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Mercury: An agent of poverty in Ghana's small-scale gold-mining sector?

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Abstract

There is consensus worldwide that the artisanal and small-scale mining (ASM) sector is comprised of individuals who are *trapped* in a vicious cycle of poverty, lacking the necessary financial and technological means to improve their standards of living. Minimal work, however, has been undertaken to identify the very factors behind miners' plight, which inevitably vary from country to country. This paper uses a case study of Ghana to argue that an increased dependence upon mercury for amalgamation in artisanal gold-mining communities is one such—albeit overlooked—"agent of poverty". There is mounting empirical evidence which suggests that dealings with the monoponistic middlemen who supply mercury, purchases of costly medicines to remedy ailments caused by mercury poisoning, and a lack of appropriate safeguards and alternatives to amalgamation, are preventing gold miners from improving their practices and livelihoods. The solution to the problem lies in breaking this cycle of dependency, which can be achieved by providing miners with robust support services, mercury-free technologies and education.

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Introduction

In recent years, artisanal and small-scale mining (ASM) has become an important topic in international development. According to the International Labour Organization (ILO), this growing sector of industry employs well over 13 million people directly in sub-Saharan Africa, Latin America and Asia; an additional 100 million individuals, including downstream workers and family members, also depend upon its existence (ILO, 1999).

There is growing consensus that ASM is inextricably linked with poverty—namely, that participants are driven to mine because of widespread unemployment. Various branches of the United Nations, the World Bank and development agencies such as the UK Department for International Development (DfID) now assert that the sector is "poverty-driven": within the impoverished localities where activities take place, there are generally few, if any, alternative income-earning opportunities (Barry, 1996). Policymakers have consequently struggled to formalize ASM, its anarchic growth linked to wider macroeconomic factors; but an even greater challenge has been finding ways in which to adequately address the daily hardships faced by artisanal miners, many of whom are now *trapped* in a vicious cycle of poverty. A necessary starting point, therefore, is to pinpoint these variables: in doing so, governments put themselves in an excellent position to identify policy measures capable of facilitating the implementation of appropriate industry support services and allied poverty-alleviation strategies.

In the case of Ghana, the location of one of the world's largest ASM workforces, there is mounting evidence suggesting that one such variable is mercury, which is used

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throughout the country to recover gold. Whilst several authors have examined at length the environmental impacts of amalgamation[1] both within Ghana (Golow and Adzei, 2002; Babut et al., 2003; Golow and Mingle, 2003) and elsewhere (e.g. Kambey et al., 2001; Limbong et al., 2003), few have explored the socio-economic implications of the heightened dependence upon mercury in rural regions (Hilson, 2006). The country's ASM workforce now exceeds 200,000 (Hilson and Potter, 2003, 2005), and there are telling signs that failure on the part of authorities and advising experts to both monitor the distribution of mercury and reduce miners' exposure to noxious vapours has exacerbated poverty in artisanal gold-mining communities. Aside from being burdened with the costs associated with the deterioration of their health, miners are often forced to sell their gold at discounted prices to monoponistic middlemen, who, as the sole suppliers of mercury, find themselves in a position to quote below-market rates for product. Improved understanding of the ways in which an increased dependence on mercury is driving poverty in rural areas is a key to devising policy measures capable of improving the living standards of Ghana's impoverished artisanal gold miners.

The purpose of this article is twofold. First, using findings from recent research,[2] the article explains at greater length how a heightened reliance upon mercury is potentially fuelling poverty in many of Ghana's artisanal gold-mining communities. Secondly, it identifies measures capable of alleviating this poverty.

Artisanal mining: an analysis of the poverty trap

Although governments have their own interpretations of "artisanal" and "small-scale" mining, defined according to such criteria as workforce size, production and revenues, ASM is generally identified in international development circles as the most rudimentary branch of the mining sector; but this notwithstanding, there *are* obvious differences, particularly in terms of skill and organization, among operations worldwide. In many West African countries, for example, the equivalent to the sophisticated, multi-compartmental sluice boxes found throughout French Guiana and Guyana are rudimentary setups featuring jute matting. Moreover, whereas excavation equipment is now widespread in many ASM regions in Latin America, within African and Asian mining communities, basic practices such as panning are more prevalent.

In the 1970s and 1980s, considerable effort was made under the auspices of various United Nations' departments to coordinate international conferences for the purpose of reaching a consensus on a universal definition for ASM and a uniform industry policy stance (Jennings, 2003). Whilst these, and complementary, initiatives are regularly portrayed as futile, if anything, the difficulties experienced in achieving these tasks helped to illustrate the magnitude of difference among artisanal and small-scale operations worldwide. Importantly, a decipherable pattern emerged: namely that, the poorest mineral-rich countries contain the largest and least-skilled ASM workforces, which has undoubtedly given rise to the industry's "poverty-driven" label in contemporary international development debates (Table 1).

The idea that ASM is linked to rural impoverishment was first proposed at the World Bank-hosted *International Roundtable on Artisanal Mining*, where delegates agreed that, "…to a large extent, informal mining is a poverty-driven activity" (Barry, 1996, p. 1). The United Nations has since popularized this idea, its industry experts noting that "because artisanal mining is largely driven by poverty, it has grown as an economic activity, complementing more traditional forms of rural subsistence earnings" (Labonne, 2003, p. 131). The broader argument, however, relates to adjustment lending, the ensuing privatization of utilities and parastatals having caused pervasive employment (see Reed, 1996; Riddell, 1997; Naylor, 1999; Crisp and Kelly, 1999; Goldberg and Pavcnik, 2003). Mining sector reforms, implemented alongside programs of economic stabilization and structural adjustment (Campbell, 2003a, b; Pegg, 2006), have exacerbated the unemployment problem. A rapid influx of large-scale mining companies and the concurrent legalization of small-scale mining have displaced several indigenous groups, leaving them landless and homeless. A growing number of the displaced have taken up employment as "illegal" transient artisanal miners.[3]

Despite accepting that the sector is poverty-driven, governments and multilateral organizations frequently condemn illicit mining activities, furthermore failing to recognize that artisanal miners are, in fact, *trapped* in a vicious cycle of poverty. This observation was made initially by Richard Nöetstaller, who argued at the International Roundtable that a combination of futility on the part of regulators and an inability to innovate on the part of miners cause such hardship (Fig. 1): that even those wishing to abandon the artisanal mining profession

[1]The process by which mercury is used to recover gold.

[2]The findings reported in this article were drawn verbatim from the transcripts of interviews conducted in three of Ghana's principal ASM regions (Prestea, Bolgatanga and Ntronang/Noyem) in 2005 and 2006. Between June and September 2005, field interviews were conducted with the leaders/elders at each of Prestea's main ASM camps: Number Four Bungalow, "I Trust My Legs", Ecomog and Kutu Kutu. Subsequent discussions were held between January and February 2006 with leaders at "World Bank", "Accra", "Tarkwa" and "Obuasi", Bolgatanga's main artisanal mining camps. In November 2005, February 2006 and June 2006, the elders and chiefs—who are also the gang leaders—at the Ntronang and Noyem *galamsey* settlements were consulted about mercury. The purpose of the research was to determine respondents' levels of awareness of mercury's toxicity and the environmental implications of amalgamation. A standardized questionnaire was used for the research.

[3]Government officers often do not accept that a lack of alternative employment is a driving force behind the growth of artisanal mining but recent attention paid, most notably by DfID and the UN, to alternative livelihood projects in ASM regions is proof to the contrary.