

Livelihoods and Policy in the Artisanal and Small-Scale Mining Sector - An Overview

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1. Introduction

This report seeks to bring together important findings from research on artisanal and small-scale mining (ASM) orientated around social and community issues. It identifies a number of key policy challenges, and suggests how these policy challenges might be met.

The report draws on a range of material looking at the sector from across the world. In particular, it uses two DFID funded livelihoods studies recently carried out in Tanzania and Ghana and five UNDP funded livelihoods studies in Tanzania, Ghana, Guinea, Mali and Ethiopia. Whilst most of the literature referred to has not been compiled using a livelihoods methodology, findings have been grouped and presented in a way that is consistent with a livelihoods approach.

Popularised by DFID, the UNDP and NGO's such as CARE and Oxfam the Sustainable Livelihoods Approach (SLA), is used as a tool for assessing the socio-cultural and economics characteristics of ASM communities (see Brocklesby & Fisher, 2003). It aims to establish a connection between local realities and the level "at which policies intended to change these realities are formulated" (Shankland, 1998, p. 4). As Carney (1998, p. 4) explains at length in the following passage:

"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living". It is considered sustainable "when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base".

SLA is held to be a valuable conceptual and programming framework for achieving poverty reduction in a sustainable manner within ASM communities (Labonne and Gilman, 1999. p. 4). Since the launch of five UNDP studies, the SLA has gained considerable momentum as a research approach in the ASM sector (ibid. 1999).

Key elements of a sustainable livelihoods approach

- People focused
- Macro/micro linkages
- Causes not symptoms
- Policy practice gaps
- Creating mechanisms of accountability
- Multi-sectoral
- Strengthening ownership and capacity
- Wide participation
- Builds on peoples' existing strengths

Whilst the first section of this report briefly touches on existing research and development activity within the sector,¹ the focus of this document is the identification of key challenges to more constructive policy in the sector and the presentation of suggested policy interventions to meet these challenges.

¹ Drawing largely from a literature review carried out under this project entitled "A Global Analysis of Livelihood Issues in Artisanal and Small Scale Mining", Centre for Development Studies/Bastia (2004).

A key observation about the ASM sector is its huge diversity (e.g. between and within countries, type of mineral, modes of extraction and processing, marketing arrangements, political economy, socio-economic organisation, etc.). The challenges and possible policy approaches suggested in this document are, therefore, necessarily broad. Indeed we would strongly argue that strategies to reduce vulnerability and improve livelihood security for artisanal and small-scale miners need to be context-specific at both the country and local levels. By implication, in a report such as this, emphasis needs to be given to process issues related to 'how to do it' rather than specifying a blueprint 'what to do'.

Any policy intervention requires a detailed analysis of the political economy and institutional environment of ASM the micro realities facing those engaged in the sector, and the development of a locally owned process, before appropriate and sustainable policy interventions can be identified. Beyond the ASM sector this is recognised as essential for successful poverty reduction in the context of country-level Poverty Reduction Strategy Papers, in the recent DFID Drivers of Change Initiative and in thinking behind recent World Bank/DFID Poverty and Social Impact Assessment initiatives.

2. ASM Livelihoods

Geographically, Asia, which has the highest number of people involved in ASM, is least covered by the ASM literature, while Latin America has received a lot of attention despite the fact that fewer people are engaged in this sector.

In terms of approaches, a number of recent studies have taken a more holistic approach, including the sustainable livelihoods approach (Gilman, 1999; Labonne and Gilman, 1999; Labonne et al., 2001a and b; MIME Consult, 2002), while others have concentrated on a specific aspect of the ASM industry, for example, the environmental consequences of ASM activities (Hinton et al., 2003a; Malm, 1998; Veiga, 1997; Veiga and Hinton, 2002), regulatory frameworks (Barry, 1996; Bugnosen, n.d.) or technical issues (Bugnosen, 1995; ITDG, 1990 and 1996).

In-depth studies of ASM communities are rare. A limited number of micro-level socio-economic studies have been carried out (Hughes and Furamera, 1999; MIME Consult, 2002), as have studies on the livelihood strategies of specific communities whose members engage in ASM (Heemskerk, 2000 and 2002; Walsh, 2003). Whilst certain studies (e.g. Heemskerk, 2000 and 2002; Hilson, 2002c; MIME Consult, 2002), seek to profile the needs of people living within ASM communities, the main emphasis of the literature hitherto has been the macro characteristics of the sector and there are few good social analysis that consider artisanal mining from the perspectives of those who identify themselves as miners and live within mining communities.

There are also few studies that capture the linkages between the micro and macro level in terms of the institutions, legal practices and policy processes that serve to exclude or include AS miners in decision-making that affects their lives. To a certain extent this obscures an assessment of the significance of ASM in

people's livelihoods and how participation in the sector affects livelihood security and wealth creation. By implication, our understanding of the contribution ASM makes to poverty reduction in different contexts for different groups of people is not well understood.

2.2 ASM Definitions and Distinctions

For decades, experts worked to devise universal definitions of “artisanal” and “small-scale” mining but were unable to reach a consensus. As Hollaway (1997, p. 35) explains in the following passage:

“In the 1980s, a string of conferences largely sponsored by the United Nations spent a disproportionate amount of time trying to define what it was they were talking about. At what point does ‘artisanal mining’ become ‘small-scale mining’? When does a small-scale mine become a ‘medium scale mine’? The problem persisted across languages: In French the difficulty was defining between *‘les operations artisanale, semi-industrielle et industrielle’*

For their own purposes, countries have devised unique definitions of “artisanal” and/or “small-scale mining”, according to a variety of criteria such as the following:

- Level of mechanisation (e.g. as in Brazil, Burkina Faso Ghana and Sri Lanka)
- Size of Concession (e.g. as in Ghana, Zambia and Zimbabwe)
- Depth of working (e.g. as in Colombia, Senegal and Ethiopia)
- Capital investment (e.g. as in Argentina, Mexico, South Africa, Pakistan and Thailand)
- Level of employment (e.g. as in Chile,
- Production levels (e.g. as in the Philippines and Senegal)

Certain countries have made a distinction between small-scale and artisanal mining in legislation; in such cases, the former is associated with illegal activities and minimal mechanisation, and the latter, with semi-mechanisation and organisation (D’Souza, 2002; Quiroga, 2002). In Ethiopia, for example, small-scale mining operations have capped production levels and are designated by the Minister, whereas artisanal mining is defined as non-mechanised mineral extraction activities carried out by either individuals or groups. A similar distinction exists in Brazil, where a separate definition has been devised for informal, rudimentary *garimpeiro* (artisanal) activities.

Artisanal and small-scale miners are engaged in the extraction and processing of a range of commodities, including gold and diamonds, gemstones, industrial minerals or construction materials (Hilson and Maponga, 2003). However, with few exceptions (e.g. China and coal, and India and construction materials), most artisanal and small-scale miners extract high-value minerals, such as

gemstones (90-100 per cent of total production in most countries), diamonds (80-100 per cent in countries that are not major producers, e.g. Ghana), gold (up to 100 per cent in many countries, e.g. Burkina Faso, Cuba, Guyana, Mozambique, Myanmar, Niger – and over 50 per cent in Bolivia, Mexico, Philippines, United Republic Tanzania), and other high-demand commodities such as reserves of tantalite in the Democratic Republic of Congo (ILO, 1999).

Since the United Nations published its seminal report, *Small-Scale Mining in Developing Countries* in 1972, the research emphasis in the sector has changed dramatically. Building upon the prolonged – and largely unsuccessful – attempts made in the 1970s to define and compartmentalise artisanal and small-scale mining, research and policy focus shifted to the technical aspects of the industry. It had become evident that despite exhibiting varying characteristics from location-to-location, ASM was generally a semi-mechanised, poverty-driven industry that did not require increased attention to be paid to devising a universal definition for policy-making purposes. The research focus has since shifted further to encompass the livelihood aspects of the sector (Table 1).

Table 1: Focus of ASM Debate and Intervention

Period	ASM Focus
1970s	Definitional issues
1980s	Technical issues
Early 1990s	Towards integration of technical, environmental, legal, social and economic issues
1990s	Special attention on legalisation of ASM sectors
Mid to late 1990s	Relation between large mining companies and ASM; Gender and child labour issues
2000s	cCommunity related issues and sustainable livelihoods

The use of the livelihoods approach, or at least the principles underpinning it, is now recognised as an important planning tool for poverty reduction in the ASM sector. The following sections use key livelihood themes to summarise key research findings from the sector.

3. The Significance of the ASM Sector in the Wider Economy and Environment

The developmental potential of small-scale mining was recognised for the first time in the UNDESA publication, *Small-Scale Mining in Developing Countries*, 1972 (UNDESA, 1972); this marked the first time that global attention was placed on ASM (Bayle, n.d.). The heightened research interest on ASM has given rise to a burgeoning literature covering a wide-range of industry-specific issues. Many have lobbied for ASM to be used as a tool for rural and community development (e.g. Bayah et al., 2003; Wall, 2000) and as a springboard for people-centred development (Ghose, n.d.). Weber-Fahr et al. (n.d.:440) estimate that “there are approximately 60 developing and transition countries where mining is or could become an important economic activity”, which makes the promotion of ASM an appropriate strategy for governments aiming to raise living standards in rural communities.

3.1 Employment

In terms of the numbers of people employed in ASM: Asia is the most significant region, followed by Africa and Latin America. China alone is estimated to employ 2.5 million people in what are considered the world’s most dangerous mines – mainly village-level coal mines that the state is constantly trying to close. As noted by the ILO, as many as 6,000 people die each year in these mines (ILO, 2003).

In terms of employment, the ILO has estimated that between 11.5 and 13 million people engage in small-scale mining worldwide (see Table 2); it is important to note that, with employment prospects dwindling in most parts of the developing world, the ILO’s estimates are likely to be vast under-estimates.

Table 2: Regional spread of employment in ASM

Region	Estimated employment in small-scale mining
Africa	3.0-3.7 million
Asia/Pacific	6.7-7.2 million
Latin America	1.4-1.6 million
Developed countries	0.4-.05 million
Worldwide – TOTAL	11.5-13 million

Adapted from ILO, 1999:7

In Ghana, it is estimated that 30,000 people are employed within the legalised small-scale mining sector (World Bank, 1995), with the Minerals Commission and the Ghana Chamber of mines noting that 60 per cent of the country’s total mining labour force is employed in small-scale mines (Hilson, 2001). However,

an additional 200,000 individuals are believed to be working illegally as *galamsey*² (after Appiah 1998; Aryee 2003). In countries such as Brazil, Ethiopia, Tanzania and Zimbabwe, the number of illegal miners operating is also in the hundreds of thousands although employment statistics are notoriously difficult to capture.

It is clear that these figures are, in most cases, estimates (and likely to be under-representative) due in large part to the fluid nature of involvement in ASM activities and the fact that a large percentage of activities are carried out illegally and in a covert manner, for which there are few if any statistics available. Moreover, entire sectors within the ASM are often not taken into account, particularly in the case of industrial minerals (e.g. lime in Zambia, salt in Ghana, barytes in India or gypsum in Nigeria) and/or construction materials (e.g. aggregates or brick clay), which are often produced for local consumption and not exported (D'Souza, 2002; Drechsler, 2001; ILO, 1999).

In terms of fluidity, employment numbers in ASM vary widely depending on, for example, the season, alternative livelihood opportunities and the price of minerals (Ethiopia, AB&A, 2002). Total number employed, however, does not fully describe the potential value of ASM employment. Generally, artisanal mining "has proved to be a primary source of employment for job seekers from various parts of the country who are relatively disadvantaged in the labour market (e.g. unskilled, low skilled, women, disabled, etc.)" (Ethiopia, AB&A, 2002; 88).

From figures of employment it is possible to extrapolate estimates of the number of people who are dependent on the sector. Based upon ILO findings compiled in 1999 (ILO, 1999), Jennings (2004) has argued that as many as 100 million people; including dependent family members and participants in downstream industries (e.g. gemstone polishing, transportation, catering, etc.) depend upon the sector for their livelihood. Again, with estimates of direct ASM employment being unrepresentative, it is likely that the number of dependents exceeds this estimate.

3.2 Output

The MMSD (Mining, Minerals and Sustainable Development) Global Report on ASM points out that "despite the low levels of production achieved at an individual level, the often large numbers involved means that on a national scale total production can be significant, in some cases equalling or exceeding that produced by large mines" (Hentschel et al., 2002:12).

Globally, it is estimated that the sector produces 15-20 per cent of the world's non-fuel mineral production (ILO, 1999:3). The sector produces 20 per cent of the world's coal, 31 per cent of its industrial materials and 12 per cent of other metals (Noetstaller, 1987). Although the composition of the sector has changed dramatically since these estimates were put forward (due to, for example, the emergence of tantalite mining in the DRC, intensification of gold mining in parts

² Local name for illegal small-scale miners.

of Africa, and retrenchment of large-scale mine workers) authoritative revised estimates have yet to be made.

Certain countries have maintained detailed data on output on small-scale mining, which can be used to illustrate the sector's contribution to national mineral output; this has been possible in large part because of the implementation of sophisticated mineral purchasing schemes. One notable example is Ghana, where the Minerals Commission has detailed data on diamond and gold purchases from small-scale miners: in 2003, the sector accounted for 9.5% of gold and 82% of diamond production (Amankwah and Anim-Sackey, 2003). Similarly, in the Philippines, according to statistics compiled by the government and banks, the small-scale mining sector is known to have contributed to 40-50% of national gold production in the period 1990-1990 (Bugnosen, 2001). A similar situation exists in India, where some 3000 small-scale mining operations generate 50% of the country's non-fuel mineral output (Jennings, 1997), and in China, over 93,000 coal mines distributed over 1,258 counties with a workforce of at least five million, account for well over 50% of total national coal output (Ghose, 1994).

In other countries, an overwhelming majority of economic minerals are produced by the AS sector. For example, in Guinea, the share of artisanal and small-scale mining in national gold production rose from 66% in 1990 to almost 100% in 1993, and in the Central African Republic, where diamonds and gold account for nearly 100% of national mineral exports, 90% of diamond and 100% of gold production is carried out by artisanal and small-scale miners (Bocoum and Samba 1995; UN 1996a; UN 1996b). In Brazil, which is by far the largest producer of gold in Latin America, at any given time, as many as one million people are involved in artisanal and small-scale gold mining, producing between 75 and 90% of national gold output (Buntenbach *et al.*, 1995).

To summarise, in terms of production, ASM plays a significant role in most, if not all, developing countries with proven mineral deposits.

3.3 Foreign Exchange

ASM also makes a valuable contribution to foreign exchange earnings in countries where the minerals are exported (ILO, 1999). As Hentchel *et al.* (2002) explain, at the macro-economic level, production of high-value metals and gemstones, for instance, are more or less standard "currency", the produced value equivalent to additional foreign income.

In Ghana, for example, over US\$300 million in gold has been collected from small-scale miners since legalisation of the industry in 1989. In Indonesia, a thriving small-scale gold mining sector comprised of some 77,000 operations generates a combined US\$58 million in earnings annually (Hollaway, 1997). Box 2 profiles the case of Suriname.

Box 2: Suriname and Foreign Exchange

“The most direct economic influence of small-scale gold mining has been on the foreign exchange reserves. In 1994 the Central Bank of Suriname in an effort to increase the country’s foreign exchange reserves decided to buy gold. About 800 kg of gold was bought that year and 3000 in 1995, estimated to be about 25% of total production. With the gold purchase operation the Bank was able to stabilise the economy and the Surinamese guilder appreciated more than 50% against the US dollar in one year “ (OAS , n.d.:11).

Small-scale mining activity is of significant importance, given the exploitive nature of large-scale mines. As indicated by scholars such as Ross (2001), Pegg (2002) and Campbell (2003), large-scale mining activity, which is predominantly foreign-owned, repatriates the majority of revenues generated. The revenues generated by small-scale mining activities, however, are generally retained within the host country. A case in point is Ecuador, where an estimated 80% of income from small gold mining activities is invested in the country (includes royalties, income tax and added value tax), with the balance used to purchase machinery, spare parts and consumables from international markets (Sandoval, 2001).

3.4 Environmental

The combination of gaseous mercury released from gold amalgamation and toxic aqueous mercury discharged to streams and soils is the most serious environmental threat posed by artisanal and small-scale gold mining. During amalgamation, mercury is used to pan gold and is added to gold-aggregated sediments, which then “wet” and adhere to metallic gold, forming pasty amalgams. These are subsequently panned, filtered and burned to produce the final gold product. In the process, significant quantities of both gaseous and metallic (aqueous) mercury are dispensed into surrounding environments. The sector is also strongly associated with widespread land degradation. Typically, pits are not reclaimed, and previously-vegetated areas are not re-graded consequently inducing erosion and subsequent siltation.

While it is widely accepted that ASM causes environmental damage at a local level, some have argued that on a national level, the environmental consequences of ASM are not as widespread as most of the literature suggests. For example, Scott (2002), who evaluated two small-scale mining sectors in Zimbabwe (small-scale brick making and gold mining), noted that these practices contributed to deforestation, river and dam siltation as well as mercury pollution and land degradation but “in national terms these impacts do not present a major environmental problem for Zimbabwe.” (Scott, 2002:2). Similarly, staff at the Guyana Geology and Mines Commission (GGMC), who reported that there is no problem with illegal *garimpeiro* (artisanal) mining activities in Guyana as in Suriname and French Guiana (Veiga, 1998), have concluded, based upon extensive research carried out by CIDA, that mercury pollution from small-scale gold mining is not an environmental concern.

The point that needs to be made, however, is that whilst individually, a small-scale mining operation caused minimal environmental impact, collectively, activities are capable of widespread and significant degradation, as demonstrated in countries such as Ghana, Tanzania and Brazil, where ASM workforces number in the hundreds of thousands.

3.5 Multiplier Effects

If employment and income figures are extrapolated, it can be estimated that up to 100 million people worldwide could depend on ASM for their livelihood (ILO, 1999: 6). The greatest benefits at the local level attributed to ASM are therefore likely to be those related to the generation of new economic linkages or multiplier impacts within the local economy (Hentschel et al., 2002; ILO, 1999; Tan Discovery, 1996). As explained by Hentschel et al. (2002), small-scale mining communities are – with few exceptions – located in remote rural areas, where they constitute the principal source of economic activity, create complementary opportunities for national micro-, small- and medium size enterprises, and provide the required infrastructure to the miners and their families. There is potential in these areas for small-scale mining in these areas to have a domino effect on the local economy, with revenues being reinvested locally. This often includes food and water, accommodation, services (including transport), and luxury items. The sector has the potential to generate significant local purchasing power and create demand for locally produced goods and services (food, tools, equipment, housing and infrastructure).

However, there are questions regarding the nature of many ASM operations and the extent to which these new economic linkages will prove sustainable once activities decrease or cease in an area (Labonne, 2002). The extent to which ASM returns are effectively invested in creating more secure livelihoods is dependent on a number of factors including the distinctions of Weber-Fahr *et al.* (2002) of the underlying drivers of participation in the sector.

Weber-Fahr *et al.* (n.d.) have differentiated small-scale mining on the basis of maturity and the driving motivation for participation in the sector. They identify four categories:

- Permanent;
- Seasonal;
- Rush; and
- Poverty-driven.

These categories can be overlapping (i.e. poverty may drive permanent, seasonal and rush mining) but nonetheless form a useful typology. There is some evidence, albeit limited, that miners invest the income accrued from activities into additional mining (Quiroga, 2002), agriculture (Chachage, 1995), the hotel industry and service sector (Mwaipopo *et al.*, 2004) or into alternative income-generating activities, such as gem dealing (Walsh, 2003). Where this does not occur it may be for the following reasons:

- With 'rush' activities, a culture of consumption often develops around the mining, preventing productive investments in the local economy (Walsh, 2003).
- Where ASM operators are migrants there might be limited incentive to invest in an area in which they have no permanent stake. They might, however, be inclined to invest in houses or capital in their own place of origin (Godoy, 1988).
- Where poverty-driven ASM is undertaken on a subsistence basis and as a safety net. Labonne argues that there is unlikely to be the opportunity to save and invest in productive ventures (Labonne, 2002). However, we need to be careful in making such judgements, because it does depend on individuals, type of mining, and local circumstances and we simply do not have good socio-economic data on savings and investment for many AS areas of the world.

Where a booming economy develops around a rush-type mining activity, localised inflation brought about by the newly acquired high purchasing power of those involved in the mining, often poses extreme difficulties to those who are not involved in ASM (Hughes and Furamera, 1999). In addition, increased pressure on local services, such as water provision and health, which are in already scarce at best in many remote rural areas of the developing world, poses difficulties and becomes potential sources of conflict between the mining operations and the local, indigenous³ populations (Heemskerk, 2002).

Whilst a general conclusion is that there is "a lack of reliable regional and national socio-economic and poverty statistics to assess the real economic significance of the sector" (Labonne, 2003, 7), it is generally agreed that the socio-economic importance of the sector is increasing (Sotham, 2004; 5) and in certain environments, cannot be disregarded.

³ In this report, the term "indigenous" is used to mean 'originating from a particular region' or the long-term inhabitants of a region. This means that they do not necessarily belong to ethnic minorities (or majorities) who have ancestral rights to the land they inhabit.

4. Underlying factors and trends affecting livelihoods in the ASM context

Small-scale mining has been an important economic activity since the pre-colonial period (Holloway, 1997; Trung, n.d.). In Africa, the mining of gold and other minerals were cornerstone economic activities in most ancient civilisations (D'Souza, 2002). The colonial name of Ghana, the 'Gold Coast', aptly referred to the presence of gold (Hilson, 2001; Jackson, 1992). The widespread silver mining that took place during the Spanish colonial rule made Potosí one of the "largest and most prosperous cities in the world" (Quiroga, 2002:129 based on Braudel, 1979). Most Latin American and sub-Saharan African countries' historical trajectories are closely associated with artisanal and small-scale mineral development and exploitation (e.g. see Jackson, 1992 on Ghana or Klein, 1992 on Bolivia). However, the recent proliferation of large-scale mining activity in developing countries has clearly made the Government promotion and efficient development of ASM an issue of secondary importance.

4.1 Political Environment

Political perceptions and attitudes towards the ASM sector are central to progressive policy processes. To a large extent, however the industry has always been viewed politically as a marginal sector because of its geographic remoteness, rudimentary nature, association with the higher profile LSM sector, and Government and public perceptions of its significance in relation to other sectors such as agriculture.

The relationship between LSM and ASM is complex and reflected in the political attention afforded to the two sectors. The latter is often seen as inextricably linked to the former in a variety of ways (e.g. prospectors, existing land users,

Box 3: Ethiopian Trends May 1991 to July 1993

- "Change of government took place;
- A decline in the formal gold production led to flourishing of illegal gold mining in Ethiopia in general and an intensive gold-rush activity in Hayadima/Shakisso area in particular;
- Government's (AGDE's) contractual relation terminated and artisanal miners commenced working illegally on most accessible high-grade placer deposits and selling the product to any gold trader rather than to the government. It was reported that those days that price of gold varied from Birr 70-80 per gm and was much close to the international market. The income per head and an employment opportunity of artisanal miners were considered the highest.
- During the gold rush process, artisanal miners broke the rules and regulations in use, the "protected area" within the designated Shakisso/Hayadima areas, and there was no provision left to protect the proper utilization and conservation of mineral resources and the country's dwindling forest and wildlife resources; " (Ethiopia, AB&A, 2002,50)

trespassers, neighbours etc.). There are some examples of mutually beneficial interaction between the two groups (Davidson and Mendez, 2000; Hilson, 2001)

but in the majority of cases, relationships are strained, with conflicts resulting from dispute over control and access land and minerals (Chachage, 1995).

Political dimensions do much to influence the relationship between the parties (e.g. in Zambia, for example, the retrenchment of the established LSM mining sector has led to the identification of the ASM sector as a key alternative economic driver, which has led to its inclusion in the country's PRSP). In Tanzania, a relatively new and expanding LSM sector has, along with tourism, been identified as a driver of growth. This has, during the development of the immature LSM sector, reduced the progressive policy engagement with the ASM sector – often considered to be a nuisance to LSM development. In the Democratic Republic of Congo, a mining sector long dominated by LSM, has been decimated by conflict-tracking the country. As a result, ASM has become a significant economic activity post-Mobutu, in large part because of escalated poverty. As the level of conflict has reduced, the re-entry of the LSM companies is likely to require sensitive handling; the World Bank is currently involved advising authorities on possible strategies for mining sector reform.

A vicious circle of corruption and, in many cases, conflict, builds up around high-value gemstones in politically unstable environments. For example, in DR Congo, Angola and Sierra Leone claims over high value minerals have long been intimately associated with conflict. ASM and the illegal trading of gemstones has been associated with armed conflicts (Richards 1996; Renner 2003). Rather than being the engine for promoting sustainable development, ASM can in such context quickly become fuel for further conflict.

In an effort to stem the flow of “conflict” and “blood” diamonds, the Kimberley Process was launched in 2001. Composed of 43 participants, the Kimberley Process is a voluntary scheme that imposes requirements upon participants to certify that shipments of rough diamonds are disassociated with conflict. Although riddled with problems, including a lack of stringent policy and statistical inaccuracy, the initiative has been identified in many policy-making circles as an important step forward in eradicating the conflicts and warfare associated with the ASM sector.

4.2 Economic Reform

Chachage (1995) pinpoints the surge in interest in the ASM sector in Africa in the 1970s and 1980s, when large-scale mining virtually disappeared in some countries due to deep financial and economic crises and associated Structural Adjustment Programmes. In the 1990s, approaches to poverty-reduction driven by multilateral and bilateral donors, focused on providing an enabling environment for foreign and private LSM investment (Addy, 1999); often, this caused drastic staffing reductions (resulting from the privatisation of parastatals), stimulating the growth of the ASM sector (Hilson, 2002c; Jackson, 1992; Quiroga, 2002; Bocangel Jerez, 2002; Horkel, 1999; Wall, 2000).

For example, in Bolivia in the early 1980s, participation in artisanal mining accounted for only 32.8 per cent of the total mining labour force, but by the late 1990s, had increased to 85.5 per cent (Bocangel Jerez, 2002). In Ghana, there are now as many as 300,000 individuals employed in ASM channels, due in large part to privatisation of large-scale projects in the Tarkwa locality (after Aryee, 2003).

4.3 Environmental Change and Land (Population)

The seasonal involvement of rural dwellers in mining is largely shaped by the agricultural and rainfall cycles; any prolonged changes in the normal pattern will affect their ability to farm and mine (Drechsler, 2001). For example, as a consequence of prolonged drought in Southern African countries, Zambian farmers had no choice but to revert to mining all year round because they could not go back to farming (Drechsler, 2001). Zimbabweans were also driven to artisanal mining in great numbers as a result of drought (Hollaway, 1997). In Mongolia, where 55 per cent of informal miners are destitute or near-destitute families who lost their livestock, individuals are unable to make a living in urban areas in the winters and therefore resort to mining (Murray, 2003).

Conflicts between LSM and ASM usually come about because of contrasting views on land ownership – an issue that is by no stretch specific to LSM/ASM relationships. The way in which most developing world governments allocate land for wildlife, forestry and environmental conservation *vis-à-vis* "production" purposes often causes conflict, as does the distinction between land rights and mineral rights, which may be the subject of highly charged contestation between local people, state officials, and others such as LSM companies. This is the case in some places in Tanzania, such as one of the villages in the DFID-funded study (Mwaipopo et al., 2004), where miners were living within a forest reserve and access to mineral rights, land for settlement and water is in dispute (see also Leader-Williams et al., 1996). A similar problem is ongoing in the Ghanaian mining localities of Bibiani, Prestea and Dumasi (Hilson and Potter, 2003). In addition, miners and farmers are also often in conflict over access to land – typically, in cases where the miners are migrants (Tanzania, Tan Discovery, 2003,46; ILO, 1999). Access to key resources, such as water, also poses potential for conflict (as in the Tanzania example cited above; Heemskerk, 2002).

5 Institutional and Regulatory Frameworks

The institutions, policies and processes which influence livelihoods in the ASM sector varies significantly both from country to country and within different regional contexts. At the national level, ASM has rarely been a key government policy priority (a notable recent exception is Nigeria where the President himself has spearheaded ASM development), even where LSM is identified as an important contributor to GDP. ASM activities are apparently universally coordinated and managed by the Ministry of Mines or a related institution, which in most cases are in charge of regulation and management of the LSM sector. The extent to which the dominant/lead ministry interprets its role with regard to ASM (i.e. to promote and control?) is a product of a range of factors, including those discussed in the previous section.

In recent years, national Poverty Reduction Strategies Papers (PRSPs) have been a useful indicator of Government (and donor) sectoral priorities. While an increasingly significant livelihood strategy in many countries, ASM has been conspicuous by its absence in PRSPs (Box 4), which appears to have reduced the willingness or ability of policy makers to prioritise action/reform of ASM over and above other pressing needs and demands at a national level. The contentious nature of 'mining' has made it an area to avoid, particularly

Box 4: ASM and PRSPs

PRSPs are (currently) the key policy tool that set the priorities and focus of social and economic planning in most developing countries.

PRSPs are intended to be locally owned and shaped documents reflecting local priorities. Their formulation is a highly political and competitive process with budget allocations (including the prioritisation of aid) being dependent upon successful inclusion in the document. PRSP processes encourage research led evidence based decision making. PSIA's are a tool designed to facilitate this through in depth analysis of key poverty dimensions and are one of the vehicles by which progress towards PRSP objectives are monitored.

Few PRSPs in Sub Saharan Africa only mention ASM of these identify ASM as a key sector. While many of these documents are currently under review ASM is conspicuous by its low profile.

This might reflect a lack of political awareness and/or support for the sector and its subordination to the bigger and better represented sectors, e.g. agriculture. The recent DFID funded study in Ghana focused on two mining areas that had not been included in the Ghana Living Standard Survey (GLSS) – thereby excluding them from any entrance point to the PRSP. In response the study mimicked the PRSIA process. The National Development Planning Committee (NDPC), responsible for carrying out and assessing PSIA's and monitoring PRSP, sat on the committee structures and took an active role in the project and results had an entrance point to policy formulation at a high level.

In Zambia ASM is explicitly mentioned in the PRSP. As a result key policy objectives regarding the sector are prioritised, allocated and regularly monitored. As a result ASM becomes; the interest of a wide range of influential stakeholders; monitored at a national level (Zambia, MFNP, 2003). Possibly as a consequence of its inclusion in the PRSP the sector is supported by significant EU (\$m) and World Bank ((\$m interventions).

rush-type activities – a major problem for local and

national governments (also where LSM is associated with significant opportunities for corruption, this has spill-over in not wanting to finance ASM sector – one of the underlying issues in Tanzania).

At the local level, a range of different public institutions (often tiers of institutions) influence or are influenced by ASM policy. Local government-district assemblies (Ghana, Guinea) also influence land use and local development policy, although evidence suggests that grassroots tiers of government are under-resourced and have different priorities to those of central government.

Decentralisation, the process of devolving resources and power from central (national) government to more local structures, is a clearly defined developmental priority in many LDCs (particularly in sub-Saharan Africa). Decentralisation is seen as a means for ensuring greater accountability of government decision-making, putting governments in an improved position to address peoples' needs, and facilitating the increased participation of citizens in decision-making.

Attempts to decentralise management of ASM have tended to focus on regional mining bureaus/small scale mining centres deigned to carry out a range of outreach-type functions on behalf of central ministries. As seen in countries such as Ghana and Zambia, tasks undertaken by regional centres include ensuring compliance with legislation, demarcation of mining rights, collection of revenues, simplification of concession application procedures, monitoring production, and provision of technical advice/ support to miners (Fredrikson, 2003; MIME, 2002).

The impact of such institutions has been varied, however. In Zambia, for example, a recent report highlighted the unsustainability and 'paralysed' nature of the regional mining bureau, which is deprived of a means to meet its own costs on an ongoing basis with little incentive to collect revenue (Fredrikson, 2003). Similarly, each of Ghana's seven small-scale mining district centres is without adequate communication facilities, computing and staff (Hilson and Potter, 2003).

In addition to modern institutions of government, traditional institutions (Box 5) can often have equal or greater significance in terms of ASM policy-making. For example, in Ghana, it is recognised that “the most important institution in the community is the traditional leadership- the chief and his elders”. Traditional authorities also collaborate with the town development committee and the unit committee to plan and work on the development of community projects (Ghana, MIME, 2002, 31

Box 5: Malian Traditional Institutions

“Respect for the traditional organisational rules of activity and life on the sites is guaranteed by a body of institutions, including:

- the owner or Damantigi (literally chief of the mine), i.e. the person who first discovered the gold deposits. However, on the placers one must distinguish between the "Damantigi" chief of the land with the power of his ancestors and the "Damantigi" discoverer and owner of a well. It is essential to have the authorisation of the first (Damantigi chief) before attempting any activity on the placer.
- the agents of customary alluvial digging law or Tomboloma, as people chosen by the Damantigi chief for their knowledge of customs and their integrity. They function as judges on the placers. Their judgments are generally accepted by the parties in conflicts but appeals can be made before first of all the councillors, then the chief of the village and the administrative authority as a final resort. They are responsible for organising activity on the site, and they alone are authorised to grant access to the site.
- the committee of alluvial diggers, whose members are the Tonden.
- Any family or person wishing to dig latrines or a traditional well must inform the Damantigi who have the work overseen by the Tomboloma, ensuring it conforms with the standards defined beforehand by the village Council. Alluvial digging has existed in this village since its creation, which dates to before the battle of Kirina (1235) between Soundjata Kéïta and Soumangourou Kanté.”

“Outside of these traditional institutions, there is the Communal Council which holds routine quarterly meetings. The village authorities and the women are invited to each session for an account of the activities. The Council has a structure of four committees: finance, civil State, property and town planning.” (CAFPD 2002:18)

One of the first policy responses available to government is legislation. There is an increasing consensus about the need to regularise the industry in order to promote any meaningful development for those involved in it (Hilson, 2002a). However, national level approaches to ASM vary enormously, although it is widely recognised that formal recognition of, and legal reference to, the sector is a crucial first step toward their more constructive participation in the economy. An assessment of existing legislation helps to interpret government policy approaches to ASM but does not tell the whole story. The implementation and support of policy is perhaps more revealing.

In many countries, national institutional and regulatory frameworks relating to the mining sector have been established largely to respond to large-scale mining, and often do not take the particularities of small-scale mining into account. Some countries that have recognised and legalised ASM and have

provided support services for operators, have seen a marked increase in mineral output and revenue.

A number of countries (e.g. Columbia, Ghana, Guyana and the Philippines) have introduced environmental impact assessments (EIAs) specifically aimed at small-scale miners, in an attempt to reduce the negative environmental impact of these industries (Baluda, n.d.; Drechsler, 2001; Espinosa Bula, 1999 and 2000; Hilson, 2002c). Research, however, suggests that these are often financially and administratively prohibitive to small-scale miners and inappropriate overall. In Tanzania, *The Mining (Environmental Protection and Conservation) Regulations*, 1999, a part of *The Mining Act*, 1998, includes articles on a range of H&S, social and environmental protection issues (ECA 2002:54). Other promising initiatives include reclamation bonds, where a proportion of revenues from mineral sales should be put into a fund, with the intention of funding environmental reclamation efforts (Hilson, 2002e). The success of reclamation bonds is largely dependent upon the presence of efficient minerals buying agents, and payment of competitive rates for product.

The exploration and identification of mining land are key activities for the private sector while the demarcation of mining concessions is a key function of the state.

“An effective mining cadastre system is a prerequisite for an efficient administration of Regional Mining Bureaus and revenue collection from mining licensees and rights.” (Zambia,

Fredrikson, 2003). Cadastre are also key steps in clarifying the ownership and title of land tenure. Experts have also stressed the need for mining claims to be transferable and for banks and financial institutions to be able to accept mining claims as collateral (Barry, 1996). Given the resource constraints previously alluded to, the UNDP Ghana study suggests the use of “technical reports submitted by exploration and mining companies (to assess) potential small scale mining sites.” (Ghana, MIME, 2002, 59). One assumes this refers to ‘old’ technical reports no longer of use to private companies. Fredrickson (2003), however, also notes the futility of setting up such a registration system unless the capacity exists to monitor and update the use and ownership of land.

Box 6: Regularising ASM in Ghana

In Ghana, regulatory efforts saw a number of laws passed in 1989 with the aim of legalising artisanal gold mining (Hilson, 2002c):

The regularisation efforts are generally seen to have had a positive contribution to the ASM sector as well as to the country as a whole.

While a lot has been done to improve the ASM situation, recent evaluations have pointed out various challenges faced by the Ghanaian licensing system.

The procedure for obtaining a licence is long and tedious, various forms need to be completed and central government authorities need to give final approval (Hilson, 2001). The whole procedure can take close to a month at best while often lasting eight months to a year (Hilson, 2002c).

The allocation of land by Government to LSM (without due consideration from ASM participants, is perceived to leave AS miners with little option but to mine illegally (Hilson, 2002c).

6. Social organisation, networks and relationships

6.1 During the Production Cycle

The diversity of mining practices, type of mineral and location translate into a diverse range of organisational relationships. You could say here that in an unregulated sector this creates multiple opportunities for extreme exploitation. Most micro-level reports indicate that where there is no formal organisation, miners/diggers still organise themselves into gangs or groups of people in order to work a claim (Drechsler, 2001; Quiroga, 2002; MIME Consult, 2002). Whilst not *formally* organised and whilst skill levels may be poor, the activity itself can exhibit a notable degree of structure (Mwaipopo et al., 2004). In addition to financiers (who advances the capital to work the mine), claim holders and diggers, studies also identify, for example, the presence of 'pullers' on-site (a rather colloquial term). These are generally women "whose job is the drawing up of the ore from the bottom of the well, its transport and washing" (CAFPD, 2002). In fact, extensive empirical work (e.g. Heemskerk 2002; Aryee 2003; Hilson and Potter, 2003) reveals that within ASM regions, labour is generally divided and structured (transporters, caterers, machinists, washers, etc.) in order to maximise efficiency. There are many other 'jobs' that one could include.....but I am not sure what you are trying to say here??? There are also countless colloquial terms for financiers, diggers, miners, haulers, etc that one could use. Are you attempting to list the various jobs/roles during the mining/processing cycle?

Box 7: Diamond Mining in Ghana

In Ghana concession owners are owners of the land on which the mining activities take place. They may look for sponsors who pay for the cost of excavators hired to dig the deep trenches (please check....a great deal of activity around the Oda region is basically reprocessing of the old waste dumps!) within which the diamond-winning activities can take place. Some sponsors were previously concession holders who accumulated enough wealth and have therefore moved up the ladder. The last there is the operators (diggers) who carry out the day-to-day diamond-winning. They usually operate in a gang of not less than 5 members.

Proceeds are divided into three equal parts – one-third to the concession owner, one-third to the sponsor and one-third to the diggers. Diggers may, however, an amount of ₵500,000 (about \$65) to the concession owner (and/or the sponsor) for the allocation of a unit. (MIME Consult, 2002)

6.2 Between Miners

There is great diversity in terms of the organisational capacity of the ASM sector. Whilst in certain countries (e.g. Bolivia, Brazil, Guyana and Peru), there exists a thriving ASM cooperative movement, in others, there is minimal evidence of such formal organisational units. Again, the key to being able to organise is the right to mine legally (ILO, 1999). Those who are mining illegally are likely to want to stay away from local or national authorities rather than engage in any type of organisation, especially in countries where they face persecution, confiscation of their tools and/or fines. At this point, it is crucial, as Hilson and Potter (2003) have attempted to argue based upon findings from ASM regions in Ghana, to determine why individuals are operating outside of the legal ASM bracket. Is there sufficient land resources available, and do they have the capacity, skill and assets needed to register operations.

In some countries, there is a commendable degree of organisation within ASM sector. A case in point is Bolivia, where 70-90 per cent of small-scale miners are organised in some form of cooperative (ILO, 1999).⁴ Here, following the dismantling of the state-owned mining company COMIBOL in the 1980s, the number of miners working under cooperative agreements increased from 20,000 to 40,000 (Quiroga, 2002). In other countries, such as Guyana, small-scale miners have resisted attempts to organise (Hughes and Furamera, 1999) whilst in other, such as Ethiopia, the number of miners who are members of cooperatives has been declining, because they allegedly receive few benefits from their membership (Labonne et al, 2001b). In Guyana, the chances of forming cooperatives is remote due to the little trust between miners as crime and theft is common (Hughes and Furamera, 1999: the extreme remoteness of the gold and diamond sites in the interior away from the major towns of Georgetown or Linden and the corrupt nature and political aspirations of specific individuals who headed the national association that has also contributed to the failure of the associations).

In contrast, in Zimbabwe up until recent political upheavals in the late 1990s/2000s, centralised facilities already exist and there is a higher level of trust between miners, therefore presenting higher potential for miners to organise into cooperatives (this is also because small-scale mining has been something of an institution in Zimbabwe for over a century and the country had a credible step-up for SSM. Some 20 per cent of the 10,000 registered mining locations are worked by syndicates, cooperatives and private-limited companies (Hughes and Furamera, 1999).

Organisation of the ASM workforce is generally encouraged to facilitate better communication between the state and miners, and to improve access to technology that is beyond the budgetary means of most individual miners or families (Hughes and Furamera, 1999).

⁴ Here we should bear in mind that it is widespread for people engaging in economic activities in Bolivia to claim to be part of a co-operative, however this does not necessarily mean they are well organised in co-operative terms.

6.3 Relations between the Indigenous and Migrant populations

Migration is a central feature of the ASM sector. Whilst in certain locations, it is largely the indigenous population that is involved in ASM (e.g. long-established and mature mining areas), it is very common to have a mixture of indigenous and migrant workers at sites (Domalsin, n.d.; Liyo, n.d.; Walsh, 2003). It is the very nature of ASM that induces migration to begin with – both internally and internationally (Heemskerk, 2000 and 2002). Whether a large influx of population takes place rapidly, seasonally or over a longer time frame largely depends on the type of mineral being mined and the nature of the deposit, the time at which an area is discovered, its location, and estimated value. Construction minerals are, however, an exception, as they are often mined on the outskirts of big towns and as such do not attract large influxes of people (Drechsler, 2001).

Generally, the migrants to a new area have to negotiate their relationship with the indigenous community. Relationships can range from peaceful coexistence based on mutual interests (Davidson, 1998; Davidson and Mendez, 2000) to that of overt conflict (Chachage, 1995). The ethnic composition of these communities is, however, seldom explored in ASM reports (current work in Nigeria and DRC is sensitive to this). However, capturing this complexity is crucial to designing appropriate interventions (e.g. the influx of large numbers of people can throw the balance between population and provision of services such as health and water); competition intensifies for the limited number of services available (Heemskerk, 2002).

In Guyana, Hugues and Furamera (1999) argue that the indigenous Amerindian population is not interested (again not completely sure of this. I think it also depends on the area.....there are some gold areas in the Mazaruni area in Guyana where the Amerindians are now engaging in mining and many act as water-taxi captains, guides, guards or other service providers) in mining but they do resent the increased pressure on the availability and contamination of water resources (e.g. mercury pollution and siltation). In addition, the highly mobile migrant population does not usually have an interest in investing in the locality and often make do with very basic of living conditions, knowing that this is only a temporary arrangement. Once the ore is depleted and the migrant population moves away, the long-term residents are forced to deal with the negative socio-economic consequences of mining (Veiga and Hinton, 2002).

6.4 Relations between Men and Women

While references to women and mining are commonly found in the literature, there are few in-depth studies on the role of gender in ASM. Reports indicate that a large proportion of those involved in ASM are women. Geographical variations are, however, wide (Drechsler, 2002). Women are less than 10 per cent of those involved in ASM in some parts of Asia, whilst in many African countries vary between 50 and 100 per cent depending on the location and type of mining (ILO, 1999; Hinton et al., 2003b). In Burkina Faso, approximately

90% of mineral processing activities are conducted by women (Gueye, 2001): here, between 45,000 and 85,000 women work in gold mining alone and as many as 45% of all artisanal miners are women. Over 50% of Mali's ASM workforce is comprised of women, who carry out an estimated 90% of mineral processing activities (Hinton et al., 2003). In Mongolia, women make up 40 per cent of AS miners (Murray, 2003), and in Lao PDR, an estimated 80% of panners are women (Hinton et al., 2003). The lack of precise gender data notwithstanding, what is certain is that women play a much bigger role in ASM than in large-scale mining. Lack of attention to gender issues and limited social analysis mean that women are often treated as a homogenous group, whereas there maybe enormous social differentiation amongst women associated with mining in a given context. For example, some may be financing mining activities as entrepreneurs while others may be living in chronic poverty and driven to hard manual labour reprocessing tailings or ore crushing.

The sexual division of labour within the ASM sector varies from region to region. In many countries, women carry out what are perceived to be 'lighter' tasks, such as crushing, sorting and carrying ore (Zambia, Drechsler, 2001; Bolivia, Wall, 2000). In Ghana's small-scale sand-mining sector, women carry the sand while the men load the sand onto trucks and also work as drivers (Mensah, 1997). In Brazil, Sena do Nascimento (n.d.) describes three occupations open to women in the Oriental Amazon's "garimpo" areas: cooking, night club entertainment (e.g. sex workers) and machine owners.

In some contexts and types of mining women are limited to engaging in lower-status and lower-paid activities. This stems from a combination of cultural perceptions of appropriate work for men and women and issues regarding women's access to assets (financial, knowledge, time, labour) to engage in mining. In some cases, cultural norms are reinforced by legislation, such as regulation that make it illegal for women to work underground (Drechsler, 2001; Tan Discovery, 1996). Less direct legislation can also restrict women's participation and control over mining activities (e.g. the denial of legal title to land, or the lack of access to credit). Some countries have acted on these issues by changing their legislation to provide women with the same rights to working underground as men (South Africa, Ranchod, 2001), whilst others have attempted to enact gender neutral legislation. The efficacy of these approaches remains to be seen, given the deeply-rooted nature of male dominance in many societies.

6.5 Child labour

The involvement of large numbers of children in ASM is widely acknowledged and observed (Alfa, n.d.; Drechsler, 2001; ILO, 1999; Jennings, 1999a and b; Martinez Castilla, 1999). Whilst some children undertake mining activities after attending school or at weekends, others are involved in ASM full-time. Sena do Nascimento (n.d.) argues that the children's work in small-scale gold mining in Brazil is part of a family livelihood strategy, which parallels the socialisation process that is noted in Africa (see Labonne 2001). Mwaipopo et al. (2004) found that in gold mining communities in Geita, Tanzania, it could be both a

family livelihood strategy, mining being considered part of a particular lifestyle and a good opportunity for young people, but it could also be taking place where there is extreme impoverishment caused by family breakdown, with for example divorcees or elderly relatives dependent on children bringing in an income.

In Mongolia, the situation is slightly different due to the high level of importance given to educational attainment. Murray (2003) argues that whilst childrens' participation in small-scale mining is widespread (about 40 per cent of the total); the majority are involved in mining work strictly during their school holidays. It is suggested that absenteeism and school dropouts are a problem limited to the poorest of the child miners (Murray, 2003). The situation may however be blurred in rush type situations.

Drechsler (2001) reports on the use of bonded labour where child labour is concerned in the Tanzanian small-scale mining sector. Whilst there is very little information on bonded child labour in ASM elsewhere, this does not mean that such practices do not exist. This is one of the areas that in need of further empirical research in order to draw attention to one of the worst forms of child labour. Whilst child labour in developing countries is not restricted to ASM, it is likely that work in the sector exposes youths to a wide range of dangers, particularly health risks. Many handle mercury with no protection and the inhalation of dust has caused children as young as 14 to be diagnosed with acute silicosis (ILO, 1999).

7 Assets, capabilities and livelihoods of ASM miners

The livelihoods framework encourages policy research to reflect on the nature of people's wealth, and to understand the multidimensional nature of poverty and vulnerability. In addition to emphasising examination of economic dimensions, it encourages researchers to look at human capital (e.g. education and health), social relations, physical assets (e.g. houses, productive assets) and access to natural resources (e.g. water, wood, land) that contribute to individuals' well being. This section highlights some important livelihoods issues in greater detail. (E.g. see box 8).

Box 8: Livelihoods Analysis of Social Groups Ethiopia

A listing of social groups by assets shows that there are very poor (deegaa) better off (harka qal'aa) and rich persons in the community.

- The degaa or the very poor do not have property (land, livestock, a private dwelling, furniture etc.) except a meagre amount of income from their labour. Many live on alms.
- The dhaba or the poor have small huts, with mud walls and thatched roofs, less than two cattle (1 ox and 1 cow or 2 of one type), 2-3 goats or sheep, very small amounts of cash (10 Birr being a big amount for them). They sell firewood, prepare and sell charcoal, local drinks like Ferso and Katakala to augment their low incomes from farming or physical work. They do not have enough food during the rainy season and are vulnerable to starvation. They mostly subsist by working for households who are relatively better off.
- The average Harka Qal'aa or the better off households have the private hut, about four cattle, 2-4 shoats and perhaps a donkey. The households can produce or obtain food for own consumption but may be exposed to starvation during the rainy season, though not very severely.
- The rich among the farming population are said to have;
 - 2-3 hectares of land
 - their own houses mostly with mud walls and corrugated iron roofs
 - furniture
 - more than seven cattle
 - more than ten shoats
 - numerous chickens
 - two pack animals
 - more than 3 quintals of reserve crops (different types) in the house
 - more than 2000 Birr in cash

(AB&A, 2002,50)

7.1 Financial capital

Most studies imply that it is, in fact, the more wealthy members of the community that are better placed to take advantage of the opportunities offered by ASM. For example, in Bolivia that it was the landed members of the community that were able to engage in small-scale mining rather than the landless ones, who were unable to take the risks associated with employment in mining (Godoy, 1988). Similarly, in Ghana, a detailed poverty and livelihood analysis of three communities that were engaging in ASM (gold and diamond) found that artisanal miners were never at the bottom of the community's socio-economical hierarchy. Food crop producers, rather than miners, were systematically ranked at the lowest levels (MIME Consult, 2002).

"Alluvial digging is very important for us as it is more profitable than agriculture. It is thanks to alluvial digging that we are able to buy equipment, to get married. We capitalise on our earnings with machinery, building work, livestock and even in the bank". (Mali, CAFPD 2002; 16)

This is supported by evidence from Madagascar where miners earn per day what a farmer in the same area earns in a month. However, this does not automatically translate into sustainable well being, given 'daring' consumption behaviour (Madagascar, Walsh 2003).

7.2 Human capital

A number of studies provide insight on the wide variety of skills, levels of knowledge and experience found among participants in the ASM sector. Whilst, Hilson (2002d) describes many Ghanaian small-scale miners as having low educational levels and low technical know-how, Other studies indicate that ASM operators have above-average education. The retrenchment of former state

employees is seen to inject badly-needed skill to the sector (Murray 2003; Hughes and Furamera, 1999). Chachage (1995) also describes itinerant miners who have acquired specialist skills while working in the formal sector in the past and visit camps in order to offer their specialised services. These miners – drillers, blasters and sand removers, as well as specialists in gold recovery – obviously possess technical know-how and skills not available to the majority of those working in the ASM sector.

Issues such as health and safety, including the use of mercury; public health, including the high incidence of STDs and HIV/AIDS in mining areas as well as those related to outbreaks of contagious diseases such as cholera and malaria; and finally, access to health services are clearly central to the well being of those involved in ASM. In some places, the miners' life expectancy is significantly lower than that of the national average. In Bolivia, for example, a miner can be expected to live to only 48 years (Quiroga, 2002), and in Burkina Faso, where there is insufficient healthcare to deal with the growing HIV/AIDS problem, the life expectancy is 44.7 years (Gueye, 2001). Consider also, the following facts, which further put into perspective the need to begin tackling the AIDS/HIV problem in the mining sector with improved strategy (CASM, 2003):

- In South Africa, experts believe that the industry hardest-hit by HIV/AIDS will be mining, with studies showing infection rates from one-quarter to almost one-half of the country's miners.
- Zambia has a similar problem, where copper accounts for 75% of the country's export earnings, and 18% of the copper miners are estimated to be HIV positive.
- In Botswana, where diamonds account for 80% of export earnings and half of the government's total revenue, a third of the industry's employees are estimated to be HIV-positive.

The problem plagues both small- and large-scale miners.

Noise and air pollution through dust and blasting fumes are additional negative side effects of ASM, which adversely impact the health and the well being of miners, as well people residing in adjacent communities (ILO, 1999). Hentschel et al. (2002) have pointed out that in the context of mercury pollution it is sometimes a case where the miners themselves (because they work underground) are comparatively safer than the women and children involved in the processing and amalgamation activities. More research, however, on the health risks associated with women's involvement in ASM is required (Ranchod, 2001). Overall, health and safety issues in ASM have been highlighted as areas in need of urgent attention, especially in view of the fact that a large proportion of the sector is undertaken illegally and therefore not complying with any applicable health and safety regulations (ILO, 1999).

The use of mercury is one of the most worrying phenomena, given the ease with which it spreads in the ecosystems (Baluda, n.d.; Clemente and Lanticse, n.d. Lanticse et al., n.d.) through bio-accumulation, affecting the miners themselves as well as the communities that live alongside the water systems

Widespread concern exists about the impact of ASM on the spreading of the HIV/AIDS pandemic as well as other sexually transmitted diseases on household security (Labonne and Gilman, 1999; M'Pele, 2002). The combination of having a very young, and very mobile population has contributed to the increase of the spread of STDs as well as HIV/AIDS (M'Pele, 2002). Is it worth mentioned specific countries eg SADC region. In addition to STDs, ASM activities have also been associated with water-borne diseases as well as epidemics of cholera due to poor sanitation in mining camps (Drechsler, 2001).

Only a limited number of studies provide information related to the access miners have to local health services. It is safe to assume that in the majority of cases, access to health services is limited, given that the locations where most ASM takes place are equipped with poor services. In addition, miners who are not from the locality where they carry out the mining activity and/or work illegally generally do not register with health providers (Mongolia, Murray, 2003). In some instances, the dismantling of state-owned mining companies or in places where large-scale mining companies move out of a location, the health services that they used to provide cease to be available to the local population (Quiroga, 2002).

7.3 Physical capital

Physical assets, particularly housing, can provide a useful indicator of ASM and also of status within the community. In Ghana, the UNDP study identified two very different scenarios reflecting the nature of the relationships between ASM and the locality. In Mpatuom in the Ashanti region, where gold mining has a long tradition and is integral to livelihood strategies, "galamsey operators contribute to development levies and they are also able to put up houses that become beneficial to the community" (Ghana, MIME, 2002, 38). In Bompieso, however, where migrant miners dominate, ASM tends to occur in poor conditions and its participants invest income in their source rather than host village.

Some artisanal and small-scale miners use only very basic technology – a shovel, pickaxe and pan. Many, however, also use more complex methods for extracting ore, crushing and separation. Despite this, the technology miners use is often seen as inadequate. It is because of this (and more implicitly because of the orientation of many development interventions) that technological improvement is for some intervening agencies seen as the key to improving ASM from the following two points of view: i) environmental protection and ii) productivity.

Many organisations have attempted to address the technical issues in the ASM (Bugnosen, 1995; ITDG, 1990 and 1996). Some have suggested that the technology used by large-scale mining companies can be downscaled and adapted for use by small-scale miners (Hinton et al., 2003a). However, in order to do so, the following barriers must be hurdled:

- Resistance to accepting new technologies – This resistance is usually based on a perceived problem with the new technology. In Bolivia, miners were dissatisfied with the use of mercury-saving retorts for gold recovery because of the higher perceived gold ‘quality’ obtained with the use of traditional methods (Bolivia, McMahon et al., 1999).

“Despite being an ancestral and apparently organised practice, the defining characteristic of gold mining is the absence of technology, conveyed in the poor materials used; this shortfall can only be linked with the lack of funding. A natural consequence of this situation is the harmful effect on the environment, the condition of women and children and health in general. One must recognise that this activity, despite its lack of productivity, is beneficial to everyone. It also fits perfectly with the traditional mindset of a population that favours group cohesion and survival.” (Guinea, EUPD 2002; 16)

- Remoteness of operations – ASM operations are often far from urbanised or other rural settlements. They are often difficult to reach, making any outreach service very time-consuming and expensive (ILO, 1999).
- Illegality of operations – Many miners operate illegally. They might therefore distrust outsiders until a suitable rapport is built (Hinton et al., 2003a; Veiga and Hinton, 2002).
- Lack of attention to institutional issues and politics (Box 9)

Box 9: The Shamva Mining Project

The Shamva Mining Centre (SMC) project in Zimbabwe is a well-known case study for illustrating the successful introduction of improved technologies but a lack of attention paid to institutional factors undermined the sustainability of the function. The SMC started by providing milling services to small-scale gold miners in the region. It then started expanding its operations by providing training and extension services to the miners. At its peak, it provided milling services to 400 customers, covering an area of 200km and it created 30 jobs. Managerial problems and financial misconduct prevented the project from becoming independent and self-financing. From the technical point of view, however, the centre proved to be very successful, building up trust with its clients and improving miners’ efficiency (ITDG, 1990; ITDG, 1996; le Mare and Everitt, 2001)

7.4 Natural capital

ASM and agriculture appear to be inextricably linked. In some cases, ASM activity complements and supplements the dominant agricultural sector seasonally. In others, the increasingly- significant ASM sector is seen as a response to declining agricultural prices, droughts or depletion of natural resource stocks. Additionally, competition for land between ASM and agriculture is commonplace.

Land conflict, however is not only a result of mining, as demonstrated in Guinea, where “the kind of acute, permanent conflict found in Worokoro is that between agricultural farmers and those rearing livestock.” (Guinea, EUPD, 2002). The Mali study provides useful insight into how communities can manage the activities of mining and agriculture effectively. It was reported that, “alluvial digging seems better-regulated here: ‘In the commune, the village patriarch decides, through consultation with the site leaders, the periods during which the populations may access the placers with a view to respecting the agricultural calendar” (Mali, CAFPD, 2002; 21). This is also the case in Tanzania:

“With the emergence of the artisan mining, it has been observed that the village youth have concentrated on the mining sector, neglecting the agriculture sector. The elderly and women are left to man this sector. The PRA team observed that fruit trees, especially the citrus trees were drying and there were very little planting to replace the dying trees” (Tanzania, TAN Discovery, 2003, 19).

“The new gold rush in Amani, Tanga, September 2003, has seriously affected the tea plantations production of Amani as most casual labourers join the gold rush fever.” (Tanzania, TAN Discovery, 2003, 62)

There have been few comparative studies in terms of the environmental consequences of different types of activities in the context of ASM. For example, few studies compare pollution caused by ASM with that of large-scale mining, capital-intensive farming or other industries, such as the textile industry. Similarly, most studies on the environmental consequences of ASM focus on the local level and rarely discuss its importance nationally or on the global scale (see earlier comment on the environment!). Studies, however, remind us that environmental damage is not only likely to be the result of mining activity. For example, in Mali, the deterioration of the environment is brought on by the following (CAFPD, 2002):

- Excessive tree-felling, especially in the villages of Sélofara and Namagana; is this for firewood for mining communities?
- Forest fires
- The effects of alluvial digging on the reduction of surfaces suitable for agriculture, and the drying-out of rivers, placers being most often situated around the banks of watercourses;” but this is caused by mining
- Seasonal movement of animals

7.5 The Vulnerability Context

ASM is undertaken to make a living and to increase individual or household security. Whether involvement in ASM can contribute to the long-term household security depends on a range of factors: the type of ASM being undertaken, whether labour relations are exploitative, the number of household members involved, relationship to other income generating activities at household level, etc. When an entire family is involved in ASM, it may be a survival strategy undertaken as a short-term solution to pressing needs (Quiroga, 2002). On the other hand, it may be part of a way of life and occupational identity for particular groups of people who have been involved in the activity for generations.

In terms of household security, rush type of migration raises concerns for (i) the family they have left behind (Hugues and Furamera, 1999) as well as (ii) the impact this will have on the households of the area where the rush-type mining has developed (Walsh, 2003). Concern has been raised for the high levels of consumption by miners in rush-type areas, especially on short-term “daring consumption” (Walsh, 2003) leisurely pursuits, such as alcohol, drugs and the provision of sexual services (Drechsler, 2001).

More mature and established mine sites appear to offer a more secure environment for citizens. In Mali, for example, citizens of one particular village were described as “pure blood” alluvial miners who were less reliant on agriculture, and had stronger social ties than more recently established mine sites (Mali, CAFPD, 2002). Identifying and understanding the drivers for people’s participation in the ASM sector helps us to shape and target interventions. Those driven by poverty with declining livelihoods options, for instance, are unlikely to countenance saving and investment in new technologies; survival is their key objective. In this case, perhaps social protection programmes or basic health and safety advice would be a more appropriate intervention. It is the small, legal ASM activities – those coping or improving livelihood options – that appear to present the most appropriate opportunities for strengthening household security. This type of mining is more likely to be stable and able to harness technical support.

8 The differential capacities to claim rights and entitlements in the ASM sector

The extent to which research and development interventions have actually engaged with miners and encouraged their participation in policy processes/decision making is unclear. However, much of the research implies that this has not taken place widely, and the relationship between government officials and miners is typically characterised by ‘top-down’ decision-making in which people have little say over actions that affect their lives.

As regards rights issues, there is an unhelpful discord between research and policy and casting little light on the capacity of miners to exercise “voice” and to claim their rights and entitlements. Also, more broadly, perspectives on

technology, health issues, environment, and legal considerations that have dominated ASM studies do not work from a rights approach.

Hilson (2002c) describes in great detail the problems ASM operators can face, even in countries where efforts have been made to legalise and regulate the sector. In Ghana, the government allocated larger-than-necessary (is this claim of 'larger than necessary' based on technical facts or hearsay. The mining cycle for prospecting, exploration to mining involves decreasing concession areas. When companies initially seek a prospecting licence they do not know the economic potential of the ground and hence need a larger areas in order to gradually 'home' in on a sufficiently rich ore body most mining legislation now explicitly states that a proportion of the licences (exploration/prospecting) has to be released each year in order to free up land!) tracts of land as concessions to large-scale mining companies; some 70% of Tarkwa, for example, is now under concession to large-scale mining companies (Aubynn, 1997). There is very little land available for ASM (yes - this is a problem and the Minerals Commission are attempting to determine ASM suitable areas of land now released by the companies) who are then forced to mine illegally on the large-scale concessions.

It is clear that being in a legal position contributes positively to the miners' ability to organise and to pressurise governments to act in their interest (ILO, 1999). However, as the examples in the previous section suggest, whether governments want to 'address these concerns largely depends on their own perception of the issues and relative benefits involved. Until governments are convinced of the benefits of supporting their ASM industries, they are bound to favour other sectors of the economy, such as agriculture or large-scale industry. In such cases, ASM will have little scope for influencing government actions.

With weak representation, some miners (particularly those in the informal/illegal or those at the bottom of the operational hierarchy, e.g. diggers) have relied upon outspoken and high profile campaigning groups to fight their corner. Lack of formal representation and pathways to policy may encourage groups to adopt extreme positions and it is notable that national media discussions on the subject may be highly polarised. Again, we can refer to categories within ASM community to try and improve understanding of who is capable of voicing concerns and needs, and who is less likely to be heard: those engaged in ASM for survival are less likely to be in a position to be heard, whereas those with improving economic opportunities are likely to be more mobile and able to attend meetings in the capital city to voice their concerns.

9 Key Challenges

As a sector, ASM has often been marginalized geographically and politically, and a key question today is whether this situation is changing. The very low profile of the sector in national development plans is both a cause and effect of this. Research into the sector does not suggest that the poverty encountered in ASM is exceptional and although one can witness enormous inequalities and exploitation around mining sites, features such as gender inequality, child labour and the lack of access to basic rights and entitlements are in no way unique to ASM.

The sector does appear, however, to be exceptional in terms of the vulnerability it has the potential to create, as in the case of health and safety, the uncertainty of the mining activity itself and the nature of 'life' in 'rush or short term mining communities. Ensuring that this vulnerability (and the economic potential of the sector) is recognised in national development plans is crucial if the potential of the sector is to be realised. In this respect, to create more constructive ASM policies we need to meet a number of challenges.

A key challenge is the *Challenge of Exclusion*. Perceptions of ASM are varied but perhaps the most prevalent is of an activity that is a nuisance to be controlled or a sector that is part of the 'rich' mining sector and therefore not to be prioritised in developmental plans. This is explained in greater detail in the following passage:

"Individuals in position of political or economic influence tend to be negatively biased towards artisanal mining and may manipulate public perception about the activity for their own gain. Thus, government policies do not effectively address the realities of artisanal mining." (Veiga and Hinton, 2002:23)

Lack of real and accountability data on the significance of the sector at local and national level is a handicap to a more positive or constructive attitude to the sector (Hilson, 2000c). "Indeed an examination of the 2000 Census data would indicate that even in communities where there is a high prevalence of artisanal mining, most people are classified as food crop farmers. " (Ghana, MIME, 2002:12)

Evidently a key challenge in this regard is the *Challenge of Perception*. Central to changing perceptions of the ASM is the provision of clear research- based evidence that elucidates the role of AS in income and employment generation at the national level, and which captures the heterogeneity of ASM sector both between and within countries (AB&A, 2002; 83) and communities/households. Unless the diversity and complexity of the sector is understood and generalisations are avoided, policy initiatives will be misconceived, inappropriate and ultimately, ineffective. What works in one context will not necessarily work in another. For example, policy solutions deemed appropriate for small-scale gold mining may not be suitable for small-scale diamond mining.

Similarly an understanding and disaggregation of the organisation of mining activities and associated labour relations, identifying the most vulnerable groups in a given context, is crucial to the design of targeted policy interventions (whether social protection or economic development). The target group for a social protection intervention, for example, is likely to be very different to that of a loan facility. Equally, knowledge of the scale and prevalence of mining operations, together with an assessment of assets and vulnerability, might be crucial in deciding what level of loan to offer or surety to demand. There is, therefore, a need to recognise and meet the *Challenge of Diversity*.

While gender inequalities are clear in many ASM environments, it should be noted that the causes of this inequality are likely to pervade gender relations across society – not just the ASM sector (World Bank 2001). Child labour is also not a phenomenon distinct to the ASM sector. Agriculture, textiles and manufacturing all have considerable child labour issues. A range of factors (cultural norms, economic imperative, etc.) determine children's participation in work. As such, "solutions" are likely to be beyond the scope of the mining sector alone and will require broader action.

Indeed, many of the manifestations of poverty /vulnerability are not exceptional to ASM. Most of the approaches to ASM, however, appear to have been created on the premise that ASM is a distinct/exceptional and isolated activity. Keeley (2001) refers to this as a common problem of how boundaries are drawn around poverty challenges. As a result, most interventions have been relatively one-dimensional addressing technical, economic and/or environmental issues and working through sectoral mining ministries. Defining the ASM challenge requires us first to be clear about what it is we are addressing and who is responsible for meeting these challenges.

We cannot expect, and should not expect, a Ministry of Mines (with inevitable resource constraints) to address all aspects of poverty in ASM communities. Equally, while LSM has obligations to the state and communities in which they operate they cannot be expected to ensure equitable social development for ASM communities; that is not their role. One of the key challenges is to mainstream the ASM sector to ensure that other actors understand their obligation to citizens involved in the ASM sector/communities. By compartmentalising ASM as a mining problem, we risk the further and continued marginalisation of the sector. This, in turn, reinforces a lack of accountability amongst other state (and civil society) actors to deliver a range of entitlements. There is therefore a key need to be clear about stakeholder roles and responsibilities amongst actors and ensure a coherence of policy and governance across sectors and create structures that facilitate this; there is, therefore, a *Challenge of Institutional Accountability and Integrity*.

Regularisation is seen by many as a crucial first step toward addressing the needs of the sector and as long been called for by those working in the sector. Regularisation would not only facilitate improved planning but would also make it easier to collect data on ASM activities.

Whilst the provision of supportive and appropriate legislation is a key first step the capacity to support this legislation and a constructive and practical approach to ASM is equally, if not more, important. Regularisation is not enough, as hinted in the following passage: *“As the industry (ASM) is essentially impossible to regulate it needs to be managed rather than legislated”* (Tanzania, Solomon, 2003, 2)

Inaccessible and stringent legislation without empathy for the reality of ASM livelihoods can be counter-productive. Legislation and its ‘practice’ must be appropriate to the realities of ASM livelihoods and the capacity of staff to manage and enforce legislation. Effective legislation demands good analysis of those it aims to embrace and the clear identification of incentives that respond to their context, needs and aspirations. For example, in Mali, “in the village of Faboula the inhabitants were relieved of paying their local taxes due to the income brought in by alluvial digging” (Mali, CAFPD, 2002; 19). Creating a “basket of incentives” and appropriate administration requirements is crucial to meet *The Challenge of Regularisation*.

Like other development sectors, ASM is littered with examples of unsustainable interventions. Projects or interventions fail for a large number of reasons. Mostly, however, they fail because of the approach taken in designing and implementing the intervention rather than the type of intervention *per se*. The available literature suggests that many of the interventions that have aimed at improving the technology available to ASM operators have failed because the needs and concerns of miners were not understood or the interests of ASM was secondary to those of the government and outside ‘experts’, who conceive and manage the interventions (Hinton et al., 2003a; Veiga, 1997). As noted in the Mali study: *“Examination of the experiences up to this point show that most of the aid projects in this region have favoured technical aspects at the expense of the populations’ social needs, without considering the deeply-rooted character of traditional alluvial digging within the social consciousness.”* (Mali, CAFPD, 2002).

‘Process’ is a term used to describe how a project or intervention progresses through its cycle. It suggests a fluid rather than mechanistic approach reflecting the accepted non-linear, political and incremental nature of policy formulation and implementation. As such, ‘process’ encapsulates much of ‘how?’ aspects to approach policy reform.

To maximise the chances of sustainability it is widely recognised that a process must be:

- **Locally-owned and driven.** Projects have a much better chance of survival if local stakeholders are committed to its aims and are involved in all stages of design and implementation. Participation encourages ownership and with it, a sense of accountability for project outcomes. Local ownership has profound implications for the nature of external assistance. This has to be far more about facilitating process of dialogue and partnership (stakeholders

with equal stake, sharing risk and rewards), rather than imposing solutions on recipient institutions/countries.

- **Informed on robust research data.** Increasingly, it is recognised that policy change needs to be based on robust, and transparent research data that ensures that a link is made between micro realities and macro policy. This helps to tailor policy but also to legitimise it. Research can play a valuable role in articulating the needs and aspirations of ASM operators. Much of the research, however, has not provided a perspective on miners' needs. There is also an apparent disjuncture between research and policy. Research that is not linked to policy reform can undermine the 'process', thereby reducing the credibility of policy. It may as a result create research fatigue and result in reluctance to participate in the future. Research processes must be seen to be integrated to policy processes and not separate. Building trust between ASM operators and the policy process (of which research is a crucial part) is a key.
- **Must be strategic and link to other key policy initiatives/sectors.** Isolated initiatives rarely have impact on deep and complex poverty issues. Projects must seek leverage and establish synergies with existing policy process and projects. Scaling up influence is crucial in creating a critical mass of activity (e.g. "Constituencies of advocacy") that are likely to be significant enough to stimulate change. Again, this has implications for technical assistance, requiring staff that have the skills and desire to work with others rather than plough a single furrow.
-
- **Build on existing capacity.** Seeking out local stakeholders ("Drivers" or "Champions") or institutions that are committed to change is vital. Without the basic commitment, the chances of projects being sustainable beyond the project timeframe is minimal. Where possible, utilising existing institutions or institutional mechanisms is necessary. This can save duplication, help to raise capacity and ensure less reliance on new funding.

Such processes have significant resource (e.g. human and financial) implications. An awareness of local human and financial resources will be crucial (Ethiopia, AB&A, 2002; 146; Labonne, 2003). Whilst technical expertise and knowledge (e.g. livelihoods, mining) can be crucial, it is the skills of supporting and facilitating a local process that are most needed. This is likely to be a labour-intensive and, therefore, costly task. Identifying key individuals who have the commitment and power to help ensure sufficient resources are allocated to the intervention and any project must be designed to ensure that interventions can be supported post external funding. Here we see the central importance of the *Challenge of Knowledge Building*.

The issues of process, finance and human resource capacity are central to meeting *the Challenge of Sustainability*.

In summary, research suggests that creating a more progressive ASM policy environment requires the following six key challenges to be met:

- *Challenge of Exclusion/ Marginalisation;*
- *Challenge of Perception;*
- *Challenge of Diversity;*
- *Challenge of Institutional Accountability and Integrity;*
- *Challenge of Regularisation;*
- *Challenge of knowledge building;* and the
- *Challenge of Sustainability.*

10 Meeting the Challenges

Having identified some of the key challenges preventing a more progressive ASM policy environment we need to move to answer the question of "How do we meet these Challenges?" As the sector has become an increasingly significant livelihood strategy in many countries, there is clearly a need for ASM policy to move from reactive to proactive. This section of the report offers examples of initiatives that would be consistent with the principles identified earlier. These broad suggestions need to be premised with the warning that any intervention needs to be context- specific and based on a commitment to a robust process.

Sustainability is clearly crucial to the success of any intervention. Funding a short-term unsustainable intervention - such as this present ASM project - can be counter productive and exacerbate inequity and vulnerability. Unless process, human resource and financial dimensions are adequately considered any intervention, however, well meaning will not be sustainable.

In a people-centred development process, how interventions are made should come before and determine the identification of the intervention you conduct. Any intervention must be embedded in a locally-owned institutional mechanism, and have minimal reliance on external funding and support. It is key that the intervention is seen to emerge for local stakeholders. The following framework policy interventions are true to these principles.

Raising the profile of ASM in PRSPs is crucial to attain funding to respond to the many challenges of the sector it is therefore currently the key to overcoming *Exclusion* from the sector. PRSPs are generally the result of a long process of negotiation between politicians, civil servants, civil society, donors and other stakeholders to decide which of the pressing needs will be prioritised and therefore benefit from increased funding. Ministries usually present papers to the coordinating body stating their claim. Since much of the responsibility from ASM currently resides in the Ministry of Mines, presenting a clear case for the inclusion of ASM on poverty reduction grounds can be difficult in the shadow of the often-dominant LSM sector. Supporting the Ministry of Mines to prepare a PRS submission, highlighting the reality of the ASM sector from both economic significance and poverty reduction perceptions, of the sector, offers a clear policy intervention option.

PRSPs demand robust micro level research encouraging awareness of the diversity of livelihoods and needs within the sector. PSIA are the key tools by which PRSPs are monitored. Carried out periodically, they tend to focus on specific issues of interest to the government or funding agencies (e.g. in Ghana, the PSIA process focused on vulnerability, impact of fertiliser price increases, impact of petrol price increases). Whilst normally focussed, they contribute to broader insight into the success of PRS policies.

Funding a PSIA that focuses on ASM has the potential to raise the profile and understanding of the ASM sector. The emphasis on the combination of qualitative and quantitative data would help to provide voice to those involved in the sector disaggregate the sector and provide a high level entrance point to macro level policy. The Ghana livelihoods study highlighted the fact that ASM areas – particularly new ones – were absent from the national household living standard survey. This made these communities virtually invisible to policy makers.

To ensure that the growing body of data related to the sector inform policy creation effective communication pathways to policy makers need to be created. This is particularly relevant to the ASM sector, which suffers, by association with the ‘rich’ mining sector (dominated by LSM) and of negative perceptions of environmental impact.

Creation of a fund (or ideally, a specific funding stream within an existing fund) supporting ASM advocacy make an important contribution to perceptions of ASM and help to further address their exclusion from the mainstream poverty reduction debate. Similar funding mechanisms have been established in a variety of countries in different sectors (Box 11), with the aim of addressing weaknesses in the demand side of policy creation or the creation of “constituencies of advocacy”.

Box 11: The Ghana Research and Advocacy programme (G-RAP)

G-RAP is a multi-donor pooled funding mechanism for supporting institutional development of Research and Advocacy Organisations (RAOs) in Ghana.

It will strengthen the institutional capacity and the autonomy of RAOs to engage actively in the policy process and to advocate on behalf of the poor and socially excluded in Ghanaian Society. (DFID Project Memorandum, 2004.

The sector’s political marginalisation and exclusion from poverty debates is a result of the narrow way in which the problem has been defined and perceived. These dominantly narrow perspectives need to be challenged. Ministries of mines cannot alone address the poverty encountered in the ASM sector. They have neither the human or financial resources to do so. They clearly play an important role but need to coordinate their activity with other actors from the public sector (Ministry of Agriculture, Health Education), civil society (NGOs), private sector (e.g. LSM) or development groups.

Facilitating discussion and coordinating cross-sectoral action on ASM will help to move from a narrow to a more holistic and deeper understanding of the sector. The creation of (or support for) cross-sectoral institutional mechanisms is an important step. These mechanisms could be constructed at a national and/or local level to help raise the profile of ASM in sectors that have traditionally avoided engaging with it, and as a result, help to increase institutional accountability.

Facilitating and/or supporting such local or national institutional mechanisms may initially be labour intensive but once up and running and showing value such forums have the potential to operate effectively without the need for external funds. Helping to create bridges between local and national mechanisms is, however, a key factor in ensuring joint up thinking and that micro level realities inform (and possibly drive) national policy responses. Such linkages can be created through the participation of representatives of the local group on the national committee of the establishment of a locally-owned monitoring system the results of which feed formally into the national committee discussions.

Regularisation creates particular challenges to policy makers. At the crux of the challenge, is the need to create significant incentives to encourage illegal or informal miners to move to a more regular and controlled/monitored activity where this is permissible. Where alternative livelihood strategies are not available, and where there are few incentives to operate within the legalised bracket of industry, clandestine activities will flourish – typically, in different or less secure locations. Creating a basket of incentives requires imagination and resources. It also likely requires the development of mechanisms, whereby some of the revenue generated by the mining activity can be clearly and transparently returned to mining communities. Developing transparency and trust between government and miners is vital. The DFID Extractive Industries Transparency Initiative is helping to develop transparency and accountability of relationships between LSM and governments; expansion of this scheme to ASM could be equally effective. A pilot project in an ASM community to display transparent use of funds would help to provide information to encourage the participation of local stakeholders in the mining policy process.

Greater cross-sectoral collaboration will help to ensure that a move to a more regular/formal mode of production will yield greater access to a range of entitlements. Creating a locally-managed fund that can directly yield benefits for miners and mining communities is a key:

“The companies and people making a business of mining production must, in each artisanal mining area, build up a fund based on their annual and periodical business total, in order to support the first two strategies (local community empowerment/literacy supporting alternative livelihood strategies) for combating poverty”. (EUPD 2002)

Setting up such a fund and locally accountable institution fits well with the process of decentralisation that is a priority within many developing countries. Decentralisation in the ASM sector must involve central government accepting that a proportion of revenues (perhaps incremental revenues) are controlled locally – thereby contributing to the transfer of power closer to the ASM mining activities themselves.

A policy that helps to ensure that funds are retained in the area in which they are raised can/could contribute to increased accountability and transparency, create resources to support, for example, regional mining bureaus and thereby provide an incentive for miners to pay and mining agencies to collect tax. Piloting a mechanism by which a percentage of incremental income from increased regularisation of ASM can be held and managed locally would be a major step towards the facilitation of a more regularised sector. How the fund is dispersed or utilised would clearly reflect local priorities (e.g. in Mali).

“in their plans for communal development, Balan-Massala and Nougou emphasise the opening up of their regions, the communes of Goundiaka and Wassoulou-Balle on the other hand will favour dietary self-sufficiency, the intensification of intra- and inter-communal exchanges and the reinforcement of educational and socio-sanitary structures to improve their populations' living conditions.” (Mali, CAFPD, 2002, 29)

Creating a new institutional mechanism (or ideally identifying an existing mechanism such as the district development committee) to manage the process is crucial. This organisation would have to:

- be representation of a range of sectors, perhaps including miners' representatives, the public sector (health), etc.
- be able to present a range of incentives for ASM participants to seek more regular existence (this may require pump priming prior to increase in revenue)
- create a progressive and pragmatic path to regularisation (i.e. adopt appropriate administrative and technical requirements – linked to capacity of mines)
- extend benefits to miners and non miners alike
- be transparent and accountable for decisions taken and financial management (e.g. through the publication of income budgets and initiatives funded)
- create incentives beyond the revenue generated by increased regular ASM activities, including.
 - access to range of government services/development projects
 - lever funds from LSM – (The participation of LSM in such a local development forum would encourage LSM to consider its responsibilities beyond its concessions. This is wholly consistent with current perceptions of good corporate citizenship and would seek to gain a percentage of the LSM social investment budget and mainstream it within wider development priorities (Tanzania, TAN Discovery, 2003, 77; Ghana, MIME, 2002;58)
 - information on rights and entitlements

The organisation would be required to highlight the value of policy initiatives focusing on the mechanism by which funds can be captured and intervention/ investment decisions made.

As the benefits of regularisation become increasingly evident, it is hypothesised that more individuals will be attracted from informal to formal sector, thus increasing revenue available locally and therefore increasing further benefits accruing. Once sufficient emphasis is placed on the institutional mechanism, reliance on external pump priming should be reduced and the sustainable future of the initiative governed by a stakeholder led business plan. When local institutional mechanisms have been established they can then prioritise what initiatives to fund. These initiatives could be drawn from a menu of identified options, including:

- Credit provision
- Retorts
- Agricultural advice
- Training skills
- Small enterprise development support
- Provision of technical advice
- Access to technology
- Support to mining groups / unions / associations

A focus on policy suggests maybe examples of real success of this approach from other sectors may help to justify this claim) an emphasis on addressing the causes of poverty rather than the symptoms. Policy is often slow, resource intensive, unpredictable and challenging “haphazard, slow and incremental”, and initiatives aimed to assist progressive change policy clearly have no guarantee for success. Given the impoverished conditions within which many participants in the sector live, it is imperative to respond quickly and address the manifestations of poverty. There is clearly a need in cases where those involved or associated with ASM suffer extreme vulnerability or chronic poverty to create policies that ensure social protection.

Many core aspects of social protection – food provision, health and education – fall outside the remit of ministry of mines. In this situation, the creation of cross-sectoral institutional mechanisms can help to raise awareness and understanding of the diverse ASM sector. Moreover, identifying local mechanisms to incentivise the regularisation of the sector will also help to ensure that other actors are increasingly aware of their responsibilities in protecting the most vulnerable – institutional accountability.

“Partnership Forums’ need to be established at regional and Woreda levels. Such a partnership should include CBOs. The forum at all levels will, among other things serve as platforms to discuss and address problems, constraints

and achievements related to the development of livelihood in artisanal mining. They may also be used to mobilise and distribute resources (AB&A, 2002; 175).

Ministries of mines must also assume a leadership role if ASM is to be regularised. Facilitating a proactive plan to deal with 'rush'-mining situations (with other sectors) should be a priority. Providing basic and appropriate information and assistance on health and safety (regardless of the legal status of miners) should also be placed high on "action" agendas. Utilisation of local development institutional mechanisms (ASM committee, district development committee, NGOs) might provide useful entry points and delivery mechanisms. If engaging with 'illegal' mining activity, it may be more appropriate that this service is provided by a NGO or other CSO.

There is clearly a wide range of policy-focussed initiatives that could be followed. Which one is the most appropriate to a specific context is likely to emerge from a process of stakeholder mobilisation and consultation. A commitment to the principles of successful policy engagement in the sector is most crucial. Getting the foundations for effective policy is the next step. This involves gaining a better understanding of the sector by disaggregating its participants (to ensure effective targeting of any intervention), effectively disseminating the realities of the sector (helping to address the challenge of perception) and then developing sustainable and multi-sectoral institutional mechanisms that can help to develop progressive ASM policy. Addressing these priorities will help to mainstream ASM in wider development and social protection policy environments, and provide the foundation on which the informal ASM sector can be managed and the formal sector monitored and encouraged.

	Policy Intervention	Meeting the Challenge of
1)	Supporting the Ministry of Mines to prepare a PRS submission.	<i>Exclusion/ Marginalisation Perception Diversity</i>
2)	Funding a PSIA that focuses on ASM What is the real difference between this and No.1	<i>Exclusion/ Marginalisation Perception Diversity Institutional Accountability and Integrity.</i>
3)	Funding additional survey social survey work in excluded ASM areas.(is this proposal really the best use of the currently limited funds)	<i>Exclusion/ Marginalisation Perception Diversity Institutional Accountability and Integrity. Regularisation Sustainability.</i>
4)	Creating a fund (or funding stream within an existing fund) supporting ASM research and advocacy (again not sure if this should be seen as a priority project as I feel others especially researchers and consultants rather than miners/communities would benefit more)	<i>Exclusion/ Marginalisation Perception Diversity</i>
5)	Pilot the creation of (or support for) a cross-sectoral institutional mechanism YES	<i>Exclusion/ Marginalisation Institutional Accountability and Integrity. Regularisation Sustainability.</i>
6)	Facilitate the participation of representatives of the local ASM groups on the national committee. YES	<i>Exclusion/ Marginalisation Perception Diversity Institutional Accountability and Integrity. Regularisation</i>

		<i>Sustainability.</i>
7)	Pilot the development of local institutional mechanism whereby some of the revenue generated by mining activity can be clearly and transparently returned to the mining communities. YES	<i>Exclusion/ Marginalisation Regularisation Sustainability.</i>
8)	A pilot project in an ASM community to display transparent use of funds and participation of local stakeholders in the identification of priorities and budgeting (Linked to 7) YES	<i>Exclusion/ Marginalisation Institutional Accountability Integrity. and Regularisation Sustainability.</i>
9)	Facilitating a proactive plan to deal with 'rush' mining situation YES	<i>Exclusion/ Marginalisation Perception Institutional Accountability and Integrity. Sustainability.</i>

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