

Conclusion

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Abstract: In this concluding chapter, we start by summarizing the main empirical contribution of this book, by focusing on diversity and connectivity in gold mining crystallizations, and on how these crystallizations are embedded in their broader institutional and ecological environment. We then turn to the main theoretical lessons, particularly for the literature on Global Production Networks (GPN). These theoretical lessons can be summarized as the need to pay more central attention to how informal activities are functionally integrated into these networks; and to how these networks are shaped by their material beginnings. Finally, we develop a number of critical afterthoughts about the limitations of the approach taken by this book, which will hopefully inspire future research.

This book grew out of a fascination for the diversity and connectivity that characterizes global gold mining. By assuming the existence of a dual gold mining economy that is neatly divided between a capitalist gold mining industry, and an informal and subsistence-oriented ASGM-sector, earlier scholarship has failed to fully account for this situation. Moving beyond this image of a dual gold mining economy, this book has explained diversity and connectivity by drawing attention to how all gold mining activities, large and small, formal and informal, are functionally integrated into one overarching global gold production system.

In the first part of the book, we analyzed how global gold production responds to three systemic challenges: the gradual depletion of gold deposits (scarcity), rising cost pressures (costs), and increased resistance to mining (resistance). First, gold mining has expanded from its historical core, into a range of new gold mining destinations. Second, gold mining is undergoing a partial and geographically unequal process of informalization, which is embodied not only in mining companies' increased reliance on outsourcing and subcontracting practices, but also in the unrelenting expansion of informal ASGM. Informalization provides a response to costs (through a reliance on cheap and flexible labor), resistance (by creating new opportunities for local populations) and in the case of ASGM also to scarcity (by targeting deposits that are considered uneconomical for industrial gold mining). Third, technological innovations throughout the gold production process have enabled the extraction of gold deposits that were previously considered uneconomical.

The thirteen case studies in the second part of the book have analyzed how these trends in global gold production touch ground in new gold mining destinations, where they produce diverse sets of gold mining activities—what we referred to as gold mining crystallizations. Significantly, several of the case studies draw attention to the functional linkages that exist within and between these gold mining crystallizations. It is this connectivity that convinced us to use the metaphor of a system. It allows us to understand how, if one of the system's components is touched (e.g. institutional change in a particular country, or technological innovation), other components are affected (e.g. expansion in another country, informalization, or new labor arrangements as a result of new mining techniques). In the first section of this concluding chapter, we will synthesize what we think are the main empirical lessons that can be drawn from the case studies. In the second section, we will dwell on the theoretical implications of this book, mainly for the literature on global production networks. In the third and final section, we develop a number of afterthoughts with regards to the limitations of this book, and possible avenues for further research.

1. Empirical lessons

Together, the thirteen case studies paint an incredibly rich picture of the wide range of existing gold mining crystallizations, and how they are embedded in the broader institutional and ecological context. Here, we summarize the main empirical findings for each of these core components (gold mining crystallizations, institutional context, ecological context) of the analytical framework that was introduced in chapter 2.

1.1. Gold mining crystallizations

While ASGM is often treated as a subsistence-oriented sector with limited capital and limited scope for accumulation, all of the chapters demonstrate that a growing number of ASGM activities have moved well beyond subsistence level. They are attracting increased investment from self-made miners and from external financiers, which include more and more foreign (notably Chinese) nationals. This increased investment has gone hand in hand with the introduction of new technologies, which are dramatically improving the scope and profitability of ASGM. Examples include excavators and high-powered water jets in Brazil; Chinese dredges, wash plants and crushing machines in Ghana; metal detectors and motorized sluice boxes in Guinea Conakry; cyanidation in Burkina Faso and Indonesia; ball mills and dredges in the DRC; portable hammer mills in Zimbabwe; excavators and ball mills in Uganda; and water pumps, drills, generators, dump trucks and cyanidation in the Philippines. In several cases, these technologies were first introduced by foreign investors or migrant miners. In other cases, they were transferred to ASGM by skilled workers with a history in industrial mining. Technology and knowledge, as Lanzano explains, are always embedded in social relations of production. So when they are transferred to new locations, they are both dis-embedded, disconnected from their original context with all social relations that surround it, and re-embedded, appropriated in a new context and giving shape to new social relations. This idea is well expressed in the description of the so-called *bricolage dredges* in the DRC. These are literally disassembled Chinese automated bucket chain dredges, for which the components have been reassembled and which are now used by Congolese mining teams.

Increased diversity has prompted the emergence of new systems of labor organization and revenue-sharing. These new systems reflect the materiality of the ore – including the location and shape of the deposits, and the forms under which gold can be extracted – and the type, size, and stage of the operations. Yet as the example of the Tomboloma in Guinea Conakry demonstrates, they are also shaped by the institutional context in which they are embedded. In the context of the eastern DRC, Geenen and Marijsse demonstrate that in one of the region's most violent and institutionally uncertain mines, ASGM miners prefer to sell the ore before processing it because they seek a quick turnover. In most cases, output is shared in the form of ore or sand, which is distributed according to a 50/50, 60/40 or 70/30 arrangement between the financiers/pit owners and the workers. Specialized workers are commonly paid per task, in cash rather than in kind. In many cases, land owners also take a share in the output. In the case of Ghana licensed Ghanaian miners subleasing their concessions to Chinese mining groups take 10-15% of profits while the Chinese take 85-90%.

In some cases – and in line with trends in industrial mining (see chapter 4) – there is a trend towards the segmentation of the ASGM-workforce between a more 'privileged' class of well-remunerated workers, and a casual workforce that faces harsh working conditions and lower salaries. Significantly, several of the case studies (notably those of Brazil, Ghana, Zimbabwe, the Philippines and Indonesia) describe how the trend towards bigger and more advanced ASGM goes hand in hand with a shift towards wage labor, and decreasing shares for the workers. Libassi summarizes the situation as follows: "a general trajectory of growing inequality, with increasing capital intensity and differentiation between poorer and richer miners exacerbated throughout time". While technological innovation can certainly create new opportunities for people with particular skills, it can also

contribute to processes of exclusion. For instance, Lanzano describes how the introduction of cyanidation in Burkina Faso led to the exclusion of female workers that previously earned a living reworking tailings from ASGM operations.

The different case studies also contain valuable examples of linkages between purportedly distinct types of gold mining. In addition to spill-overs of knowledge and technology, we find an increasing number of instances whereby ASGM operators are working together with junior miners (e.g. Burkina Faso, Zimbabwe, Brazil) or larger mining companies (e.g. the Philippines). In these instances, the boundaries between formal and informal mining, and between industrial mining and ASGM, become exceedingly blurred. While a growing number of ASGM operations exhibit formal features and rely on technologies that are typically associated with industrial gold mining, mining companies are becoming increasingly enmeshed in mining crystallizations that exhibit high degrees of informality. These observations are particularly apparent in the growing number of cases (notably in Madagascar, Zimbabwe, and Ghana) where gold mining is financed and/or developed by Chinese investors and companies. Whatever the arrangement, the different case studies indicate that increased connectivity between different types of mining is unlikely to benefit ordinary workers, who instead experience downward pressures on their income due to the proliferation of rent-seekers.

1.2. Institutional context

Turning to the ways in which gold mining crystallizations are embedded in the broader institutional context, many of the case studies (e.g. Uganda, the DRC, Burkina Faso) seem to confirm the dominant view that state regulation favors industrial gold mining, while discriminating against ASGM. While governments provide mining companies with easy access to mining titles, ASGM operators face lengthy and complex formalization procedures, which are further hampered by rent-seeking behavior on the part of state officials. Several of the case studies (e.g. Ghana, Colombia, Indonesia) also document attempts on the part of the state to eradicate so-called illegal mining through violent and coercive means.

Yet upon closer inspection, the case studies reveal a more complex and multi-faceted relationship between the state and informal ASGM. Contrary to what official statements might suggest, state officials in most (if not all) countries are wittingly or unwittingly condoning or even promoting informal mining and trading, either through their personal involvement, by creating “legal loopholes” (Colombia), or by providing ASGM operators with incentives for smuggling gold across borders (the Philippines and Peru). In some cases, politicians attempt to capitalize on the presence of ASGM as part of a wider discourse about “liberation” (Zimbabwe), “national treasures” (Uganda), or “reclaiming the land for the benefit of the nation” (Brazil). In other cases (the Philippines), local politicians engage in proactive efforts to formalize ASGM, without necessarily having the approval of the national government.

At the same time, it is important to note that in a growing number of instances, formalization efforts are having at least some effect. However – and this is a crucial observation – as the cases of Uganda and the Philippines clearly demonstrate, these formalization efforts are rarely aimed at improving the situation of ordinary workers. Instead, by narrowly focusing on the issuance of mineral tenure rights (in the form of mining permits and -licenses) to small businesses or cooperatives, they only benefit a small stratum of well-connected and financially powerful individuals. By failing to address the problem of working conditions and revenue-sharing, formalization efforts essentially leave the logic of informalization (i.e. the exploitation of informal labor) intact.

Ultimately, then, the state emerges as a multi-layered entity with a highly ambiguous attitude towards both ASGM and industrial gold mining. In several cases (e.g. Burkina Faso, the Philippines), national governments are vacillating between resource nationalism (which may or may not involve open

support for ASGM such as in Zimbabwe) and efforts to attract foreign investors. Meanwhile at the local level, state officials may be actively involved in ASGM, or may be facilitating its expansion, as exemplified by local politicians that facilitate the entrance of Chinese firms in Ghana, Uganda and Madagascar.

Beyond the national level, several chapters illustrate how international regulatory dynamics shape particular gold mining crystallizations. The abovementioned formalization efforts and legal reforms, for instance, are clearly inspired by evolving global discourses about what constitutes “good governance” in the mining sector. Such discourses move back and forth between state-led regulation (resource nationalism, including the promotion of domestic industrialization via local content) and liberalization with private foreign direct investment. In recent decades, initiatives for a more ethical regulation of supply chains – through fair trade or ethical minerals regulation - have also proliferated. While these have not been at the center of our analysis, these ethical gold initiatives are having a real impact on the global gold production system, albeit not necessarily the impact that was intended. For instance, the chapter on the DRC noted how international regulations around conflict minerals have pushed miners from artisanal coltan and tin mining, into ASGM – since gold is easier to smuggle. In chapter 5, it was mentioned that the requirements of the LBMA responsible gold guidance lead the big refineries to avoid sourcing gold from ASGM. Somewhat paradoxically, this may perpetuate its adverse incorporation into the global gold production system. These unintended effects of efforts to make global gold supply chains more ethical and sustainable are certainly an issue that merits further attention.

Finally, the book contains valuable empirical evidence on the involvement of non-state actors in regulating aspects of gold mining and -trade. The case of Guinea-Conakry elaborates on the changing regulatory role of customary authorities. While they remain involved in ASGM, their role has shifted from regulating spatial and temporal access to mining, to a more minimalistic form of rent-seeking. In Brazil, mining cooperatives have taken over state-like functions such as taxation and the issuance of licenses. In the Philippines, communist rebels of the New People’s Army have long collected revolutionary taxes from ASGM-operators. Dynamics of conflict and criminal violence (Colombia, DRC, Zimbabwe, Burkina Faso) obviously have a severe impact on local gold mining crystallizations. They do not only add additional layers of rent-seekers in the form of (state or non-state) armed groups and criminal bands, but may also force workers into violent and coercive labor regimes.

In sum, gold mining crystallizations do not merely involve firms, workers and traders, but also different types of (state and non-state) actors whose capacity to regulate gold production is a product of their economic, social, political, traditional and/or religious power. Several cases have shown how their role changes over time, responding to technological innovation or to legal reforms. Yet all cases have also concluded that they make skillful use of these changes to guarantee continued access to the gold mining profits, for instance by creating *comptoirs* (Burkina Faso) or cooperatives.

1.3. Ecological context

In addition to being a product of systemic trends in global gold production and the broader institutional context, gold mining crystallizations are inevitably shaped by the ecological context, which includes both the geophysical properties of gold, the geological characteristics of the subsoil, and the wider ecosystem. These material characteristics determine the financial and technological requirements for the profitable extraction and processing of gold. For instance, while accessible near-surface deposits require less capital investment, deep shaft mining requires specific technologies. They also affect the type and amount of labor that needs to be mobilized: while underground mining requires more specialized and skilled labor (although this may now change as a result of digital technology), alluvial mining may be undertaken by workers with limited knowledge and skills. And

even where the geological and geophysical characteristics of gold deposits are conducive to profitable mining, other ecological features may still render it difficult. The hostile ecological environment (together with political uncertainty) is one of the main reasons why industrial gold mining has never gained a foothold in the Brazilian Amazon, and why informal ASGM has flourished.

Yet history has shown that the global gold production system has been very successful in overcoming these ecological limitations – which are also a measure of technological trends and the gold price – and has been quite ruthless in occupying and transforming new ecosystems. Both industrial gold mining and ASGM produce far-reaching effects on land, water, forests and air. Most attention has been devoted to the dramatic impact of large open-pit mining. Yet in the case of ASGM, there is ample evidence of mercury pollution threatening aquatic life and human health, and cases like that of the Madre de Dios region in Peru demonstrate how it may have equally dramatic impacts on land and water, diverting or even draining entire river systems. Mining activities may also decrease soil fertility, thereby affecting agricultural production. These devastating and increasingly visible effects on the environment are feeding into increased resistance to both industrial mining and ASGM. In Ghana, for instance, the environmental argument is at the heart the campaign against the *Galamsey*; while in the Philippines, the government has taken (half-hearted) efforts to close mines and cancel permits in a bid to protect the environment.

While material is continuously being extracted from the subsoil, the gold production system simultaneously produces tons of waste. These are released back into the environment, or accumulate as tailings near points of extraction or processing. Interestingly, as documented in this book such tailings of “waste” can acquire new value thanks to the introduction of new technologies: the cases of Burkina Faso and Indonesia both illustrate how the adoption of cyanidation does not only allow to recover more gold, but also transforms local power relations by intensifying competition over residues.

2. Theoretical contribution

While the primary contribution of this book lies in its efforts to analyze and explain the changing anatomy of global gold mining, we also expressed the ambition to contribute to the literature on Global Commodity Chains, Global Value Chains and Global Production Networks. This literature, which proliferated over the last two decades, attempts to understand how global production is organized, which actors are involved, how value is created and distributed, and how all this is shaped by the territorial and institutional context in which different tasks in the production process take place. In a way, what fundamentally puzzles these scholars, is –again– diversity and connectivity. More precisely, they attempt to make sense of the formidable geographical spread and fragmentation of supply chains into an endless series of tasks located in the most diverse parts of the world. At the same time, they also try to understand how such tasks are coordinated and connected to each other. In chapter 2 we discussed why we feel that a GPN approach is best suited to comprehend the issues at stake. Compared to the other two approaches, it pays more central attention to the spatial dimensions of global production, studying how different tasks in the production process are embedded within particular territorial and institutional contexts. Moreover, at least some authors in the GPN tradition have analyzed the position and agency of labor, and have developed a more fine-grained understanding of value and power.

We suggested that an analytical focus on gold production can contribute to addressing two gaps in the GPN literature. A first gap is the preoccupation with the role of (lead) official firms, to the detriment of informal production. The second gap is an empirical focus on the transformation of raw commodities into (semi)finished products, and a concomitant neglect of the beginnings of global

supply chains: the point at which vital inputs for our global economy are extracted from their ecological environment. While this book has by no means succeeded in completely closing these gaps, it does provide us with a number of valuable insights that can inform future GPN-studies.

First, there exists broad consensus among the contributors to this volume that informality in gold mining is not a residual phenomenon that takes place at the margins or outside of the global capitalist economy (cf. the dualist view discussed in chapters 2 and 4), and that informal ASGM will eventually crumble under the pressure of global mining capital. Instead, informality imbues the global gold production system with the flexibility it needs to respond to systemic challenges. The trend towards outsourcing and subcontracting that we are witnessing in the gold mining industry allows it to deal with rising cost pressures. Meanwhile, by tapping into scattered gold deposits, mobilizing cheap labor, and reviving depressed rural economies, informal ASGM simultaneously addresses the challenges of scarcity, costs, and resistance. Put differently, rather than undermining or contradicting mining capitalism, informality is necessary for its further expansion, and arguably even for its survival.

Such a critical understanding of informalization processes in global production networks can help us shed new light on the role of informal activities in these networks, but also on why the global expansion of production need not – and often does not – lead to social upgrading (Barrientos et al. 2011). Instead, it provides more evidence for the hypothesis that global production networks are producing exclusion and adverse incorporation (Phillips 2011). Although increased financial investments, new technologies and mechanized production techniques have significantly enhanced the profitability of ASGM, the accumulated profits are captured by politically well-connected elites and businessmen, leaving the mineworkers in a state of uncertainty and precarity. Similarly, in large-scale industrial mining, profits tend not to trickle down to local populations, who risk falling victim to forced displacement and pollution; nor to unskilled workers, who often work on casual contracts and are not always protected by labor laws. While the focus of this book was first and foremost on gold mining, several of the chapters in this volume contain indications that this logic of informalization extends beyond the mine site. For instance, responding to various institutional pressures, several countries have witnessed the emergence of informal trading networks during the precolonial (Madagascar, Ghana), colonial (DRC, Uganda) or post-colonial era (Peru, Philippines).

Second, while the GPN literature has significantly enriched our understanding of how production is embedded in territorial contexts (see chapter 2), it has mainly emphasized the importance of policies, institutions and infrastructures – everything that can be found above ground. This book drags us belowground, by demonstrating how the material beginnings of global production networks have a formative influence on gold mining practices. As noted above, the ways in which the gold deposits have been formed into placer, alluvial or primary deposits, as well as the form of the metal itself, determine the technology-, capital-, and labor requirements of gold mining. Consequently, the availability and nature of these production factors also shapes possibilities for, and the profitability of, gold mining. This attention for how gold mining is shaped by the material qualities of gold deposits, and by the availability of production factors, significantly enriches the notion of embeddedness that is so central in GPN studies. Apart from the materiality of gold deposits, a focus on extraction also reveals how value is fundamentally created out of an appropriation of nature, and in turn creates waste flows and pollution (Bunker 1984).

A third theoretical contribution to GPN is not a new insight. In a sense, it is a return to the older, foundational framework of World Systems Theory, which highlighted the interdependency of different economic systems within one capitalist world system. By empirically documenting the functional linkages between ASGM and industrial gold mining, and analysing these as simultaneous responses to global systemic trends, this book reconnects to these theoretical roots. The adoption of the term

system reflects the existence of two interconnected modes of production within one overarching system.

3. Afterthoughts

The framework of the global gold production system has been very helpful for understanding broad trends in global gold production, and how these are shaping gold mining practices across the globe. It has also allowed us to transcend particular regions or countries – the scale at which most previous research on gold mining has taken place. At the same time, the essentially structuralist perspective proposed in this book might contribute to an image of a global gold production system as a kind of Godzilla that destroys and flattens all differences on its way. The different case studies in the second part of the book already demonstrate that this notion of the global gold production system as a monolithic entity does not do justice to realities on the ground. In this final section, we attempt to qualify this idea even further, by drawing attention to potential disruptions in the global trends that are at the heart of our framework; to the exclusionary dynamics that exist within the global gold production system, and to questions of agency. We also hope that these afterthoughts can serve as an inspiration for future research on gold mining that attempts to analyze local dynamics of expansion and contraction, inclusion and exclusion, and human agency, against the background of structural trends in global gold production.

3.1. Trends in global gold production

Chapter 3 may have created an image of an ever-expanding frontier that relentlessly incorporates new mineral wealth. And indeed, in response to the challenges of scarcity, costs, and resistance within the gold mining core, gold mining has moved into new countries and peripheral regions, extracting previously untapped gold reserves and mobilizing cheap (and often informal) mining labor. All the while, technological innovations continue to improve the scope and profitability of gold mining, creating new value out of previously “useless” reserves.

Yet at the same time, we have emphasized that this unrelenting expansion of gold mining is reaching its limits – although these limits are continuously redefined by the price of gold. Resistance to mining continues to increase, and is no longer aimed exclusively at industrial gold mining. Instead, the situation in Ghana and Indonesia indicates that ASGM is increasingly coming under siege from a diverse range of social forces, not least due to its dramatic environmental impact. Moreover, the problem of scarcity and the non-renewable character of gold becomes ever-more acute amidst sustained increases in gold demand. While technological innovations (notably the use of digital technology) may well harbor the promise of further efficiency and productivity gains, it remains to be seen just how far their potential reaches (Clifford et al. 2018). In this context, the prospect of extracting gold from the ocean floor, or even in outer space – which would fundamentally upset our use of the term *global* gold production system – is no longer a remote possibility, although recent experiences indicate that there is still a long way to go (Doherty 2019).

3.2. Exclusion and adverse incorporation

The outward expansion of global gold production does not only result in the inclusion of previously excluded territories and actors; it also continuously produces exclusion. There are now countless examples of previously active mines that are –temporarily or permanently– abandoned and closed. As cases in this book show (DRC, Burkina Faso), transnational mining companies may decide to abandon their operations for various reasons, including financial difficulties, regulatory pressures or societal resistance. In ASGM, gold rushes testify to the inevitably temporary character of gold mining.

Yet internal processes of exclusion also reveal themselves at the level of particular actors. On the one hand, the expansion of gold mining – small or large, formal or informal – comes with new opportunities. These include jobs for ordinary workers; but also opportunities for intermediaries that bring gold from the point of extraction to the market; and for local elites that benefit by collecting taxes, participating in CSR-programs and outsourcing arrangements, or accepting campaign contributions from mining companies or ASGM-operators. At the same time, the expansion of gold mining can result in the exclusion of particular (groups of) actors. The most widely documented example is that of industrial gold mining expanding at the expense of ASGM. Yet this book also contains numerous examples of how technological innovations can engender exclusionary dynamics. In industrial gold mining, the trend towards digital mines reduces the need for mining labor. In ASGM, new mining- and processing technology (e.g. excavators, mechanized ball mills, cyanidation) may similarly reduce the need for unskilled labor. These exclusionary dynamics can be reinforced by regulatory interventions, such as efforts to promote the expansion of industrial gold mining, or government initiatives that promote “clean” and more technologically advanced forms of ASGM.

In many other cases, rather than directly excluding actors, the global gold production system produces exclusion within inclusion, a situation that has been described elsewhere as “adverse incorporation” (Hickey and du Toit 2007, Phillips 2011). This observation is most apparent in the exploitative labor arrangements that have been described throughout this book (see section 1.1). This dynamic of adverse incorporation is a direct consequence of informalization processes in the global gold production system. Like the exclusionary dynamics discussed in the preceding paragraph, these dynamics of adverse incorporation can similarly be enhanced by regulatory interventions, such as formalization frameworks that fail to consider the plight of informal workers.

In sum, exclusion is not only visible in what remains outside of- or is ejected from the global gold production system, but is also produced within the system. This argument has been made before by Jennifer Bair, through her disarticulations perspective (Bair 2011). She argues that so-called chain and network perspectives – including the GPN approach – exhibit a strong inclusionary bias. As a consequence, they tend to downplay or even ignore the fact that regions or actors are constantly disconnected or expelled from production networks, and that exclusionary dynamics permeate these networks in the form of socio-economic inequalities as well as gendered and identity-based valuations of labor. Bair (2013: 2544) therefore sees the commodity chain as a “constantly shifting boundary” rather than a steadily advancing frontier that proceeds “by incorporating territorial and social relations inside a hierarchical core-periphery structure of global capitalism”.

3.3. Agency

Theoretically speaking, our structuralist approach leaves little room for agency on the part of ordinary workers and small-scale producers. Still, several GPN-studies have pointed out that local actors like smallholder farmers (Selwyn 2011) and factory workers (Carswell and De Neve 2013, Azmeh 2014) can shape global production systems by using their structural and associational power. As explained in chapter 2, structural power arises when workers or producers can make use of their particular position within a production process to disrupt this process, for example by jeopardizing the supply of a critical material to the market at a particular point in time. As we have explained, gold is held in deposits that are extremely scattered – more so than other minerals. It is extracted in a wide range of countries, by a wide variety of actors. As a consequence, ASGM miners or ordinary workers do not hold the structural power to disrupt gold supply.

Where it comes to associational power, in chapter 4 we have documented that labor unions have historically played a key role in the mining industry. Yet their power is crumbling as a result of

neoliberal pressures, and widespread tendencies towards the informalization and flexibilization of work. Still, the case studies in part 2 of the book do contain examples of how associational power is exercised in the global gold production system. In most cases, this associational power takes the form of more or less orchestrated and institutionalized forms of resistance of ASGM against industrial mining. The chapter on Brazil describes a case where *garimpeiros* organized themselves in a cooperative that was able to push for the invalidation of a number of industrial mining concessions, on the grounds of the fact that the mining companies held these concessions for mere speculative purposes. Similarly, ASGM operators in the Labeka gold rush in Madagascar resisted a corporate-government coalition that had displaced them from the gold rush site, by re-occupying the site. A similar case of (violent) re-occupation was described in the context of the eastern DRC. In Marmato in Colombia, ten years of struggle (2007-2017) by informal ASGM miners against a company-state coalition resulted in a ruling of the constitutional court that imposes a community consultation on who can mine the El Burro mountain. While this judgement has been interpreted as a victory by the miners, and while 13 titles have since been returned to them, Robles Mengoa and Uran point out that Marmato seems to be a rather exceptional case of a contested but relatively peaceful mine. These examples of ASGM resistance against industrial gold mining can be argued to shape the global gold production system, by determining where industrial mining capital can go, and where it will be hindered or stopped. As explained in chapter 3, such acts of resistance can significantly increase the economic costs of a mining project. At the same time, as Geenen and Verweijen (2017) have argued elsewhere, mobilization against large-scale industrial mining is frequently fragmented (divided along different inter-community cleavages) and fluid (waxing and waning over time).

Looking beyond resistance to industrial mining on the part of ASGM, other examples of agency can be found throughout this book. Yet the lion's share of these examples involve elite actors responding to changing opportunities presented by gold mining: customary elites in Guinea-Conakry reverting to taxation in response to technological change in ASGM, corrupt government officials in Ghana and Madagascar facilitating the entry of Chinese miners in exchange for kickbacks, or Peruvian gold traders shifting their strategies in response to tightening border controls. This book contains precious few examples of how ordinary workers try to improve their position in the face of the (increasingly) exploitative labor arrangements that can be found in ASGM, industrial gold mining, or any combination of these. Future research has a critical role to play in uncovering the subtle and less subtle ways in which workers can improve their situation, within the confines of a hostile structural context.

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