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The myth of alternative livelihoods: artisanal mining, gold and poverty

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Abstract: This paper aims to resolve a fundamental policy question: Should international institutions concerned with the environmental hazards produced by artisanal and small-scale gold mining attempt to direct miners into alternative livelihoods, or promote mining as a means of poverty alleviation? It is argued here that gold rushes are forces of economic history undeterred by policy, and that small-scale mining activities are expanding throughout the world because of gold's firmly rooted market value. Gold mining presents a unique opportunity for the world's poor, generating 3–5 times the income of other livelihoods, and international policy must be pragmatic about this reality.

Keywords: ASM; artisanal and small-scale mining; gold mining; Sudan; sustainable livelihoods; alternative livelihoods; poverty alleviation.

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1 Introduction

In any applied discipline, field or science, there are certain paradigmatic questions that define the contours of research and experimentation. Left unresolved, these questions create polemics, which divide professional and academic communities, and interfere with the delivery of policy prescriptions. The study of the small-scale mining sector in developing countries is yet an emerging science; much of its terrain is unmapped, its hard edges still being determined, and its aspirations coming into focus. Within this decade-old community of professional ASM experts, one obstacle preventing the design and implementation of effective policy – domestic and international – has been at inadequate concentration on the economic and anthropological dynamics of small-scale mining communities (Hilson, 2006; Heemskerk, 2005).

Most ASM centres on the extraction of precious metals in the developing world. Because of its consistent presence throughout the world, and its enduring value across cultures and history, the small-scale mining of gold is a constant feature of ASM economies, particularly in the developing world. With its low barriers to entry and a reliable global market, artisanal gold mining often functions as a safeguard for impoverished populations against the descent into extreme poverty. Yet at the same time, ASM can also contribute to the demise of functioning local economies, as well as to the despoliation of terrestrial and aquatic environments. A chief concern among the environmental consequences of ASM is the release of elemental mercury from the burning of gold–mercury amalgam, and the loss of mercury in discarded tailings. These two pathways of pollution expose millions of miners – and the tens of millions of people linked to the ASM economy – to the inhalation of neurotoxic mercury fumes; the ‘lost’ mercury ends up in the environment, where it is transformed to methylmercury and works its way up the food chain through organic matter, eventually winding up in carnivorous fish and mammals. In all, mercury pollution from ASM is believed to be the source of between one-quarter and one-third of global mercury pollution. Next to emissions from coal, ASM is the world’s second largest source of mercury pollution. In much of the developing world – for instance across Africa where there are few coal-fired power plants – ASM is the main source of mercury pollution. Depending on the number of gold miners in a given year, 650–1000 tonnes of mercury are used to extract gold by creating amalgam. Various estimates propose that the discharges from amalgamation and smelting in ASM account for one-tenth to one-third of the world’s anthropogenic mercury pollution (Madison Declaration on Mercury Pollution, 2007; Veiga and Baker, 2004; Swain et al., 2007).

When it comes to addressing this mercury problem stemming from ASM through international institutions, the policy-making community is routinely divided over whether it ought to be promoting the expansion or reduction of artisanal gold mining. This polemic divides people into two camps: those who approach ASM as an issue of *sustainable livelihoods*, and those who view it in terms of *alternative livelihoods*. The similarity of the two terms leaves an impression that they are feathers of the same bird, especially since both refer to the question of what policies should be formulated to address artisanal mining. This, however, is their only commonality. When policy professionals use ‘sustainable livelihoods’, it implies consideration of policies such as technical and economic assistance, conflict resolution and human rights recognition (Hinton, 2005). By contrast, ‘alternative livelihoods’ is about creating laws or economic incentives to transfer people out of artisanal mining altogether.

Unfortunately, there are also occasions when these terms are used interchangeably, such as when alternative livelihoods deals with industrial activities that mining communities might pursue after a gold rush (Otchere et al., 2004; Hinton et al., 2003). These discussions about post-mining activities such as fish farming, brick production, cattle ranching, or agricultural development are not meant to replace artisanal mining while gold mining is productive. Instead, they fall into the category of economic diversification after the gold rush. Post-gold economic diversification is not the subject of this paper. Rather, the specific concept of alternative livelihoods towards which this paper is aimed is one where mining is framed as something that can be stopped by political or economic intervention.

Indeed, one could argue that the only way to achieve meaningful reductions in global mercury pollution is to reduce – and ultimately eliminate – the artisanal mining sector producing the pollution. Given the miserable state in which gold mining can leave the environment, its legacy of pollution and resource depletion, and the boom-bust economic cycles to which gold-mining communities are subjected, could the right answer not be the end of gold? Should international diplomacy and national policy-making efforts not be dedicated to discouraging people from becoming gold miners by directing them to alternative livelihoods?

It is possible to observe this debate being rehearsed in numerous policy settings. In international conferences, *ecocentric* delegates debate *technocentric* delegates over whether to pursue ways to eliminate artisanal mining. For bureaus of environmental protection, whose mandate is ecological management, artisanal gold mining is an intolerable activity. Likewise, mining companies confronted with artisanal miners working on and around their concessions have traditionally preferred to see ASM swept away. There are also many mining ministries, which waver over whether to formalise artisanal miners, or criminalise and prosecute them.

While understandable, proposing, or even enforcing, that miners find alternative livelihoods as a solution, is not a solution at all. In all of its diverse forms, mercury pollution is linked to essential economic activities, chief among them is coal production. Yet, it is hard to argue that because of mercury pollution, the coal industry – still among the vehicles of industrial growth after hundreds of years – ought to be dismantled. More to the point, promoting alternative livelihoods for artisanal gold miners is not simply a matter of providing job training for other industries. This is the myth of alternative livelihoods. Gold rushes are an economic force like few others: once gold mining has begun, there is little chance of pushing it back. Further, the motivation to become miners is propelled as much by necessity as by choice: “artisanal mining will persist for as long as poverty drives it” (MMSD, 2002, p.314). To redirect miners into other livelihoods requires capital, infrastructure and access to markets. Typically, the best hope of accumulating such capital is in the gold already being extracted.

Several commentators have noted that introducing environmental intervention to artisanal gold-mining communities requires its own set of principles, different from the way such interventions would be conceived for wealthier societies. As Veiga explains,

“concepts such as conservation, heritage values, and aesthetics, that are commonly established principles in developed countries, are superseded by the struggle for survival and need for employment in poorer countries where choices are few and people are unable to plan beyond their immediate future.”
(Veiga et al., 2001, p.197)

Put differently, in poor countries, “environmental issues are poverty issues” (Pedro, 2006).

Even advocacy groups that reject much mainstream thinking about the essential place of mining in modern development concede that artisanal mining at least has the potential to generate capital that contributes to local economic development (Coumans, 2005). Likewise, most UN agencies working on the issue promote artisanal mining as a means of poverty alleviation (Pedro, 2004).

2 Livelihood of artisanal gold miners

Artisanal gold mining is expanding faster than at any time in history. A high gold price is one reason for this surge: the peak of the current spike occurred 12 May 2006 when the price of gold hits \$US 725/oz., the highest since the all-time modern peak of \$US 850/oz. on 25 January 1980. Yet, the 21st century rush started before the international fix skyrocketed at the outset of this millennium. More than high international prices, it is a transformation in the profile of miners that is giving rise to the search for gold. There are today as many people living in extreme poverty as inhabited the entire world a century ago (Wright, 2004, p.30).

Nonetheless, the study of the small-scale mining economy in developing countries is an emerging professional and academic field, whose terrain is largely unmapped and hard edges still being determined (Hilson, 2006; Heemskerk, 2005). The United Nations Environment Programme’s (UNEP) Decision 22/4, issued in February 2003, confirmed the global consensus that there is sufficient evidence to warrant international action to reduce the risks to human health and the environment from the release of mercury and its compounds into the environment. This decision was reaffirmed in 2005 through Decision 23/, further legitimising the case for intervening in artisanal gold-mining situations as a means to controlling mercury releases, 25–35% of which originate from ASM operations. But precisely, what kinds of interventions and practices international aid agencies ought to promote remains an unresolved paradigmatic question. This polemic divides policy professionals into two camps: those who view it as preferable to design mercury management practices around the promotion of ASM as a means of poverty alleviation, and those who envision the elimination of ASM activities through the creation of ‘alternative livelihoods’.

The term ‘livelihoods’ has become something of a catch-all phrase to describe economic intervention in poor, and often rural, communities in the developing world. When policy professionals use the term ‘sustainable livelihoods’, it implies consideration of policies fostering technical and economic assistance, conflict resolution and human rights recognition (Hinton, 2005). By contrast, ‘alternative livelihoods’ is about creating legal obligations and economic incentives to transfer people out of artisanal mining altogether. Given ASM’s legacy of mercury pollution and environmental degradation, the argument is as follows: Should international diplomacy and policy-making efforts not discourage people from becoming gold miners? Is the answer not to bring about the end of gold?

The position here is that proposing that miners find alternative livelihoods is not a solution at all. In all its diverse forms, mercury pollution is linked to essential economic activities; promoting alternative livelihoods for artisanal gold miners is not simply a matter of providing job training for other industries. This is the myth

of alternative livelihoods. Gold rushes are an economic force like few others: once gold mining has begun, there is little chance of pushing it back. Further, the motivation to become miners is propelled as much by necessity as by choice. “Artisanal mining will persist for as long as poverty drives it” (MMSD, 2002). To redirect miners into other livelihoods requires capital, infrastructure and access to markets. Typically, the best hope of accumulating such capital is in the gold already being extracted.

Indeed, combined with failing local economies and failing states, population growth and extreme poverty are creating a perfect storm for the scale of global gold rushing seen today. It has also changed the nature of artisanal gold mining. The great 19th century gold rushes in California, Australia, South Africa, Russia, the Yukon and Alaska were often characterised by a type of gold seeker one rarely encounters anymore, namely the adventurer (Veiga and Meech, 1995). Some of these miners were heralded as pioneers venturing into remote regions to stake new ground. They were viewed as valuable contributors to the development of national wealth, their exploits recorded for posterity as one recounts the triumph of a great footballer bringing home the World Cup. One has only to read the documents of the 19th century rushes to understand how people from a variety of classes – not just the poor – comprised the vanguard of fortune hunters.

Perhaps, no person better characterised the adventuring spirit of this gold-seeking than British explorer Richard Burton. Burton spoke 36 languages, including many African dialects he personally decoded. He famously translated classic Eastern texts such as *Arabian Nights* and the *Kama Sutra*, and was one of the explorers credited with locating the long-pursued sources of the Nile. Yet when the gold rush hit, Burton proclaimed gold to be “better than geography”. From 1877 to 1882, he embarked on three failed expeditions labelled by one of his biographers ‘glorified treasure hunts’. The literary product of this first three week expedition, *The Gold Mines of Midian*, shows the journey to be nothing more than a caricature of the times – the dream of an instant California-style bonanza, only more steeped in Burton’s intellectual brilliance (Brodie, 1967, p.281).

Nineteenth century adventurers viewed gold much the way gamblers and stock market speculators envision a grand payoff and the “permanent emancipation from work” (Arendt, 1968, p.78). Describing the gold rush in South Africa, Arendt draws on the historian Kiewiet who wrote:

“All of them [gold seekers] belonged to ‘a class of persons who prefer adventure and speculation to settled industry, and who do not work well in the harness of ordinary life ... [There were] diggers from America, German speculators, traders, saloonkeepers, professional gamblers, barristers ..., ex-officers of the army and navy, younger sons of good families ...” (Arendt, 1968, p.78)

The driving feature of these gold rushes was that with very little investment, one could return rich from the bush. Ingersoll (1897, p.11), who documented the early bonanzas of the Klondike, writes: “Any man who has pocket money and about \$500 for grub and staking a claim can safely go to the Klondike region and expect to reap a liberal reward for his efforts”. Evidence of this kind of claim came not only from miners returning home with their bounty, but also from travellers and writers covering the global bonanzas. In 1875, the English novelist Anthony Trollope toured the British colonies, recording his observations in dispatches for the *Liverpool Mercury* newspaper. Detailing falling output from gold mines in Victoria, Australia, Trollope excavated the records of the early period

of the rush between 1853 and 1857, when over three million ounces were exported from the colony: "That and the produce of the next four years may be said to represent the state of things *when the rivers ran gold, when men had but to wash the mud in the gullies to find wealth on the surface*" (Trollope, 1875, p.103).

To be sure, part of the 21st century appeal of gold mining remains this aspiration of plucking plum-sized nuggets from the banks of the river and retiring on the profits. In gold-rich regions, it is still common to hear rumours circulating about someone hitting the mother lode. When this happens, a 'shout' goes out. The news spreads rapidly by word of mouth, usually with the value of the discovery fluctuating dramatically from place to place. One miner will say: "I heard he sold it for \$500,000". Elsewhere, another might claim: "No, he got so much for it the buyer had to go home first to collect enough money to pay him". Finally, a third miner will contend: "They are both wrong. I actually know a guy who saw the nugget, and it was worth \$1.2 million". And so on and so forth.

This oral tradition of spreading news of a gold discovery is chronicled by Cleary (1990) in his study of the 1980s gold rush in the Brazilian Amazon. The formation of a *garimpo* (artisanal mining area) begins with a *fofoca* (gossip), a term used to describe the moment when an area is producing a lot of gold and, when the news spreads, a small gold rush occurs. But, *fofoca* also refers to word of mouth reports (*radio peao*), often embellished, about an exceptionally rich discovery; these reports attract more people to the area, who secure mining rights from the pioneer prospector who made the discovery. A *fofoca* is usually a frantic period of extraction, but it is also when the formal arrangements for organising activity on the mining claim are developed.

Although the prospect of a shout remains part of gold's allure, most artisanal gold mining has transformed from a boom-bust cycle into a refuge for the world's poor. As Cleary (1990, p.79) observes, 96% of the workers in the artisanal gold mines he surveyed came from the lower classes of Brazilian society. Cleary takes this to mean that, in fact, ASM represents a significant opportunity for 'upward mobility' for people who have very few options or prospects outside of the *garimpo*. Indeed, by any current ethical measure of well-being and baseline livelihood, today's artisanal gold miners are marginalised, impoverished and vulnerable. All of the core development issues identified by the UN Millennium Goals are critical for gold miners. The MDGs propose seven markers of extreme poverty: hunger; primary education; gender inequality; child mortality; maternal health; HIV/AIDS; malaria and other diseases; environmental sustainability. On each one of these indicators, gold-mining communities are typically lacking the most basic social and economic infrastructure to break out of extreme poverty (Spiegel and Veiga, 2005; Heemskerk, 2005).

For many millions of people who lack the capital and rights to be active participants in the cash economy, gold is one of the few commodities requiring little investment or infrastructure. In this sense, there is a common thread connecting today's gold miners to those of the Klondike: the barriers to entry remain low enough that anybody with a strong back and the need for income can enter the labour force. What is different, perhaps, is the outcome a miner can expect in return for his – or her – efforts. "Pocket money and about \$500" can still get a person going as a miner. The important question, however, is what returns will a miner see from this work?

3 Gold and development

A miner's wages differ depending on the type of mineral deposit, technology, market access and organisation of labour. Most artisanal gold miners make 0.2–1g of Au/day (\$5–15 USD), but in the right conditions, gold can be far more profitable. Telmer (2007) points out that around the town of Kareng Pangi, Indonesia “Land and river based gold production may have generated 50 million USD in 2006 ... enough to support 20,000 households of 5 people at 2400 USD/year – far above the average Indonesian wage”. These wages, Telmer argues, “Can support many more when it is spent and re-spent, cycling through the community”.

Yet, despite this potential for development from artisanal gold mining, it is reasonable to fear about the negative fallouts of an artisanal gold economy. Few can deny the mayhem created by the madness over gold. As Trollope (1875, p.87) observes, gold makes people crazy:

“No one who has not seen it can understand how continual and how detrimental is the hankering after gold in an auriferous country. It upsets the minds of men with a propensity for gambling, and induces them to waste their honest earnings in the pursuit, with a lavish extravagance which soon reproduces poverty and distress.” (Trollope, 1875, p.87)

Indeed, Trollope witnessed many conditions still common in artisanal gold-mining areas around the world: gangs of miners washing gold in rivers; men working without wages; no management or accounting systems; everyone hoping for a big payoff, with as many men dying in poverty as retiring to wealth. “Who can compute how much such a one threw into the general stock of loss?” Trollope asked (p.100). “Who can say how much money was thus expended with absolutely no result in produce? A true report of expenditure and receipts in this great enterprise can never be furnished”.

When coupled with ecological ruin, gold mining can be a powerful force of economic chaos and social upheaval. Once triggered, there is no known means of ending a gold rush without exhausting the resource. In the 19th century, fear of the consequences of a gold rush led the Russian Governor Baranov to repress knowledge about gold in Alaska, after it was discovered in 1804 by Russian fur traders. Baranov and successive governors loyal to the fur trade managed to suppress this fact for more than 60 years. When Russia at last ceded the territory to the USA in 1867, rumours of Alaska's mineral wealth brought prospectors to the region, leading eventually to the great gold rush of the Klondike (Ingersoll, 1897).

Dipping into the historical debate amongst philosophers reveals divergent opinions about whether gold builds or destroys capital. In *The Poverty of Philosophy*, Marx (1847, p.64) argues that gold, along with other precious metals, imported from the USA provided the capital needed by European nations to bankroll the industrial revolution:

“An indispensable condition for the establishment of manufacturing industry was the accumulation of capital facilitated by the discovery of America and the importation of precious metals.”

This idea that gold finances the development of wealthy societies can be traced to the medieval Islamic philosopher, Khaldun (1332–1406), whose *Prolegomena to the Arab Philosophy of History* is credited with being a precursor of modern sociology. According to Khaldun (p.77), a country's stockpiling of gold is a signal of its imminent rise as an economic power, and evidence that somewhere else a country is declining.

“The quantity existing in the hands of men circulates and is transmitted from generation to generation. And, it probably circulates from country to country and from state to state, according to the price paid for it and the [need of] different societies for it. Thus, if such wealth has decreased in North Africa, it has not diminished in the land of the Franks or Slavs; if it has decreased in Egypt or Syria, it has not diminished in India or China. For it is a social effort, the search for profit and the use of tools that cause the increase or decrease in the quantity of precious metals in circulation ...”

Other commentators, however, reject the view that gold builds capital. Picking up Marx’s (1847, p.47) mantra that “in our age, the superfluous is easier to produce than the necessary”, Arendt (1968, p.68) scorns gold as “the most superfluous raw material on earth”, and ridicules the idea that its possession provides anything resembling sustainable economic development. The author further notes that, “gold hardly has a place in human production and is of no importance compared with iron, coal, oil, and rubber; instead, it is the most ancient symbol of mere wealth”.

Despite her scorn for gold, Arendt concedes one critical point, which may be gleaned as a virtue of gold mining. At its peak, the South African gold rush of the 1880s provided a living for one-half of the country’s population, and financed half of all government expenses. But not even this fact is enough to convince Arendt that gold adds value to an economy. She concludes (p.69):

“In its uselessness in industrial production it bears an ironical resemblance to the superfluous money that financed the digging of gold and to the superfluous men who did the digging. To the imperialists’ pretense of having discovered a permanent savior for a decadent society and antiquated political organisation, it added its own pretense of apparently eternal stability and independence of all functional determinants.”

It is Max Weber, however, who comes closest to understanding that the issue with gold is fundamentally occupational but not appropriational. Weber argued that gold and other precious metals can build capital if they are accompanied by the right organisation of labour. An inflow of precious metals may cause price revolutions, as occurred in 1530 in Europe, but to bring about capitalism increasing the supply of precious metals works only

“when other favourable conditions are present, as when a certain form of labour organisation in the process of development, the progress may be stimulated by the fact that large stocks of cash come into the hands of certain groups.” (Eldridge, 1971, p.278)

To illustrate his point, Weber summons the example of India in the period of Roman power, when the rajahs were receiving enormous sums of precious metals – 25 million *sestertii*¹ annually – in exchange for domestic goods. And yet, commercial capitalism did not appear because the rajahs hoarded the metals rather than converting them into cash by investing in “enterprises of a rational capitalistic character”, leading Weber to conclude:

“This fact proves that it depends entirely upon the nature of the labour system what tendency will result from an inflow of precious metal. The gold and silver from America, after the discovery, flowed in the first place to Spain; but in that country a recession of capitalistic development took place parallel with the importation ... Consequently, the stream of precious metal flowed through Spain, scarcely touching it, and fertilised other countries, which in the 15th century were already undergoing a process of transformation in labour relations which was favourable to capitalism.” (Eldridge, 1971, p.279)

Khaldun (1950 ed., p.285) made a similar case some 500 years before Weber, arguing that

“such forms of wealth as gold, silver, precious stones and objects [made out of them] are only minerals and products having an exchange-value, like iron, copper, lead, and the other metals and minerals ... It is society, acting through human labour, which brings them to light and increases or decreases their quantity.”

4 The gold souks of Khartoum and Omdurman

The great gold souk of Khartoum – famous through the ages as an exporter to the world – occupies an entire square block adjoining the central bus station and the city’s biggest mosque. It is a precious metals market so abundant in jewels that even street vendors trade in gold. Khartoum is a sprawling city without a main commercial district or downtown core. In many ways, the souk is the centre of the city.

For the most part, shoppers circulate around the perimeter of the market, competing for space with a vibrant exchange in used cellphones. But, the heart of the souk is an open-air interior courtyard used for smelting, smithing, trading, and offering the afternoon prayer.

From the courtyard, a stairwell winds up three more floors housing jewellery manufacturers. These workshops specialise in reprocessing scrap metals recycled through a complex East African and Middle Eastern trade network, of which Dubai is the uncontested hub.

Ninety-five per cent of all gold trading conducted in the gold souk of Khartoum is in imported recycled metal, rather than raw gold arriving from artisanal mines located in the distant corners of the country. Officially, the Sudan produces just five tonnes of gold per annum, all from one mine operated by a French company in the Northeast (GFMS, 2005). But, there is much that is omitted from the official ledgers. This is especially true in parts of the country where Khartoum’s authority is limited, and gold serves more bellicose purposes.

The Sudan, Africa’s biggest country, has four principal artisanal gold-mining areas. Near the towns of Kurmuk and Khor Yabus on the headwaters of the Blue Nile along the Ethiopian border, there are 100,000–200,000 miners working on deposits on both sides of the frontier; in the Bayuda Desert of Northern Sudan 5000–10,000 miners compete for resources with mining companies recently issued exploration licences; in the Nuba Mountains to the west of the White Nile, there is an area believed to involve several hundred miners; finally, in Southern Sudan, gold is mined artisanally and smuggled across the border into Kenya. During the long civil war between the North and South, the Sudanese People’s Liberation Army relied on this gold to finance its operations and traffic in arms, an arrangement similar to that between Congolese rebels and Ugandan gold traders documented by Human Rights Watch (2005).

As a result, the gold souk of Khartoum is not primarily a trading post for artisanal gold. From the third floor of the souk, a small staircase leads to a flat rooftop. The roof – which overlooks the bus station and many half-finished buildings – is used primarily for discarding waste: old chairs, cardboard boxes with batteries and light bulbs, the odd piece of pipe. But in one corner, there is a man crouched over a large bowl. Next to him is a pail of water and a small pile of dirt. His posture is oddly familiar,

but so out of context in this environment that it takes a moment to recognise what he is doing. Here in the centre of Khartoum, this man on the roof is panning gold from a slag of cigarette butts and pebbles. He scowls as visitors approach. When he lifts his arms to drain water from the pan, he exposes the tip of a knife strapped above his elbow.

In fact, this solitary panner is one of many dozens of 'miners' who gather in the souk at daybreak to scoop dust that settles on the floors during goldsmithing and smelting. From the souk, most people take what they collect to the banks of the River Nile to pan and amalgamate the gold dust. Yet, this panning is still productive enough to keep them returning to scavenge the offal for minute particles of gold. Even this low on the supply chain, artisanal gold mining is a compelling livelihood strategy.

Across the Nile from the gold souk of Khartoum lies another equally impressive market. The gold souk of Omdurman has 76 gold shops, overseen by Yousef Tabidi, Chief of the souk's Public Committee. Tabidi works out of a small storefront office where he deals in specialty items, mostly antiques. He proudly exhibits a 1901 US dollar, which weighs eight grams, as well as a 10 gram Swiss ingot, and a 1927 English pound. Tabidi's family has been in the gold business since the 15th century (Tabidi means goldsmith), when the Sudan was the chief source of supply for gold and silver to the world's major civilisations. By the 19th century, the centres of gold mining had shifted to North America, Australia, Russia and South Africa, and the merchants of Khartoum and neighbouring Omdurman shifted to buying their gold from banks. But, today the central bank either no longer has, or no longer sells gold to the shopowners. So, Tabidi and the merchants of the city have returned to an older system of relying on a robust hand-to-hand exchange of scrap metal. About 95% of the gold traded by Tabidi is coming from abroad, largely through Dubai.

The trade centre of gold scrap is Dubai, where the gold dealers of India, Iran, Saudi Arabia and East Africa converge in what the marketers of the Emirate call The City of Gold. In 2005, The Dubai Multi Commodities Centre (DMCC) traded 523 tonnes of recycled gold, recovered primarily from Indian scrap jewellery, as well as gold bars purchased from central banks. The scrap is melted into smaller bars and sold to investors and manufacturers. As of 2004 (GFMS, 2005), increased marketing of more traditionally valued 18-carat gold has, not to mention the growth of China's industrial class, helped make China the third biggest consumer of jewellery (224 tonnes), behind India (517 tonnes) and the USA (352 tonnes), followed by Turkey (189) and Saudi Arabia (136 tonnes).

As Tabidi is talking, a woman fixes on his shop and enters, seductively extending an open palm in which she carries several rings. His eyes widen for a moment before he shakes his head no, and she moves on quietly. Tabidi will not buy from her because she has no invoice and he worries it might be stolen.

In financial markets, gold rarely, if ever, needs to pass physically from hand to hand. The world gold supply consists of primary production and existing stocks. Stocks of 'recycled' or reclaimed scrap gold are generally included in estimates of existing stocks. In the modern era, the world's aboveground stocks have grown exponentially. In the early 16th century, the total amount of mined gold in the world was about 155 tonnes. By 1800, there were 4200 tonnes of gold above ground. In 1941, 50 years after the introduction of modern industrial mining and business methods, holdings had quadrupled to 16,000 tonnes (O'Callaghan, 1991, p.7). At the conclusion of World War II, the Bretton Woods convention fixed the price of gold at \$35 per ounce. This system tied the value of gold to the US dollar, making it illegal in many places for

private citizens to own gold, and capping the holdings of central banks. Bretton Woods did not, however, limit the growth of gold mining. Aboveground stocks nearly quadrupled again by 1968, accumulating to 70,000 tonnes, fully half of which belonged to official monetary institutions. From 1985 to 1991, the largest producing countries were South Africa (33% of production), the Soviet Union (15%), and the USA (10%). By 1991, the world stock surpassed 100,000 tonnes, with new production levelling at around 2500 tonnes per year (GFMS, 2005).

With 100,000 tonnes of gold in circulation – 40-times annual production (O’Callaghan, 1991, p.8) – it is rare for banks to need additional supplies of virgin gold (O’Connell, 2006). High-volume trading is mostly paper but not physical. But, in the Sudan and other countries, where there is less capital accumulation than in financial centres, the physical trading of ‘scrap’ or used (as opposed to raw) gold is a central feature of the economy.

The resale of jewellery by women is an important part of this transcontinental exchange. In the Sudan, as in many places, if a woman is fortunate, she will accumulate enough gold in her lifetime to cover both arms, her fingers and neck. The parts of her body she cannot drape with gold – the palms of her hands and soles of her feet – will be died with henna. Women receive gold at lifecycle moments such as weddings, births and religious festivals, with gold sales peaking at the end of Ramadan and during the Hajj, the way Christmas and Easter are bookends to the jewellery seasons in the West.

Much of what is sold is what Tabidi calls ‘show-off gold’. Virtually, all the jewellery in the souk is in the style of Emirati or Bahraini ornamentation one sees in the Gulf or dangling on the arms of Persian children and Indian brides; enormous bangles that clink together like ice in a glass; necklaces covering the whole chest to ward off the evil eye. It is bright, yellow, 21-carat gold – bulky and gaudy by European standards. When refiners in Dubai receive ingots or scrap from Canada or Tokyo, they have to reduce the purity from 0.999 to 0.995 to give the gold the colour preferred in India, the Middle East and East Africa. Unlike New York or Paris, where the value of a gold ornament is determined by brand and design, in the Sudan, just as in Dubai and Teheran, jewels are sold by weight. The defining characteristic of gold ownership is how much gold you have in your possession, not where it comes from. When a woman is widowed, divorced or disgraced, gold is her the only investment. Indeed, gold is not just a source of a woman’s pride and beauty; it is her insurance.

Thus, critics who protest that gold is “the most ancient symbol of mere wealth” (Arendt), or call it a ‘barbarous relic’ as Keynes did (Green, 1968, p.12), neglect an economic reality. The issue of whether gold builds capital is not about who possesses the gold, but the context in which gold is being produced and traded. The value of gold is established not through intrinsic value but via social relations (Marx, 1847, p.62).² For miners, gold is not mere wealth; it is an essential economic activity. Similarly, outside the world’s financial capitals – in places beyond the reach of banks and certainly beyond digital credit – gold continues to thrive as the ‘lubricant of trade’ (Ball, 2002, p.68). For people in the developing world, particularly women, gold is hardly a relic: it is hard currency.

5 The value of gold

In dubbing gold a ‘barbarous relic’, Keynes (see Green, 1968) was referring to the role of gold as the base value for the international monetary system. As such, he was refuting a position held at the time by, among others, French Prime Minister Charles de Gaulle, who at a press conference in 1965, delivered an almost erotic sermon praising the virtues of gold:

“There can be no other criterion, no other standard than gold. Yes, gold, which never changes, which can be shaped into ingots, bars, coins, which has no nationality and which is eternally and universally accepted as the unalterable fiduciary value par excellence.” (Green, 1968, p.12)

De Gaulle was caricaturing gold in a way that it has been described as “the delusion of absolute value” (Arendt, 1968). Gold of course can be devalued rather easily, either by over-hoarding, such as when the Roman emperor Nero removed too much gold from the market to build his palace, or by depressing the market through oversupply, as when the King of Mali distributed so much gold along his path to Mecca that he deflated prices from Bamako to Khartoum.

But, it is important to draw a distinction between the question of absolute value and sociological value. The fact that the value of gold can be diminished globally does not change the fact that gold retains value socially. In 2005, gold demand included 2700 tonnes for jewellery and 600 tonnes for hoarding, exceeding new official production by nearly 1000 tonnes (O’Connell, 2006; this does not include an additional 400 tonnes for industrial use). It is commonly assumed that gold production serves no purpose; that gold is merely stashed in central banks. Contrary to public perception, gold demand from private individuals is greater than what industrial gold-mining companies can produce. It is also presumed, correctly, that gold supports mostly jewellery markets – jewellery being a symbol of frivolity (‘show-off gold’). However, most of the world jewellery, and all gold for that matter, is fundamentally about security not ostentation.

Gold is insignificant in the global investment environment. On the three trillion dollar London Stock Exchange, the 40–60 billion dollar gold market hardly occupies the attention of most traders, whose eyes are locked on pension funds and the 9.1 billion dollar profit recorded by Exxon-Mobil in the third-quarter of 2006. Overall, gold amounts to little more than 1% of investment portfolios.

Yet, it is not as if the transportability or reliability of gold is somehow diminishing. However diminutive gold is on the London Stock Exchange, when there is economic uncertainty, banks and individuals still revert to gold as a hedge against currency depreciation and sudden emergencies (Green, 1968, p.136). The reliance on gold as a hedge was revived in September 2001, when fear of economic collapse led to whispering on the floor of the stock exchanges that quickly turned to a shout: buy gold. Central banks in Russia, China and Argentina began stockpiling, in some cases doubling their current reserves. This move validated the view of some economists that heavy gold trading is evidence of imminent political upheaval (Cassidy, 2006).

6 Poverty and mining

Especially, high-volume international trading does not immediately lead to increased industrial world gold production. Because paper trading does not necessarily demand any physical exchange, there is a lag time between a price spike and increased supply. While the gold price was more than doubling from 2001 to 2005, official global production actually dropped from 2600 to 2400 tonnes (GFMS, 2005). But, these numbers tell only part of the story. Gold industry analysts acknowledge there is a certain amount of ‘loss’ in any accounting of global supply and demand. Official supply does not immediately climb to meet demand because it takes time for companies operating at economies of scale to increase production. For example, when gold prices reached record highs in 1979 and 1980, mine output did not match demand until 1984. Raising capital, assembling infrastructure, and acquiring licences are a multiyear effort in the best of times. In the meantime, spikes in demand are met at a smaller scale by increased trade in aboveground stocks and by artisanal mining. With the high volumes of gold already available aboveground, the so-called dishoarding – when private owners unload their stocks – can at times account for more supply than primary production. This was the case in 1931 when a 50% devaluation of sterling led British India to dishoard as much gold as South Africa produced that year (O’Callaghan, 1993, p.7).

In addition to dishoarding, increased hedging in the gold economy puts pressure on artisanal mining to ramp-up production. Because of its low entry barriers, artisanal mining persists even when low gold prices make large-scale mining uneconomic (Green, 1968, p.99). As Cleary (1990, p.92) points out, in the Amazon gold rush of the 1980s, it was possible, in certain circumstances, “to find the ideal combination of low capital costs and a highly valuable product”. As a result of this dynamic, higher prices coupled with greater international demand results in more artisanal miners (Ryan, 2006). Even so, the growth of artisanal mining is unlikely to register statistically, largely because smuggling makes a complete accounting of gold difficult. For example, 100 tonnes are suspected to have smuggled out of Dubai every year, an astonishing fact given that all gold in Dubai is traded tax-free (Griffith, 2006).

Still, the proper measure of the growth of artisanal mining is its labour force rather than its rate of production. Because artisanal mining is notoriously inefficient and trade so difficult to monitor, growth in ASM should be determined by a rise in the number of miners rather than increased official production. A country like Guinea, Ghana, or Guyana can produce just 5–10 tonnes of gold artisanally, yet still have hundreds of thousands of miners working in the goldfields to extract what a few thousand workers could recover working with industrial methods. Therefore, a price spike in London creates tens-of-thousands of jobs in rural Indonesia, Ethiopia, and Ecuador, and dozens of other developing countries. In effect, global financial institutions and private investors hedge their bets on the backs of miners.

Despite this correspondence between the wealth of nations and the work of miners, it remains common for miners to be regarded as irrelevant or a nuisance. A unique kind of dismissiveness is frequently used to refer to miners. “A miner’s life is short”, goes a popular saying in South America. “It is harder to turn a man into a gold miner than to turn a gold miner into a man”, was the longstanding refrain of one Brazilian *garimpeiro*. In cases where miners are more vilified, the sloganism casting them as subhuman is filled with vitriol, as in “The only good gold miner is a dead one”, a phrase promoted in the 1980s by the executives of a large mining company.

Since at least the Bronze Age, miners of all kinds have been treated not merely with disdain but as “a separate race of humans” (Freese, 2003, p.45). In antiquity, when Southern Egypt was the primary source of gold traded throughout the Near East and Mediterranean, mines in the Eastern Desert gave the Egyptians so much gold the Mitannian King was moved to say “Gold is as dust in the land of Egypt” (McEvedy, 2002, p.47). This gold helped Egypt become one of the most prosperous ancient civilisations. But, when the Roman writer Diodorus Siculus travelled to the mines of the Nubian Desert in the first century BC, he observed wretched slave conditions among miners:

“No care at all is taken of the bodies of these poor creatures, so that they have not a rag so much as to cover their nakedness... though they are sick, maimed or lame, no rest nor intermission in the least is allowed them... till at length, overborne with the intolerable weight of their misery, they drop down dead in the midst of their insufferable labours.” (Ball, 2002, p.59)

The term *garimpeiro*, used in Brazil to refer to artisanal miners, means thieves from caves (*grimpas*), whose meaning hearkens back to the 18th century when formal mining rights were granted only to the Portuguese elite, and Brazilians invaded mining shafts and tunnels in the middle of the night (Veiga, 1997). Indeed, the indignities suffered by gold miners are not a relic belonging to a distant, less civilised age. Neither the labour movement nor the human rights revolution has remedied the wrongs continuing to be perpetrated against miners by the public and private sectors in the name of domestic production, growth and expansion. And in some ways, the fate of miners has worsened since Diodorus. The obstacle that once prevented miners from being treated like so much dust has finally been removed: there is at last an infinite labour pool, and so much poverty gripping people by their throats that in spite of its exploitative, dehumanising qualities, artisanal gold rushing is rising to unprecedented heights, or lows as the case may be.

7 Catalyst and consequence

There is no other commodity like gold, whose market has an irrational life force that boggles most efforts to explain it. This near-mystic irrationality evokes great surges of human activity. The myth of alternative livelihoods is that gold-mining activities can be fundamentally altered through political or economic intervention. The notion that miners can, or should, be persuaded to exchange gold mining for agriculture or other light industries forgets what Hinton (2005, p.19) calls the *Problematique of ASM*, in which “poverty is both the catalyst and consequence of ASM”. Modern artisanal gold miners are motivated less by adventure than by survival. Most artisanal gold mining happens in places where the daily average wage is one or two dollars a day. The ideology of alternative livelihoods does not consider that gold mining is flourishing because it is the most accessible, lucrative, replacement for economies that are failing people. Gold mining itself is the alternative livelihood. Relative to other options, the additional earnings miners receive from gold are significant. Invested effectively, these earnings can help build capital and diversify economies.

Alternative livelihoods also perpetuate a perception of gold miners as corrupt or criminal, when in fact the entire industrialised world relies on artisanal miners at the first sign of global instability. Women and artisanal miners are the first responders to international financial crises. Labelling the artisanal gold economy as antiquated misses the fact that throughout the world, gold remains a vital currency and part of a living economy. This economy cannot merely be legislated away or eliminated through environmental intervention. Artisanal mining is going to persist for as long as poverty drives it, and for as long as humanity desires gold. If gold is the alternative livelihood, then the question is how can it contribute to poverty alleviation and strengthen local economic development? For despite its many miseries, in times of privation, war, or extreme poverty, gold offers what few other commodities provide: an established market with a firmly rooted infrastructure for trade and commerce. Rather than marginalising miners by promoting their criminality, solutions to mercury pollution and other social ills created by ASM must come from tolerance, legitimation, and adding value through manufacturing and diversification.

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Notes

¹Sestertii was an Ancient Roman coin thought first to be silver, then later bronze.

²Marx was supporting Voltaire's statement that "The sole intrinsic value of a silver mark, is a mark of silver, half a pound weighing eight ounces".

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