵² Data retrieved from S&P Global.

Table 3: Largest gold mining companies, by market capitalization⁵³

Ranking (out of top-50 mining companies by market capitalization)	Company	Country	Headquarters	Market Capitalization, end-March 2021 (US\$billion)
4	Anglo American	United Kingdom	London	53.38 (diversified portfolio)
8	Newmont Goldcorp	United States	Denver	48.22
13	Barrick Gold	Canada	Toronto	35.23
23	Newcrest Mining	Australia	Melbourne	15.03
24	Shandong Gold Mining	China	Jinan	14.07
25	Agnico Eagle	Canada	Toronto	13.99
28	Sibanye Stillwater	South Africa	Johannesburg	13.29
44	AngloGold Ashanti	South Africa	Johannesburg	9.42
45	Kirkland Lake Gold	Canada	Toronto	9.23
49	Gold Fields	South Africa	Johannesburg	8.74

⁵³ 'Mining[dot]Com Top 50', www.mining.com/wp-content/uploads/2021/04/TOP-50-Value-top-50-mining-companies-jumps-600-billion-from-covid-lows-.jpg (Accessed 3 January 2022).

Table 4: Gold exploration budgets in selected developing countries, 2019-2021

Country	2019	2020	2021
Ghana	98.6	84.6	103.7
Peru	167.4	116.1	114.7
Dominican Republic	7.5	14	17.8
Suriname	24.7	25.7	19.7
Papua New Guinea	39	43.9	39
Mali	91.9	94.6	126.9
Indonesia	45.3	56.2	88.6
Colombia	92	76.7	102.4
Tanzania	36	32.5	38.6
Philippines	18.6	20.5	24.4

Source: Data obtained from S&P Global

Appendix I: Programs implemented by selected gold mining companies to protect workers⁵⁴

Company	Program Name	Brief Summary
Newcrest	COVID-19 Life Saving Behaviours	Developed in 2020 to identify the specific behaviours required to keep operations COVID-19 free. It is nestled within the company's Safety Transformation Plan and Health, Hygiene and Wellbeing Framework.
Kinross	COVID-19 Champions Program	Launched in recognition of employees who, in the eyes of management, have gone above and beyond to 'make positive contributions in the areas of health and safety, innovation, community support and increasing team morale during this challenging time'.
Anglo American	WeCare Program	The company's employee and community response to COVID-19. It has 'three intersecting phases of support', specifically Prevent, Respond and Recover.
Harmony	Safety and Health (no specific program name)	On 18 March 2020, the company issued a statement declaring that it would institute a series of precautionary measures, 'effective immediately', at its South Africa and Papua New Guinea operations. These included the following: 1) Identifying high-risk employees; 2) Stressing the identification of symptoms and the urgency of self-isolation if displaying symptoms; 3) Compulsory use of PPE in the workplace; 4) Mandatory use of a facemask in the workplace; and 5) Avoiding group meetings where possible.

⁵⁴ "SUSTAINABILITY Safety and health," www.newcrest.com/sustainability/safety-and-health (Accessed 4 May 2022); "Explore Stories," <https://kinrossworld.kinross.com/en/explore-stories/page/2/?tag=COVID-19%20Champions> (Accessed 4 December 2021); "Anglo American's global employee and community response to Covid-19," www.angloamerican.com/~media/Files/A/Anglo-American-Group/PLC/sustainability/anglo-american-we-care-programme.pdf (Accessed 3 March 2022); and "HARMONY ADOPTS COVID-19 PREVENTION MEASURES ACROSS ALL OPERATIONS," www.harmony.co.za/invest/company-announcements/2020/item/1107-harmony-adopts-covid-19-prevention-measures-across-all-operations (Accessed 4 March 2022).

Appendix II: Coronavirus support funds established by selected gold mining companies⁵⁵

Company	Name of Fund, Amount	Details
Newmont	Global Community Support Fund, US\$20 million	<ul style="list-style-type: none"> Launched 9 April 2020 to support the workforce, their families and host communities combat the impacts of the pandemic. It provides support in three key areas: workforce and community health, food security, and local economic resilience.
Newcrest	Community Support Fund, Aus\$20 million	<ul style="list-style-type: none"> Launched to help contain the virus and provide health assistance in the counties in which the company operates. Supports national, provincial and local efforts to provide essential goods and medical services to people in host jurisdictions and communities. Provides livelihoods and recovery assistance, including assisting with building community resilience and socio-economic recovery; supporting host governments, communities and suppliers; targets measures to support the local economy in immediate areas of operation; and supports the vulnerable and disadvantaged in local communities. Supports medical efforts to combat the virus, including vaccine research.
Resolute Mining Ltd.	More than US\$1 million donation	<ul style="list-style-type: none"> Contributed to the Special COVID-19 Funds set up by the Mali Government and the Senegal Government. Sourcing and supply of PPE, COVID-19 testing kits, and other medical equipment.
Barrick Gold	US\$1.7 million Covid-19 Support Fund, Tanzania (through its joint venture with the Government of Tanzania)	<ul style="list-style-type: none"> Supported the Government of Tanzania in combating and containing the pandemic Providing critical equipment and expertise to help prevent the spread of the virus.

⁵⁵ “Supporting our communities during crisis,” www.newcrest.com/supporting-our-communities-during-crisis; “Focused on value. Driven by purpose (2020 Sustainability Report, Newmont,” https://s24.q4cdn.com/382246808/files/doc_downloads/sustainability/2020-report/Newmont-2020-sustainability-report.pdf; “Resolute donates to African host governments’ Covid-19 support funds”, <https://clients3.weblink.com.au/pdf/RSG/02223840.pdf>; “Tanzania: Barrick Gold launches \$1.7 million Covid-19 support program,” www.business-humanrights.org/en/latest-news/tanzania-barrick-gold-launches-17-million-covid-19-support-program/ (Accessed 2 April 2022).

Appendix III: In-kind donations/individual contributions of selected gold mining companies⁵⁶

Company	Country (ies)	Contribution(s)
Harmony Gold	South Africa, Papua New Guinea	<ul style="list-style-type: none"> Assisted the South African Department of Mineral Resources and Energy and unions with the rolling out of vaccines in mining communities, and facilitating, through education and communication, vaccine uptake. Joined forces with other gold mining companies in a radio advertising campaign to communicate knowledges on how to stop the spread of COVID-19 amongst employees and within communities. Adopted a risk-based approach to managing the impact of COVID-19 on the safety and health of employees. Distributed food parcels, care kits and face masks to the most vulnerable in local communities.
OceanaGold	The Philippines	<ul style="list-style-type: none"> Supported the global rollout of COVID-19 vaccines.
Sibanye-Stillwater	South Africa	<ul style="list-style-type: none"> Provided financial and logistical support to the government Assisted with 18,000 vaccinations a day, making available its 45 health and medical facilities
Endeavour Mining	Burkina Faso	<ul style="list-style-type: none"> Supplied the government with CFA 750 million to assist with the purchase of medical and laboratory equipment. Mobilized CFA 70 million to support vulnerable communities. Mobilized CFA 70 million for distance learning.

⁵⁶ See “Beating Covid-19 together”, www.harmony.co.za/sustainability/covid-19; “OceanaGold supporting the equitable global distribution of COVID-19 vaccines,” <https://oceanagold.com/2021/02/25/oceanagold-supporting-the-equitable-global-distribution-of-covid-19-vaccines/>; “South Africa's mining industry prepares for \$20 mln COVID-19 vaccine rollout effort,” www.reuters.com/business/healthcare-pharmaceuticals/south-africas-mining-industry-prepares-20-mln-covid-19-vaccine-rollout-effort-2021-01-28/; “Endeavour mining provides Burkina Faso with Covid-19 support worth CFA880 million,” www.endeavourmining.com/sites/endeavour-mining-v2/files/endeavour-mining/community-engagement/covid-19-update/edv-covid-19-endeavour-mining-supports-burkina-faso.pdf (all Accessed 1 June 2022).

Appendix IV: Major global mine equipment suppliers⁵⁷

Company	Headquarters	Description	Details of Finance
Caterpillar Inc.	Illinois	American Fortune 100 corporation which designs, develops, manufactures and sells machinery and engines.	In Q1 of 2020, sales and revenues totalled US\$10.6 billion, a reported a 21% decrease in revenue from Q1 2019 (US\$13.5 billion).
Komatsu Ltd.	Tokyo	Japanese multinational that manufactures construction, mining, forestry, military and diesel engines and industrial equipment.	For the fiscal year under review (1 April 2019 – 31 March 2020), the first year of the mid-term consolidated net sales totalled JPY 2,444.8 billion, down 10.3% from the previous fiscal year.
The Liebherr Group	Bulle	Swiss multinational with 11 divisions, including Earthmoving, Mining, Mobile cranes, Tower cranes, Concrete technology, and Maritime Cranes.	Record sales in 2019, with revenues of € 11.75 million. This represents an increase of €1,19 billion, or 11.4 %, compared to the previous year.
Hitachi, Ltd.	Tokyo	Japanese multinational with 11 business segments, ranging from IT systems to construction machinery.	Fiscal 2019: consolidated revenues decreased 8% year over year, to 8767.2 billion yen.
Terex Corporation	Westport	American manufacturer of lifting and material-handling plant for industries including construction, infrastructure, quarrying, recycling, mining and shipping.	First-quarter 2020: a loss from continuing operations of USD 24.7 million, on net sales of USD 833.6 million. In the first quarter of 2019, the reported income from continuing operations was USD 57.2 million, on net sales of USD 1.1 billion.
United Heavy Machinery/Uralmash-Izhora Group	Moscow	Russia-based international heavy industry and manufacturing conglomerate, specializing in engineering, production, sales and service of electric mining shovels and drilling rigs.	N/A
Taiyuan Heavy Industry Co., Ltd (TYHI)	Taiyuan	The first listed company in Chinese heavy-duty machinery industry. Main products include train wheel, axle, forging equipment, excavators, cranes, and rolling mills.	N/A

⁵⁷ “Top Mining Equipment Manufacturers in World and Market Insight,” <https://www.marketresearchreports.com/blog/2020/07/27/top-mining-equipment-manufacturers-world-and-market-insight> (Accessed 21 July 2022).

Sany Heavy Industry Co., Ltd.	Huangdao	Chinese multinational with manufacturing facilities in China and Australia, Belarus, Brazil, Canada, Russia and the USA.	In 2019, SANY's total sales revenue reached US\$10.69 billion with 35.55% year-on-year growth (of which US\$2 billion was international sales revenue, up 3.96% year on year, with rapid growth in Indonesia, USA, Europe, Russia, and Latin America).
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