

“Live and Let’s Live” – The relationship between artisanal/small-scale and large-scale miners in Ghana: The Abooso Goldfields experience

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Introduction

There is widespread analysis of the benefits and contributions of both large-scale mining (LSM) and artisanal/small-scale mining (ASM) to the economy and livelihoods of areas where they occur. Several studies have, in particular, underscored the economic importance of both LSM and ASM, how they can contribute to poverty reduction, and their environment impacts (Hilson 2001, MIME 2002, D’Souza 2003, Asante 2003).

The case of Ghana has been well documented in the literature. Since 1990, Ghana has produced an average of 1,000,000 ounces of gold and 800,000 carats of diamonds per annum. Of these figures, an average of about 100,000 ounces (about 10%) and 700,000 carats (about 70%) of gold and diamonds respectively were produced by the artisanal small-scale miners in the country. While LSM is estimated to provide direct employment to approximately 15,000 Ghanaians, between 100,000 and 200,000 people are estimated to be directly engaged in ASM, of whom an estimated 30% are women. Since 1989, the gold and diamond production from the ASM sector has generated over US\$400million.

In recent years, land use conflicts between Ghana’s artisanal/small and large-scale mining parties have escalated, due in large part to decreased prospects for underground mining and the rapid rise in open-pit mining activity. In the mining region of the southern portion of the country, for example, most ASM operations occur either on the concessions of large-scale miners or as ‘uncomfortable neighbours’ competing for the same ore resources. Although there is widespread indication that the relationship between Ghana’s large-scale and artisanal/small-scale miners has deteriorated under reform, there continues to be minimal information providing scope on the current state of affairs. This raises the following question: what is the nature of relations between Ghana’s artisanal/small-scale and large-scale miners, and can these parties coexist peacefully and harmoniously?

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Surprisingly, this question has not been adequately raised and addressed. In recent years, the issue of relationships between ASM and LSM parties has exercised the minds of many government regulatory agencies in Ghana, including the Minerals Commission, the Environmental Protection Agency (EPA), industry associations such as the Ghana Chamber of Mines, and individual large-scale mining companies. It is widely recognised that maintaining harmonious relationship between large-scale multinational mining companies and local operators is crucial if both parties are to maximize their contributions to the economy and livelihoods of the operational areas². However, very little has been done to improve understanding of the nature of the problem and more significantly, to unravel the causes of the often conflictual consequences of their intercourse. Significantly less has been done in identify policy options for helping to regulate relations and reducing conflicts between these sets of mine operators. In Ghana, poor policy has been responsible for mutual suspicion, acrimony and a vicious cycle of violent clashes, interspersed by 'uneasy calm,' broken promises and blackmail between the two groups.

Purpose of engagement and data

This chapter examines the relationship between ASM and LSM parties in Ghana, drawing mainly upon the case of Abooso Gold Fields Limited (AGL) operations at Damang in the mining district of Tarkwa in the Western Region. The case of AGL is particularly attractive because of the company's leadership in deliberately developing a plan of coexistence of community ASM. The chapter looks at the implication of the current lack of enforcement of the country's mining law with particular reference to "encroachment." In particular, the chapter will examine the piecemeal arrangements, devised in the mid-1990s, between AGL and its neighbouring ASM operators, arising out of the latter's encroachment on the former's mining lease area, and the extent to which they have worked.

The central argument of the chapter is that the absence of clear and enforceable national policies prevents peaceful and harmonious relations between ASM and LSM operators. The key objective is to underscore the importance of establishing a clear and enforceable policy framework at the outset. The AGL experience demonstrates that with an appropriate arrangement, working relationships and partnerships can be established between ASM and LSM, to the mutual benefits of the two parties. AGL's example is a model well worth exploring to address the apparently intractable ASM question in Ghana.

The data presented in this chapter were collected from local mining documents (obtained from the Minerals Commission, the Mines Departments, the Chamber of Mines, etc), corporate reports, and studies conducted in this area (Ofei Aboagye *et al* 2004, Hilson 2001, MIME 2002, D'Souza 2003, Asante 2003;). Media reports and other journal publications also provided a major source of background information for this chapter. Finally, complementary information was obtained through informal interviews with a number of senior officers of both large and small-scale mining

² I would like to thank Mr. Peter Dwenfuour, the former Small-Scale Mining Supervisor for AGL, for his immense help in getting materials for this chapter.

operations. The author draws on his own direct experience as a player in negotiating and maintaining relationship arrangements with ASM to make sense of the data presented in the chapter.

The remainder of this chapter is organised as follows: The next section examines the situation prevailing in the 1990s when large scale open-pit or surface mining became prevalent in Ghana and looks at the regulatory environment as well as the perceptions of ownership rights by respective mining operators which have largely underlined the confrontational attitudes that characterised the relationship between ASMs and LSM. The subsequent sections focus on the case study of the Abosso Goldfields experience and examine the impact of the Live and let's live conceptual approach introduced by the company. Some conclusions and lessons are drawn in the final section.

Prevailing situation and the need for a change in approach

In some countries (e.g. Mali, Niger and Burkina Faso), differentiation is made in law and policy between the purely manual, very small-scale 'artisanal', and the more mechanised groups 'small-scale mining' or semi-permanent installations (Hentschel et al 2002:4). Such a distinction is of little relevance to the Ghanaian situation, where the size and mode of operations are almost the same. The terms "small-scale mining" and "artisanal mining" are therefore used interchangeably throughout this chapter. A distinction is, however, made between formally registered and illicit or *galamsey*³. Such a distinction, while artificial and theoretical, is relevant because of its implication for the management of relationships not only between ASM and LSM parties but also between government institutions. Various sources at the Minerals Commission and the Precious Minerals Marketing Company (PMMC) estimate that less than 30 per cent of the over 200,000 ASM operators in the country are duly registered and licensed.

It is against this background that this section examines the mining terrain of Ghana in the early-1990s when large-scale open pit operations began to gain preponderance in the formal mining sector of the country. It is instructive to describe the complex relationship between land ownership and mineral rights in Ghana, as well as the general perception of local ASM operators regarding entitlement to both land the mineral resources. This may help improve understanding of the defiant posture often associated with the illicit *galamsey* operators.

The law, territoriality and ownership

The current legislative framework for mining in Ghana is laid down in the Minerals and Mining Law, 1986, PNDCL 153 (2) as amended by the Minerals and Mining Amendment Act 1993, Act 475 (Act 475) and modified by the provisions of the Constitution of 1992 (Article 156). By law, mineral deposits in lands (and elsewhere)

³ There is little wonder that in Ghana the whole ASM segment of the mining industry is commonly known under the omnibus name of *galamsey*, an adulterated English phrase for 'gather them and sell' and which has a very defiant subterfuge towards the law .

in their natural state are vested in the President on behalf of and in trust for the people of Ghana. Only approximately 20 per cent of Ghana's total land surface is owned by the State. Approximately 80 per cent of all lands in Ghana (on which minerals are likely to occur) are customarily owned by the traditional Stools and Skins who hold such lands in trust of their respective communities. Thus, regardless of who owns the land upon or under which minerals are situated, the exercise of any mineral right requires, by law, a licence to be granted by agents of the State and not the land owner. With regards to the appropriation of rents and revenue accruing from mineral extraction, it was not until 1986 when the Minerals and Mining Law allowed for the payment of 4% of the minerals royalty to the traditional owners of the land. The state or central government has always held the exclusive right to appropriate them.

Thus relationship between land ownership and the mineral rights ownership structure in Ghana is interesting at least for the contrasting effect on the use of local community resources and the way ASM operators perceive their rights to mine unencumbered by the state.

Historically, much of the motives behind the promulgation of mining laws and regulations in Ghana have been to promote investment in the LSM sector and until 1989, all ASM was virtually illegal and the existing mining laws and regulations only minimally addressed the interest of operators within this category of miners.⁴ In 1989, the government passed three key legislations which opened the doors for ASM to be registered and legalised. First, the Small-Scale Gold Mining Law 1989 (PNDCL 218) effectively legalised the operations of ASM requiring operators to go through a licensing process and be licensed. Second, the use of mercury had long been proscribed in Ghana. It has however, long been an 'open secret' that mercury continues to be widely used by ASMs as the main method of amalgamation to extract gold from the semi-processed ore. To come to grips with this reality, the Mercury Law 1989(PNDCL217) was promulgated to allow for the legitimate purchase and use of mercury in gold processing. Third, to regularise and provide a legitimate sales outlet for the gold produced by ASM operators, the Precious Minerals Marketing Corporation Law 1989 (PNDCL 219) was also passed.⁵

In spite of this legislation which provides an opportunity for ASM miners to regularise and mainstream their operations, less than one-quarter of them currently operate within the ambit of the law. The failure of ASM operators to legalise their activities has been largely attributed to the long and cumbersome process of registration.⁶ At a two-day *National Workshop on Artisanal Mining* organised in Accra

⁴ For instance the Colonial mining laws such as the Concessions Ordinance 1890 (CAP 87) and the Gold Mining Protection Ordinance, No. 3 1905 were designed specifically to protect the interest of Large Scale mining concessionaires.

⁵ As a direct sequel to this Act, the Precious Minerals Marketing Company (PMMC), hitherto Diamond Marketing Company was set up by the government to purchase and sell gold and diamonds from the ASMs.

⁶ See Hislon (2001: 22-23) and Bawa (2003) for a vivid documentation of the regulatory framework as well as the registration procedures of ASM mining in Ghana.

by Ghana's Centre for Scientific and Industrial Research (CSIR) and the Ministry of the Environment and Science, on 29-30 July 2003, participants indicted the registration process as a major disincentive for ASM operators to regularise.⁷ According to Hilson and Potter (2003), this situation is aggravated by the unavailability of mineralised lands to the ASM operators who consider the 'hassle' of registration almost an exercise in futility.

Violent clashes

As indicated in the beginning of this chapter, in Ghana, the mid-1990s were characterised by a series of violent confrontations between artisanal miners on the one hand, and LSM and state security forces on the other. The local media profiled many of the major clashes, which were characterised by excessive violence and fatalities. In July 1996, for example, a major clash occurred between ASM operators on the Ashanti Gold Fields (AGC) mining lease area and the state security forces at Obuasi during which about US\$10 million in mining was estimated to have been destroyed⁸. Similarly, on 11 July 1996, another clash occurred between artisanal miners and a contingent of police on the concession of Barnex Ltd Prestea, some 45 km from Damang. At the time, Gold Fields' operations in Tarkwa were not spared of such violent clashes amid their preparations to suspend underground operations in favour of the development of surface resources. During one of numerous clashes with encroaching *galamsey* miners, a senior manager of the Company was reported to have been brutally assaulted.

Nearly three-quarters of ASM operators interviewed claimed that it was their birthright to mine. As one miner put it:

"This is our own land and we, and not anybody from anywhere, decides how to use it to our benefit. If we can farm on this land, why can't we mine the gold in it?"⁹

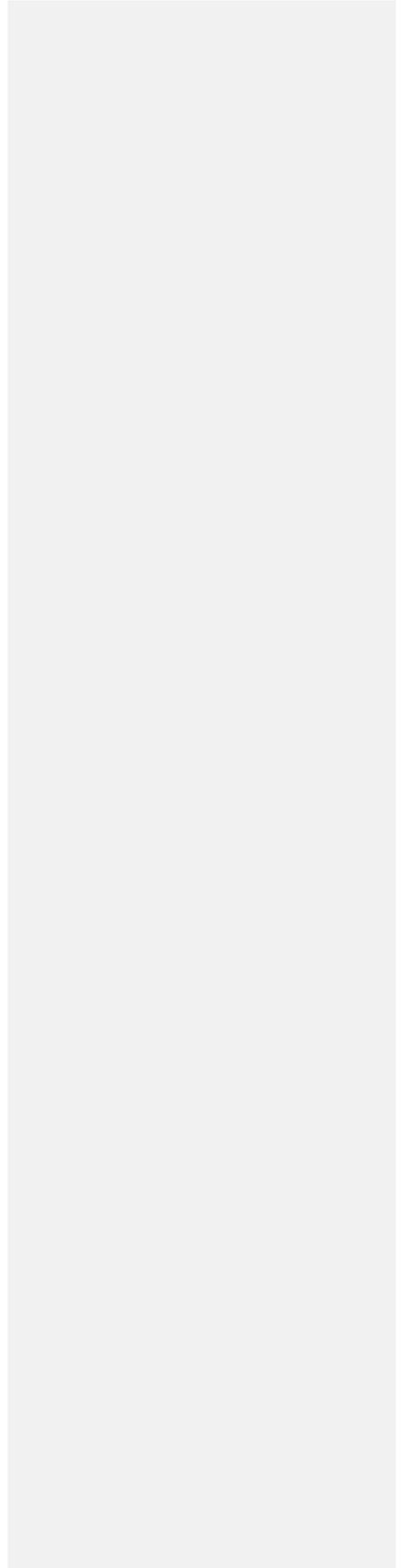
Responses of this nature resonated in several informal interviews with ASM operators at Damang and Amoanda. From the ASM perspective, the conflict relationship between indigenous mining groups and large-scale miners is a contestation for survival and a fight against the "intrusion" of what they perceive as their traditional rights to work on the land, whether for mining or farming. The ASM operators interviewed were mainly local and indigenous people who argued that ownership of the mineral deposits (gold) was their God-given right. They would therefore not comprise their livelihoods on the grounds of any statutory laws of the country. LSM operators, on the other hand, contend that these confrontations are unfortunately necessary to protect their "legally" exclusive concessions against unlawful encroachment and intrusion. To a certain extent, the confrontations could be interpreted in terms of contest between traditional rights versus legal rights.

⁷ Similar sentiment was shared by participants at a recent validation workshop on research on ASM commissioned by the DFID organised at the Institute of Local Government studies on (?) August 2004.

⁸ AGC is a Ghanaian multinational gold mining company. In 2004 AGL merged with another multinational mining giant, AngloGold to form the AngloGold-Ashanti

⁹ An ASM operator who gave his name as "Taller" during an interview on 12 November 1996.

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Political Sensitivity

The control of illicit mining in Ghana has always been a sensitive issue, especially since the inception of constitutional rule in 1993. During the military regime of the Provisional National Defence Council (PNDC) government of the 1980s, it was common to witness police raids on *galamsey* operators in the Wassa West mining district, which occasionally led to the arrest and prosecution of culprits.¹⁰ Controlling illicit mining activities became associated with the use of force and brutality; thus, attempts to enforce illicit mining under the new democratic dispensation have necessarily featured a politically sensitive dimension. Evidently, the then National Democratic Congress (NDC) government did not possess the political will to control ASM operations: the government was of the belief that any attempt to full-heartedly stop *galamsey* operations without the provision of acceptable alternative livelihood sources risked putting more people out of job, with suicidal political consequences. Needless to say, most of the serious clashes and demonstrations intensified between June and November 1996, when the country was preparing for national elections. The situation seems to be the same under the current New Patriotic Party government (NPP)¹¹.

Abosso Goldfields and Neighbouring ASM

Figure...is map of the Wassa West Mining district and the operational area of AGL. AGL operates an open-pit gold mine with a Carbon-In-Leach (CIL) processing facility near Damang, approximately 29 km north of Tarkwa in the Western Region of Ghana. It was constructed in the later half of the 1980s as a subsidiary of Ranger Mineral plc, an Australian-based junior mining company, to develop the mineral resources in a 104km² concession within the Tarkwa and Abosso area. In February 1990, the company was issued a Prospecting Licence by the government of Ghana for the above area, and by 1993 had been granted a mining lease of approximately 57 km² from Damang in the north-west to the old Abosso mining area in the south easterly direction.¹²

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As with most mining areas in Ghana, AGL's present operation at Damang was preceded by active artisanal mining activities. Available anecdotal evidence suggests that ASM operations in the area provided important geological leads to AGL.¹³ Records from the PMMC indicate that a few of these ASM operators—seven co-operatives—were duly registered in accordance with PNDC Law 218 prior to the

¹⁰ As a high school graduate, the author personally witnessed some of these police raids, commonly called "scatter" and heard stories from victims of such raids. The brutal nature of some of the raids occasionally led to fatalities and abuse of human rights

¹¹ The 1996 national elections were held in December of that year. During the run-up to the 2004 elections, the ruling New Patriotic Party government was also accused by a section of the media (*The Chronicle* in particular) for failing to act in the case of the encroachment by ASM operators on the properties of the the Bogoso Mine because of the political sensitivity of the issues.

¹² Ranger Minerals has since January 2002 sold its interests in Abosso to Gold Fields, a South African-based global precious minerals company and Iamgold, a Canadian-based exploration and development company.

¹³ Until the discovery of a bankable deposit in the present Damang area in 1995, the original interest of Ranger Minerals in Ghana was to treat the old Abosso tailings.

issuing of the prospecting licence to AGL in 1990. The mineral cooperatives had licenses covering an area of 155 acres; the last of these leases expired on 13th November 1996.

A pragmatic shift: The concept of “Live and Let’s Live”

By the mid-1990s the problem of illicit mining on the concessions of LSM companies had become intractable. Scarcely a week went by without reports of some form of confrontation at one mine operation or another. The economic, social and environmental costs of such confrontations were becoming unbearable. After assessing the nature of the conflicts at the time between ASM and LSM operators in Ghana and elsewhere in the world, AGL officers realised that it needed to do something different if it was to avoid the same relationship predicaments. The failure of aggressive policies provided a strong case for a paradigm shift—movement towards a more innovative and pragmatic strategy for dealing with problems to ensure that the company operated peacefully, harmoniously and profitably. In line with the above need, AGL adopted a more negotiable and compromising approach, which became encapsulated in the concept of “Live and Let’s Live”. This approach sought to accommodate artisanal miners on AGL’s lease area insofar as their operations did not cause operational threats to the company.

According to the management of AGL, this new approach was founded on the following two key principles:

- 1) The recognition that ASM activities have for a long time been an important activity both socially and economically to the indigenous operators of Damang, Huni-Valley and other surrounding villages.
- 2) That a well-organised and harmonious relationship between the artisanal operators would ensure sound and safe mining practices, and also help to eliminate some of the suspicions ASM operators had of government agencies and large-scale mining companies.

Initially, the company adopted a compromised approach by offering to set aside areas for the local indigenous ASM operators. This gesture was met with initial difficulties, especially with respect to how to confine the operators to their designated areas. Nearly 600 *galamsey* operators intensified their activities and easily encroached on exploration trenches where high-grade gold ores were exposed in drilling sites on the mining lease. Attempts by the law enforcement agencies to control the situation often led to violent clashes. A typical example was the conflict between *galamsey* and the Police at Bompieso, a village close to AGL’s concession in November 1996, which resulted in serious casualties.

Managing the relationship

The above approach required the adoption of a completely new structure and rules. To draw up and agree upon the rules that would govern the relationship between AGL and ASM operators, a Management Committee was formed. Deliberate efforts were made to ensure that the base of the committee was broad enough to accommodate wide shades of opinion among the stakeholders and to ensure open, honest and frank discussions. The committee was comprised of the following groups of people:

- Three technical personnel from AGL;
- Two artisanal miners who represented each of the five local communities of Damang, Amoanda, Huni-Valley, Bompieso and Nyamebekyere;
- Three District Assembly representatives (assembly-man from each community);
- Chiefs and opinion leaders;
- One District Police Crime Officer; and
- One Officer from the National Bureau of Investigation. (B.N.I).

The committee's task was as follows: to initiate and develop a workable AGL-small scale mining policy based on Ghana Mining Regulation's tributor system (LI.665 1970) and consistent with the company's new philosophy of relative accommodation. The Committee came up with the following blueprints:

- ASM operators licensed to operate on the concession would operate during the AGL exploration phase. The duration of licenses would be for an initial period of two years with the prospect of a further two-year renewal after which there would be no further renewals.
- In the event that mineable reserves were established by AGL in the area worked by small-scale miners, the Government of Ghana would be notified and no more small-scale mining licenses would be renewed in that area. AGL would not be requested to compensate small-scale mining licence holders.
- Holders of small-scale mining licenses would not transfer their licences to large-scale mining companies while the AGL Prospecting Licence remained valid.
- AGL would not be held responsible for any environmental degradation or social disruption caused by ASM operators.
- To help formulate and implement these policies, AGL would appoint and maintain a professional mining engineer to be placed at the disposal of ASM operators on regular basis.¹⁴

Ground implementation and trust-building

To ensure smooth implementation of the new arrangements, the company demarcated an alternative site on an active mining lease area for the short-term

¹⁴ Ghanaian Mining Engineer with considerable experience (seventeen years at underground operations and eight years at various surface mines both gold and diamond) was employed by AGL

relocation of the ASM groups, who were close to areas earmarked for active mining by the company. Site allocations took cognisance of the proximity to the various groups/communities. For example, ASM operators resident in the Damang area were allocated sites of the lease which were closer to the Damang village, while those in Amoanda, Huni-Valley and Bompieso to the North of the operations were awarded areas closer.

To provide some form of permit and authorization for ASM operations in the designated site and to further control immigration of artisanal miners from areas outside AGL's catchments communities of Damang Huni-Valley, "Amoanda" and "Bompieso", the indigenous ASM operators from each of the communities, were identified and issued with photo identity cards (ID cards) by AGL.

The sudden accommodating attitude of AGL, a large scale mining operator, towards the ASM operators, was a revelation at the time, but ironically raised some doubt in indigenous communities, where people expressed concern about the company's 'real' intentions. For instance, the issuance of the ID cards generated initial scepticism among local people who feared that it as a clever ploy by the company to facilitate their arrest for prosecution. There was also concern that openly identifying oneself as a leading *galamsey* operator ran the risk of being blacklisted for future employment in mainstream operations. Some operators also saw it as a ploy to force them to sell their produce to AGL at below-market prices. This confirmed the age-old axiom that trust is a necessary ingredient in any successful human relationship, in this case, between ASM and LSM parties.

As a means of building trust and confidence between the two parties, the Company ran a series of educational campaigns and seminars. The educational drive sought to underscore the benefit of the new relationship, such as dissemination of improved safety practices, and to assure ASM operators of their total ownership and control of operations, including their produce. Crucially, AGL officers informed ASM operators that they were free to sell extracted product to PMMC licensed gold buyer of their choice.¹⁵

The operators were also assured that there would be no police harassment, provided that they operated within the mutually agreed rules. The Company also demonstrated commitment by providing ASM operators with small inputs such as water pumps, gold pans, and mercury retorts. Officers also worked to educate miners on improved technology for better gold recovery.

Impact of "Live and Let's Live" Policy

This section examines the impact of AGL's "Live and Let's Live" policy. As previously explained, the overall purpose of the new approach was to ensure mutual

¹⁵ PMMC is a government appointed agency responsible for the purchase and marketing of gold and other precious minerals from Small-Scale miners in Ghana

peace, safety and environmentally sustainable operations. The ultimate goal was to reduce and eventually remove the ASM operators on the AGL's mining lease area.

Profile of indigenous mining population

By December 1996, a total of 740 Small Scale Miners had registered with AGL (Table 1).

Table 1: Details of registered small-scale miners on AGL's concession, December 1996

Community	Number registered people
Damang	120
Huni-Valley	60
Amoanda	120
Bompieso	230
Nyamebikyere	210
TOTAL	740

Source: AGL Small-Scale Mining Scheme

One year later, the number had dwindled sharply to less than half the figure (360). A number of reasons, however, were responsible for the drastic decline. First, AGL began active recruitment for the commencement of its mine production in early-1997. It appears that AGL and the allied contractors had absorbed a large number of the operators into mainstream mining through the Company's local employment programmes.¹⁶ Secondly, some of the more shrewd operators had mobilised sufficient funding to launch their own small-scale contracting companies, which provided a host of services to the main Company. Finally, most of the non-indigenous operators who failed to secure any gainful employment had returned to their hometowns, particularly during the drought period which persisted throughout the last quarter of 1996 and the first quarter of 1997. This drought created a dearth of water for ore processing for ASM. This, combined with the global decline in gold price during the last quarter of 1997 which impacted negatively on the revenue and profitability of artisanal mining overall, prompted many of the operators registered on AGL's concession to entertain employment opportunities elsewhere.

Improved mining and ore processing methods

In order to ensure that the artisanal miners worked safely, achieved high recovery and reduced the environmental damages resultant from their operations, a

¹⁶ It was the policy of the Company to ensure that at least 70 per cent of its unskilled labour requirement was sourced from the local area.

substantial attention was focused on assisting the operators with improved methods of mining and ore-processing.

As it is well known, artisanal mining is a near surface activity. The operators mine consolidated sandstone and conglomerate bands with shallow overburden using simple basic implement such as shovels, pick axes, chisels and hammers. Prior to AGL involvement in the ASM project, the informal miners in the area scrambled for positions along the strike of the exposed reef under shallow overburden and mined in all directions creating a vast open stope with no roof support and ventilation channels. Using lanterns fuelled by kerosene, the soot of the lamps created unhealthy working conditions by increasing the levels of carbon dioxide and carbon monoxide. The result of such operations was numerous fatalities usually caused by ground collapse and asphyxiation. Fatalities were more pronounced where smuggled explosives were used. With technical assistance from AGL, a room and pillar mining method was introduced for the reef miners. The introduction of the room and pillar mining methods was initially met with resistance since initial development slowed down production. Seminars were organised for the team leaders who grasped the concept and passed it on to their colleagues in the field.

Workings on alluvial surface have also occasionally produced fatal accidents. The alluvial miners tended to undercut the thick overburden and in the process some of them occasionally got trapped when the overburden collapsed. This group of miners received direct field instructions on the risk of undercutting alluvial formations. Here training centred mainly on overburden removal, digging out the gravel followed by sluice box operations directed into the cavity created, and spreading the barren overburden over the worked out area. This practice was accepted by all as safe and environmentally sound method.

In the area of ore processing, the traditional practice has been to introduce a high flow of water on sluice boxes filled with ore. The use of high water flow in sluice boxes meant that gold nuggets are collected on the blankets while large quantities of gravels and stones get washed out of the sluice box by the running water. The main problem with this method is that finer sized gold is washed away along with the impact of the high water flow. Unfortunately, a lower water flow also meant more removal of stone by hand on the headboard and the need to stir the bed to stop it packing down on the sluice box.

Screen headboards and woollen carpets were introduced to replace the traditional wooden sluice box with jute sacks, as the means of gathering gold concentrates. The screen headboard was made out of corrugated roofing sheets with holes punched through at the base to retain the large oversize stone so that small stones and sand which host gold can flow over the sluice box with riffle arrangement. The gravel fed into the screen must be completely soaked with water to ensure all clay and soil lumps are broken up to allow fine materials to pass through the screen. Compared with the traditional sluice box with jute sacks, the riffles on the screen headboard act as 'speed bumps' that induce settlement of heavy minerals (gold) carried by the passing water current.

The common method of gold recovery by the ASM operators is mercury amalgamation. This method has been used in Ghana for over a century and current statutory laws permit its use by Small-Scale Mining operators. The health and environmental dangers of the use of mercury by ASM has been well documented in recent times (Refs). In order to reduce high levels of environmental contamination caused by the use of mercury on sluice boxes, and the poisonous effect of mercury on the health of the ASM operators, AGL ordered twenty "Garret Gravity Traps" for free distribution to them. Gravity Traps are used to pan the gold concentrate from the sluice box for better recovery of gold nuggets or dust, thus reducing the amount of mercury requirements for amalgamation.

In September 2000, the Company in partnership with the Ghana Association of Artisanal and Small-Scale Miners, the umbrella association for the ASM operators, donated eight sets of amalgamated mercury retorts for use by the operators of the various catchments communities within the concession. The retort is believed not only to stem the negative health implications of the bare use of mercury but is also believed to significantly improve recovery.

The introduction of the new but simple technologies entailed attitudinal change and the initial resistance by a section of the miners was to be expected. However, with the passage of time, and as others became well acquainted with the use of these new methods, they became increasingly acceptable. For example the use gravity traps to pan gold without the use of mercury was totally inconceivable by some of the operators. However, with the evidence of improved recovery and better health implications, there was a reported rush in the demand for the use of gravity traps. According to AGL's Small-Scale Mining Supervisor, those who became well vested in the art of panning engaged in concentrate panning for a fee.

Gold production, safety and the environment

The introduction of the above new technology and approach to artisanal mining within AGL concession, appeared to have led to a considerable increase in output of the ASM operators with evident safety and environmental improvements. Officials of AGL estimate gold production by artisanal miners in the area at 35 ounces in January 1997. By August the same year production had jumped to 368 ounces. Fewer injuries and fatalities were recorded under the scheme. The Table below illustrates the production trends immediately following the improved relations between AGL and the ASM operators in the area from January to December.¹⁷

Production Trends by ASM operators under AGL Scheme, 1998

Area	Number Miners	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec

¹⁷ The AGL Small Scale Mining Supervisor liaised with the accredited gold buying agent for monthly gold purchases from AGL Small Scale Miners to enable AGL submit monthly returns to the Minerals Commission and Mines Department.

Tomento	50	10	8	11	9	8	6	7	12	11	12	13	10
Nyamebkyere	40	6	9	12	8	4	5	7	11	12	12	9	12
Amoanda Alluvials	80	8	6	8	9	5	7	8	13	10	11	11	8
World-Bank	30	10	9	7	8	6	5	8	9	11	14	12	10
Rex North	50	9	10	7	6	2	6	7	10	12	10	8	10
Bompieso Alluvials	35	12	13	9	9	6	7	6	10	11	13	12	17
Bompieso Process Base	25	10	12	11	7	7	7	6	9	10	12	8	12
B.C.M. Old Camp	30	15	13	10	8	6	9	9	11	13	12	12	11
TOTAL	340	80	80	75	64	46	52	58	85	90	96	85	90

Source: AGL Small-Scale Mining Project

Conclusions and lessons to be learnt

This chapter has discussed the relationship between ASM operators and their large-scale counterparts in a certain detail. In Ghana, ASM operations are largely informal with a majority of them operating at the blind side of the law. It is clear in the forgoing that even though artisanal gold mining has been in Ghana since time immemorial, increased open-pit gold mining operations by LSM companies since the 1990s has resulted in an increased contestation for mining lands in the country. Trespassing by ASM operators on concessions acquired by LSM companies have become common. This has often resulted in confrontations with local ASM operators who believe the acquisition of large tracts of mining lands by LSMs is also encroachment on their livelihood source. The prevailing legal and traditional interpretation of the land-mineral ownership rights coupled with the lack of political will to enforce the laws on illegal encroachment of property have combined to feed into the sour relationship between ASM and LSM operators.

The laws of Ghana allow the relative exclusivity of right of concession or mining lease holder which makes any encroachment for competing activities (i.e mining) impliedly unacceptable. The stark reality since the early 1990s is that these concessions legitimately acquired by LSM companies are often encroached upon. It remains the duty of government to protect the legitimate holder of a mining concession or lease. However, as has been noted above, with the advent of democratic dispensation in Ghana since the early 1990s and the subsequent regular multi-party elections, ASM operators in the country have created a political niche (which some analysts have described as blackmail) for themselves. This has made successive governments appear unwilling to fully enforce the laws on illicit mining, largely for political purposes. After all, ASM presents major solution to a

bourgeoning social problem in the country as it offers easy source of employment to the large army of unemployed youth. The onus for dealing with ASM-LSM relationship appears to have been placed inevitably on the shoulders of LSM which are expected to demonstrate leadership by adopting pragmatic rather than legal-protectionistic approach.

As demonstrated in this work, AGL, as a large scale mining operators, sought to deal with the encroachment and clashes that was prevalent at the time with diligence and pragmatism. On the surface, the "Live and let's live" strategy, which allowed artisanal miners to operate under a better organised system on portions of the company's mining lease placed the company at the edge of the mining laws of Ghana which completely prohibit mining of gold by unauthorised persons. However, in reality, this also meant a good and pragmatic corporate judgement that ensured relatively peacefully operations while, to the extent possible, the activities of the indigenous miners were not impaired. In my view, even at the risk of inconveniencing its own operations the "live and let's live" approach adopted by AGL represented the best option then. As noted earlier, the approach has yielded significant dividends through efficiency of operations and more particularly in the area of gold production, safety and environmental management of ASM operations. This has resulted in enormous social peace within the area. Also within the first two years of implementation, the new approach contributed to the reduction in the numbers of ASM operators on the ML.

The key lesson to be learnt from the AGL's experience is two fold: First, effective engagement by LSM with ASM in the contestation for mineral resources can yield mutual dividends. Thus, contrary to the view commonly held that ASMs and LSMs are not bedfellows and antagonism is the language of engagement, evidence from AGL suggests that they can coexist along each other. This will however require a pragmatic strategy including a process of formalising the relationship and ceding portions of concessions which may be economically viable only by ASM methods to the ASM operators. Assistance with the organisation and capacity building of ASM operators will pave the way for constructive engagement. It needs to be cautioned that the AGL example may not lend itself readily for easy duplication, as there might be certain peculiarity such as, the number of indigenes or real community members directly involved in the ASM activity which may have implications on the ability to create internal controls within the operations. Beside, the approach may only provide a temporary respite rather than a long-term solution. Problems are likely to arise as the LSM company decides, depending upon the metal price environment, to convert its marginal resources (temporarily ceded to ASM operations) into active mining. The above, notwithstanding, the AGL example provides a basis for careful study for possible adaptation.

Second and finally, from the perspective of government, the ASM conundrum could be addressed through the "carrots and stick" approach. There is the need for government to demarcate mineralised areas to be dedicated only for ASM operations. This idea has been discussed in bit and pieces within the Ghanaian mining industry circles in the last couple of years but how to concretely achieve this

noble idea has been persistently elusive as available geological data are inadequate. While suggesting that further investigations is required, a comprehensive data mobilisation on existing exploration results from various companies will help in identify potential areas to be demarcated for ASM activities. Going forward, such demarcations may be based on the extent of ore body concentration. Presumably, mineralisation of less than 30-acre radius with no complementary adjacent or geographically contiguous mineralization may not be viable for large mining operations. This could form the basis of area demarcation for only ASM operations. Furthermore, (dis)incentives that inhibits ASM operators from formalising and coming to the mainstream need to be removed. Measures have to be put in place to ensure it is practically easy, less cumbersome and time-consuming for ASM operators to formalise themselves. Other incentivisation mechanisms, including special reward for (i.e. paying relatively higher rates for gold produced) by ASM operators who can demonstrate adoption of good practices could serve as a bait to draw informal operators to join the mainstream. Such efforts should go along with the “stick”. Government should fully enforce the laws on encroachment on mining concessions and apprehend and prosecute offenders in accordance with the laws of the country.