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<a>Informal mining labour: Economic plurality and household survival strategies

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Introduction

The mining sector is usually thought to be quintessentially capitalist. Once highly exploitative and the site of strong unionization, this sector fueled the industrial revolution and set a precedent for capitalist industrial relations (Bridge, 2004). Today 30 million people, or one percent of the global workforce, are employed in the formal mining sector which is highly mechanized and provides regular employment to well paid workers in many parts of the world (International Labour Organization, n.d.). But this number excludes the estimated 100 million people who gain a livelihood from informal, artisanal and small-scale mining (Communities, Artisanal and Small-Scale Mining [CASM], 2008). From a diverse economies point of view, mining is as much non-capitalist as it is capitalist.

The estimated 100 million men, women and children working as informal mining labourers in unregulated mines are largely found in the majority world. These workers are un-unionized, use mainly hand tools and are enrolled in different forms of enterprise or production units including self-employment, family business, small-scale business or cooperative associations. In the academic and policy literature informality in mining is defined by its illegality, lack of safety and unregulated nature (Lahiri-Dutt, 2008; Hilson et al., 2017; Hentschel, Hruschka and Priester, 2002). In popular media informal miners are regularly featured digging tunnels prone to landslide and collapse, swimming underwater using only oxygen tubes connected to their mouths, gold panning using mercury, or manually digging and crushing coal or construction stones without protective gear in dusty quarries. Strategies for addressing the the hardship and exploitation of informal miners are usually focused on eradication by formalization. This chapter positions informal mining labour as part of the survival portfolio of poor and landless households. I draw on research with informal miners in the Philippines to argue for a more dynamic view that opens up different possibilities for livelihood-making.

** Formalization and Informal Mining Labour**

How we frame informal mining labour and its livelihood-making dynamics can have the performative effect of either limiting or expanding the possible trajectories of its development. The most prominent narration of informal mining labour places it in the dualist framing of informality and formality. Individuals in the informal sector are seen to be lacking the adequate education, skills and training to be employed in

the formal economy (Chen, 2002). Informality acts a form of exclusion for those who have not been absorbed by the formal economy (Chen, 2002). Informal labourers are reproduced through a cycle of poverty and are viewed as surplus in the labour market (Hilson, 2012). Essentially they are seen as victims of capitalist development.

In countries where informal mining persists, national governments now acknowledge the huge role of this sector in economic development. They have introduced policies to appropriate the benefits of the informal mining sector through legal and extralegal instruments (Hilson, Hilson, Maconachie, McQuilken, and Goumandakoye, 2017; Hinton, 2005; Siegel and Veiga, 2009). Where possible they seek to formalize informal mining labour by absorbing the labour practices of informal miners and the sector of artisanal and small-scale mining into the formal and legal domain (De Soto, 2000).

One way that the extralegality of informal mining has been addressed is through the implementation of “designated mining areas” (Corbett, O’Faircheallaigh and Regan, 2017). In the Philippines, where the right of informal miners to mine is recognized in state policies, informal mining zones called *Minahang Bayan* have been established (Verbrugge and Besmanos, 2016). A provincial or city mining regulatory board identifies and designates segregated mining zones for small-scale producers. These designated mining zones are aimed at curbing the proliferation of illegal mining and the detrimental ecological impacts of indiscriminate mining. The board can grant registered small-scale mining cooperatives a renewable 2-year contract to mine and process minerals in permitted areas (Verbrugge and Besmanos, 2016).

Another approach to formalization recommends that financial institutions provide informal miners with capital (Siegel and Vega, 2009). Informal miners are encouraged to access loans to purchase better equipment, improve mineral recovery and increase profit (Siegel and Vega, 2009). It is through capitalization that informal mining is then deemed to be regulated, monitored and extended support within the legal system (Hilson et al., 2017).

In some countries more forceful strategies have been used. But Banchirigah and Hilson (2010) argue that, for example, in sub-Saharan Africa forced mined closures and regulatory management do not work to end informal mining. Mine sweeps, the arrest of people involved, and confiscation of mining equipment, do more economic harm than address the impoverished situation of informal miners. Mine crackdowns are usually intermittent, due to financial and manpower constraints in the government (Banchirigah and Hilson, 2010) and the lag between crackdown and follow-up monitoring gives time for miners to re-mobilize and restart their operation.

For those at the bottom of the hierarchy who lack formal education the bureaucratic process of formalization can prove daunting (Chen, 2012). Not all informal miners have an interest in moving to designated areas or indeed accessing capital

investment since there are those who mine only as a way of diversifying livelihoods for subsistence. Indeed, we cannot assume that limiting informal mining by legal means will necessarily improve the livelihoods of those concerned. Formalization can be quite problematic as it withdraws the sector from its embeddedness in the context of a social economy which allows for “local autonomy and action” (Lahiri-Dutt, 2004 p. 126). Through informal mining, local communities get to reclaim their mineral rights that are often appropriated by large corporations and governments (Lahiri-Dutt, 2008). Thus informal miners and a range of other actors are to some extent able to directly capture economic benefits from their mineral-rich communities.

Interventions to assist informal miners and help them diversify livelihoods are often directed towards lessening the participation of families in mining altogether. However, outright replacement may not be realistic. Hilson and Banchirigah (2009) argue that in the case of Ghana’s informal gold miners alternative livelihoods are not viewed as effective, since mining can provide more monetary benefits, especially if a miner hits the bigtime. In Laos local farmers diversify into tin mining as a way of taking advantage of the ongoing mineral extractivism in their country (Lahiri-Dutt, Alexander and Insouvanh, 2014). Lahiri-Dutt et al. (2014) argues that in this context of change local farmers are not victims but are active economic agents. The opening of Laos to large-scale mining investments has transformed the traditional farming landscape. As mining gets extensive, the local environment becomes unsuitable for farming to flourish. Farmers thus turn to small-scale mining as their primary livelihood.

On the ground, households pursue all sorts of activities to constitute a ‘survival portfolio’ (Chambers and Conway, 1991). Livelihood-making dynamics are conceptualized as the interactions between different kinds of economic practices within the ‘survival portfolio’ of a particular household. To position informal mining labour as contributing to livelihood-making dynamics is to depart from the binary framing of informality and formality which situates it only as ‘other’ to formal work in the capitalist mining industry.¹

If we situate the informal mining labourer as a subject in a diverse economy with a decentered identity, it is possible to imagine multiple entry points enhancing the diversification strategies of informal miners and their household members. I illustrate this point using the case of aggregate mining in the Philippines.

** Livelihood-making dynamics: informal aggregate mining labour around Metro Manila**

Informal miners are not only involved in the extraction of valuable minerals such as gold, diamonds or coal. They also are involved in the mining of mundane materials including construction aggregates. Aggregates, including sand, gravel and crushed stone, are second to coal as the most mined non-metallic minerals in the world (Bridge, 2004). They serve as cheap bulking materials in concrete and make up 60

to 80 percent of its mass (Seegebrecht, n.d.). The rapid urbanization happening worldwide continues to be fortified by precast concrete infrastructure and steel-reinforced concrete buildings. This form of construction in the urban setting puts more pressure on workers who are implicated in the production of building materials including informal aggregate miners.

Metro Manila is a growing megacity in Southeast Asia with a population of 12.88 million as of 2015 Census (Philippine Statistics Authority, 2016a). As a 'concrete jungle', Metro Manila and its extended region – Southern Tagalog - are at the centre of building construction in the Philippines archipelago (Philippine Statistics Authority, 2016b). With increasing demand for building materials, informal mining households continue to produce aggregates amidst the environmental and health consequences of their practice.

My research was conducted at two mining sites located at the edges of Metro Manila. One quarry stands at the foot of a mountain which has been prone to landslide and flooding. The mountain is quarried by both mechanized operations using heavy equipment and manual mining activities. Both forms of operation are unregistered. The poorer manual miners live in an informal settlement by the roadside across from the quarry and along a riverbank. In another field site, the quarry is situated below a hill. On top of the hill is a gated residential subdivision. The mining households live in slum housing around the quarry site. Supplier truckers consider these quarries as ideal as they are highly accessible from the main road.

<c>Diverse economic practices and roles

Miners typically begin working at the quarry before sunrise. They will take a rest from quarrying at lunchtime but will go to the quarry in between rest periods whenever there are truckers buying stones. Other miners will resume quarrying when they feel that the heat from the sun becomes more bearable and they work until the sky gets dark. Miners who send their children to school sometimes work longer hours to increase the volume of stones they can dig, pile and crush in a day.

The informal miners from both sites observe a "*pwesto*" system. *Pwesto* literally means place. This informal system of claiming a portion of the quarry is based on how much space a miner can identify from a point of reference. The ones who have *pwesto* in the quarry are the informal miners who first got entrenched as informal settlers in the area. In the first quarry site, the miners use their houses as the reference point, and the available space that gets extended from their residence up to the base of the mountain corresponds to their *pwesto*. A *pwesto* could be similar to one's backyard. In the second site, specific segments of the hill correspond to a particular *pwesto* of an individual miner or a mining household. A miner can only manually dig stones from his own *pwesto*. But in some instances, a miner who has a *pwesto* and is not using it on a particular day can share his mining space with other miners who do not have their own *pwesto*. In return for access they earn a small percentage of the revenue generated when the *pwesto* 'owner' sells his stones

stones. There are certain circumstances when miners sell their *pwesto* to other miners for financial reasons.

Informal mining households rely on a range of labour practices and transactions to augment finances and minimize economic uncertainty. Some miners work in their family's mini-store, or as part-time construction workers, cooks, house-helpers or sewer workers. Miners who have families do unpaid household labour and care work for their children and aging parents. Other miners and their family members grow food in their own backyard garden, breed and raise cows and hogs, and glean leafy vegetables from the neighborhood and sell them in the market.

There are also instances when individuals give up informal mining (or limit their work hours at the quarry in a day) when they see that other economic practices become more financially rewarding than digging and crushing stones. For example, some miners are also tricycle drivers, and they devote most of their working hours to driving. As registered tricycle drivers, they become members of a tricycle operators and drivers' association in town. The organisation serves as a conduit between individual members, commuters and the public transport authorities. It also helps them in collectively negotiating with authorities any dispute related to their trade, among other things.

As social actors, many miners are also parents. As parents, they seek jobs that allow for work and life balance. Having a flexible work schedule of self-employed aggregate mining means that their activities can be spread across the whole day. Female miners who have children, will bring their kids to school in the morning, crush stones for a few hours before lunchtime, do household chores in the middle of the day, and fetch the kids from school in the late afternoon. In between household and mining work, they can attend meetings in their kids' school or in the village, take a nap or socialize with neighbors without a boss noticing their every move. However, miners who are also mothers do most household-related tasks. For both male and female miners, they do not have to travel far to go to work since the mountain where they quarry is just a few meters away from their backyard. For them, time lost commuting is also an important consideration as well as money for transport.

Informal miners obtain loan money from private lenders and microcredit institutions. Some miners use it to set up their mini-store, to pay the cost of celebrating a family member's baptismal, to purchase livestock, or to augment hospital expenses when a family member gets sick. However, while some individuals find getting loans beneficial, others feel that they also suffer from becoming trapped in a cycle of debt. There were instances in the past when a member of a mining household would get a loan and use a portion of the money only to repay another lender. A few miners now ensure that they seek financial assistance from lending companies that offer loans in a more sustainable way. For example, some miners prefer applying for loans from a microcredit institution that

gives them an option to allocate a small percentage of their monthly repayments to cover the cost of their life insurance policy and to add a pre-agreed amount to their savings account. The miners find this setup beneficial in the long run.

<Collective practices and actions

One way of reading informal mining labor differently is to reveal the ways miners work together to attempt to minimize risk and extract materials in a responsible and caring way. In one site quarrying has transformed the mountain and affected its stream and tributaries. Informal mechanized quarrying, as well as manual mining, have operated in the site and co-transformed the topography. The quarry site has become more prone to landslide and flashflood especially during the monsoon and typhoon months. Different actors have come together in an attempt to remedy, albeit temporarily, the environmental problems in the quarry. During one monsoon season, the slum dwellings of informal miners and their non-mining neighbours were flooded. The affected residents sought the help of the village chair and complained about the alleged negligence of the mechanized quarry operator regarding preventing the flooding incident. The village chair had to intervene by requiring the mechanized quarry operator to build improvised dikes by piling boulders, gravel and soil against the path of the previous flood to prevent future flooding from reaching the slum dwelling. On the eve of a passing typhoon, the village chair organized the residents across the quarry to do a clean-up of the canals along their houses to de-clog them of household waste and sediments from the quarry. Both mining and non-mining household members volunteered a few hours of their time that day. The miners not only volunteered their labor but also shared their shovels during the clean-up.

A few of the informal miners encountered in my research are members of a progressive party list organization. With the help of the organization, they have learned different strategies of resistance against threats of ecological destruction, co-optation of mining practices and displacement from their mining site and place of residence. They have been supported to document flooding events with photographs and videos, communicate their documentation with government authorities, attend demonstrations, meet, consult and negotiate with government officials, verify the authenticity of any legal instruments presented before them, and prevent themselves from affixing their signature to any document without consulting their allies about its content and veracity, among others. Creating allies and becoming proud of organizational identity is part of the livelihood-making dynamics of these informal miners.

In one research site, informal miners have safe-guarded a portion of the mountain where a natural spring is located and restricted quarrying activity around this area. They get their water from this source and have developed a practice of sharing and distributing water supply to other households in the village. At another field site, informal miners devote one day of their week to quarry stones and pool together their revenue for that day. They donate their earnings to fellow miners or their

family members who have been sick and need financial support for their hospital bills.

Informal miners are embedded in economic and ecological relations that constitute the materials they create. In the case of informal aggregate miners, they can be considered as producers of building materials. They also enroll these materials when building their own houses. The houses of informal miners are made from mix of light materials (e.g. wood, wood scraps, bamboo, galvanized iron sheets, etc.) and reinforced concrete. Adult family members build these structures themselves. A few informal mining households have rebuilt or renovated with concrete after saving some of their income and getting additional loans from local lending companies. Concrete houses are also self-built. Households often enroll the help of extended family members who have previously worked as casual labourers in construction projects.

I would like to suggest that it is at the intersections of diverse economic practices and collective actions where the prefiguring of alternatives can be made. For example, when informal aggregate miners are conceptually decentered from mining per se they can be re-signified as environmental repairers or co-makers of building materials. With this re-presentation, we can begin to imagine other future roles for informal mining labour. ⁱⁱ

Conclusion

Informal mining livelihoods will always be in question as mining continues to pose environmental and health threats to workers and the planet in the age of the Anthropocene. Moreover, as our societies continue to struggle with the challenges brought by automation, accumulation by dispossession and resource conflict, informal miners and their families face many barriers to their mining practices. A diversification strategy that relies on the formalization of manual mineral extraction, for example, can be easily made redundant by mechanized mining operations. In some contexts, decision-makers continue to circumvent mining policies to satisfy their personal stakes including the interest of businesses and corporations.

The ironies presented by informal mining compel us to think of developmental interventions, that are participative and sensitive to local contexts. By looking at informal mining labour as a process of livelihood-making, we can trace the economic and ecological relations it facilitates between and among different practices within and outside the context of extraction. By splintering the identity of the informal mining labour subject and situating informal mining in a diverse economy, we can begin to imagine a broader range of trajectories of transformation that highlight interdependency, complexity, uncertainty and possibility.

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ⁱ While I will still use the adjective “informal” to describe mining labour, I strategically marshal the concept only to signify ontological difference from other kinds of mining labour (Lahiri-Dutt, 2016).

ⁱⁱ In my action research with informal miners we attended an urban gardening seminar in which speakers demonstrated how mushrooms can be cultivated. I briefly mentioned to my participants that mushroom is now used as a potential alternative building material and I showed them a photo of wall boards/panels that were made from mushrooms.