

Perspectives on female participation in artisanal and small-scale mining: A case study of Birim North District of Ghana

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Abstract

This article critically examines the issue of growing female participation in the artisanal and small-scale mining (ASM) sector, particularly within its illegal segment, drawing upon experiences from Birim North District in the Eastern Region of Ghana. Although an estimated 50% of those employed in ASM are women, few researchers have investigated what roles women play in the sector, or how their participation contributes to rural development. The paper aims to examine the causes of female participation in the ASM sector and the impact of this type of employment on women's income, health and families. An analysis of collected data suggests that there is a growing need for policies to address female employment in ASM and, more generally, rural employment. The analysis demonstrates the utility of gender mainstreaming in the small-scale mining formalisation process, as well as the need to promote other viable employment opportunities for the benefit of women residing in rural areas.

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Introduction

In recent years, the artisanal and small-scale mining (ASM) sector has experienced significant growth worldwide, predominantly in remote rural areas of the developing world. This has occurred mainly in response to widespread unemployment within African, Latin-American and Asian countries in which it takes place (Hentschel et al., 2003). There is a consensus worldwide that ASM is largely poverty-driven and that "...there is a correlation between the human development index (HDI) position of countries and the proportion of the total workforce involved in ASM" (Hoadley and Limpitlaw, 2004, p. 1). The redundancies caused by structural adjustment programmes, inflation and modified patterns of trading and farming over the past 10–15 years have driven millions of

people of varying skill and background to take up employment in the ASM sector (Tallichet et al., 2004).

Recent rises in the market prices of precious metals and stones, the main commodities mined on a small scale have further fuelled the sector's rapid expansion. In many cases, ASM operations are conducted informally, outside regulatory and legal frameworks; it is considered that as much as 80% of the small-scale mining operations worldwide are illegal¹ (Hentschel et al., 2003). In this respect, ASM is typical of informal economic sectors in the developing world that offer employment to a significant part of labour market; make important contributions to production and rural income generation; and provide a necessary survival strategy for hundreds of thousands of people (ILO, 2004).

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¹Illegality and informality of small-scale mining sector is a continuously debated topic, see Lahiri-Dutt (2004) and Heemskerk (2003). In this paper, all small-scale mining activities conducted without licensing and registration are referred to as illegal.

In Ghana, where poverty rates are high (38% of the population live below the national poverty line), especially in rural areas (the incidence of poverty in agriculture is as high as 65% of the rural population, data from Sackey, 2005), small-scale mining—particularly gold extraction and processing—has proved to be an ideal income-earning opportunity for its economically active population (Heintz, 2005; Hilson and Potter, 2005). Although Ghana has a long history of artisanal and small-scale gold mining (Hilson, 2002a), the Government only began regularising ASM in 1989, following implementation of the *Small-Scale Gold Mining Law*. This initiative has given rise to two groups of operators: (1) those who are legalised (registered) and (2) those who are unregistered (illegal) and referred to as *galamsey*,² “illegal small-scale miners... without the requisite mining license and they usually operate on concessions held by other companies” (Amankwah and Anim-Sackey, 2003, p. 131). The current estimation of the ASM sector in Ghana is around 200,000 people; the majority of whom are illegal miners. Main reasons for the expansion of the illegal small-scale mining population have been linked to an inefficient regularisation process plagued by problems in registration and licensing (Appiah, 1998; Hilson and Potter, 2003).

Although Ghana's ASM sector has received extensive coverage in literature, its dynamics and labour issues continue to be poorly understood. One issue that has been particularly overlooked is the role of women, especially in illegal operations. The expanding ASM sector creates innumerable opportunities for thousands of impoverished women to find non-farm employment. According to Hilson (2001) some 15% of the legalised segment of Ghanaian ASM sector is female, as well as 50% of the *galamsey* population. However, the roles they play, their struggles and needs have been largely overlooked in both policy-making and research circles. Acquisition of knowledge about female participation in the small-scale mining is a key to facilitating regularisation of the ASM sector.

This paper provides extended analysis of women's participation in Ghana's ASM sector, drawing upon experiences from *galamsey* camps in the Birim North District of the Eastern Region of Ghana. Specific emphasis is placed on examining the causes of female participation in the sector and the impact of the small-scale mining employment on women's income, health and families. The paper also raises issues concerning gender mainstreaming in the small-scale mining and alternative employment for women in rural areas.

Women in artisanal and small-scale mining

Global perspective

Small-scale mining involves extraction and processing of minerals by manual means. It is labour-intensive and in the

²A local term derived from a corruption of the phrase “gather them and sell” that labels illegal small-scale miners.

most advanced of cases, is semi-mechanised and utilises slightly advanced processing techniques (ILO, 1999; Hilson, 2002b). Generally, ASM is extensively practiced as an alternative economic activity in times of stress (Hoadley and Limpitlaw, 2004). Hentschel et al. (2003) divides ASM into the following categories: (a) “gold rush”; (b) temporary operations fuelled by economic recession; (c) isolated and remote operations with little or no involvement with nearby communities; (d) seasonal ASM activities within an agricultural cycle and (e) traditional year-around activities that are generally associated with stable communities.

According to estimates of the International Labour Organization (1999), nearly 13 million people are directly employed in the ASM sector worldwide and an additional 100 million people depend on it for their livelihoods. Women comprise up to 50% of this workforce (ILO, 1999). In Asia, the share of female employees in the sector amounts to 10%, while in Latin America it ranges from 10% to 20%. The highest percentage of women in ASM is, however, in Africa, where up to 50% of the labour force is female (Hinton et al., 2004). African women engage in the ASM sector to a greater extent than their global counterparts principally due to comparatively higher unemployment. For example, an estimated 74% of small-scale miners in Guinea are female, as is 50% of the ASM workforce in Madagascar, Mali and Zimbabwe (Hilson, 2002a).

It has been noted that female participation in ASM can be either *direct* (i.e. primary engagement in mining operations) or *indirect* (i.e. servicing the mine sites) (Gunson and Jian, 2001). Heemskerk (2003, p. 63) provides a detailed description of the roles that women play in the sector:

Women are panners, cooks, mining operators, nightclub entertainers, sex workers, and merchants, among other professions. While some women work marginal jobs, occasionally in conditions resembling debt servitude, others are powerful managers of multiple mining teams.

Women occupy a distinctly marginal role in the management of small-scale mining operations worldwide. They are rarely identified as miners in their own right and only sporadically attain the same decision-making positions as their male counterparts, including concession owners, mine operators, dealers and buying agents and equipment owners (Labonne, 1996; Susapu and Crispin, 2001; Hinton et al., 2004). Although women provide up to 50% of total workforce in the sector, they do not receive equal financial reward as men (Dreschler, 2001; Chakravorty, 2001). One reason for low payment to female small-scale miners could be seen in the “unskilled” nature of the work they perform. One task that is chiefly carried out by women is loading and transporting material. At the same time, women almost never work underground (Chakravorty, 2001; Gunson and Jian, 2001; Hinton et al., 2004). Women are also engaged in panning, sluicing and separation of gold;

however, final separation of gold or burning of amalgam (of gold particles with mercury) is almost exclusively seen as a male activity (Susapu and Crispin, 2001).

Amankwah and Anim-Sackey (2003) argue that the barriers to effective female participation in ASM are linked to cultural and social taboos. Limited access to credit prevents women from participating in small-scale mining activities, which relegates them to menial jobs. A lack of education and technical knowledge, compounded by illiteracy, further inhibits women from fully engaging in the full spectrum of activities and processes of the mining business. Moreover, family commitments and cultural barriers impose a heavy family burden on women, which hinders their independence and mobility to take the lead in a small-scale mining ventures (Dreschler, 2001).

A study undertaken by Dreschler (2001) in Tanzania uncovered several factors that are contributing towards female participation in ASM. These include the deterioration of subsistence farming (low prices of agricultural commodities, effects of droughts on farmlands and lack of farmlands), low demand or lack of public and private employment, lack of trading commodities, high inflation rate, high birth rate and extended families. In order to support their families, women are forced to look for new means of survival at the lowest cost. But this employment often comes with significant costs to health, safety and the environment (Shen and Gunson, 2006). The negative effects of ASM activities extend to agriculture and communities via environmental degradation and social problems (gambling, prostitution, alcoholism and substance abuse). Nonetheless, as Tallichet et al. (2004, p. 213) note: “Women’s economic involvement in small-scale mining is growing, and the economic advantages (despite health and welfare disadvantages) will continue to propel their participation”.

It is acknowledged that ASM, if properly regulated, can potentially create opportunities for productive employment, business development, a reinvestment of revenues from small-scale mining into local economies and generation of local infrastructure. International donor organisations (World Bank, United Nations) believe that ASM can contribute to socio-economic development in poor rural areas (ILO, 1999; Hentschel et al., 2003; Hoadley and Limpitlaw, 2004; Heemskerk, 2005). Labonne (1996) argues that artisanal mining could bring significant benefits at national and local levels, if developed into an efficient, safe, minimally destructive and equally accessible sector. Moreover, by participating in the ASM sector, women could progress tremendously economically but again, in order to do so, they would require support through technical training, education and financial support from governments, development agencies and non-governmental organisations.

According to the findings of the Mining, Minerals and Sustainable Development (MMSD) Project, “Although women play a central role in many small-scale mining operations, they have frequently been bypassed by

programmes of assistance” (MMSD, 2002, p. 328). Here, gender mainstreaming is identified as a key way for facilitating an increased and equitable participation of women in ASM worldwide. Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. Gender mainstreaming is a strategy for making women’s as well as men’s concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality (United Nations Economic and Social Council, 1997, Chapter IV).

The United Nations stresses the need for gender mainstreaming and urges policy-makers to support “increased involvement of women at all levels” of artisanal mining industry (UN, 1996, p. 222). Heemskerk (2003) argues that policy should not only focus on the economic benefits that the small-scale mining can potentially bring to the communities, but should also anticipate the long-term health, cultural and social outcomes of female employment in the sector, cautioning that female employment in the ASM sector is unlikely to alleviate persistent poverty. There is a need not only to explore factors that hamper the process of gender mainstreaming for policy development, but also to investigate the ways in which women engaged in ASM could improve their livelihood and well-being.

Women in artisanal and small-scale mining: focus on Ghana

Artisanal gold mining in Ghana has a long history, spanning 2500 years (Hilson, 2002a). Regularisation of ASM in the country began in 1989, following implementation of the *Small-Scale Gold Mining Law* (1989), which permits Ghanaians to apply for a license to mine for gold on a plot of land not greater than 25 acres, without the use of explosives, for a period of 3–5 years. Hilson and Potter (2003) argue that shortfalls in licensing process have fuelled the expansion of illegal activities. Their rapid growth is attributed to the acute shortage of jobs and accompanying poverty nationwide, particularly in the rural areas, and which are largely linked to the country’s successive structural adjustment programmes.

An estimated 100,000 women are employed in Ghana’s ASM sector, the majority is engaged in its illegal segment; and, because these activities generally take place in remote areas, it is mainly women originating from rural areas who seek employment in the sector. Indeed, in rural areas of Ghana, small-scale mining has become a somewhat indispensable non-farm income-earning opportunity for the rural poor. Comparatively, the participation of women in the legalised small-scale mining sector is marginal, accounting for only for 6% of licensed buyers, 10% of concession holders and 15–20% of sponsors of work groups and mining cooperatives (Hilson, 2001).

Generally, non-farm earnings account for up to 45% of rural household income in rural sub-Saharan Africa (Reardon, 1997; Barrett et al., 2001). Throughout the region, non-farm activity³ such as ASM is seen “to offer a pathway out of poverty if nonfarm opportunities can be seized by the rural poor” (Barrett et al., 2001, p. 316). Moreover, non-farm employment is perceived as an alternative and complementary employment to the poor, who, due to small landholdings or landlessness, are often challenged to find sustenance in agriculture (Lanjouw and Lanjouw, 1995). Importantly, non-farm employment is a means of diversifying rural income and employment, and therefore, is a significant way of managing the risk of poverty and distributing income over years and seasons for people who have limited access to savings, credit or insurance (Barrett et al., 2001; Lanjouw and Lanjouw, 2001; Whitehead and Kabeer, 2001).

In Ghana, there is an established correlation between gender and poverty, especially in rural communities (Haddad, 1991). Although in Ghana today, female participation in income-generating activities is high and nearly equivalent to that of men, the poverty rates among working women remain well above that of working men (Heintz, 2005). Men and women play different roles in the livelihoods of their households. Traditionally, women residing in Ghana’s rural communities have been responsible for household management, child care, providing assistance to family farms and bringing additional incomes to households through various trades. This has become even more visible since the introduction of cash crops to the country: men have taken active control of cash-crop farming, while women have taken more responsibility for food crops for home consumption. This relationship is considered by many to be a result of structural adjustment programmes, which marginalised women from productive agriculture (Newman and Canagarajah, 2000; McCusker and Carr, 2006). Rural women are more than ever forced to bring additional non-farm income to the household, sums that are often larger than male non-farm income; and currently as much as 42% of women in rural Ghana undertake non-farm employment as their primary or secondary occupation (Lanjouw and Lanjouw, 2001).

Further marginalisation of women continues in non-farm activities, since it has been established that not all households or household members have equally well positioned opportunities to take advantage of non-farm employment. Women generally enter labour markets on contractually inferior terms to men; they are consequently forced to pursue low-return activities, which have implications for their welfare, work burdens and health (Whitehead and Kabeer, 2001). Importantly, the gender differentiation in living standards is linked to poor educational enrolment and attainment amongst women

and their heavier time-burdens (Haddad, 1991). Education and skills are important determinants of business start-ups and wages earned in non-farm jobs (Reardon, 1997). These factors place women—structurally—in a more disadvantaged position, since it is well established that school enrolment for females is lower than that of males. However, as Lanjouw and Lanjouw (2001) argue that although non-farm sector employment often brings lower returns than agricultural employment, especially for women, the employment in non-farm sector could be beneficial from a welfare perspective, helping to increase income and economic security. From this perspective, female participation in the small-scale mining could be seen as beneficial for the welfare of poor rural households.

Contribution of women towards country’s economic development via their participation in the ASM sector is often understated by the Ghanaian government. The ASM sector in Ghana, both legal and illegal segments, has produced over US\$ 300 million in gold since 1989 (Hilson and Potter, 2005). According to official statistics, the ASM in Ghana accounts for 9% of the national production of gold, making a contribution towards the national economy (based on data from Amankwah and Anim-Sackey, 2003).⁴ However, the government often views illegal small-scale mining as a source of environmental degradation and safety risk. It, furthermore, perceives illegal mining as the underlying cause of the country’s brutal conflicts between rural communities and large-scale miners (Ghanaian Chronicle, 2005). Similarly, the position of Ghana’s large-scale miners on illegal mining working on their concessions is that the presence of operators “adversely affects the country’s image as a safe investment destination...”.⁵

What is overlooked by these parties, however, is that the individuals encroaching have few, if any alternatives, with women experiencing the most serious hardships.

Methodology

This paper reports the findings from fieldwork undertaken in the Birim North District of the Eastern Region of Ghana in January–February 2006 and interviews with government officials in Accra, the country’s capital, in August–September 2005 (see Fig. 1). Interviews were carried out with both male and female miners, traders and farmers in the district, as well as representatives from local authorities and organisations in Birim North District. Following the methodological approach taken by Heemskerk (2005), access to communities was negotiated with the traditional chiefs of the area and *galamsey* leaders at sites. Most of the data reported in this paper were derived

⁴The entire mining sector in Ghana (including gold, diamonds and bauxite) contributes 6% of the gross domestic product and 40% of gross foreign exchange earnings (Yelpaala and Ali, 2005).

⁵“Galamsy—now a major challenge to mining companies”, 14 September 2006, Ghana web <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=110587> (accessed 17/10/2006).

³Non-farm sector includes all economic activities in rural areas except agriculture, livestock, fishing and hunting (definition from Lanjouw and Lanjouw, 2001).

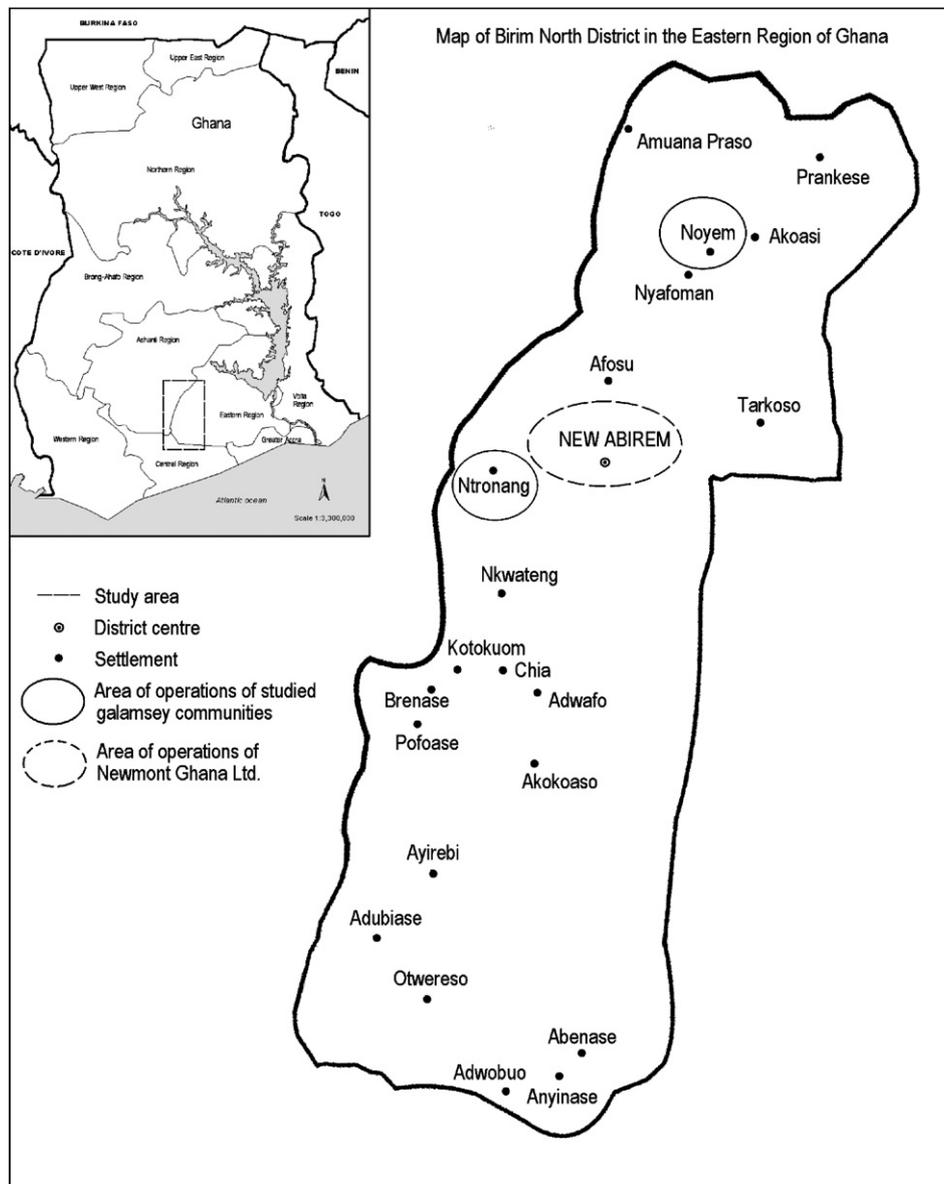


Fig. 1. Map of Birim North District of Ghana.

verbatim from interviews with *galamsey* women, who were approached and interviewed in villages of Ntronang and Noyem and at *galamsey* sites. Semi-structured interviews, as well as group discussions were carried out. Interviews with non-English speakers, mostly women, were conducted with assistance of an interpreter. Handwritten notes were taken during interviews, as it was believed that tape recording could have impaired the ability to engage with women, especially because interviews took place in public. Participant observation was also conducted at *galamsey* sites and villages, which provided means of becoming acquainted with the lifestyles and work of women, as well as the contextual setting for their narratives. The narratives of interviewees' cases (pseudonyms are applied) from interview notes are used in this paper to provide illustration of the conditions of female employment at *galamsey* camps, and to highlight selected experiences.

At present, no specific methodology exists to analyse female participation in ASM. However, in their assessments, researchers such as Heemskerk (2003) and Chakravorty (2001) have focused on several key areas such as income, economy, health, social structure, family and the role of women. The material reported in this paper, therefore, is assembled under several subsections, covering issues of work, income, health and family.

The case study area, the Birim North District, is located in the western end of the Eastern Region of Ghana (see Fig. 1). The Eastern Region is considered to be one of the poorest in Ghana: an estimated 44% of its population are below the poverty line (which refers to income of 2500 cedis⁶ a day) (Gyan-Baffour, 2003). The Birim North

⁶Cedi—unit of currency in Ghana, in 2006 the exchange rate varied from 9000 to 9600 cedis to US\$1.

District has an area of 1250 sq km and a population of 132,350 people as estimated in 2005 (Birim North District Assembly, 2006). Apart from few wood processing, construction and milling businesses, the main economic activity in the district is farming of cash crops, primarily cocoa, cola, palm fruit, citrus and rice, and other food crops such as plantain, cassava, cocoyam, banana and sugarcane. In 2003, Newmont Ghana Ltd. acquired a concession to mine for gold in Akyem in the north of the district, an undertaking which has provided employment for some members of the local communities. The company plans to start mining in Akyem in 2008, while continuing exploration work on adjacent lands. The illegal small-scale miners operating in the Birim North District have also penetrated the land that was given to Newmont Ghana Ltd. on a prospecting licence. Since 2003, the Birim North District has experienced a mass migration of people who began working as *galamsey* in the district, particularly in Nyafoman and Noyem, where, according to local estimates, there are 10,000 *galamsey*, the majority of whom migrated from various areas of Ghana, as well as from neighbouring countries.

Many locals have joined *galamsey* camps, including women and teenagers. In 2004, when *galamsey* began moving sites closer to the village of Noyem, which has a population of about 1000 people, local inhabitants began engaging with *galamsey*. It is estimated that in February 2006 as many as 90% of the women originating from Noyem were involved in *galamsey* activities in one capacity or another, some carrying ore material for payment and others supplying foodstuffs for mine workers. The opening of *galamsey* sites has propelled significant migration to the area, including Noyem, where miners arrived with their families. Noyem is a busy village, with active trade going on near the main village road, which leads to the *galamsey* sites in both Noyem and neighbouring Nyafoman. A large number of taxis service these communities, waiting to transport people between villages and *galamsey* sites.

Another village that has recently (since autumn 2005) experienced recruitment of local communities into *galamsey* activities is Ntronang, which is a smaller community, but where women have also started to seek employment opportunities with *galamsey*. Ntronang is a quiet place, where the local market is fairly quiet during the week with an exception of a “market day”, when newcomers are rarely seen in the village and even less people are seen in the streets during working hours.

Women in *galamsey* camps

Throughout Ghana, the sight of women working amongst *galamsey* miners is certainly not rare; this case is no exception. It is estimated that 40% of people involved at the Noyem and Ntronang *galamsey* sites are women. The majority that work at the *galamsey* sites near Ntronang and Noyem (situated at a distance of 5–10 km from the villages) are local residents, who commute to *galamsey* sites

daily to participate in several types of work such as selling and cooking food, carrying loads of material from pits to trucks, and washing sand. Amongst those who sell food is Linda, her case is illustrated with a narrative from interview notes (this format is used in the paper to describe cases of female participation in the small-scale mining camps):

A 23 year old single mother of a 3-year old girl is a petty trader in Ntronang. She does not have a shop; instead, she sells her goods by going around the village. This trader also sells rice at the *galamsey* sites, working for her sister, who pays her wages. She is not interested in working for *galamsey* miners, because she does not carry heavy loads on her head. Besides, she insists that her petty trading is a better job than *galamsey* work in terms of money. (Interview notes, Birim North District of Ghana, 9 February 2006)

At larger *galamsey* sites, women perform a greater range of activities. For example, in Nyafoman (mining and residence camp), the largest *galamsey* site in the Birim North District, women set up trading stalls, selling more foodstuff, water, electronic goods, various small items and credit for mobile phones. Women are found washing, cleaning, cooking directly at the site as well as working alongside men in pits.

At a site near Ntronang, women are aged between 17 and 50, but are mainly young women between 23 and 35 years of age. Most have a basic education, few have finished secondary school, and several interrupted their education after primary school or junior secondary school in order to pursue employment. Few women also reported to have gone through vocational training. It is characteristic of children, particularly in poor households, to drop out of school to engage in commercial activities either to fend for themselves or to supplement the family budget, which reduces poverty in the short-term, but extends poverty in the long-term (Kyereme and Thorbecke, 1991). In relation to this, girls are more likely to drop out of school under household economic constraints, because they not only contribute more to household tasks, but the opportunity costs of schooling girls is also higher for them than it is for boys (Stephens, 2000). The evidence suggests that small-scale mining is seen as a lucrative employment among less educated rural women.

At some sites, women are organised in groups of 10–15, loading trucks with gravel and sand. Visits to *galamsey* sites proved that loading trucks with crushed ore and sand is predominantly a woman’s job, while digging, crushing stones and washing are conducted by men. The more arduous and hazardous activities, including underground work and burning of amalgam, are also conducted by men.

The main driver for increased female employment in *galamsey* mines in the region is the growing need to bring income to households and lack of employment opportunities in the region, although the reasons are more multifaceted than they appear. While the main source

employment in the Birim North District is commercial farming (including palm fruit, cocoa, cassava and citrus), many families are engaged in subsistence farming as well (growing vegetables and cassava for household consumption). Local farmers often sell their produce to local communities, which lack purchasing power and have fairly small markets. Farmers complain about ineffective agricultural processes and lack of requisite resources to improve their production. Impoverishment of subsistence farmers is the main reason for joining *galamsey* activities in the region. Particularly telling is a story of 28-year mother of five children, who brings her 9-month-old breast-fed baby daily to a *galamsey* site near Ntronang:

Mary is a petty trader, her husband works with *galamsey* as well. Both of them started 5 months ago. Her husband was a farmer, growing palm fruit, cassava and cocoa. They still farm on their 2 acres of land and also do palm oil extraction on a small scale. They do weeding and everything else themselves. They used to sell palm fruit oil at a junction in New Abirem. But they no longer have a palm fruit farm. Her first son was sick and in order to raise money to treat his illness they had to sell the palm fruit farm for 2 million cedis. They are left with a cassava farm now. They use cassava at home and sell cocoa on a smaller scale. Their entire year's harvest of cocoa amounts to half a bag, which they sell to buyers for 80,000–100,000 cedis. Mary works in a group with other women at the *galamsey* site and gets 5,000–7,000 cedis per load. The work is not consistent; they do not get it every day. Women take lunch to the site, but prepare their own food at home every evening. Mary has 5 children, the eldest are in school and do not come to the *galamsey* site. She works five times a week at the *galamsey* site. After preparing food for her children, she comes to the site at 7 in the morning and leaves home at 4 in the afternoon. Mary and her husband attend to the farm on Saturdays. She wants to open a provision shop in Ntronang and expand her trade to sell rice, sugar and soap, while her husband wishes to buy land and go into palm fruit plantations. It costs 2–5 million cedis to buy a farm or 500,000 cedis to lease a plot of farmland. (Interview notes, Birim North District of Ghana, 9 February 2007)

With lack of employment and underdeveloped markets in remote rural areas, illegal small-scale mining becomes the only option for impoverished farmers to find employment,

For instance, you may say that it's lack of employment opportunities, that's one it is. Even in certain districts small-scale mining itself may even have that. So we find that in the villages where you have no other industries and all these things all that the people have got to do is mining and farming. And therefore when a guy doesn't want to go to farm all there is, is illegal mining.

(Government official from the Ministry of Forestry, Mines and Land, Accra, 12 September 2005)

Traditionally, while men are involved in cash-crop farming, many women earn money by engaging in petty trading of food stuff and clothing. However, due to the inability of women to successfully enter productive petty trading, they are left with few alternatives but to enter into *galamsey* mining, which requires minimum financial input, skill and education. In the Birim North District, markets for petty trading are limited in scale, competition between traders is intense, and the inability of traders to reach wider markets often leads to business failures. A large proportion of women approached in *galamsey* sites used to be involved in petty trading before joining *galamsey*.

Access to credit is limited; that has hampered the development of trades in the area. Although many women have skills in various trades such as in knitting, sewing, hairdressing, baking, palm oil production and other food processing, they generally lack financial resources to run their businesses. There is an acute need for credit to support local small businesses; local rural banks offer limited loans to traders and small businesses, instead they provide the majority of credits to cash-crop farmers. Tough requirements for loans make it difficult for impoverished women to obtain credit. For example, a branch of the Mponua Rural Bank located in New Abirem offers loans amounting from 2 to 20 million cedis (between US\$ 222 and US\$ 2222) payable within 10 months with 30% annual payable rate, deducted monthly.

Employment mobility in Ghana is strongly associated with family and especially female mobility (Lyons and Snoxell, 2005), which is clearly seen in the case of migration patterns amongst women working in the ASM sector. Many of the women from Ntronang and Noyem who work at *galamsey* sites have joined artisanal mining along with their husbands and boyfriends. However, there are also single women, who joined *galamsey* work in pursuit of income. Although many women who work at the *galamsey* sites near Ntronang and Noyem are local residents, there is a small number who migrated to the area specifically to work for *galamsey*. Many came to the area either with their partners and relatives or have relatives and connections in the area. Single migrant female workers usually arrive to the area in a group, such as depicted in a story of two women from Accra,

Two ladies from Accra came to visit their mother in Noyem. They heard about this kind of job and decided to join *galamsey* mining. They did not know of anywhere else to go, so they joined a camp in Noyem. The older woman is a widow and has two children in Accra, who go to school there. The younger woman has a one year old child, whom she takes along with her to work at the *galamsey* mines. These women used to be petty traders in Accra, one selling tomatoes and the other selling soap. They have been working in the *galamsey* camp for 2 years now and earn 15,000–25,000

cedis a day. Once they save enough money, both hope to go back to Accra. (Interview notes, Birim North District of Ghana, 2 February 2006)

Income

According to ILO (1999), women in ASM are usually compensated less than male mineworkers; this is also the case in Ghana. In the Birim North District, women are paid various daily rates for their work at different camps—the rates are estimated to range between 15,000 and 30,000 cedis (approximately US\$ 1.66–3.33). In some cases, when women work in a group of 10–15, they are paid for the specific *load* of work, such as *loading* a truck for 45,000 cedis. Although the daily wages women receive higher than average weekly earnings in Ghana,⁷ the availability of paid jobs in small-scale mining is not consistent; women, therefore, commonly switch from one site to another in search of work, following the quickly paced small-scale mining operations.

Since the engagement in income-generating activities alongside farming for women in Ghana is a possible way of adding bargaining power in the household (Newman and Canagarajah, 2000), this assumption could be applied to women's engagement in *galamsey*. Although it is evident that by working at a *galamsey* site, women receive relatively higher earnings, many generally express a desire to perform other labour rather than carrying heavy loads at *galamsey* sites. Many local women see *galamsey* mining as a short-term engagement, as an opportunity to generate cash to invest in self-employment such as petty trading and food catering in the climate of credit failures. Even those women who have travelled to join *galamsey* camps from other areas of Ghana, view *galamsey* as an opportunity to generate savings to continue their businesses. In Noyem, where women have demonstrably been a part of the growing *galamsey* community, work with *galamsey* miners has improved their income levels, as observed by others in the village; but women themselves claim that they are unable to save money for their trades. Whether illegal small-scale mining is an effective way of generating investment is not conclusive; other non-farm employment opportunities might not be equally financially rewarding and require many more resources (skills, education, training, etc.).

The influx of *galamsey* miners into the area has brought about changes to the local traditional subsistence economy. In Noyem, many women have abandoned farming completely after 2 years working with *galamsey*, and in Ntronang, where mining only began in 2005, many women have put farming second to mining, because only “when we [can] raise enough harvest, we [will] go farming” as stated by a group of female *galamsey* miners from Ntronang.

Some women choose to cater for their family farms once a week; others have stopped attending to their farms altogether. For example:

25 year old Jane is a married woman with five children from Ntronang. She joined the work at a *galamsey* site on her own. She has not been to her farm for a long time since she started doing *galamsey*; that was four months ago. Her husband tends to the farm instead. (Interview notes, Birim North District of Ghana, 9 February 2007)

Relatively high wages of *galamsey* miners are not necessarily directed towards saving, but are absorbed by an increasing cost of living since prices on food and accommodation in the area have recently risen. Since subsistence farming in the area reduced, the reliability of these communities on marketed food has inevitably increased. Following the increased migration to the area, prices on accommodation have also grown due to a short supply of housing in the district.

Health

The most potent health risk in small-scale mining is exposure to mercury, which is used in final stages of gold extraction. Mercury is highly toxic and poses a health hazard to humans and animals through direct exposure or via the food chain (Mutemeri and Peterson, 2002; Hinton et al., 2004; Appleton et al., 2006; Castilhos et al., 2006; Hilson, 2006). Since *galamsey* miners deploy unsafe methods of gold extraction, such as open burning of amalgam, everyone at the site could be exposed to mercury vapours and mercury in water, which is released during washing and panning (Hilson et al., 2007).

Interviews with *galamsey* miners throughout the Birim North District as well as community meetings in Noyem and Ntronang themselves suggest a widespread lack of knowledge concerning health hazards associated with mercury and an overall absence of environmentally safe technologies and methods for recovering gold. The health authorities consulted linked the increasing number of respiratory diseases in children of the district with the effects of mercury from gold mines. Communications with selected *galamsey*, however, suggest that although the extent of exact knowledge about mercury poisoning, health and environmental hazards remains poor, some improvements are being made. Notably, previously, *galamsey* miners, after a day's work, would burn amalgam in their residences; but the practice was stopped after it was observed to be inducing coughing amongst children. Today, most burning is carried out at *galamsey* sites and downwind from operations.

Although many researchers suggest that the best way of overcoming gender differences in small-scale mining is through increased technical education and training, in Ghana, illegal small-scale miners do not receive any technical or educational support from the government (Hilson et al., 2007). On the contrary, government

⁷Average weekly earnings in Ghana according to data of 1998/1999 are equal to 25,717 cedis per week for total employed population over 15 years old (data from Heintz, 2005).

organisations are opposing the idea of advising *galamsey* operators on how to improve their activities:

A *galamsey* operator who is not licensed, he has no concession, he works on people's concessions...you can look at him as an armed robber... . And because they are working on people's concessions, it is not prudent, or even legal or right even for the technical people in the Minerals Commission even to go there and advise them... . He is a *galamsey* operator. And because he is working on this concession, I don't have the mandate to go there and advise him. If I do that it means I am actually glorifying illegalities. So I cannot go to advise them. (Government official from the Minerals Commission, Accra, 29 August 2005)

Moreover, it is widely acknowledged that labour in artisanal mines increases the risk of illness, injury and stress due to enhanced levels of dust and noise pollution as well as extreme exertion from highly labour-intensive jobs (Hinton et al., 2004). Hard labour at *galamsey* camps poses high risk to the health of women and their children due to the total absence of basic mine safety. None of the women have protective gear; they, along with young children, are exposed to dust and noise. Many female interviewees complained about common problems associated with carrying loads, including headaches; waist, neck and back pains; and minor injuries such as cuts and bruises. The local health authorities reported malaria, anaemia, hypertension and diarrhoea as the common diseases that women working in *galamsey* camps complain of. Observations prove that *galamsey* camps, especially those which have been in existence for some time, are highly unsanitary—an additional concern of the local environmental health department.

Local environmental health authorities have attempted to educate *galamsey* miners about basic hygiene and health risks; but these actions are one-off and are not consistent enough to have a widespread effect. There is a general attitude amongst government agencies that *galamsey* miners are uncooperative due to their temporary and unorganised structure, as an Environmental Protection Agency representative declared:

It's very difficult to say that if they are organised group of let's say 20 young men and women, there are women involved with children. 20 young men and women who are permanent, then you can talk to them. As we go out in monitoring, you go out and meet them in the area, in the following week or two you go and you meet different people. So it's really, really difficult. (Representative of the Environmental Protection Agency, Accra, 9 September 2005)

Women in *galamsey* communities are extremely vulnerable to HIV/AIDS and other sexually transmitted diseases (STD) because of their limited ability to control their sexuality due to socio-cultural barriers (lack of sex education, religious opposition to the use of contracep-

tives), a shortage of family planning services in the area (lack of birth control advice available and lack of free contraceptives offered) and economic imperatives that force them into sex exchange for survival. Many women interviewed at *galamsey* sites near Ntronang and Noyem admitted that they are sexually harassed by men at camps, both physically and verbally. Some are forced into sexual intercourse, for example, exchanging sexual favours with *galamsey* bosses for an opportunity to get a job at the site. Staff interviewed at Ghana Health Services of Birim North District explained that incidents of STDs have considerably increased since *galamsey* started working in the district.

Apart from that, local education and health authorities associate the rise in teenage pregnancy in the district (3 teenage pregnancies in 2003; 4 in 2004; and 7 in 2005) with negative social effects of *galamsey* operations in Noyem, Ntronang and Nyafoman on the local communities.

Prostitution and substance abuse are becoming major social problems. Moreover, it was mentioned by one of the *galamsey* miners interviewed that "if you pay the right amount—don't use condom". The consulted health experts were predicting that a spread of HIV/AIDS is highly possible within *galamsey* communities, a serious issue given that the Eastern Region already has the highest prevalence of HIV/AIDS in Ghana, almost twice the national average of 3% for adults. The increase in mining migrants to the area, prostitution, low use of preventative methods and some cultural stigmas have already stimulated an increase in STDs, according to local health authorities:

Before the mining operations started in the Birim North District, one woman could have infected three men with STI.⁸ Now, one woman could infect up to seven men". (Representative of the Local Health Authority, Birim North District of Ghana, 7 February 2006)

The evidence suggests that in Birim North, many of the poor rural women who enter *galamsey* for low-skilled jobs run an extremely high risk of harassment and health.

Family

Many women from Noyem and Ntronang work alongside their husbands. For example, out of 18 women interviewed near Ntronang, 7 were single, 2 widowed and 9 married; most of the latter work alongside their husbands at *galamsey* sites. It is evident that families re-orient their usual subsistence farming existence towards *galamsey* activities, but also retain their small farms, which often increases women's workloads. In Noyem, during the course of 2 years, some changes have occurred in the family lives of villagers: interviewees mentioned that some women who joined *galamsey* have started to divorce their husbands and the number of divorces overall is on the increase.

Traditionally, African women are solely responsible for child care and many other domestic duties (Tallichet et al.,

⁸STI—sexually transmitted infection.

2004). The role played by women within families as a carer for children is transferred to *galamsey* sites: most bring their children who range in age (but are on average 1–3 year olds, according to observations) to work; some are very small and are still breast fed. Older children are cared for at home or attend nurseries and schools. Since women spend the entire day at a *galamsey* site and neglect child care, the nutritional standards of children have worsened. This is linked to reduced subsistence farming and preparation of food at home, a point reinforced by a district nutritionist consulted at the Ghana Health Services in New Abirem.

New *galamsey* activities in the Birim North District have affected not only the women who have joined *galamsey* camps. It has also become difficult to prevent their teenaged children from joining *galamsey* activities, although some families do not make much of an effort to discourage their children, aged as young as 14, from working as *galamsey*, sieving and washing sand and gravel. Schoolchildren, mainly boys, either go to a *galamsey* site after school in the afternoon or truant schooling altogether. Some school leavers, instead of pursuing farming or further education, join *galamsey* mining. The main motivation for children, admitted by many interviewed parents and community members, is pocket-money and peer pressure. According to one teacher consulted in Noyem, it is often not a parent who introduces children to *galamsey*, but rather children of the same age group who are already heavily immersed in mining activity. Children working with *galamsey* are able to generate substantial amounts of money. Children, who earn money by performing washing and other activities in *galamsey* camps, usually keep their earnings for themselves, but some give money to their parents.

Not all parents are content with children working as *galamsey*, and the resulting school truancy and reduced school performance are implicit with working in the ASM sector. Some parents have appealed to schools to stop their children from going to *galamsey* mines, while others resort to different measures, including sending children to different schools in neighbouring towns such as Nkawkaw and other villages in a desperate attempt to keep them outside of the *galamsey* catchment area.

Discussion and conclusions

It is evident that the major motivation for women to join *galamsey* is a lack of productive employment. Landlessness, undeveloped local markets, an inability to physically access wider markets and a lack of financial credit push the poorer women inhabiting rural areas to enter low-skilled, less productive jobs in illegal small-scale mining, where they can be further marginalised and impoverished. A policy for gender mainstreaming in ASM and especially the promotion of female participation at all levels in the sector is needed, which would tackle

issues of education and training, health risks, lack of mobility of rural women and growing informality.

A major factor that limits women's potential in gaining productive non-farm employment is education. In Ghana, gender differences in enrolment for formal education have narrowed slightly since independence but continue to persist, particularly at higher levels; dropout rates and literacy rates are still much lower for women than men (Baden et al., 1994), something which is clearly reflected in the demographics of *galamsey* women in the Birim North District. Increasing the levels of education amongst women in rural Ghana could improve their skills and level of participation in farming, trading and small-scale mining, thereby encouraging them to become more proactive in securing loans, developing businesses and improving the health of their families. Due to their low educational levels, household responsibilities, low technical knowledge and restricted employment mobility, women enter illegal small-scale mining "unskilled" and therefore are afforded few opportunities to gain productive employment. That is why female *galamsey* workers have little chance of participating in more lucrative areas of the industry such as trade, management and equipment handling.

The case of Ghana's ASM sector shows that female participation in illegal activity brings about changes to their households; affects other family members, particularly children, often in adverse ways (truancy, reduced educational performance and negative health impacts); and alters household economics (less subsistence farming and food processing). Given that *galamsey* mining is one of few available survival strategies, women are forced into vulnerable positions. Their economic mobility in Ghana overall is very limited, which proves to be a major constraint behind their moving with the small-scale mining parties they join around the country.

The engagement of women in *galamsey* mining is highly characteristic of conditions for workers in the informal economy, including the absence of legal and social protection, limited access to public infrastructure and benefits, no effective representation and a lack of voice at the workplace or in the socio-political arena (ILO, 2004). Moreover, employment in the illegal ASM sector is unstable, insecure, inconsistent and short-term, often requiring long hours of work; it is also, given the low health and safety standards at sites, detrimental to the health of women and their children. However, at the same time, illegal ASM sector also provides easy entry for women and pays comparatively high wages, providing an important source of non-farm incomes.

The growing informality of ASM in Ghana hugely hampers the development of the sector in terms of economic growth, environmental safety and gender relations, and is also an area of limited access for gender mainstreaming policy. Formalisation of small-scale mining could further push impoverished, low-educated women into the informal sector, because in many cases, formalisation means forcing illegal small-scale miners from the

concessions of the mining companies and thus out of a community. This could lead to loss of employment for many rural women who are unable to relocate with *galamsey* miners.

In order to improve the position of women in small-scale mining, policies need to be implemented which emphasise training and education on technical issues for those willing to continue their participation in the artisanal sector. The priority areas that need to be addressed include education on the health hazards of mercury and gold-processing technologies. The case of the Birim North District shows that although local authorities and government agencies are aware of women's problems in the illegal small-scale mining sector, strikingly little or no effort is being undertaken on the part of the government to intervene in order to assist women and their children in *galamsey* communities. Again, the government's justification for not doing so is that the operations these women are employed at are illegal, interaction with which, it is maintained, could be interpreted as the authorities' endorsing underground activities and therefore jeopardising prospects for future foreign investment.

Gender mainstreaming in the ASM sector is by no means a panacea for addressing the struggles of rural women who fall into *galamsey* mining in search of productive employment. Considering the high risks associated with small-scale mining, it is necessary to provide women with alternative and more sustainable income-generating opportunities, to draw vulnerable women away from hazardous and unstable illegal artisanal mining altogether. The evidence from the Ghana case shows that many women use employment in artisanal mining as an investment-generating activity, but it does not prove to be an efficient method in terms of risks involved. Women abandon not only their trades, but also farming, falling into dependency on artisanal mining. Although it is generally considered that non-farm employment provides women with low returns across the board (Lanjouw and Lanjouw, 2001), some types of employment are more hazardous than others and in the long-term, are less secure, such as menial jobs in small-scale mining. Preferences should therefore be given to support more productive employments.

There have been attempts to implement alternative livelihoods in Ghanaian small-scale mining communities (Hilson and Yakovleva, 2007). Initiatives include poultry farming, grass-cutter rearing, fish farming and dress-making, activities, it is argued, that are more beneficial for women than men (Corporate Social Responsibility Movement, 2006). There is a merit in developing livelihood programmes that target women specifically within small-scale mining communities, who are willing to work in trades rather than mining. But there is a great problem in accessing credit in African countries, Ghana being no exception; instead, many female traders rely on informal sources of credit from relatives and relations, and on *susu*—a credit scheme and a popular source of loan (Newman and Canagarajah, 2000). There is a need to

support female trading by providing affordable loans and educating women about access to loans and the benefits of banking systems.

Here, the mining companies could play a role in developing specific initiatives for women in small-scale mining communities since illegal small-scale miners are also of concern to mining companies, which often hold mining and prospecting licences for lands that host small-scale mining camps or have small-scale mining communities based within the catchment area of their mining projects. It is thus in the interests of the mining companies to help to regularise the activities of small-scale miners. There is merit in mining companies to engage in proactive initiatives and work alongside small-scale mining communities to improve the livelihoods of inhabitants, a move which helps facilitate the long-term sustainability of a mining project. Since the small-scale miners from Noyem and Ntronang have penetrated the lands awarded to Newmont Ghana Ltd. for prospecting gold, it is in the interest of the large-scale mining party to help female miners to find non-mining employment by developing and involving them in appropriate projects.

The challenge lies in recognising and successfully developing local economic opportunities in rural areas that would involve production of goods or provision of services using local resources, markets and skills. One of the initiatives that could have immediate effect for improving the income-generation capabilities of women in Birim North District would be an assistance in forms of affordable and flexible loans to start up food processing and preservation (such as palm fruit processing) and assistance in transportation of products and goods to larger market places. Advancement of the overall educational level of women, while undoubtedly necessary, is a long-term task, but one that could greatly improve lives of women in small-scale mining communities. Greater education and training, improvement of literacy and language skills could assist and contribute towards women positioning themselves within the ASM sector, improving the health standards of their families, facilitating more efficient operation of legal and financial systems and creating more productive employment. Policy needs to address specific areas of education that can have more potent effects in tackling particular problems of small-scale mining communities worldwide, such as training for jobs in non-mining sectors, educating about environmental and health impacts of small-scale mining, and training in the use of safer mining technologies. In the case of the Birim North District, investment in vocational schools to train local residents could meet the demand for qualified workers in the public sector. Given the high health risks in small-scale mining, participants' low awareness of the environment, poor health practices as well as greater female responsibilities for child care, household and food supply, specific efforts are required that will enable women to change their practices for the benefit of all members of these communities.

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