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**Analysis of formalization approaches in the artisanal and
small-scale gold mining sector based on experiences in
Ecuador, Mongolia, Peru, Tanzania and Uganda**

Uganda Case Study

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UNEP would like to thank the Government of Norway for their contribution to this work. A formalization analysis document of the artisanal and small-scale gold mining sector has been developed by UNEP to highlight critical elements of formalization process for policymakers.

Five case studies were developed as a means to inform the overall formalization analysis. The case studies are available on UNEP's web-site and were developed by the following regional experts:

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The case studies represent the views of the identified expert author. The case studies do not imply any expression of any opinion whatsoever on the part of UNEP or the country studied.

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1. GENERAL CHARACTERIZATION OF ASGM IN THE COUNTRY

A. History

Production of iron and salt in Uganda has occurred since ancient timesⁱ; artisanal and small-scale gold mining (ASGM) is a much more recent phenomenon. The emergence of ASGM can be traced through four periods of minerals sector development over the past century.

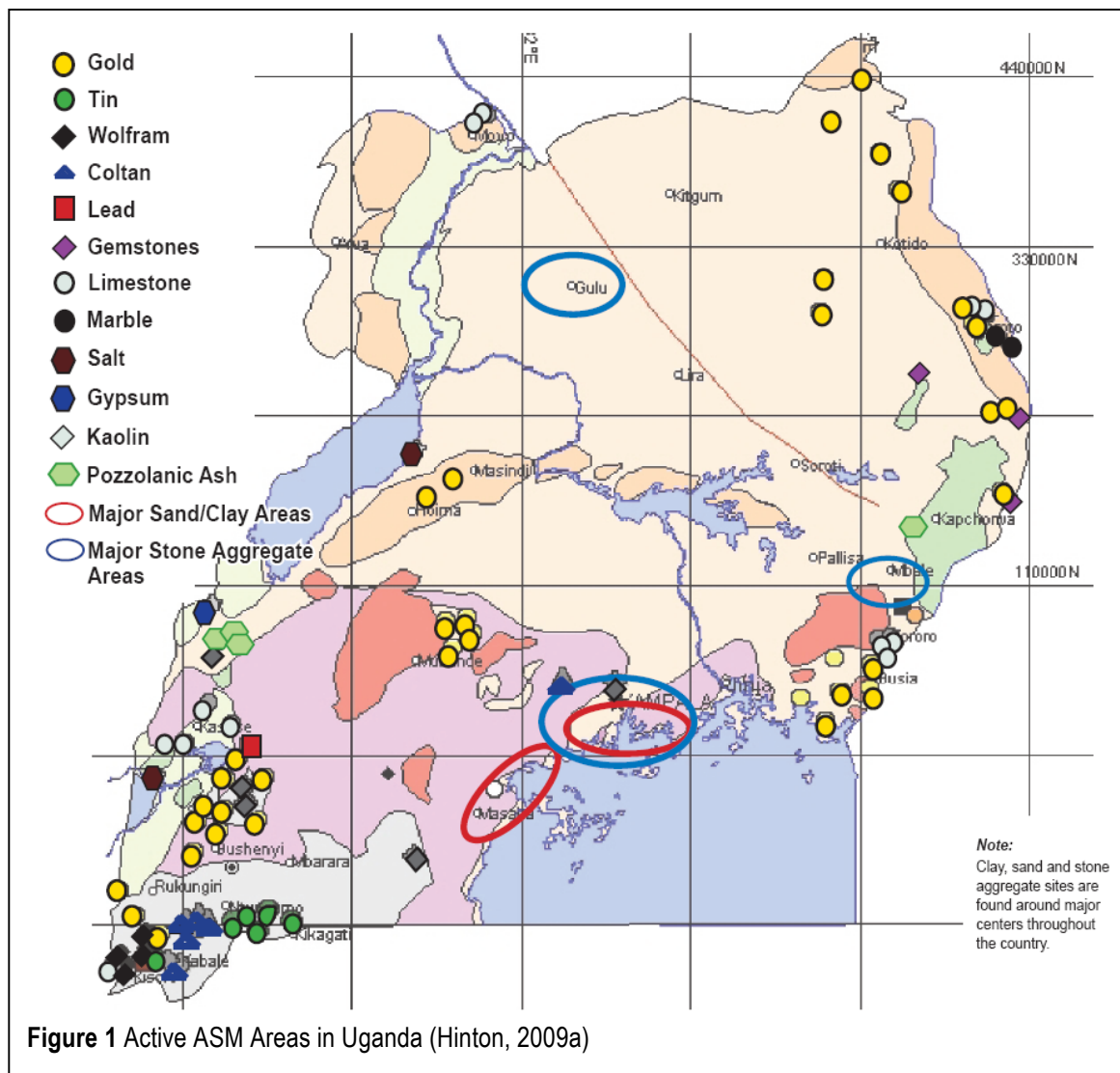
First, establishment of a number of colonial gold and tin mines across Southwestern Uganda between the 1920s and 1950s introduced small-scale mining to the indigenous Banyankore, Batoro, Bakiga, and other Bantu-speaking tribes of that region of the country. This led to small migrations into mining areas by various local tribes as well as Rwandese and Congolese, whose descendents still populate many of the mining areas today.ⁱⁱ

Second, between the 1950s and 1970s, establishment of Falconbridge's Kilembe Mine marked the first and, as of yet, only large-scale mine in the country, producing over 271,000 tonnes of blister copper as well as cobalt.ⁱⁱⁱ During this time, a number of small, semi-mechanized lead, tin, wolfram, and coltan mines also operated in the Southwest (e.g., Kitaka, Mwerasandu, Kirwa, Ruhizha), most of which were founded in the pre-independence (pre-1964) period but were later operated mainly by small Indian-Ugandan or Ugandan, rather than British, companies. During this period these mines were the third GDP contributor after coffee and cotton, contributing up to 35% of the country's foreign export earnings.^{iv} Under the 1964 Constitution, mining of gold and diamonds was illegal, yet gold continued to be extracted within the region, in particular around sites of pre-independence gold mines.

Widespread political and civil unrest under the regime of Idi Amin led to the collapse of the formal mining sector in the late 1970s and retrenchment of over 10,000 trained miners. Dispersion of these unemployed miners stimulated unlicensed ASGM across the Southwest and, to a lesser extent, in the goldfields of the East and Northeast. Widespread extralegal gold mining continued until 1986, when the National Resistance Movement (NRM) came to power and President Yoweri Museveni made licensing of gold mining possible by presidential decree.

With the relative stability experienced since the mid-1980s, a series of gold discoveries by artisanal miners generated rushes that drew between 1,000 to 5,000 miners and introduced ASGM to a number of farming and pastoral communities. Important areas include: Kisita in Mubende District and at Ruyeyo in Kanungu District between 1986-89; a number of smaller localities across the Buhweju Goldfield (e.g., Buhweju, Mashonga) and in Amonikikene and Tira in Busia District during the 1990s and 2000s^v; and, gold rushes drawing between 500 and 5,000 miners, respectively, to Buhweju in the Southwest and Napak in Karamoja Region over the past year (Figure 1).

Most of these ASGM activities have been alluvial, but those few occurring in hard rock deposits have led to the establishment of small to medium-scale mechanized operations in Mubende (Kisita Gold Mine) and Busia (Busitema Gold Mine) where mining, crushing, grinding, and gravity concentration equipment replaced the manual hauling, crushing, grinding, and panning methods that characterize ASGM across the country. At Busitema, cyanide vat leaching was introduced as an alternative to mercury amalgamation which is still practiced by ASGM in that region. Although licensing of several other small-scale, hard rock operations (*vis-à-vis* "Location Licences" for small operations) also resulted from a series of discoveries in the 1980s through to today, these operations continue to be highly manual, employing essentially the same practices as unlicensed miners.



B. Current Status of ASGM

Artisanal and small-scale mining (ASM) in Uganda provides a source of livelihood for almost 200,000 women and men, over half of which are engaged in production of industrial minerals to serve the construction demands of the country's rapidly growing population (3.3% per annum). At least 20,000 of these miners are engaged in gold mining via ASGM, which has become a relatively important economic activity, mostly in the regions of Busia and Karamoja in the East and Northeast as well as in the Kigezi and Buhweju goldfields across the West and Southwest of the country.¹

Over the past decade, escalating gold prices, coupled with high population density and resulting land pressures (across the West and Southwest), and prolonged droughts, tribal conflict, and loss of traditional pastoral livelihoods (in the Northeast), is rapidly attracting growing numbers into ASGM.^{vi} The gender dimension of ASGM also seems to be shifting depending on local circumstances. Only 10-25% of miners are women in ASGM areas in the West and Southwest where farming continues to thrive. However, in the comparatively impoverished Northeast, women's participation increases to approximately 50-60% and is as high as 90% at some ASGM sites.

While strong farming and pastoral traditions have generally limited the massive influxes into ASGM as observed in neighbouring Tanzania, DRC, and South Sudan, the confluence of geoclimatic, environmental, and economic factors seem to be stimulating the subsector. Government of Uganda (GOU) officials from the Department of Geological Survey and Mines (DGSM) suggested that ASGM activities may have increased as much as 20-40% since 2008 estimates (Table 1).

This has recently increased the attention of the GOU, mainly as a result of the massive losses in royalties and revenues due to informality and smuggling. In 2006 and 2007, the gold country's officially reported production was produced 0.022 and 0.025 tonnes, respectively, however export in the same years was reported at 6.11 and 3.57 tonnes.^{vii} While linkages with gold smuggled from neighbouring Democratic Republic of Congo have often been cited, a substantial proportion of exported gold seems to be derived from in-country ASGM.

For example, in 2008, unlicensed, informal ASGM gold production from over 15,000 miners was estimated at over 1.2 tonnes valued at US\$28.3 million while *officially* reported gold production in the same year amounted to only US\$46,636 and official exports totalled US\$35.3 million^{viii} (Table 1). This disparity is attributable to lack of formalization of both ASGM and the minerals trade. In the case of the latter, those dealers who are formally reporting exports commonly declare out of country origin (primarily South Sudan and Tanzania) due to measures that were initially introduced to mitigate Uganda's role as a "pipeline" for illicitly traded minerals from DRC and elsewhere.

¹ The number 20,000 could be higher by 20 – 40% due to growth in the sector as indicated in Table 1.

Table 1: ASGM Activities and Official Gold Production, Imports & Exports (2008)

Item	West & Southwest	Central	East	Northeast	Total
ASGM ESTIMATES (2008)					
No. of Miners (2009)	1450	100	500	15,000	17,050
Ratio of Men:Women	3:1	3:1	4:1	3:7	1:1
Annual Production	93 kg	5 kg	151 kg	961 kg	1,210 kg
Value of Production	US\$2.0 M	US\$0.13 M	US\$3.3 M	US\$22.9 M	US\$28.33 M
Total Miners' Incomes	US\$1.64 MD	US\$0.09 M	US\$2.7 M	US\$16.9 M	US\$21.33 M
OFFICIAL STATISTICS (2008)					
Value of Gold Production					US\$46,636
Value of Gold Imports					US\$45.9 Million
Value of Gold Exports					US\$35.3 Million

Source: Hinton, 2009

Note: Uncertainty factors were applied to specific areas and sites where data was limited and estimates are believed to be conservative. The current level of activities is suggested to have increased by 20-40%.

In both cases, informality applies to miners and traders *as well as* the institutions charged with regulating the sector. For example, while provision of extension services and support for fair market access is included in the Mineral Policy (2001), these services are not formalized in workplans and budgets of DGSM, Local Government,² or other relevant institutions. Lack of financial and human resources, in large part driven by the low priority afforded to the minerals sector, and inadequate mechanisms for institutional accountability have been cited as a major constraint to effective regulation and service delivery.^{ix} Buttressing the well-conceived policy mandate to support ASM formalization with a legal mandate by enshrining related institutional roles in mining legislation has been suggested as one measure that would help fill this gap.

C. Short History of ASGM Legalization Processes

Historically, development of the minerals sector in Uganda has been hindered by a number of policy, legal, regulatory, and enforcement constraints. For instance, the Mining Act of 1964 enshrined a number of problems ranging from granting absolute discretionary powers, to administration, to creating size and duration of tenure for various licences that were not suited to the nature of the sector, to inappropriate taxation given regional and international norms.^x

Reviews and discussions within the Government and stakeholder consultations led to policy and legal reforms beginning with a Mineral Policy in 2001, followed by promulgation of the Mining Act (2003) and Mining Regulations (2004). The reform process received criticism

² Local government offices include administrative and technical officers, including those responsible for environment, water, labour, community development, commercialization, health and other functions that are vertically linked with their relevant Ministries at the central level. These are subdivided into five levels. District (LCV), County (LCIV) and Subcounty (LCIII) councils are Local Governments with legislative, financial, and administrative powers while Parish (LCII) and Village Councils (LCI) are administrative units only.

from some stakeholders concerning lack of genuine and informed engagement (and lack of inclusion of stakeholder recommendations in legislation), yet the resulting code is essentially in line with international “best practice” and enables Uganda to compete for investment by creating liberalized, stable, and conducive conditions. A key change is that the Mining Act is now administered by the Commissioner of the Department of Geological Survey and Mines (DGSM), thereby separating powers from the Minister responsible for Minerals, and licences are granted on the basis of first come, first served principles.

Furthermore, DGSM has, over the past 3 years, engaged in regional initiatives with the Uganda Bureau of Statistics (UBOS) and improved information sharing with the Uganda Revenue Authority (URA). At the same time its reporting of estimates of informal ASM production has served to increase the priority afforded to ASM and the minerals sector in general. This has substantially increased the attention of the GOU, including the Ministry of Finance, Planning and Economic Development (MFPED), and plans have subsequently been developed to increase budgetary support to DGSM to help fulfil its ASM regulation and extension service mandates.

2. MERCURY AND OTHER ENVIRONMENTAL IMPACTS IN ASGM

A. Brief Assessment of Mercury Use and Other Environmental and Social Impacts

In most of the country, few miners are aware of mercury. In areas where some awareness exists, beliefs concerning its effects on fertility and its potential to cause illness have precluded its adoption. In Busia in the Eastern part of the country, and to some extent in neighbouring Bugiri, about 600-1000 miners do use mercury. Furthermore, with the exception of the occasional gold rush, the majority of gold miners work in small groups of less than six panners and diggers. Only in a few sites does the number of gold miners in a group exceed 15-20.

As such, the main environmental impacts from ASGM in Uganda relate to siltation of rivers and wildcat pitting causing localized degradation of soil and vegetation (in some cases affecting forest resources). Particularly in the tropical climate characteristic of the West and Southwest, natural reclamation of sites (natural re-growth and recovery of rivers) appears to be relatively rapid. However, in some localities, the situation of several hundred miners working within a given watershed has been observed to impact cumulatively downstream water users via siltation and to create health and safety hazards (e.g., for cattle and humans from wildcat pitting) as well as impeding post-mining agricultural use. This is most evident in ASGM areas of Buhweju, Kaabong, Napac and, to a lesser extent, Moroto Districts. In protected areas where sporadic ASGM is occurring, such as Bwindi Impenetrable Forest or Kashoya-Kitomi Central Forest Reserve, there is some concern about the cumulative effects of ASGM on these ecosystems.

Gold mining in Busia District occurs in an extension of northern Tanzania’s greenstone belt where gold occurs in association with quartz veins or as a secondary enrichment within a banded iron formation unit at the base of laterites.^{xi} As such, mercury amalgamation was

introduced in the 1990s by a few Ugandan miners who previously sought fortunes in Tanzania. Unlike the small, mechanized processing centres found in Tanzania, methods used in Busia are comparatively crude and manual (pounding with mortars and pestles, hand amalgamation in basins, open air burning over fires, haphazard discharge of tailings into waterways).

No comprehensive assessments of mercury mobility and bioaccumulation have been done in the area although, based on gold production estimates and methods used, it is estimated that approximately 150kg of mercury per annum are emitted into the environment. Approximately 45kg per annum of this mercury may be discharged with tailings into small rivers and streams. Most of this is likely retained in sediments but a portion may reach Lake Victoria over 30 km downstream via a series of wetlands where potential for methylation of mercury and incorporation into the food chain may be possible.

Environmental and human health concerns are most evident from inhalation of mercury vapour via open air burning over fires or from using small blowtorches, some of which takes place in cooking areas of the home and in the presence of children. Fatalities and serious injuries due to collapse of pit walls or underground tunnels presents a more immediate concern in Busia and *all* of the other ASGM areas. Between one and five deaths are known to occur annually while many more are likely to go unreported.

There is currently a risk of proliferation of cyanide use by ASGM in conjunction with mercury amalgamation in Busia District, thereby potentially increasing both mobility and methylation potential of mercury. After more than 6 years of disputes with local artisanal miners, Busitema Mining Company (BMC) established a central processing centre utilizing a stamp mill, copper plates and mercury amalgamation for whole ore amalgamation wherein tailings would be retained by the company for subsequent cyanide vat leaching. Despite concerns vocally expressed by ASM consultants with respect to the environmental risks of introducing such technology to Uganda (as well as concerns regarding the BMC approach to access and benefit sharing from the central processing centre), BMC continued to implement the model for over a year. The centre did not continue to operate, however, largely due to mistrust of BMC, but many miners are now aware of how to use such methods.

Cultural taboos preventing mercury use in other regions of the country and extremely limited capacity to implement cyanidation seem to limit the likelihood of widespread adoption of these methods. Nevertheless, use of cyanide may emerge as a new ASGM technology as cyanidation is planned/under development at the new Mashonga Mine in Buhweju and Kisita Mine in Mubende.

In terms of socio-economic impacts of ASGM, a relevant characteristic of ASGM in Uganda is that most miners are indigenous to the communities and areas where they live and work (or have been long-time residents) and “migration” is typically only within a subcounty or, at most, a district. Issues related to HIV/AIDS and stimulation of the sex trade through the

cash-based economy are significant. However, common concerns related to modification of cultural values and inter-cultural conflict are far less pronounced than documented in other countries (the exception being particularly large rushes such as that currently taking place in Napac in the Karamoja Region). Miners often obtain informal consent from land owners prior to work (whether they hold land title or not) and some form of profit sharing seems to be preventing related conflicts.

A significant proportion of ASGM in Uganda is seasonal, and miners often use revenues to invest in farming and meet basic needs, such as school fees, health care, and home improvements. Cumulatively, this economic contribution can be substantial and is visibly evident in the form of shops, restaurants and goods available in trading centres near to many of the larger ASGM areas. In 2008, gold miners' incomes from ASGM were estimated to total US\$21.4 million most of which was injected into local and, to a lesser extent, regional economies.^{xii}

B. National and international initiatives

Much of the recent attention to ASGM has been catalyzed by the Sustainable Management of Mineral Resources Project (SMMRP), which was implemented from 2004-2011. Funded by the World Bank, African Development Bank, Nordic Development, and the GOU, one of five components of the SMMRP addressed community development and small-scale mining. Targeting gold as well as other metallic minerals (tin, coltan, wolfram) and industrial minerals (limestone, marble, stone aggregate, etc.), SMMRP activities sought to strengthen institutional capacity to support formalization and improved performance of ASM throughout the country.

In partnership with an international ASM consultant, most of the SMMRP-supported ASM-related activities and outputs described in the Strategy were undertaken by a Training and Awareness Campaign Committee (TACC) comprised of government officers from the DGSM, National Environmental Management Authority (NEMA), Department of Occupational Safety and Health (DOSH/MGLSD), Community Health Department (CHD/MOH), Ministry of Water and Environment (MWE), and representatives from the Geology Department of Makerere University, Uganda Chamber of Mines (UCM), Uganda Mining Association (UMA), and Uganda Quarry Operators Association (UQOA). Between mid-2007 until early 2009, SMMRP-supported TACC achievements included: co-authorship of the "Small Scale Mining Handbook"; co-development of curriculum and implementation of training of more than 180 trainers; co-authorship of the "Facilitators Guide: Training Workshops for Artisanal and Small Scale Miners"; co-implementation of community-based training of over 1,000 women and men miners from 17 ASM areas; sensitization of an additional 200 government officers; and development of a National Strategy for ASM in Uganda and a National Guidance Strategy for Promotion of Gender Equity in Mining.

With increased understanding and awareness of ASGM in Uganda and a reasonably strong network of key persons in central and local government and at a grassroots level, potential

for intervention has increased substantially. Scoping studies to assess potential ASGM pilot project sites have been conducted by the Alliance for Responsible Mining (ARM) for Fairtrade and Fairmined Gold and the German government's Federal Institute for Geosciences and Natural Resources (BGR) under its program for Certification of Mineral Trading Chains (CTC). In 2007, UNIDO assessed the potential for inclusion of Uganda in subsequent phases of the Global Mercury Project via a country visit resulting in strong endorsement from the Ministry of Energy and Mineral Development (MEMD), yet follow-up has not yet materialized.

More recently, Irish Aid has completed a baseline assessment of ASM (including ASGM) in Northeastern Uganda's Karamoja Region in 2011 and may move towards intervention in 2011-12. In accordance with the multi-faceted recommendations from this assessment, such efforts shall likely span issues of livelihood improvement and technical intervention, environmental protection, health (including HIV/AIDS), and other critical issues in partnership with other donors and NGOs (e.g., Oxfam, ECO) that are active across the region.

The DGSM has engaged proactively in each of these endeavours and has since put forward revised workplans and budgets via the National Development Planning Process (2010-2014) to support fulfilment of their ASM mandate.

DGSM/MEMD is further engaged in regional initiatives, such as the International Conference on the Great Lakes Region (ICGLR) and African Union Commission (AUC) Africa's Mining Vision. ICGLR is a regional initiative comprised of 11 member states that has established a framework for dialogue and consultation to address illegal exploitation of natural resources. Through information exchange and harmonization of policies and approaches, the ICGLR seeks to strengthen the capacities of national institutions and civil society to engage in the fight against illegal exploitation of natural resources, including minerals. Africa's Mining Vision was adopted by the Summit of Heads of State and Government in Addis Ababa in February 2009, commencing with a detailed assessment of mining regions and resulting in a comprehensive Framework. The subsequent implementation phase (2010-2012) will develop toolkits, policy templates and guidelines, briefing notes, and other instruments for use in revising mineral regimes in Africa. Reportedly, ASM will be emphasized increasingly in this work yet was largely overlooked in the first phase of assessment activities.

Most of the aforementioned efforts include environmental protection within their scope but do not focus specifically on issues related to mercury use or the environment. One national NGO is seeking to design and implement a mercury intervention-focused program in Busia but lacks outside support. Of note, a multi-country initiative entitled, "*Artisanal and Small Scale Mining in Sensitive and Protected Ecosystems*" (ASM-PSEP), being implemented by WWF in partnership with Estelle Levin Ltd. (ELL), is developing programs in Liberia, Gabon, Sierra Leone, and DRC with a view towards expanding to other priority areas in Africa, Asia, and South America. In Uganda, the ASM-PSEP is assessing the potential for

implementation in Kasyoha-Kitomi Central Forest Reserve (in the West) and Pian Upe Game Reserve (adjacent to the Napac gold rush).

3. KEY ISSUES IN THE ASGM MINING FRAMEWORK

Within the framework of the National Development Plan (NDP, 2010/11-2014/15), the Government of Uganda (GOU), *“envision[s] the transformation of Uganda into a modern, prosperous country within the next 30 years.”* Associated strategies are founded on pillars of stability and peace, a knowledge-based economy, gainful and sustainable exploitation of resources, a private sector led economy, and a strong federated East Africa with an effective common market. Thus, the minerals sector is explicitly recognized within Uganda’s national poverty reduction strategies based on the contention that mining industry growth can advance development at community, regional, and national levels.

The minerals sector is captured within the Constitution of the Republic of Uganda (1995) via a number of provisions including that the State shall: *“promote sustainable development and public awareness of the need to manage land, air and water resources in a balanced and sustainable manner for the present and future generations.”* Accordingly, Articles 39 and 41 oblige all citizens to maintain a clean, healthy, and safe environment while the Constitution (1995) further states that: *“every person in Uganda has a right to a healthy and clean environment and as such can bring action for any pollution or improper disposal of wastes.”* The Constitution (1995) and its Amendments cite provisions for enhancing conservation and management of the environment and natural resources. It is further stipulated in Chapter III, Section 245, that Parliament shall, by law: *“provide measures intended to protect and preserve the environment from abuse, pollution and degradation.”* This is complemented by Section 43 of the Land Act, Cap 227, stating that: *“a person who owns or occupies land shall manage and utilise the land in accordance with the Forests Act, the Mining Act, the National Environment Act, the Water Act, the Uganda Wildlife Act and any other law.”*

As for all other sectoral policies in Uganda, the Mineral Policy (2001) is framed within national poverty reduction strategies and the Constitution (1995) with a vision for the minerals sector:

The new dawn in mining: to attract investment in, build capacity for acquisition and utilisation of geodata and increase mineral production for social and economic development of Uganda [and its goal is] to develop the mineral sector for it to contribute significantly to sustainable national social and economic growth. (Mineral Policy (2001), p. 5)

With respect to ASGM, under the Mineral Policy (2001) the Department of Geological Survey and Mines (DGSM) is mandated to:

Regularize and improve artisanal and small scale mining through light-handed application of regulations, provision of information on production and marketing, provision of extension services through miners associations and implementation of awareness campaigns targeting artisanal and small scale miners.

While a policy mandate to support formalization exists, these institutional roles are not captured in the corresponding legislation. Part IV of the Mining Act (2003) and Part VI of the Mining Regulations (2004) refer only to aspects related to licensing and maintenance of “Location Licences” for small-scale operations. Specifically, these chapters outline the process of application, granting, size, duration, renewability, revocation, and rights and duties of a licence holder and related disputes. Related sections in the legislation address powers of the Commissioner of the DGSM (e.g., inspection, dispute resolution, surrender, cancellation and suspension) as well as specific sections relating to environmental protection, mineral dealing and financial provisions, among others.

Although mining policy and legislation provide an overarching framework for the management of ASGM in Uganda, in actuality, regulation of ASGM falls within various sectoral laws and regulations, including that derived from national fiscal, environmental, and labour policy. Compliance with a multitude of generic legislation – including the National Environment Regulations (2001), the National Water Resources Regulations (1998), the National Environmental Management Regulations (2000), the Occupational Safety and Health Act (2006), and the Employment Act (2000), among many others – is required but is largely unknown to most miners engaged in ASGM.

A. Legal Definition of ASGM, Mining Titles, and Related Obligations and Rights

Ugandan legislation does not distinguish between “artisanal” and “small-scale” mining. ASGM licensing is provided for in the legal framework by way of “Location Licences,” which pertain to “*small scale operations*” or “*prospecting or mining operations which do not involve expenditure in excess of five hundred currency points [approximately US\$5,000] or the use of specialized technology [e.g., cyanidation, flotation]*” (Mining Act, 2003). The licence is exclusive, granted for a two-year period and renewable in two-year periods.

Location Licences vary in area depending on whether the deposit is alluvial or hard rock and also by mineral. A Class I licence for precious metals in hard rock deposits covers an area of 500m by 300m and a Class IV licence for precious metals in alluvial deposits covers up to 16 hectares. In reality, many alluvial ASGM activities are distributed across areas well in excess of 16 hectares and/or work small deposits and move on to another site within the course of a few months or a year. Furthermore, those few hard rock deposits being worked involve several veins or shear zones that extend outside of a 500m by 300m area. Thus, even if artisanal miners obtained a Location Licence for their activities, several adjacent licences would need to be obtained progressively in order to maintain legal status.

The main obligations of Location Licence holders include: (i) keeping and submitting monthly records/returns on production and mine development activities to DGSM, which is rarely done; (ii) reclamation and rehabilitation of mined out areas; (ii) operating in a safe and responsible manner and carrying out directives of the Commissioner to improve practices; and (iv) notifying the Commissioner and providing just cause for cessation or suspension of work.

B. Type of Business Entities to Perform ASGM Operations

Location licence applicants must be individuals or association members that hold Ugandan citizenship or companies that are more than 50% Ugandan owned. The legislation does not require specific types of associations but Ugandan policy, in general, is supportive of cooperative formation.

Companies or community based organizations (CBOs) in the form of cooperatives or associations are eligible to apply. CBOs can be registered easily with provision of a group constitution, signatures of members, endorsement of village and subcounty leaders, and payment of approximately US\$5 for registration at both subcounty and district government headquarters.

C. Requirements for Mining Titles Attribution

While the Location Licence category is aimed at encouraging formalization and legalization of ASM, less than 5% of artisanal gold miners hold or work on Location Licences. This has been attributed to the following:

- (i) Most areas where artisanal miners are active are already covered by exploration licences. Exploration licence holders are required to relinquish 50% of their areas within the first 3 years of exploration, which some regulators suggest provides sufficient opportunity for ASGM to licence their activities. In reality, given the climate of speculative investment and potential for resale of licences to foreign investors, these areas are immediately taken up by other companies (or by the relinquishing company under a different name).
- (ii) Even if areas were available, most artisanal miners have little if any awareness of mining legislation and, even if they are aware and interested to obtain a licence, procedures are daunting and miners lack the level of organization and savings and technical capacity to obtain them.

The procedures for licence acquisition are somewhat complex, requiring:^{xiii}

- A prospecting licence, which can be obtained by completing a simple application at the DGSM in Entebbe;
- Confirmation from DGSM in Entebbe that the area is available (not under licence already);

- Completion of a relatively simple application form and preparation of a Project Brief (5-10 pages addressing how and where mining will take place, environmental issues, how reclamation shall occur), and a 1:50,000 mapsheet of the area. Most miners need assistance in preparing the application at additional cost;
- Endorsement of the Chief Administrative Officer (CAO) of the district where the licence area is located;
- A Bank Payment Advice Form (BAF) from the DGSM, requiring a return trip to Entebbe, covering mineral rent, preparation, and registration fees;
- Payment using the BAF at Diamond Trust Bank in Kampala, which provides a URA receipt that is taken to the MEMD Accounts division which provides another receipt; delivery of the MEMD receipt to DGSM Entebbe for recording and submission of the location licence application.

Review and processing can take several weeks and approval is not guaranteed. Most obvious constraints relate to costs, language (all documents are in English), literacy, transportation, accommodation and unforeseen, unofficial facilitation costs (as described in Section 7(a)) as well as the potentially intimidating experience of navigating the bureaucratic channels of Central Government.^{xiv} The same constraints also apply to preparation and submission of quarterly reports. These constraints are likely more pronounced for women miners, who face additional challenges in terms of autonomy and confidence to travel to Kampala/Entebbe to facilitate the process and comparative lack of literacy and savings capacity, among others.

As a consequence, most Location Licences are held by small, better capacitated Kampala-based companies, many of which also hold exploration licences. There is no restriction on the number of titles that can be held by a single entity and some companies hold multiple Location Licences, often (but not always) focusing on regions of the country where they also hold Exploration Licences.

D. Transfer of Rights and Mining Titles Upgrades

Location licences can be transferred to other acceptable entities by completing a transfer form (signed by organization signatories identified when the initial licence was obtained), which is submitted to the DGSM. Typically, the licence must be in good standing to be transferred. The fee to transfer a licence is approximately US\$325 (requiring the same payment procedures outlined above).

The only other licensing category for mineral extraction is a Mining Lease, which applies to any activity with a capital cost investment exceeding five hundred currency points (approximately US\$5,000) and/or that plans to employ specialized technology (e.g., cyanidation, flotation). The requirements to upgrade a Location Licence to a Mining Lease are complex for most, requiring a feasibility study, detailed and costed Mine Development

Plan, and full Environmental Impact Assessment (EIA). Application, compliance, monitoring and reporting requirements (e.g., annual environmental audits, detailed quarterly and annual reports, etc.) are in line with those applied to large scale mines and present a barrier for most small-scale operations to upgrade their licences. A few location licences have been upgraded over the past 5 years, but these are limited to far better equipped companies who often face challenges in meeting legal requirements.

E. Negotiation and Consultation with Communities

Under a Location Licence, a simple 5-10 page Project Brief is accepted in lieu of a full EIA and its requisite public consultation requirements. In reality, the scale of ASGM typically precludes any resettlement and access/use agreements are more likely to be made with landowners via informal profit sharing arrangements and/or simple handshake agreements. The DGSM (its Mines Division, in particular) can play a role in assisting ASGM to negotiate formal agreements, if needed, but this generally only occurs for larger scale mining leases.

Nevertheless, the legislation does require the holder of a mineral right (for exploration or mining) to pay the owner or lawful occupier of private land:

Fair and reasonable compensation for any disturbance of the rights of the owner or occupier; and for any damage done to the surface of the land by the holder's operations; and shall on demand made by the owner of any crops, trees, buildings or works damaged during the course of such operations, pay compensation for any crops, trees, buildings or works so damaged.^{xv}

While compensation provides for such damage, it does not account for any enhanced value of land due to the presence of any minerals (which is provided for in the 3% royalty share paid to land owners, as described below).

F. Other Relevant Requirements: Labour Conditions and Profit Sharing

Labour conditions theoretically are regulated under the outdated and largely unknown Occupational Safety and Health in Mines Act (1964), and more commonly governed under more current legislation. This includes the Employment Act (2006), which under Section 5 (1) requires that no person shall use or assist any other person in using forced or compulsory labour, and Section 32 (1) requires that a child under the age of 12 years shall not be employed in any business, undertaking, or workplace.

Most relevant legislation refers to the responsibilities of an employer for its employees, and related provisions are not typically relevant to most ASGM scenarios as no "employees" exist, *per se*, i.e., miners are working in small groups or teams rather than for a company. For instance, the Employment Act (2006) outlines terms of deductions for missed work, providing for a minimum one day off per week and a maximum work week of 48 hours.

Intensive support for organization of ASGM and ASM specific regulations are needed to achieve any measure of compliance in these respects.

In those instances where artisanal miners work under a company-held Location Licence, most are paid via product-purchase arrangements (e.g., gold is simply sold to the licence holder in exchange for “access” to the ASGM site) rather than through formal employment; application of relevant labour provisions is woefully lacking. Legislation which requires attention includes:

- The Occupational Safety and Health Act (2006) which provides for the prevention and protection of persons at all workplaces from injury, disease, death, and damage to property. *Its provisions extend to the self-employed and any other persons that may be legitimately present in the workplace.* Employers are responsible for safety and health measures of employees, the protection of workers from adverse weather conditions, a clean, safe and healthy work environment, sanitary conveniences, washing facilities, First Aid and facilities for meals, as well as safe access to the workplaces and safe work practices.
- The Workers' Compensation Act (2000) requires compensation to be paid to a worker who has been injured or who has acquired an occupational disease or has been harmed in any way in the course of his/her work. Compensation of 60 months earnings for a fatality or for permanent total incapacity is specified in Sections 5, 6, and 7.

Among multiple objectives, the Mineral Policy (2001) explicitly seeks: “To remove restrictive practices on women’s participation in the minerals sector and protect children against mining hazards.” Section 114 of the Mining Act (2003) states that: “Notwithstanding the provisions of any other law to the contrary, a woman may be employed in any underground work in any mine or in any operation or activity relating to or associated with mining.” In reality, less than 5% of persons employed in the formal minerals sector are women while women’s engagement ranges between 25% to up to 90% at some sites in the case of extralegal ASGM.

Other than these legal provisions, gender is not adequately mainstreamed in the mining policy and legislation. A gender analysis of the minerals sector conducted in 2009 identified numerous entry points where explicit legal reforms to promote gender equity can be introduced with respect to: licensing requirements; extension service delivery (and its decentralization); understanding of land versus mineral rights; consultation; compensation; and, distribution of benefits and implementation of policy objectives.^{xvi}

No requirements specific to profit sharing *within* ASGM producer groups are specified in the legal framework. On the ground, profits are typically shared within producer groups equally (e.g., if ASGM is conducted in “teams” of 5-15 miners) or retained by individual panners or family units. In the case of the latter, women often turn over gold or earnings to their husbands.^{xvii} In some cases, a site will pay a percentage (e.g., 10%), or more often a flat fee, to the landowner.

4. ENVIRONMENTAL LEGAL FRAMEWORK

The National Environment Act (NEA) established the National Environment Management Authority (NEMA) as the principal agency responsible for its management. The Ministry of Energy and Mineral Development (MEMD) is defined as a Lead Agency (LA) by the NEA with respect to the minerals sector in Uganda. As such, MEMD and, more specifically, its technical and administrative arm the Dept. of Geological Survey and Mines (DGSM) is primarily responsible to ensure that legal provisions under the mining and environmental legislation are followed in collaboration and communication with NEMA.

A. Environmental Assessment Instruments and Environmental Licences

Section 19 (5) of the National Environment Act requires the developer of a project to conduct an environmental impact study if a project will have a significant impact on the environment. This provision applies to ASGM but, to the credit of the Mining Act (2003), environmental criteria for Location Licences are far more appropriate to the reality of ASM. Under the Mining Act, a Location Licence requires completion of a simple Project Brief (5-10 pages describing how the environment will be affected and measures to be taken to mitigate this) and completion of reclamation and rehabilitation activities (usually requiring backfilling of pits and re-vegetation). If environmental impacts are expected to be substantial, a full EIA may be required but this is rarely the case. Although these requirements are much simpler than those for Mining Leases, even generating (and understanding) the Project Brief presents a challenge for most artisanal miners.

Procedures and costs for obtaining a *NEMA Certificate of Environmental Impact Assessment Approval* are integrated in the Location Licence application process (as described in Section 3(C) above). Evaluation of the application, inclusive of the Project Brief, is conducted by the DGSM, which recommends to NEMA whether an application should be accepted. If an ASGM area is located in an area of other jurisdiction, review must also be completed by those authorities (e.g., National Forest Authority if the proposed site is located in a forest reserve).

B. Pollution Control Measures

In addition to a chapter dedicated to Protection of the Environment in the Mining Act (2003), multiple regulations fall under the National Environment Act related to environmental standards (e.g., for air, water and soil quality), waste management and pollution control, among others. Theoretically, these are to be applied to ASGM to the same extent as any other mining activities. Recognizing the limitations of the subsector, the Mining Policy (2001) specifically refers to “*light-handed application of regulations*” with respect to ASM.

i) Legal measures to control the use of mercury and cyanide

Mining sector-specific legislation provides no specific provisions concerning the use of mercury and cyanide, therefore, guiding regulations are largely limited to those related to environmental legislation including standards (e.g., for discharges) and pollution control regulations, which generally are applied to any industrial project or development in the country. Similarly, health and safety standards apply to requirements for safe chemical handling, storage and disposal but do not specifically relate to mercury or cyanide.

Sector-specific guidelines and regulations would pre-emptively help to provide more specific guidance in safe use and handling.

ii) Explosives

The Explosives Act regulates the manufacture, storage, sale, transport, importation, exportation, and use of explosives. Explosives are licensed by the Ministry of Internal Affairs on the recommendation of the Inspector General of Police and first require a mineral right for extraction (a Location Licence or Mining Lease). The process requires a letter of request from the applicant and payment of a site inspection fee (including sites and conditions of storage) as well as payment for the permit (approximately US\$1000). Consequently, no ASGM sites are licensed for the use of explosives. As most are alluvial operations, they are not used anyway. Illegal use of explosives is only common for ASM production of tin, coltan, and wolfram in Southwestern Uganda. Those few gold Location Licences occurring in hard rock deposits continue to rely on manual rock breaking while only the small to medium-sized gold operations with Mining Leases (Busitema Mine, Kisita Mine, and Kitaka Mine) hold the required permits.

Under Section 64(e) of the Mining Act (2003) the DGSM is responsible for inspection of storage of explosives but other roles (e.g., inspection of use, handling, transport) are implied via related occupational safety inspection functions.

iii) Closure of mining operations

Location Licence provisions related to closure are far more realistic than those required for a Mining Lease. Location Licence holders do not require a detailed Environmental Restoration Plan but must comply with reclamation obligations such as backfilling small pits and trenches, closing shafts, and breaking down steep faces in alluvial workings. The site must be inspected by the DGSM and approved prior to official granting of closure.

C. Other Relevant Requirements

Additional environmental authorizations required for a Location Licence include permits for water extraction and discharge from the Ministry of Water and Environment (MWE) and compliance with environmental standards (e.g., for air, water, soil) and regulations for

waste disposal and management (e.g., tailings storage) and pollution control as set out in the numerous regulations under the National Environment Act.

5. RELATIONSHIP BETWEEN SMALL-SCALE GOLD MINING AND MEDIUM AND LARGE-SCALE GOLD MINING

A. Lessons Learned from Experience

Since adoption of the new Minerals Policy (2001) and subsequent promulgation of the Mining Act (2003) and Regulations (2004), interest in exploration has created a veritable “licensing rush” spanning almost all ASGM areas in the country. As a consequence – with the exception of the few hundred miners legally operating on Location Licences – the majority of ASGM takes place on exploration licences held by others and therefore continues to be unlicensed and informal. This falls within three categories of activities:

- (i) A large proportion of exploration areas are held by small Ugandan companies that maintain licences with the intent of establishing joint ventures or selling licences to international investors and/or exploration companies. Engagement between licence holders and ASGM is negligible and a “live and let live” policy is informally followed.
- (ii) A number of these companies are also reportedly buying from artisanal gold miners. There is little evidence of “forced sale” or intimidation by these licence holders and few companies have been able to ensure miners sell to them unless their prices are competitive and they are able to maintain a sustained presence (e.g., via buying agents) at ASGM sites.
- (iii) Active gold exploration is taking place on very few exploration concessions, most of which is by Canadian, South African, and to some extent Indian or Chinese companies, often as joint ventures with Ugandan companies. Most is at a greenfields stage with a few sites progressing to drilling and more detailed gold exploration. Interaction with ASGM in these areas, if it occurs, is generally positive.

The main exception in terms of company-ASGM conflict has been the Busitema Gold Mine in Eastern Uganda. Prior to granting of exploration concessions and a Mining Lease to Busitema Mining Company (BMC), the majority of rural households in the area were engaged in gold mining either on a seasonal or year round basis via manual extraction, mortar-and-pestle pounding and mercury amalgamation.^{xviii} Since commencement of operations in 2002, conflict with local miners has been ongoing as BMC tried to expand and following unsuccessful efforts to compensate and resettle residents of adjacent Tira Village.

To address the situation, the company first sought to buy tailings from miners, and eventually established a central processing plant in 2008 to provide services to miners in exchange for tailings. Due to high levels of mistrust, few miners used the service or brought

Table 2: Government Institutions and their Relevant Responsibilities

only low grade ore to the plant and the small centre closed. BMC's activities ceased in 2009 and the mining and exploration areas were reportedly sold to a South African investor in 2011. In the past few months, following prolonged engagement and consultation by the Ministry of Energy and Mineral Development, ASGM areas have been designated and an end to the conflict may be imminent.

B. Legal Framework to Promote Partnerships Between ASGM and LSGM

Other than the exclusivity afforded to mineral rights (i.e., no overlapping licences are permitted), the legislation does not explicitly address partnerships between ASGM and LSGM. It does, however, provide a mandate to DGSM to engage in resolution of disputes between companies and local miners and residents, as was the case in Busia District.

Recognizing the reality of the ASGM sector in Uganda – particularly with respect to the unavailability of exploration licences – the DGSM has suggested a willingness to accept agreements between ASGM and exploration and mining companies. This could provide a means to recognize ASGM on concessions held by others and address liability issues that otherwise may be imposed on the company. Such agreements have not yet been established but one may be imminent at the Kitaka Mine in Western Uganda, in conjunction with some company support for basic training and organization, where up to a few hundred local residents (panners) are engaged seasonally in gold mining in streams and rivers.

6. KEY INSTITUTIONAL ELEMENTS AND LESSONS LEARNED

A. State Function in the Formalization of ASGM

i) Ministries of Mining and Environment or corresponding executive government institutions

Given the multi-faceted challenges facing ASGM, many other institutions have a role to play. These include the Ministry of Gender, Labour and Social Development, Ministry of Health, Uganda Revenue Authority, Uganda Police Forces (e.g., in illicit minerals trade), and others (Table 2). Many of these institutions have decentralized offices at district and subcounty government levels and, by virtue of their proximity to ASM areas and complementary mandates, local government offices may be better positioned to deal with issues at a grassroots level.

Institution	Relevant Responsibilities
Constitutional Mandate	<ul style="list-style-type: none"> Promote sustainable development and public awareness of the need to manage land, air, and water resources in a balanced and sustainable manner for present and future generations. No explicit reference to ASM.
Ministry of Energy and Mineral Development (MEMD)	<ul style="list-style-type: none"> Provides policy direction for the minerals sector. The Minister plays a key role in arbitration of disputes and conflict resolution as well as issuing statutory instruments and promoting the sector. Oversee and provide guidance to DGSM on its mandates and functions.
Dept of Geological Survey and Mines (DGSM)	<ul style="list-style-type: none"> Technical and administrative body responsible for implementation of the Mining Act (2003) and Regulations (2004). Lead Agency (LA) under the National Environment Act for environmental issues in the minerals sector, including related inspections, reviews, and recommendations on EIAs and environmental audits. Grants and monitors performance for all mineral licences; collects and disseminates production statistics; revenue collection. Includes a Social Environment Unit which is supposed to play a role in supporting/advising ASM (although sustainability of the unit is in question). No special department to deal with ASM but has a policy mandate to: "Regularize and improve artisanal and small scale mining through light-handed application of regulations, provision of information on production and marketing, provision of extension services through miners associations and implementation of awareness campaigns targeting artisanal and small scale miners."
National Environmental Management Authority (NEMA)	<ul style="list-style-type: none"> Coordinate with DGSM, NFA and other relevant government agencies to ensure appropriate application of the National Environment Act, effective monitoring and development of suitable requirements for the minerals sector. Oversee and provide direction to District Environment Officers, whose functions may include inspection, monitoring and provision of guidance to ASGM area.
National Forest Authority (NFA)	<ul style="list-style-type: none"> Collaborate with DGSM and other key agencies to harmonize policies and legislation with respect to mineral development in forest reserves. Develop guidelines related to mining activities in forest reserves. Sensitize Regional Forest Officers and Forest Rangers on mining policies and legislation and promote collaboration and communication with respect to environmental compliance monitoring.
Ministry of Finance, Planning and Economic Development (MFPED)	<ul style="list-style-type: none"> Secure and disburse sufficient funds to DGSM in accordance with approved workplans and budgets to enable fulfilment of mandate in accordance with National Development Planning Process. Poverty Monitoring and Analysis Unit: compile gender-disaggregated data, assess trends of the contribution of different sectors to poverty reduction. Microfinance Unit: provide information on financing programs and sources to Ugandan individuals and organizations on demand. Cooperative Department: provide information and assistance in formation and registration of cooperatives.

ii) Distribution of responsibilities at the Regional and District levels

Most activities within the DGSM occur via the central DGSM office in Entebbe with three regional offices located in Mbarara, Kabale, and Tororo Towns. Lack of human and financial resources constrains the effectiveness of regional offices. Plans (under the SMMRP) to strengthen them and establish additional regional offices in Moroto, Gulu, and Arua were

not implemented during the project duration but are part of the longer term vision for the institution.

District administration is responsible for receiving, reviewing, and forwarding applications for mining and exploration rights, arbitrating in compensation disputes, and resolving other conflicts. Although District Environment Officers (DEOs) have a mandate to coordinate with NEMA and DGSM in oversight of the minerals sector, this role seems to be sporadically fulfilled. (See Table 2.)

In addition to DEOs, many technical officers in local government have complementary mandates that could fill many of the gaps needed to improve ASGM activities in the country. Potential entry points include increased roles related to monitoring of mineral production and environmental performance, support for small enterprise development and organization of miners, and constructively addressing issues such as child labour, HIV/AIDS, and water needs in ASM areas. A useful function of local government should include clarification of issues concerning mining rights as they relate to land tenure.^{xix}

Following SMMRP training of trainers (approximately 30% of which were drawn from key positions in local government such as environment, development, health and welfare officers) and engagement of these trainers in subsequent grassroots training of over 1,000 women and men miners, many local government officers demonstrated increased capacity and commitment to ASM. A number of officers incorporated ASM in their work programs and most have increased engagement with DGSM for advisory or collaborative purposes. The key lesson from this exercise is that creating mandates for local government officers alone is inadequate unless accompanied by suitable capacity development and engagement with miners themselves to develop genuine understanding of the situation and how best to address it.

B. The Role of Miners' Organizations in the Formalization Process

Throughout the course of SMMRP activities, more than 20 ASM associations, three regional associations and the National Artisanal and Small Scale Miners Association (NASMA) were formed in Uganda. Although intensive organizational strengthening activities were planned under SMMRP, these did not come to fruition. NASMA has been largely inactive although its members from around the country continue to engage each other informally and they have recently requested assistance (from the author) to: (i) conduct country-wide sensitization of miners on NASMA and ASM legislation; (ii) hold in-depth grassroots consultations to ensure input of artisanal miners is obtained for planned legal reforms (inclusive of development of small-scale mining regulations); and (iii) strengthen their organization and its effectiveness as an advocacy group. Efficacy of smaller ASM associations has been variable. While a reasonable network of artisanal and small-scale miners seems to exist, support for organizational strengthening would go far in supporting formalization of ASM in the country. One main benefit of SMMRP ASM activities relates to the increased communication between miners (illegal and legal) and DGSM Mines Division officers. As

such, many of these local miners' representatives are included in local and national consultative processes.

The Uganda Chamber of Mines and Petroleum (UCMP) is established as an umbrella organization for private sector stakeholders in mining and exploration in the Country. While they have expressed interest in incorporating ASM associations and groups in their organization, membership fees are prohibitive and interests are largely geared towards larger players in the sector.

C. Roles and Major Initiatives of Academic, Research, and Technology Centres in Formalization

The Faculty of Technology at Makerere University is notably engaged in a Commonwealth Fund project to develop clusters (one of which relates to mining) in Uganda. Working with local metal fabricators, efforts have been initiated to identify technical needs of artisanal miners and develop some technology. The program is still ongoing but some simple methods have been developed as student projects. In the past 5 years, Mining Engineering programs have been established at Busitema and Mbarara Universities and time will tell whether ASM becomes incorporated within the curriculum. Otherwise, there has been only marginal or piecemeal engagement in ASGM specific activities.

7. ECONOMIC INSTRUMENTS IN THE FORMALIZATION OF THE ASM SECTOR

The Mining Policy (2001) refers to fiscal incentives vis-à-vis the “*provision of information on production and marketing*” to small-scale miners by the DGSM. This, and the provision of other extension services, would create an incentive for formalization but is availed only by some officers within the DGSM Mines Division and is not effectively institutionalized in departmental mandates, work plans, and budgets.

A. Fiscal Systems and their Role in the Gold Production Chain

i) Fiscal regimes, royalties and fees

The most significant fiscal provisions affecting formalization of ASGM relate to formal and informal costs of licensing and royalties paid on production.

As outlined in Section 3(C), procedures for licence acquisition present a bureaucratic constraint, however, it is the official and unofficial costs at each step that substantially increase barriers to legalization. Fees for a Location Licence officially cost 650,000 Uganda shillings plus 200,000 Uganda shillings per year for mineral rent (totalling approximately US\$340 for one year or US\$450 for 2 years). When a prospecting licence (approximately US\$75), stamp fees at district offices (approximately US\$25-100) and service fees for assistance in licence preparation (approximately US\$75-420) are included, the total cost of

licence acquisition can range from US\$515 to US\$1045 *excluding* transport, accommodation, and day to day expenses needed to complete the process.

As for Mining Leases, holders of Location Licences must pay 3% of royalties on gold production according to the international value (as typically determined by international sources such as Kitco or another renowned listing). These royalties are shared among central government (80%), local government in areas where the mineral was produced (17%), and owners or lawful occupiers of the land where the mine is located (3%). In an effort to bring development benefits nearer to the ground, MEMD officials have indicated that a revision to this distribution arrangement is currently underway wherein local government royalties shall, in future, be divided such that 10% would go to the District Government and 7% to the Subcounty where mining activities are located (rather than 17% to the District as previously administered).

Collection of royalty transfer payments from the Consolidated Fund (via the Ministry of Finance and Uganda Revenue Authority) reportedly presents a hurdle for local government and landowners.^{xx} Furthermore, in Uganda as in most countries that are now instituting such revenue sharing arrangements (e.g., Ghana, Tanzania, Sierra Leone), many problems have been encountered in translating returned royalties to development on the ground.^{xxi} Main issues include delays in release of funds, lack of communication with stakeholders concerning both the amount of funds received by local government and how they were used, lack of direction in appropriate use of funds, and inadequate reporting and auditing measures.^{xxii,xxiii} MEMD has proactively recognized this issue and has indicated intentions to institute requirements for local government to use royalties specifically for local development activities (e.g., boreholes, roads, health care) but guidelines, procedures, and training in their use are also needed to ensure these directives are actually implemented transparently and effectively.^{xxiv}

As few ASGM activities are licensed, some officers in the Mines Division of DGSM are encouraging licensed mineral dealers to declare sites of origin (even if from extralegal ASM) as a means to increase reporting of Ugandan production, improve statistical data on ASM in the country, and increase local revenue sharing from ASM.

Currently, the Government of Uganda is considering raising royalties and fees in the minerals sector in an effort to increase revenues. An assessment of fiscal regimes for ASM in over 15 countries demonstrated that the cost of licences and royalties are inversely proportional to the percentage of the sector likely to be formal.^{xxv} Ironically, governments seem to reap fewer, rather than greater, financial benefits from ASM when costs of licences are higher, and a similar effect is predicted in Uganda.

In addition to royalties and licence fees, the income tax rate ranges from 25-45% depending on the profitability of the venture although few in ASGM pay these taxes or are aware of the requirement to do so. Fiscal incentives such as zero customs duty on imported capital goods, equipment, machinery, vehicles, raw materials and other goods needed for mining

are included in legislation. A few small gold companies have sought to take advantage of this measure but reportedly face difficulties avoiding fees and continue to be charged during the customs clearing process.

ii) Commercialization requirements and taxes

Holders of a mineral right for extraction (e.g., Location Licence, Mining Lease) are entitled to sell and export minerals produced on their concessions with an export permit obtained from the DGSM in Entebbe and proof of payment of royalties.

Other mineral traders must obtain a Mineral Dealers Licence (MDL), which allows the holder to engage in buying and selling of minerals. Separate MDLs are needed for precious minerals (e.g., gold, gemstones) and non-precious minerals (e.g., industrial minerals). The cost of an MDL for the buying and selling of gold is 2 million Uganda shillings per year (approximately US\$1000 per annum). Prior to export, proof of payment of import taxes (0.3% of the international value of gold) or the 3% royalty on production is required (if it is declared from Uganda and has not been paid).

Mineral dealers are required to keep records indicating where and from whom the mineral was purchased, the quantity and price paid and to submit such reports quarterly to the Commissioner, DGSM. The MDL must be renewed each year at the end of December regardless of when it was obtained during the year).

B. The Role of Credit Mechanisms

While a number of credit-support programs have been initiated to promote investment in medium-scale mining in Uganda, none have targeted ASM specifically. Most banks and micro-finance institutions are willing to lend to ASGM with the same terms and requirements as any other loan, inclusive of that related to collateral, pay back periods, and other conditions.

Most artisanal miners do not have bank accounts, reports on production (nor feasibility studies for mine development), and have not established the credit records needed to obtain such loans. Some of the more equipped small-scale miners have obtained bank loans but must put up personal assets (e.g., land) as collateral. As ASGM is often perceived to be high risk, interest rates are high, sometimes exceeding 20%, and repayment must start in the first month following receipt of the loans.

In a few cases, informal arrangements with gold buyers have provided small loans or provision of basic tools or equipment (e.g., water pumps, sluice boxes) in exchange for sale of gold produced.

C. The Role of Ethical Market Initiatives and Brief Analysis of the Current Initiatives

Scoping studies of ASGM pilot project sites have been conducted by the Alliance for Responsible Mining (ARM) for FairTrade and FairMined Gold and the German government's Federal Institute for Geosciences and Natural Resources (BGR) under its program for Certification of Mineral Trading Chains (CTC). Many ASGM sites are enthusiastic to engage in these activities, including formalization, but additional support is needed. Formalization of the ASM extension services mandate of DGSM would contribute substantially to taking potential sites to the next phase.

8. CONCLUSIONS AND RECOMMENDATIONS

A. General Summary

Over the past century, ASGM has emerged as a relatively important livelihood and contributor to local economic development in several regions of Uganda including in Busia and Karamoja in the East and Northeast as well as in the Kigezi and Buhweju goldfields across the West and Southwest of the country. Numbers of gold miners have reached around 20,000 and participation is increasing due to issues such as high population density and land pressures and, in the northeast of the country, prolonged droughts and conflict that have threatened traditional pastoral livelihoods.

Most ASGM is on the "artisanal" end of the spectrum, employing basic manual technologies, and few are operating within a legal framework. In any event, informal economic contributions can be substantial. The development potential of ASGM has received increased attention from the GOU as a result of 2008 estimates of the formal *and* informal ASGM contributions by way of GDP and local economic contributions, employment and both potential and actual royalties, taxes, and fees. Specifically, in 2008 ASM production of gold, tin, coltan, and tungsten was found to be the third largest foreign exchange earner in the country after coffee and fish products, injecting over US\$35 million into local economies. Lost royalties amounted to over US\$2.6 million in that year alone. Given current commodity prices and the growth of ASM over the past 3 years, such contributions may now be 25-40% higher than earlier estimates.

Recognizing this, the GOU has vetted plans to fulfil policy mandates of ASM extension services and efficient regulation via the National Development Planning Process (2010-2014). A number of related improvements have included reporting of informal ASM statistics in Annual Reports, information sharing with the Uganda Bureau of Statistics (UBOS) and Uganda Revenue Authority (URA) and increased communication with artisanal miners following training activities under the Sustainable Management of Mineral Resources Project (SMMP).

Clearly, formalization of ASGM in Uganda relies on GOU support and regulation of ASGM. In any event, most ASGM areas are covered with exploration licences leaving little recourse for

licensing ASGM activities. While realistic legal and fiscal frameworks would provide the foundation, outcomes shall also be determined by efficient and effective institutions, adequate incentives for legalization and measures to mitigate relationships between ASM and exploration and mining companies in the country.

B. Legal Framework for Mining Titles

The recent Mining Policy (2001) and ensuing Mining Act (2003) and Regulations (2004) have attracted considerable interest in the Ugandan minerals sector by enabling first come, first served licensing, streamlined licence acquisition procedures, reduction in discretionary powers of the GOU and affording security of exclusive tenure for mine development. Legislation, combined with international commodity prices, has created a veritable exploration licence boom in Uganda, where speculative licence dealing has become widespread.

While the legal framework provides opportunities for licensing ASGM vis-à-vis Location Licences for small-scale operations, most ASGM continues to be extralegal due to a number of factors:

- Procedures and costs of licence acquisition and maintenance of Location Licences are better suited for small-scale, semi-mechanized operations yet the majority of ASGM consists of alluvial artisanal operations dispersed over larger areas.
- Even for small-scale operations, the “step-up” from a Location Licence to a Mining Lease is substantial in terms of technical and financial requirements, inclusive of those related to establishing feasibility and conducting a detailed Environmental Impact Assessment. Given these challenges combined with a capital investment cap of approximately US\$5,000 for location licences, most existing small to medium-scale operations are consigned to working quasi-legally under a Location Licence category.
- Almost all ASGM areas are covered under Exploration Licences (and to a lesser extent Mining Leases) held by others. Exploration Licences can cover up to a 500km² area and there is no limit on the number of licences that can be held by a single entity. Furthermore, costs are relatively low (approximately US\$350 plus approximately US\$5/km² rent) but returns can be high (e.g., a lucrative licence with little work done can be sold for US\$100,000-250,000). Consequently, “free” areas are readily snapped up by other companies as they become available leaving little recourse for ASGM.
- Women, whose engagement in ASGM ranges from 15% to as much as 90% at some sites, face greater economic and socio-cultural barriers to licensing activities yet gender is inadequately mainstreamed in the mineral policy and legislation. While the GOU has made strong national commitments for the empowerment of women and gender mainstreaming, there seems little political will to translate such objectives into the policy and legal framework.

- Finally, while a policy mandate exists, institutional responsibilities to support formalization of ASM by the DGSM and other government institutions (e.g., local government) are not defined in the Mining Act (2003) and Regulations (2004). Current legislation defines roles related to inspection, reporting, licensing and related regulatory functions but clarity is needed with respect to provision of extension services and advisory functions (including during site inspection) to miners. Consequently, ASM extension services are commonly excluded from work plans or are the first to go when DGSM finances become constrained.

While reforms to the Minerals Policy (2001) and legislation are called for, such processes can take several years to implement. The GOU is currently planning to reform mining policy and laws, inclusive of ASM regulations commencing in 2011-2012, with support from the Commonwealth Fund. Many of the gaps identified above ideally will be addressed via these reforms, with recommended changes including:

- Creation of separate licensing categories for artisanal, small, medium and large scale mining.
- Gender mainstreaming within the policy and legislation, particularly with respect to requirements for licensing of “artisanal” alluvial miners and provision of extension services and outreach to ASGM sites. Potential to establish locally administered permit systems for “artisanal” alluvial miners (e.g., via the well established, decentralized local government system at least at district level) should be explored.
- Reducing costs of “artisanal” mining licences and simplifying application procedures. A greater impetus is needed to implement longer-term plans to strengthen regional DGSM offices (that would be linked electronically to the national mining cadastre) and are more accessible to artisanal miners.
- Clearly defining institutional roles and responsibilities related to ASM extension services, outreach and mediating ASM-LSM/exploration arrangements (in addition to regulation and enforcement) must be specified in the Mining Act and Regulations. This would serve to reduce discretionary powers and *ad hoc* planning and execution of work programs related to ASM. Legally enshrined mechanisms could also increase transparency and provide the foundation for establishment of performance monitoring and evaluation frameworks needed to hold management, departments and their officers accountable to fulfil legally defined mandates.^{xxvi}

C. Environmental Licences

The Ministry of Energy and Mineral Development is defined as the Lead Agency by the National Environment Act, which is primarily responsible (reporting to and in collaboration with NEMA) for ensuring that environmental legislation is adhered to within the mineral sector. As the technical and administrative body responsible for implementation of mining

legislation, the DGSM reviews applications (inclusive of environmental assessments) and makes recommendations to NEMA for approval.

In the case of a Location Licence, a basic Project Brief is required in conjunction with the application process. While this 5-10 page overview of project activities, expected impacts and mitigation measures is far simpler than the full EIA required of Mining Lease applicants, it nevertheless is beyond the capacity of most miners. Obtaining assistance in Project Brief preparation can increase the costs of licensing significantly (between US\$150-500), providing an added fiscal barrier for formalization, while comprehension of its contents (and therefore likelihood of implementation) is often limited.

Licensed ASGM theoretically must comply with a plethora of environmental regulations while, to its credit, the Mining Policy (2001) recognizes the limitations of the subsector, by specifically referring to “*light-handed application of regulations*” by DGSM with respect to ASM. The Mining Act (2003) and Regulations (2004) similarly put forward reasonable requirements for working and closure obligations. Specific guidance, however, would be useful concerning mercury and cyanide, which are currently only captured under environmental legislation, including standards (e.g., for discharges) and pollution control measures.

Licensed ASGM requires additional permits from the Ministry of Internal Affairs for the use of explosives and from the Ministry of Water and Environment (MWE) for water extraction and discharge. Most ASGM sites are alluvial so explosives are rarely used at present.

While it is practical to include environmental requirements in the Location Licence application and review process via DGSM, some reforms are recommended including:

- Simplifying the Project Brief requirements such that it is comprised of an easier to comprehend checklist and fill-in-the-blank form rather than a more elaborate, 5-10 page written description. The Project Brief form should be reviewed by both a DGSM Officer and the Applicant at the time of submission to ensure all aspects are clearly understood and can be used as a basis for monitoring performance *and* reporting;
- Provision of specific requirements and guidelines for use of mercury and cyanide in ASM Regulations; and
- Clarifying and defining the legal mandate of District Environment Officers (DEOs), who are much closer to the ground. Training of some DEOs has been conducted but this should be done more broadly as relationships between DGSM and related agencies (e.g., NEMA, Ministry of Water and Environment) are formalized.

D. Relationship Between Large and Small-scale Mining

Large-scale gold mines are not found in Uganda at present, but active exploration suggests the potential for larger developments over the next decade. Most engagement of ASGM is with a few small to medium-scale operations and exploration companies holding

concessions that span almost all ASGM areas. Most exploration licences seem to be held for speculative reasons or by companies engaged in gold buying activities. Consequently, the relationship between companies and artisanal miners is largely harmonious. The main exception is the Busitema Gold Mine in Eastern Uganda where prolonged disputes over access to areas has led to the cessation of formal production and recent sale of the medium-scale mine. Over the past 2 years, MEMD has taken an active role in mitigating the conflict and ongoing consultations have led to allocation of viable ASGM areas, which is likely to alleviate tensions significantly.

The legislation is clear on exclusivity of mineral rights but the widespread coverage of ASGM areas by exploration and mining licences presents a major challenge for formalization. DGSM has recently been undertaking measures to cancel exploration licences for non-work and the GOU seems likely to raise fees and rents for exploration. While this should theoretically “open-up” areas for ASGM, in reality, areas are promptly taken up by other companies. The DGSM has indicated its willingness to accept formal, written agreements between ASGM and exploration and mining companies as a means to provide some recognition of ASGM and mitigate company liability issues, but such arrangements are yet to be instituted. One such agreement may be imminent at Kitaka Mine in Western Uganda, potentially providing a model for co-existence and providing valuable lessons for future legal reforms.

Main recommendations concern:

- Providing clear legal guidelines for engagement with artisanal miners, including explicit requirements for identification and consultation with ASGM in baseline studies and EIA processes, increasing obligations and regulation of companies engaged in buying ASGM gold, and improving effectiveness (via a legal mandate) of the DGSM Social Environmental Unit in these processes.
- Recognizing pre-existing ASGM on exploration licences, such that when areas are relinquished, ASGM can have rights of first refusal for licensing ASGM sites. While DGSM seems amenable to recognizing agreements between licence holders and artisanal miners working on their concessions, a formal legal provision for such arrangements should be provided for in legislation.
- Reducing discretionary powers related to cancellation of licences for non-work.
- Increasing the cost of mineral rent (currently at approximately US\$5/km²) to reduce acquisition of large areas by speculators.

While reducing the maximum number of licences or area to be held by a single entity has been suggested as an effective mechanism, Uganda is seeking to harmonize licensing requirements (as well as taxes and fees) regionally and with neighbouring countries and attract exploration investment wherever possible. Thus, such changes are unlikely unless adopted by neighbours. Furthermore, even if such requirements were introduced, companies are likely to constitute themselves under multiple company names, with the same outcome.

E. Government and Institutional Structure

Although the DGSM is the central agency responsible for minerals sector regulation and management, multiple agencies have a role to play including NEMA, NFA (for areas in forest reserves) and technical officers in local government, particularly those responsible for environment, community development, labour, and social welfare.

The main constraints relate to lack of formal communication mechanisms between these institutions, lack of awareness of mining and complementary mandates, especially with respect to local government, and systemic limitations on financial and technical capacity to fulfil such mandates.

DGSM has, over the past 3 years, begun to engage in regional initiatives with the Uganda Bureau of Statistics (UBOS), improve information sharing with the Uganda Revenue Authority (URA), and incorporate estimates of informal ASM in its reporting, thereby increasing the priority afforded to ASM and the minerals sector in general. This has substantially increased the attention of the GOU and increased the interest of the Ministry of Finance, Planning and Economic Development (MFPED), which has resulted in proposals to increase budgetary support to DGSM to fulfil its ASM regulation and service mandates. Although prior activities under the SMMRP between 2006 and 2009 substantially increased ASM awareness of local government, related technical roles at ASM sites have only been undertaken on a piecemeal basis and formal institutionalization of complementary functions is needed.

The main recommendations related to the institutional framework include:

- Establishing and adequately resourcing an ASM Unit within the DGSM, most likely best placed within its Mines Division, and strengthening of Regional DGSM Offices, inclusive of the appointment of an ASM focal point in each.
- Specifying performance requirements within legislation to increase accountability of DGSM and MEMD in implementing related work programs, thereby improving the legal framework, in addition to providing a legal mandate to this unit (and other complementary divisions of DGSM).
- Strengthening relationships between DGSM and local government ministries, National Forest Authority, National Environmental Management Authority, and other key agencies in order to increase commitment to address ASM. Training of District Environment Officers and District Community Development Officers (who have clear roles in strengthening local organizations) would significantly improve performance on the ground, particularly if such functions were institutionalized.

F. Economic Incentives

Current costs of ASM licensing are appropriate for small-scale, semi-mechanized operations but provide little incentive for licensing artisanal miners. Furthermore, the costs of and

capacity needed to obtain a Mining Lease are prohibitive for those who do possess a Location Licence providing a legal deterrent to mechanization by costing in excess of US\$5,000. Different licensing categories for artisanal, small, medium, and large-scale miners are clearly needed, while added economic incentives through viable credit mechanisms instituted in banks and microfinance institutions would create additional incentives for formalization and improved performance.

Outreach and sensitization of financial institutions and efforts to bring miners together with banks (particularly local development banks) would help bridge some of these gaps while linkages with existing micro- and small-enterprise development programs could serve to generate improvements in ASGM. Entry points include Savings and Credit Cooperative Society (SACCO) program support under the MFPED, the Private Sector Foundation of Uganda (PSFU) program “Business Uganda Development Scheme (BUDS),” and the recently established Small and Medium Enterprise Development Unit of Uganda Investment Authority (UIA), among others. Establishment of Loan Guarantee Programs (as currently being instituted in Nigeria) to reduce lending risk, mitigate high interest rates, and support more appropriate pay-back periods and terms would be useful although are more practically introduced for larger loans for small-scale operations rather than artisans.

Economic incentives should also extend beyond miners to mineral dealers in the country. At present, it is more cost-effective for mineral dealers to declare out-of-country origin than pay the 3% royalty on in-country ASGM production, thereby perpetuating the relatively low-priority status afforded to ASGM by the GOU. Harmonization of royalty and import-export taxes with neighbouring countries is needed but, at present, the GOU is actually proposing to substantially increase royalties, fees, and taxes on minerals. The GOU would benefit from lessons learned in numerous jurisdictions demonstrating that the likelihood of ASM formalization decreases substantially with increasing financial costs of legal operation. Consultative processes to review these and any other proposals for mining legislation reform should include miners at a grassroots level and also bring mineral dealers into the fold.

In addition to other issues identified in previous sections, main recommendations concerning economic incentives therefore include:

- Harmonizing royalty and import-export taxes imposed on minerals and maintaining relatively low taxation rates.
- Lowering costs of mineral dealers’ licences and/or creating a low-cost category for local buying agents.
- Formalizing institutional roles related to marketing assistance, business skills training (e.g., via an ASM Unit in DGSM) and an outreach/sensitization program targeting financial institutions and increasing their links with miners.

Finally, the GOU is currently seeking to increase revenues from the minerals sector and now recognizes the considerable potential of the informal ASM sector. However, as

demonstrated in numerous countries around the world, ASM is unlikely to become formal unless miners have the capacity to become legal *and* there is a clear benefit in doing so. An unbalanced emphasis on regulation and enforcement, combined with increased taxes and fees, is likely to drive miners deeper underground and widen the gap between government and ASM.

While responsiveness to the well documented needs of miners is duly recognized in the Mineral Policy, the same attention to formalization of institutional roles is also needed. *“Informality begets informality. Unless ASM support is formally enshrined in [mining authorities’] work programs and budgets, ASM is unlikely to make much progress towards formalization.”^{xxvii}* For each of the issues described herein, a policy mandate provides the vision but a clear legal mandate is needed to help ensure that the objectives of well-meaning policy are actually achieved.

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