



USAID | **CENTRAL AFRICAN REPUBLIC**

PROPERTY RIGHTS AND ARTISANAL DIAMOND DEVELOPMENT (PRADD) PROJECT

COMPARATIVE STUDY: LEGAL AND FISCAL REGIMES
FOR ARTISANAL DIAMOND MINING

OCTOBER 2010

This publication was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech ARD.

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Prepared for the United States Agency for International Development, USAID Contract Number EPP-I-00-06-00008-00, Task 5.4, Property Rights and Artisanal Diamond Development in CAR, under the Property Rights and Resource Governance Program (PRRGP) Task Order, under the Prosperity, Livelihoods, and Conserving Ecosystems (PLACE) Indefinite Quantity Contract.

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ACRONYMS

ADM	Artisanal Diamond Mining
AMZ	Artisanal Mining Zone
ASM	Artisanal and Small Scale Mining
BECDOR	Control and Evaluation of Diamonds and Gold Office
CAMI	<i>Cadastre Minier</i> (Mining Registry), DRC
CAR	Central African Republic
CDS	Contribution to Social Development
CEEC	<i>Centre d’Evaluation, d’Expertise et de Certification</i> (The Centre for Evaluation, Expertise and Certification), DRC
CFA	Central African Franc
CP	Contribution of the <i>patente</i>
DACDF	Diamong Area Community Development Fund
DRC	Democratic Republic of Congo
EIA	Environmental Impact Assessment
GDD	Gold and Diamond Department (Sierra Leone)
GDO	Government Diamond Office
GDP	Gross Domestic Product
GGMC	Guyana Geology and Mines Commission
GoCAR	Government of Central African Republic
GoDRC	Government of Democratic Republic of Congo
GoSL	Government of Sierra Leone
KPCS	Kimberley Process Certification Scheme
MDF	Mineral Development Fund
MFI	Microfinance Institution
MLME	Ministry of Lands, Mines, and Energy (Liberia)
MML	Mining and Minerals Law
MMSD	Ministry of Mines and Steel Development (Nigeria)
NASMA	National Artisanal and Small Scale Miners Association
NGJA	National Gem and Jewelry Authority (Sri Lanka)
NGO	Non-governmental Organization
NSMAC	Namibian Small Miners Assistance Centre
NTR	Non-tax Revenue
PMMC	Precious Minerals Marketing Company Ltd.
PRADD	Property Rights and Artisanal Diamond Development

SACCO	Savings and Credit Cooperative (Tanzania)
SAESSCAM	<i>Service d'Assistance et d'Encadrement d'Artisanal et Small Scale Mining</i> (The Service for Assistance and Organisation of Artisanal and Small-scale Mining), DRC
TDA	Artisanal Development Tax
USAID	United States Agency for International Development
VAT	Value Added Tax

EXECUTIVE SUMMARY

Artisanal diamond mining (ADM) is an important livelihood for around 400,000 women and men in the Central African Republic (CAR) and provides more than 60% of the country's export earnings.¹ While official statistics suggest that the mining sector in the CAR contributes only 4–7% to national Gross Domestic Product (GDP), more than 95% of the country's alluvial diamond production is attributed to artisanal miners; the likelihood of substantial losses in government revenue is high due to production and sales outside of the formal chain of custody.²

Legalization of artisanal diamond miners in the CAR has the potential to generate significant development benefits for the nation by contributing to the National Treasury, providing non-agricultural employment options, and stimulating rural economies in mining areas through small enterprise development. However, in many artisanal and small scale mining (ASM) countries, it has been widely demonstrated that the costs of licensing, fees, rents, taxes, and royalties are a common obstacle for informal miners, and that artisanal miners will only obtain a license if they have the financial, technical, and personal capacity and incentives to do so.

The Property Rights and Artisanal Diamond Development (PRADD) Project in the CAR has begun to show success in demonstrating an effective process to identify and formalize property rights in ADM zones. Despite this, artisanal miners still face barriers in purchasing an annual license (*patente*).

This Comparative Study assesses how legalization of artisanal diamond miners can be promoted through reduced costs of licensing, royalties, taxes, and fees. Detailed case studies from diamond producing countries—Liberia, Sierra Leone, Guyana, Tanzania, and the Democratic Republic of Congo (DRC)—and general experiences from several other ASM countries provide interesting insights. For example:

- In Guyana, licensing fees have been lowered with a view towards generating revenue from royalties and export taxes. Permits are easily accessible at rates of only US\$5 for diamond diggers, US\$50 for dredges and US\$75 for traders and exporters. Rather than individual miners, whole production units (dredges) are targeted for formalization and generate a weekly production sheet which accompanies diamonds throughout the chain. Royalties of only 3% are paid based on a standard value of US\$75 per carat (regardless of quality). Because of the simplicity of the tracking tool and low-cost fees and taxes, almost 100% of the production units are legalized, although the *artisanal* miners who work on the dredges remain largely informal as many refuse to get their cards.³
- In comparison, in Sierra Leone, a license costs US\$200–US\$300 (registration plus other fees). A 3% royalty payment on the export of artisanal diamonds is harmonized with export taxes in neighboring countries and 25% of this is allocated to the Diamond Area Community Development Fund (DACDF). The DACDF returns a portion of diamond revenues to diamond communities for investment in local development projects. The allocation of this 0.75% of total diamond export value depends on the proportion of mining licenses a chiefdom has hosted out of the national total. In principle, the DACDF is a good model for incentivizing formalization, although challenges in management and allocation of funds have prevented communities from fully benefiting.⁴

¹ Mbendi Information Services, 2010a.

² Mbendi Information Services, 2010b.; Diamond Development Initiative, 2010; Economist Intelligence Unit, 2006. The EIU reports that diamonds composed 42% of exports from CAR in 2004.

³ Blore, S., 2008; Shawn Blore, email to Jennifer Hinton, 4 October 2010.

⁴ National Advocacy Coalition on Extractives (NACE), p. 34.

- In the DRC, artisanal miners can be legally recognized by obtaining a \$25 '*carte d'exploitant artisanal*' from the provincial offices of the Mines Ministry (*Division des Mines*). Few miners have taken the cards. Reasons include failure of the state to print enough cards due to a lack of supplies and logistical capacity; the logistics of reaching issuing centers; the practice of charging in excess of US\$25 for cards; lack of any penalty for those without cards; and a perception amongst miners that there are no benefits to having one.⁵ Another major reason is that the card only allows the digger to mine within a certain zone and, because miners are highly mobile, they need to purchase multiple cards. One suggested approach is to validate the card for use in the entire province and/or drastically reduce the fee for the cards.⁶ This outcome reflects the importance of understanding the local situation when designing licensing systems.
- Since Madagascar enacted the 2005 Mining Code, low-cost licensing models have been applied, where a gold miner or group pays only approximately US\$5.50 for an annual permit (*Carte d'Orpailleur*). Payments are made to their "ccmmune" (local administrative unit of government), which is authorized to grant permits while 3% royalties are paid by a *collecteur* or local buyer (whose annual license costs only US\$50). Between 2004 and 2007, 1,383 of 1,500 gold panners in the Commune of Antanimbary had obtained permits. This successful formalization of activities was due to a concerted sensitization campaign by a local non-governmental organization (NGO), with funding from the World Bank, as well as clear evidence to the miners that it was their license fees that were paying for a variety of local social and economic infrastructure projects. Despite this success, widespread registration has been impeded due to difficult logistical access to administrative centers and illiteracy.⁷
- In the Philippines, where the main commodity is gold, the costs of preparing applications and environmental impact assessments (EIAs) are financed under the *People's Small-scale Mining Protection Fund*. The fund receives a 15% share of all government revenues from mining and this money is mainly used for information dissemination and training of small scale miners on safety, health, and environmental protection, and on the establishment of mine rescue and recovery teams.⁸
- In Ghana, officially reported production of diamonds doubled from 40% in 1989 to 80% in 2002, owing to reforms in legislation, as well as concerted outreach and training provided by regional mines offices and a series of technical assistance projects. While legal exports did rise, the number of licenses given out was fairly low. The ASM subsector is comprised of an estimated 200,000 artisanal diamond and gold miners, yet only 620 artisanal mining licenses were granted in this four-year period.⁹ Miners linked lack of registration to bureaucratic procedures in licensing.

Key fiscal success factors include: low-cost licensing; simple reporting procedures; regional harmonization of mining taxes to reduce illegal exports; the establishment of a community development fund for investing diamond-generated revenues back in diamond production areas; investment in ADM support services; and the collection of taxes and royalties via licensed mineral dealers at the point of export (instead of at the point of production).

However, success in formalizing artisanal mining also needs simplified requirements for licensing and increased institutional support to miners. Miners will simply not legalize their activities if: (i) they lack the technical and financial capacity (and in most cases even basic literacy and numeracy) to obtain a license and comply with its requirements; and (ii) they do not see any real benefits from doing so. In many African countries, a large percentage (45–65%) of the ASM workforce is made up of women

⁵ PACT, 2010.

⁶ World Bank, 2008.

⁷ Levin, 2007.

⁸ Government of Philippines, 1991, Section 20.

⁹ Aryee, 2003; Hentschel, et al., 2002.

who face even greater barriers (e.g. literacy, funds, autonomy) to licensing.¹⁰ Expensive and bureaucratic licensing systems run the risk of widening gender gaps at local levels, as men will find it easier to register than women.

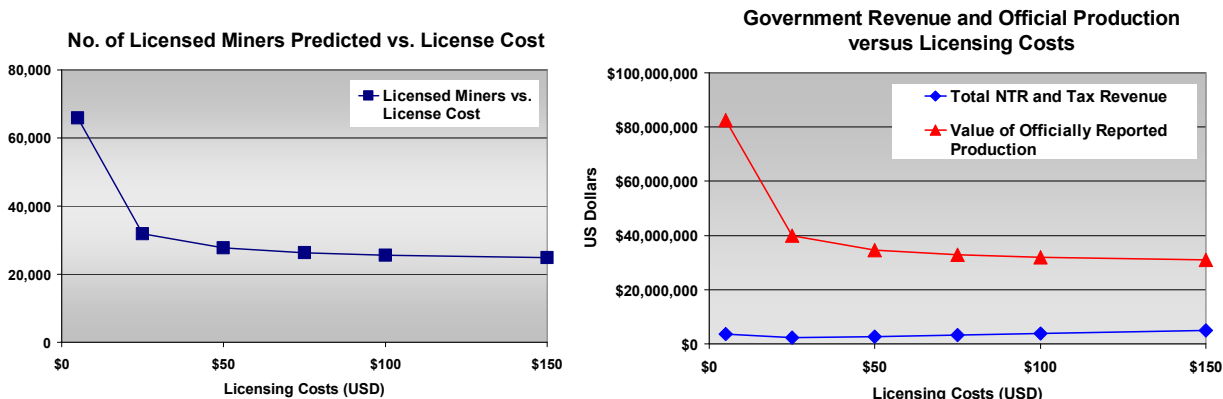
To deliver the support needed to artisanal miners, many countries such as Ghana, Philippines, and the DRC, have small scale mining units or departments but, in all cases, implementation of what appears to be good policy has been hindered by a lack of resources to these units and limited accountability for their performance. In Uganda, a National ASM Strategy determined that a levy of only 5% of royalties on all mineral production would be sufficient to finance a cross-section of training, outreach, regulation, and data collection functions to responsibly manage and develop the ASM subsector as well as monitoring and evaluation of the effectiveness of these government efforts.¹¹ Because extension services and improved regulation of ASM can support further legalization, government can obtain progressively greater and greater tax and non-tax revenues as the program expands.

Incentives to artisanal miners to formalize also exist in the form of entitlements to transfer and mortgage claims; designation of areas specific for ASM only (which exists in most legislation but is rarely practiced); decentralization of claims allocation and administration; training and advisory support (e.g. in gem valuation and mining methods); providing market linkages to licensed dealers; tax deductions on equipment imports; and access to capital development funds (microfinance).

Key mechanisms for benefit sharing include community development funds that return a portion of royalties to local governments, land owners, and communities directly involved in or affected by ADM. As shown in Sierra Leone and the Philippines, however, unless local capacity is developed to administer these funds and effective accountability structures are in place, the potential for misuse is high.

Governments use taxation to meet two primary objectives: to raise revenues by implementing a fair and equitable system, and to guide taxpayer behavior through “command and control” mechanisms. The various mining taxation instruments available seek to increase the rate of formalization and also improve on revenue collection from the sector.

The “balance” between affordable licensing and the broader benefits of formalization versus government revenue is surprising. A simple economic model developed from case study data suggests there is a correlation between miners’ incomes, license costs, and the percentage of miners who opt to obtain a license. The model suggests that in the CAR license fees as low as US\$5 per miner could yield \$50 million US\$ per annum *more* in official diamond exports than a license fee of US\$50, and almost US\$ 0.8 million *more* in tax and non-tax revenue due to expected increases in the number of licensed miners from 28,000 to 65,000.



¹⁰ Hinton, Veiga, Beinhoff, 2003.

¹¹ Hinton, 2009.

While results of the economic model are promising, one of the main lessons learned from other jurisdictions is that reduced licensing costs, royalties, and export taxes *can* stimulate licensing. However, immediate results are unlikely, except in areas where sufficient on-site intervention and support is provided. Consequently, fiscal provisions must be harmonized with sensible mining policies and the institutional mechanisms needed for implementation.

Results from case study countries strongly suggest that the biggest challenge to formalization lies in implementation. Reducing licensing fees is the first, essential step to set the stage for increasing the proportion of artisanal miners who register with the state; the second step is sensitization of miners across the country as to the benefits of registration; and the third is to ensure those benefits are provided. Finally, institutional performance should be strictly and transparently monitored to ensure effective implementation and ever-increasing rates of legalization.

1.0 INTRODUCTION

ADM is an important livelihood for around 400,000¹² women and men in the CAR and provides more than 60% of the country's export earnings, estimated at US\$146.7 million in 2007.¹³ While official statistics suggest that the mining sector in the CAR contributes only 4–7% to national GDP, more than 95% of the country's alluvial diamond production is attributed to artisanal miners: the likelihood of substantial losses in government revenue is high due to production and sales outside of the formal chain of custody.¹⁴

Formalization of artisanal diamond miners in CAR has the potential to generate significant development benefits for the nation by contributing to the National Treasury, providing non-agricultural employment options, investment of ADM revenues into agriculture, and stimulating rural economies via small enterprises in mining regions. However, in many ASM countries, it has been widely demonstrated that costs of licensing, fees, rents, and royalties are a common obstacle for informal miners; and artisanal miners will only obtain a license if they have the financial, technical, and personal capacity to do so.¹⁵

The PRADD Project in the CAR has begun to show success in demonstrating an effective process to identify and formalize property rights in artisanal diamond mining zones. Despite this, artisanal miners still face barriers in purchasing an annual license (*patente*) for \$100 and, as in many countries, likely also face even more difficulties due to additional taxes, royalties, rents, and bureaucracy.¹⁶ Because unlicensed miners are considered illegal, they are likely to have problems with different authorities. This can quickly increase the divide between informal miners and government and make future licensing even less likely.

This Comparative Study assesses how legalization of artisanal diamond miners can be promoted through reduced costs of licensing, royalties, taxes, and fees. It specifically examines what fiscal provisions are reasonable given the incomes and capacity of artisanal diamond miners in CAR and when and how the expected benefits of lower fees can increase government revenues from ADM through a greater number of licenses granted. A simple economic model has been developed to help the Government of CAR (GoCAR), donors, and others evaluate expected changes in revenue streams and other benefits through increased licensing of artisanal miners (see Annex Two).

1.1 ARTISANAL DIAMOND MINING: DEVELOPMENT CHALLENGES AND OPPORTUNITIES

ADM is typically characterized by crude methods, serious occupational safety risks, environmental degradation, child labor, exploitative work arrangements, gender inequalities, and illegality. Despite this, hundreds of thousands of women, men and children are drawn into the ADM subsector by acute

¹² Sebastien Pennes, email to Levin, 6 October 2010. He notes that there are approximately 40,000–90,000 miners; total of 400,000 including artisanal labourers (diggers, washers).

¹³ Mbendi Information Services, 2010a; Pangea DiamondFields Plc, 2010. The *Etats Généraux* workshop proceedings document repeatedly notes that the contribution of diamonds to GDP is about 4%.

¹⁴ Mbendi Information Services, 2010b; Diamond Development Initiative, 2010; Economist Intelligence Unit, 2006. The EIU reports that diamonds composed 42% of exports from CAR in 2004.

¹⁵ Hinton, Veiga, Veiga, 2003, pps. 99–115; Hinton, 2006.

¹⁶ This bureaucracy can include paperwork (and paying for assistance to complete it, including preparation of map-sheets, environmental briefs, and other requirements). Other costs include transport to government offices and accommodation and food while waiting for applications to be processed.

rural poverty, lack of viable livelihood alternatives, and the hope of riches. ADM nevertheless provides a source of revenue for rural economies by stimulating small business (e.g. goods and services to miners for their mining activities and subsistence needs) and it further reduces rural-urban migration and enables miners and their families to meet their basic living requirements.

The economic contributions of a legalized ADM subsector in the CAR could be substantial, particularly given that:

- Between 40,000 and 90,000 artisanal miners are estimated to be active in the CAR, of which the majority mines diamonds.¹⁷ This direct labor, coupled with estimates of employed, indirect, and induced labor and household dependency ratios, suggests that over 2.8 million women, men, and children, about two thirds of the national population, are directly and indirectly reliant on ADM.¹⁸
- With estimates placing net average incomes at \$723 per year per miner, if only half of incomes are spent on local goods and services (an extremely conservative estimate), more than \$28.9 million US\$ may be injected into local economies annually, particularly in the regions of Berbérati, Upper Kotto, and Sangha. Local demand by miners, who are often wealthier than others in rural economies, creates markets for locally grown or supplied products and increases the cash component of household incomes. Local formal and informal businesses, as a consequence of ADM injected capital, may contribute an additional \$86.7 million US\$ to local economies.¹⁹
- CAR's official artisanal diamond production averages approximately 400,000 carats per year and is valued at 60.4 million US\$ per annum.²⁰ Assuming only half of mining production passes through official channels²¹ and based on a point of production levy of 7%, this would amount to losses in tax revenue on the order of US\$2.1 million per annum.

Licensing of artisanal miners would provide a vehicle to introduce formal sources of financing and technical support, which in turn would lead to increased diamond production and even greater contributions to the local and national economy. One of the most important instruments to support legalization of ADM is a set of practical and achievable fiscal and legal requirements.

1.2 THE IMPORTANCE OF A SUPPORTIVE FISCAL AND LEGAL REGIME

Fiscal policy is crucial to ensuring that investment in economic development is stimulated while providing sufficient revenues to enable government to fulfill broader national development objectives. The four main components of fiscal policy are (i) expenditure, budget reform, (ii) revenue (particularly tax revenue) mobilization, (iii) deficit containment/financing, and (iv) determining fiscal transfers, particularly from higher to lower levels of government.²² While this Comparative Study examines revenue streams from licensed ADM, it also recognizes the importance of fiscal transfers in supporting further licensing and improved development outcomes from ADM.

¹⁷ Sebastien Pennes, email to Levin, 6 October 2010. He notes approximately 40,000–90,000 miners and up to 400,000 artisanal laborers (diggers, washers).

¹⁸ Due to lack of reliable data, commonly used multipliers of 2.5 and 2 for indirect and induced labor (*after* Hinton, 2009), respectively, were reduced to 1.5 and 1.0. Average number of household dependents in ASM areas was conservatively estimated at 4.6 dependents per miner based on average fertility rate.

¹⁹ Source of Incomes from Chupzei, et al., 2009. Some remittances may be sent outside of mining areas, however it is probable that the bulk of expenditures are local to sustain day-to-day needs. Thus, the extent of local economic contributions are more likely to be underestimated than overestimated. Multipliers of economic contribution in ASM areas in other countries are calculated at 2.5. Due to lack of data, a multiplier of 1.5 was used (Priester, et al. 2010; Hinton, 2009).

²⁰ Source: Data from Ministère des Mines (2010) based on averages from 2001–2009.

²¹ Chupzei et al., 2009, *after* Matip, 2003. See page 30.

²² ASARC, 2007.

The business case for governments to support formalization of ADM through conducive fiscal, legal, and institutional frameworks is clear:²³

“Countries that create a legal and economic environment that supports integration of extralegal enterprises almost invariably prosper more quickly than those that do not. Furthermore, costs of imposing top-down authority over the extralegal economy are prohibitive, particularly when existing informal systems are viewed as legitimate at the grassroots level”.

Important lessons can be learned from the experiences of countries such as Brazil, Colombia, Ghana, Indonesia, Laos PDR, Tanzania, and many more that have, at one time or other, battled and failed to stop illegal ASM at great financial and reputational costs.²⁴ As demonstrated in the case study countries, recent approaches *now* recognize the importance of incentive-based legislation and institutional support coupled with practical regulation and enforcement mechanisms.

For *any* business to operate for any length of time, it must generate more profits than the costs of operation. This principle is no different for artisanal diamond miners. The benefits of legal operation *must* be greater than costs of licenses, rents, taxes, and royalties. However, not only must artisanal miners see advantages from operating legally, they must have the *financial, personal, and technical capacity* to fulfill associated bureaucratic and legal obligations.²⁵

For these reasons, the harmonization of fiscal and mineral policies underpins the effectiveness of a supportive framework for ADM. While substantial government revenues can be realized from a legal ADM subsector, practical and achievable fiscal and legal requirements must be coupled with institutional support to build miners’ capacity to comply. Without this support, the policy will remain ineffective, no matter how perfectly crafted.

1.3 OBJECTIVES

The primary objective of this work is to develop a comparative study of ADM fiscal regimes to permit the GoCAR to consider whether lowering the fee of the *patente* will encourage formalization. The *patente* is the *carte d’exploitant artisan minier*, a permit which all miners must possess to mine within a designated artisanal mining zone or as part of an artisanal cooperative.

This assessment further seeks to:

- Provide a summary of case studies of legal regimes, inclusive of their fiscal frameworks, primarily in ADM countries to identify factors contributing to success or failure in their implementation and potential relevance for CAR.
- Review the existing CAR fiscal framework related to ASM and identify related challenges and opportunities.
- Draw from international best practice on fiscal regimes affecting ADM (and other relevant ASM sectors) and address critical factors that may be applied to the CAR, with specific emphasis on:
 - Fiscal regimes that facilitate the entry of artisanal miners into the formal system and their specific mechanisms (e.g. incentives, enforcement practices, tax collection systems) that support formalization as well as investment and entrepreneurship.

²³ Siegel & Veiga, 2009; Hinton, 2009.

²⁴ Hinton, 2009.

²⁵ Hinton et al., 2003.

- Fiscal regimes that generate significant financial benefits to the state and ways in which these benefits are applied to support development (e.g. trust funds, community development funds, etc).
- The relationships between miners' incomes and licensing fees, rents, taxes, and royalties.

Informed by data from case study countries, this work also seeks to develop a basic Excel model to show the relationships between state revenues generated from ADM and the number of paying artisanal miners. The model intends to be a simple tool for use by government, donors, and others that can hypothesize the impact of reduced *patente* costs on the number of legal miners and their revenue contributions to the treasury.

1.4 METHODOLOGY

1.4.1 METHODOLOGICAL APPROACH

The short time-frame for the project (two weeks) has confined research methods to being primarily desk-based. Methods included:

1. Documentary review and analysis of:
 - a. Legal codes pertaining to ADM and ASM fiscal and legal systems in 10 countries, including those demonstrating successful approaches to formalization of artisanal mining sectors.
 - b. Government reports and statistics related to the minerals sector.
 - c. Consultancy reports, and academic and NGO publications on ADM and ASM fiscal regimes and formalization.
2. Statistical analysis of ADM populations (formal, semi-formal, and informal), diamond production and trade, and government revenues from the Kimberley Process Certification Scheme (KPCS), international financial institution, and government statistics.
3. Consultation by email and telephone with experts and government officials in case study countries to update information, where possible.

1.4.2 ECONOMIC MODELLING

A simple, user friendly Excel model was developed in order to assess the relationships between government revenues and the number of licensed miners (see Annex Two). The model is an adapted version of that developed by Hinton (2009) to assess economic contributions of ASM in Uganda. Important variations from the original model include the use of basic correlations to assess the potential influence of the *patente* cost on the number of legal miners and their revenue contributions to the Treasury. Correlations were developed using countries with comparatively good data on miners' incomes and production levels which were coupled with country licensing costs and percentage estimates of the formalized sector. While a number of assumptions and estimates were used to set up the model, refinement of statistics is easily undertaken.

The Economic Model is comprised of four spreadsheets:

1. **Main Statistics:** Users can enter data on the total number of artisanal diamond miners (licensed and unlicensed); Annual Total License Costs; Royalty Rate and Export Tax Rate. Users also have the option to enter data on the Nation's Total GDP and Foreign Exchange Earnings. From this, results are generated showing: non-tax revenue (NTR), tax and royalty revenues; Value of Officially Reported Production; % of GDP and Foreign Exchange Contributions; and other development benefits (e.g. local economic contributions from miners' incomes; direct, indirect, and induced labor as well as indirect beneficiaries of ADM)

2. **License Costs versus % Licensed Miners:** This sheet simply prompts users to edit license costs and, based on correlations derived from case study data, the percentage of predicted licensed miners is estimated as well as associated government revenues and expected value of officially reported production.
3. **Graphs—The Effects of License Costs:** Based on changes to the second spreadsheet, the relationship between license costs, percentage of licensed miners, non-tax and tax revenue to the government, and the value of official diamonds produced are easily observed.
4. **Assumptions and Correlations:** The sources of estimates, as well as data informing the correlation are included and can be adapted as more information becomes available.

1.4.3 RESEARCH LIMITATIONS

This research has been limited by the following:

- *Lack of existing data on artisanal miners' incomes.* While data is fairly good, though often outdated for some jurisdictions (e.g. Sierra Leone, Guyana, DRC), estimates are limited or seemingly non-existent for others. In all cases, the sources of data are cited. Consequently, the correlations used to develop the economic forecasts for legalization in CAR are based on a limited number (seven) of countries.
- *Limited published analysis on experiences in formalizing ASM sectors through fiscal measures.* World Bank, ICMM, and other have done extensive works related to fiscal regimes and their effects on large scale mining and exploration investment. Data on conducive *fiscal* frameworks for artisanal mining is available on a piecemeal basis, while this is believed to be the first focused analysis of its kind.
- *Availability of Government Data.* Key persons from government agencies were contacted via email and phone yet little data was yielded from these sources. Many countries referred researchers to government websites where statistics were supposed to be posted, but were not present (or websites were non-functioning).
- *Time Frames.* Sometimes good data was available for years preceding important changes in legislation. In these cases, data could not be reliably used in the development of statistical correlations yet nevertheless illustrated the situation in a country's ASM subsector.

2.0 ARTISANAL DIAMOND MINING AND THE DEVELOPMENT OF THE CENTRAL AFRICAN REPUBLIC

The CAR is the world's tenth largest diamond producer based on value, and fourth biggest artisanal diamond producer, with annual diamond exports averaging 400,000 carats from 2000 to 2009.²⁶ In 2007 diamonds contributed 4–7% of CAR's GDP and approximately 40% of export earnings.²⁷ CAR's diamonds rank sixth in the world in terms of quality, with 75% being gems.²⁸ CAR's diamonds are alluvial and 95% of the sector is artisanal, with about 40–90,000 autonomous women and men artisanal miners forming the base for the mining activity in the country.²⁹ These miners, who manage and run the operations and earn about US\$280 a month, employ up to 350,000 laborers (diggers and washers), who may earn up to \$50 per month.³⁰ Artisanal miners sell their production to about 160 certified collecting agents who, in turn, sell to two purchasing offices located in Bangui.³¹

Formalization rates based on anonymous polls of a small sample of miners (around 230) vary from 5.6% (2010) to 12.1%.³² Government documentation notes an average of just 1,100 miners with the *patente* (*carte d'autorisation d'exploitant artisan minier*) in six out of seven diamond areas for 2009 and 2010.³³ On this basis, the Ministry demonstrates a formalization rate of around 2% for 2009 and 2010.³⁴

2.1 OVERVIEW OF THE FISCAL AND LEGAL FRAMEWORK IN CAR

CAR's Mineral Policy gives GoCAR a mandate to promote responsible ADM through measures including, but not limited to: licensing of artisanal miners and ADM cooperatives; registration of diamond collectors and buying/export businesses; enforcing legal dealings through *la Brigade Minière*; maintaining records and a database to document mineral production and trading; and

²⁶ KPCS, 2009.

²⁷ ARD, 2007, and data from Ministère des Mines (2010).

²⁸ Chupzei et al. 2009 ; KPCS, 2009.

²⁹ Diamond Development Initiative, 2010 and Sebastien Pennes, email to Levin, 6 October 2010.

³⁰ Wardell Armstrong, 2008 and Sebastien Pennes, email to Levin, 6 October 2010.

³¹ Chupzei et al., 2009.

³² Sebastien Pennes, email to Levin, 6 October 2010.

³³ Data from Ministère des Mines (2010).

³⁴ *Les Papiers Officiels pour devenir Artisan Minier Legal*

supporting ADM by enabling cooperatives to export directly, providing training to artisanal miners and providing other technical and material assistance.³⁵ Four decentralized offices are responsible for implementing the Mineral Policy at a regional level.

By all accounts, this policy mirrors that of many jurisdictions and is in line with international best practice. And yet the formalization rates remain low.

2.1.1 THE MINING CODE³⁶

CAR's artisanal mining sector is currently governed by the national Mining Code (*Code Minière*), law No. 9-005 of April 29, 2009, which has reshaped and restructured the legal and institutional framework supporting the mining industry as outlined in the 2004 Mining Code. The mining sector in CAR is directly under the Ministry of Mining and Energy (*Ministère des Mines, de l'Énergie et de l'Hydraulique*). Other authorities overseeing the diamond sector are the General Director of Mines (*Directeur Général des Mines*), and the Minister of Mines (*Ministre d'État Chargé des Mines*).

The law distinguishes between artisanal mining, semi-mechanized artisanal mining, small scale mining, and industrial mining (Art. 1). It defines artisanal mining as: "All activity by which a physical person of Central African origin, in an artisanal exploitation zone delimited in area and depth to a maximum of 30 meters, extracts and concentrates mineral substances using non-industrial, manual tools, methods and processes that are limited in mechanization" (Art. 1).

Importantly, Article 15 states that: "The State favours the evolution of artisanal to small-scale mining, by the regulatory route." However, according to Article 64, potential mining sites are first considered based on their potential for industrial operations. Artisanal exploitation is permitted solely of small scale mining deposits, where industrial exploitation is not viable due to technical or economic limitations. If a site is deemed suitable only for small scale extraction, the Minister of Mines can designate an artisanal mining zone (AMZ), after consultation with the General Director of Mines. However, a decree on this last point has not yet been passed, so in effect there are no official AMZs yet.³⁷

Most artisanal diamond miners in CAR are still clandestine. Control and Evaluation of Diamonds and Gold Office (BECDOR) data indicates that a mere 2% of miners are registered.³⁸ A principal concern is that illegality within the mining industry increases other illegal activity, and creates a wider economic environment of fear, fraud, and lack of rule of law, which takes a toll on society, discourages investors, and reduces the government's income.

An artisanal miner can become legal through three avenues:

1. Obtaining a miner identity card (*carte d'exploitant artisan minier*) and operating within a designated artisanal mining zone. The card is valid for one year, and can be renewed without limitation (Art. 64). This is the *patente*.
2. Where miners wish to obtain a mining title over a specified area (outside of a designated AMZ), they must possess a *patente*, organize into a cooperative comprising at least ten licensed artisanal miners, and obtain an artisanal mining exploitation license (*autorisation d'exploitation artisanale*), issued by the Minister of Mines (Art. 1, 66, 67). The license is valid for two years and can be renewed twice for the same period of time. It can cover an area of up to 62,500 square meters. The cooperative must respect health and safety, preserve the environment, commercialize their diamonds legally, and not damage agricultural operations or water sources. (Art. 69, 70, 71)

³⁵ ARD, 2007.

³⁶ All translations from the French are the author's own.

³⁷ Sebastien Pennes, comments to authors, 13 October 2010.

³⁸ *Les Papiers Officiels pour devenir Artisan Minier Legal*.

3. Prospecting licenses (*autorisation de prospection*) are issued by the General Director of Mines for a period of one year and are renewable once for the same period of time (Art. 62).

2.1.2 THE FISCAL REGIME

The current 2009 CAR Mining Code was specifically aimed, as was the previous 2004 one, at facilitating foreign investment access into the industry and increasing revenues from mining for the country.³⁹

The minimum cost per year for obtaining official documentation necessary to be considered a legal artisanal miner is 58,650 Central African Francs (CFA) (US\$132):

- *Patente* fee is 46,850 CFA (US\$105).
- Production notebook is 2000 CFA (US\$4.50).
- Minimum five mine worker's cards at 2000 CFA (US\$4.50) each is 10,000 CFA (US\$22.50).

Artisanal miners claim that this amount is too high for them because of the uncertainty of diamond production levels.⁴⁰ For miners organized into a cooperative and seeking an *autorisation d'exploitation artisanale*, they must pay for the *patente* for each miner, as well as a number of other fees associated with forming a cooperative, and the *autorisation* fee 100,000 CFA (\$224) (Art. 16), in addition to a surface fee of 5,000 CFA (\$11) per hectare per annum (Art. 18). This is a total of 703,500 CFA (\$1580). A prospecting license costs 100,000 CFA (US\$224) (Art. 62).

The 2009 Code clarifies the regulations for artisanal mining and offers some exemptions from taxes and fees for those miners. For example, under Article 132 any holder of an exploitation license is exempt for three years from the minimum tax, contribution of the *patente* (CP), and the Contribution to Social Development (CDS). However, this benefit is limited to operations lasting longer than ten years, and those making less than a ten-year commitment (that would include most artisanal miners) receive only a one-year tax break.

Other taxes and fees include:

- A 7% royalty is levied on the diamonds at the point of production and must be paid by the holder of the exploitation license, otherwise a penalty is applied (Art. 18).
- Precious stones *cut* and sold on the domestic market are subject to Value Added Tax (VAT) and an Artisanal Development Tax (TDA).
- Any *cut* gems for export are subject to the same export taxes as when sold through the Import-Export Purchasing Office—*Bureau d'Achat Import-Export*. They are also subject to a TDA (Art. 161).

2.2 KEY ISSUES RELATED TO FORMALITY

Key issues in the sector include:

- The majority of artisanal diamond mining is unlicensed (up to 98%).⁴¹
- Up to 50% of diamonds produced are believed to exit the country illegally.⁴²
- The sector is characterized by “a lack of respect for the law.”⁴³

³⁹ International Monetary Fund, 2010.

⁴⁰ *Les Papiers Officiels pour devenir Artisan Minier Legal*.

⁴¹ *Les Papiers Officiels pour devenir Artisan Minier Legal*.

⁴² Chupzei et al., 2009, after Matip, 2003. See page 30.

- The *patente*, designed for registering diamond *miners*, is being taken out by diamond *buyers*, who hold the majority of the *patentes* in some communes.⁴⁴
- The majority of artisanal miners live “in the bush,” far from urban centers, which makes controlling the sector practically impossible.⁴⁵
- Other obstacles to formalization are the fact that the fee is annual, from January to December; that the miners see the land is theirs and so do not see why they should register with the state; and that fewer buyers are financing miners, owing to the recent collapse in diamond prices making it harder for miners to afford to mine.⁴⁶

Consequently, the government of CAR is considering the following measures to incentivize miners to acquire the *patente*:⁴⁷

1. Lowering the price of the *patente*.
2. Changing the structure of payment (introduce tranche payments and for a fixed twelve month period).
3. Introducing a system of “kelemba” and microcredit.⁴⁸
4. Massive sensitization efforts.
5. Encouraging private investment to aid artisanal miners to organize into cooperatives.

2.3 THE DEVELOPMENT POTENTIAL OF ADM IN CAR

ADM provides an important source of labor intensive, non-agricultural rural work for up to 90,000 women and men. Almost 60% of foreign exchange earnings are attributed to ADM while its informal and formal development contributions are likely to be far more extensive.

2.3.1 CURRENT CONTRIBUTIONS OF ADM

The current contributions of ADM are mostly invisible, yet, even in its largely informal state, it plays an important role in local and national development. For example, *when indirect labor, induced labor, and CAR fertility rates (4.6) are considered, an estimated 2.8 million women, men and children directly and indirectly rely on the ADM subsector (Annex Two).*

This is mainly because a substantial percentage of miners’ incomes from ADM (if not all) is spent in communities where they live and work. In many countries, this investment may be directed towards the purchase of basic tools and supplies needed to mine (supporting small shops and enterprises), the basic amenities needed to sustain life (often providing some cash incomes to local farmers), while many miners are likely to invest some surplus into agricultural and other small businesses.⁴⁹ Incomes from ADM can also enable miners to send their children to school and meet household health costs, both of which are crucial to long term, sustainable development. Indeed, *in some countries, an*

⁴³ ARD, 2010.

⁴⁴ ARD, 2010.

⁴⁵ ARD, 2010.

⁴⁶ ARD, 2010.

⁴⁷ ARD, 2010.

⁴⁸ “Kelemba” is a type of “group savings and lending mechanism” which has “proven to be effective in increasing income and security, particularly among women managing small enterprises.” ARD, 2008, p. 14.

⁴⁹ Hinton, 2006.

*artisanal miner can contribute 15–20 times more to the GDP than a person involved in farming and fishing.*⁵⁰

The basic economic model presented in Annex Two provides some interesting insights. Taking a conservative estimate of economic multiplier effects of ASM, *revenues from even informal artisanal mining combined with its spin-off economic enterprises may inject as much as US\$144.7 million into the economy.* As one of the pillars of many national poverty reduction strategies, increasing the cash component of household income in ADM areas and regions can provide an essential foundation for national growth and development.

2.3.2 POTENTIAL CONTRIBUTIONS OF ADM

Given the suspected informal contributions of ADM, it is astonishing to consider the development opportunities of a formalized ADM subsector. Based on correlations between miners' incomes and license costs found in other countries, *a US\$5 license fee could result in legalization of more than 60,000 artisanal miners, comprising ~82% of the current estimated ADM workforce.* Statistics suggest this would yield *official* diamonds exports of US\$82.4 million, comprising ~4.2% of the nation's GDP and bolstering foreign exchange earnings. *Even at low royalty (1.5%) and export tax rates (3%), as much as US\$3.5 million could be generated in tax and non-tax revenue.*

As the rest of this report will demonstrate, however, it is important to recognize that fiscal measures alone are insufficient to achieve such impressive outcomes. “High performing” countries, such as Guyana and Sri Lanka (where licensing costs were in line with miners incomes) have spent years putting in place extensive support mechanisms to complement their fiscal and legal frameworks. “Mid-range” performers such as Madagascar have suitable fiscal and legal measures in place but have done very little outreach to miners. “Lower performing” countries, such as Liberia and Uganda, have only very recently begun to revisit their legislation and take steps towards establishing regulation, enforcement, and extension service mechanisms that are appropriate to their respective subsectors.

While results of the economic model are promising, one of the main lessons learned from other jurisdictions is that reduced licensing costs, royalties, and export taxes *can* stimulate licensing. However, immediate results are unlikely, except in areas where sufficient on-site intervention and support is provided. Consequently, fiscal provisions must be harmonized with sensible mining policies and the institutional mechanisms needed for implementation.

Such institutional support could yield even *greater* benefits in terms of development. For example, efforts to introduce appropriate, intermediate, “step up” technologies could boost diamond production even more while increasing miners' capacity to mine in a safer and environmentally responsible manner. Training in basic gem valuation and simple business skills can boost miners' incomes leading to multiple spin-offs in terms of micro- and small-enterprise development and growth of market gardens, fish farms, and other agricultural ventures. Closer ties with mine authorities can further support linkages with other arms of government, such as agencies responsible for health, education, and infrastructure.

Reduced licensing fees and taxes would mark the first critical step towards achievement of the full development potential of ADM in the CAR. Outcomes of these much needed reforms, however, shall ultimately be determined by incentive-focused mining legislation, institutional commitment, adequate financing for implementation, and accountability for performance. The next two chapters demonstrate this clearly.

⁵⁰ Hinton, 2009.

3.0 FISCAL AND LEGAL APPROACHES TO ARTISANAL MINING

This diagnostic assessment analyzes fiscal and legal regimes from a number of case study countries that have experienced different degrees of success in legalizing ASM and increasing its formal contribution to economic development. While recognizing that every country and context is different, the assessment seeks to identify *key success factors and constraints in encouraging formalization* in order to inform reforms to the CAR’s fiscal policy and legislation in the interest of best practice.⁵¹

Definitions:

Formalization is founded on the principle that extralegal systems, social arrangements, and organizational structures exist for legitimate reasons and the law itself should be an evolving *and enabling* instrument that reflects the changing ways people live (Siegel, 2009).

Specifically, *formalization* is the process of integrating rather than controlling extralegal enterprises by recognizing local arrangements in legislation, reducing barriers to legalization, and creating clear benefits from participation in the formal system (Hinton, 2009).

Legalization refers to the status of becoming legal (e.g. obtaining a license) and complying with law. Legalization of ASM is believed to largely depend on the process of formalization.

The ADM fiscal and legal regimes for five other ADM countries are summarized below and detailed in Annex One. Case studies were selected on the basis of the diversity of models and approaches, perceived relevance to the CAR situation and availability of useful data to build upon. Analysis is then also informed by approaches in other jurisdictions in Africa, Asia, and Latin America where useful best practice insights can be drawn.

3.1 ARTISANAL DIAMOND MINING JURISDICTIONS

3.1.1 DEMOCRATIC REPUBLIC OF CONGO (DRC)

Between 75 and 95% of the DRC’s diamonds are deemed to come from informal artisanal miners, principally in the Kasai Provinces.⁵² In 2009, the DRC produced around 22 million carats of diamonds, predominantly of industrial quality, with a total value of \$US226m.⁵³

Relevant fiscal and legal components of DRC law include:⁵⁴

⁵¹ *Legalization* refers to the status of becoming legal (e.g. obtaining a license) and complying with law. Legalization of ASM is believed to largely depend on the process of formalization. *Formalization* is founded on the principle that extralegal systems, social arrangements, and organizational structures exist for legitimate reasons and the law itself should be an evolving *and enabling* instrument that reflects the changing ways people live (Siegel, 2009). Specifically, formalization is the process of integrating rather than controlling extralegal enterprises by recognizing local arrangements in legislation, reducing barriers to legalization and creating clear benefits from participation in the formal system (Hinton, 2009).

⁵² Wardell Armstrong, 2008.

⁵³ KPCS, 2009.

- Artisanal mining includes simple non-industrial methods of mineral exploitation only with the use of artisanal tools and processes and can be done by any Congolese national who holds a valid Artisanal Exploration Card (Art. 5).
- Exploitation must take place within a designated AMZ, and cannot be deeper than 30 meters. Artisanal mining outside of an AMZ is technically illegal.
- Groups of artisanal miners who wish to perform mineral exploration within an artisanal mining zone are required to form a cooperative and seek the consent of the Minister of Mines. Each cooperative member must hold an Artisanal Exploitation Cards, and they the organization must have a non-profit character (*Reglement Minier*, Art. 234).
- Artisanal miners are required to obtain an Artisanal Exploration Card, granted by the Head of the Provincial Division of Mines for one year, and renewable without limitation for another.
- All Congolese nationals over the age of 18, who have not been penalized under Article 27 of the Mining Code or Article 215 of the Family Code, are eligible to obtain the Artisanal Exploration Card. Other eligible entities include: “a) any individual of age and who is a foreign national and has a domicile in the National Territory; b) any legal entity incorporated pursuant to Congolese law which has its administrative registered office in the National Territory and whose corporate purpose is the purchase and sale of mineral substances from artisanal mining.”⁵⁵
- The Card does not authorize the holder to sell or process minerals obtained through artisanal production, and can be withdrawn if standards are violated (Art. 112). Officially all diggers should carry this card, but very few do.⁵⁶

The formalization rate of artisanal diamond miners in the DRC is very low for two main reasons. Firstly,⁵⁷ the state institutions which govern the sector have huge capacity constraints, even to the point that they are not able to print enough cards. Secondly, there are many disincentives for artisanal miners to legalize. For example, although the card is supposed to cost US\$25, miners may find that they are obliged to pay more. They also face logistical difficulties in reaching issuing centers, are not penalized for *not* holding a card, and many believe that there are no real benefits to having a card. Another major reason is that the card only allows the digger to mine within a certain zone but miners are highly mobile, requiring purchase of multiple cards. One suggested approach is to validate the card for the entire province and/or drastically reduce this fee in order to make the cards accessible to the miners at a lower cost.⁵⁸

The DRC example shows that low-cost licensing alone is not enough. The local situation of miners must also be understood when designing licensing systems.

3.1.2 GUYANA

Guyana’s diamond exports were worth \$14.6m in 2009, accounting for just 1.9% of Guyana’s exports owing to depression in world diamond markets and a move of ASM from diamonds to gold.⁵⁹

With formalization of the entire artisanal mining *sector* in mind, Guyanan authorities have taken a number of proactive, successful steps to formalize the industry at all stages of the production chain

⁵⁴ DRC’s artisanal mining sector is governed by the national **Mining Code** (*Code Miniere*), law No. 007/2002 of July 11, 2002, and the protocol for its application contained in Decree 038/2003 of 26 March 2003. (DRC 2003; Pole Institute, 2010)

⁵⁵ PACT, 2010.

⁵⁶ Partnership Africa Canada and CENADEP, 2007.

⁵⁷ PACT, 2010

⁵⁸ World Bank, 2008.

⁵⁹ KPCS, 2009; Bank of Guyana, 2009.

(from the miners to the exporters). Because of the simplicity of the tracking tool and low-cost fees, almost 100% of the production units (dredges) are legalized, although the *artisanal miners* who work on the dredges remain largely informal as many refuse to get their cards.⁶⁰ Key success factors include:

- Licensing fees lowered to accessible rates. Permits are easily accessible at rates of only US\$5 for diamond diggers and US\$50 for dredges (production units).
- A trader/exporters license costs only US\$75. Royalties (3%) are paid based on a standard value of US\$75 per carat, regardless of quality. An average Guyanan diamond is valued at US\$100 per carat and thus exporters see this as a fair and simple royalty system.⁶¹
- A simple tracking system is used based on a system of mining site and buyer-side reporting.
- The license is issued for the main production unit, the dredge, which must be registered and licensed either at Guyana Geology and Mines Commission (GGMC) headquarters or at a regional office.

The vast majority of diamond mining in Guyana is done using mechanized jigs called dredges or *resumidores*.⁶² Once a dredge is registered, an entry is made in the GGMC's master ledger, and the administrative clerks open a dredge file where all production records are centrally kept in a numbered system. There were 3,683 registered dredges in Guyana as of April 2006. Dredge owners are required to maintain weekly production sheets containing information on the dredge's location, hours, diesel use, and, most importantly, its production of diamonds. Coordinated and consistent field checks by Guyanan authorities contribute to the accuracy of the data being processed.⁶³

Under this system, buyers can only buy from registered miners, diamonds have been tracked from source to export, government royalties are consistently paid, and auditing is possible. While sourcing is restricted and subject to participation in the tracking system, exporters can sell to whomever they decide.⁶⁴ To address illicit financing, the GGMC instituted mining-financing reforms requiring traders to show, via bank or other money transfer records, a clear and legal source for the funds with which they purchase *Garimpeiros'* (small scale miners') diamonds.

While the measures used in Guyana are generally hailed as a success, Guyana has a number of attributes that may affect direct application of this model to other countries.⁶⁵ First, Guyana has a small population (approximately 800,000 people) and small and manageable surface area. Secondly, diamond quality is relatively consistent and does not require individual valuation. Thirdly, the government has a good level of capacity relative to other diamond producing countries. Fourthly, Guyana has a track record of establishing competent and semi-autonomous state agencies for key economic sectors such as mining; the GGMC, for example, was established in 1979. Lastly, the system is believed to work because it targets and works through production units, i.e. dredges, which is believed to be far more manageable, traceable, and accessible than targeting individual miners.

⁶⁰ Shawn Blore, email to Jennifer Hinton, 4 October 2010.

⁶¹ Blore, 2006.

⁶² Shawn Blore, email to Jennifer Hinton, 4 October 2010.

⁶³ Elbow, 2010.

⁶⁴ Blore, 2006

⁶⁵ Elbow, 2010.

3.1.3 LIBERIA

In 2009, Liberia officially produced 28,368 carats of diamonds worth approximately US\$11.25 million, with an average per carat value of around \$400.⁶⁶ Approximately 98% of Liberia's mineral exports come from ASM and it supports employment of at least 100,000 artisanal miners.⁶⁷

The Ministry of Lands, Mines, and Energy (MLME) has undertaken a number of progressive measures to develop the ASM sector. These include adopting a new Mineral Policy (2010) that is consistent with international best practice; enacting legislation supporting implementation of the KPCS; establishing a transparent licensing system and clarifying access procedures; training mines inspectors; and establishing regional field offices for the Government Diamond Office (GDO).

MLME is now in the process of bringing into force new regulations specific to licensing of artisanal mining (Class C Licenses). The Mining and Minerals Law (MML, 2000) and its Ch. 40 Amendment to the MML (2004), which is specific to diamonds and the KP, include provisions that are believed to provide some constraints to "best practice."⁶⁸ Different proposals for Class C Regulations are currently under review, one of which complies with the MML (2000, 2004) and provides interim measures for licensing artisanal miners. Key and unique features suggested in the proposed regulations will be shortly published in an upcoming USAID report but broadly include reducing the license fee, simplifying the application process, ascribing rights to miners to receive advisory support from government, and prohibiting the use of heavy, earth-moving equipment.

Liberia still faces a challenge with regard to formalization of its artisanal mining sector. Only 8–12% of the country's approximately 100,000 artisanal miners work under a Class C License.⁶⁹ The low numbers of formalized miners and largely illegal exports are due to a combination of lack of incentives, many disincentives, lack of enforcement, low awareness of the laws and procedures and, in many cases, limited capacity to fulfill them.

Firstly, it is logistically difficult for ASM to formalize. Since licensing is centralized in Monrovia, miners must invest time and money to travel to the capital.⁷⁰ Intense rainy seasons restrict transport making it much easier for Monrovia-based business people to get licenses rather than miners.

Secondly, the mining agency's lack of capacity is problematic. Mining agents and inspectors often have limited training, are paid low salaries, and are not given the funds, allowances, or even transport required for the execution of their duties.⁷¹

Lastly, many aspects of the Mining Code are not compatible with the reality of how mining takes place on the ground.⁷² For example, the standard plot size allowed is 25 acres, which "forces the artisanal miner to look for financial support to effectively mine such a plot, thereby increasing levels of indebtedness and poverty."⁷³

⁶⁶ KPCS, 2009. Note that an average per carat value of \$400 is very high for Liberia (and for alluvial producers generally). Average value was just \$122.47 in 2007 and \$210.43 in 2008. Neighbouring Sierra Leone, which is traditionally understood to have a higher quality of gem than Liberia, had an average value of \$234.50 in 2007 (making it the highest amongst alluvial producers in Africa), and \$266.05 in 2008. KPCS, 2007 and 2008.

⁶⁷ Garrett & Lintzer, 2010; Garrett & Carstens, 2008.

⁶⁸ Hinton, 2010a.

⁶⁹ Garrett & Carstens, 2008. In 2008, the MLME issued just 877 Class C licenses. (Temple, 2010).

⁷⁰ Temple, 2010.

⁷¹ Temple, 2010.

⁷² Temple, 2010.

⁷³ Temple, 2010.

3.1.4 SIERRA LEONE

Since the turn of the decade, the Government of Sierra Leone (GoSL) has been restructuring its mineral sector with the intent of encouraging its formalization and compliance with the KPCS. Sierra Leone was the first “conflict diamond” country to trial a certificate for its diamond exports in 2000, before enforcing the KPCS in 2003. Sierra Leone is estimated to have 150–200,000 artisanal miners, most of whom mine diamonds and many of whom have transitioned into gold owing to the recent economic collapse.

The 2004 Mining Code was recently replaced by Parliament passing the Mines and Minerals Act 2009 and the country is in the process of replacing its 2005 “Policy Measures relating to Small Scale and Artisanal Mining and Marketing of Precious Minerals” with its new Artisanal Mining Policy. The regulations governing artisanal mining are set out in the Mines and Minerals Act, but the marketing of diamonds, including export and associated taxes and fees, is presently still covered by the 2005 *Policy Measures*.⁷⁴

Some key aspects of the new legislation include:

- Artisanal miners are awarded a mineral right of up to half a hectare, and small scale licenses can be from one to 100 hectares.
- Only indigenous Sierra Leoneans may apply for and be issued artisanal mining licenses, whether they are applying as individuals or in an organization.
- Artisanal mining licenses are issued by the Mines Department, and only if accompanied by a “certified copy of the agreement between the applicant and the Chiefdom Mining Allocation Committee or the rightful occupiers or owners of the land over which the artisanal mining license is granted” (Art. 88.2).
- Artisanal miners do not have to pay any royalty on their production (exporters pay a 3% royalty at point of export, which is consistent with the regional export taxes on diamonds in neighboring countries).
- Whilst the new Act sets out a schedule of fees for artisanal miners, the old fees are still being applied.⁷⁵ Miners only pay a fee to government at the point of application for a license. Under the previous legislation, the total cost to license an acre for artisanal mining was around Le800,000 (about US\$270 by 2005 exchange rates).⁷⁶

Since 2004, artisanal production has been declining as a proportion of total exports, mainly because of large areas of land taken up by larger operators, the consolidation of artisanal operations into “small-scale” units due to decreasing accessibility of remaining reserves, and a move by many post-war artisanal miners to return to their traditional livelihoods. At the same time, gains in formalizing the sector have been threatened as many artisanal diamond miners have returned to mining without licenses (though with permission from traditional authorities to whom they pay their traditional “surface rent”⁷⁷), disillusioned that formalization does not bring the benefits, such as security of tenure, as originally intended.⁷⁸

⁷⁴ Samuel Koroma, Government Gold and Diamond Office, telephone call with Levin, 4 October 2010.

⁷⁵ Andrew Keili, CEMMATS, email to Levin, 5 October 2010. Under the new Act, total cost is 550,000 Leones per half acre (US\$143), which is nearly \$300 per acre.

⁷⁶ GoSL, 2005. Licensing fees for an artisanal or co-operative mining lease per acre, per year: Le200,000. Other fees: rehabilitation fees (Le 200,000), Mine’s Manager’s certificate (Le 100,000), monitoring fees (Le100,000); and payments to traditional authorities, including surface rent of around Le100,000.

⁷⁷ Andrew Keili, CEMMATS, email to Levin, 5 October 2010. To get their license, artisanal miners must also pay “surface rent” to local chiefdom authorities, the price of which varies by chiefdom and according to the social position of the miner. In cases where miners choose not to get a mining license from central government, they generally pay surface rents to “formalize” their activities at the local level, although their activities remain technically illegal.

⁷⁸ Estelle Levin, interviews with GOSL officials and artisanal miners 2007, 2009.

Based on this experience—and further to the near collapse of the country’s artisanal diamond sector due to the worldwide recession—in early 2009 the Ministry of Mines made the decision to lower the cost of licensing to Le500,000 plus surface fees (Le100,000) (US\$156).⁷⁹ As the sector is presently recovering, the Ministry is now considering returning them to Le800,000.⁸⁰

In 2004, Levin conducted research with artisanal diamond miners in Kono District to determine what motivated them to formalize their activities, or not. She found that the structure of a miner’s livelihood and assets determines his/her decision to mine legally or illegally.⁸¹ Understanding *who* your miners are, how they use the mining, and what it brings them is therefore key to designing the right legal structures and incentive structures for formalization.

3.1.5 TANZANIA

Tanzania’s mining sector has grown dramatically in recent years, from 15.6% in 2006 and 10.7% in 2007 and comprising approximately 3.5% of GDP.⁸² Diamonds officially represented approximately 1% of total mineral exports in 2008 and are worth approximately US\$22.3 million, of which the most came from industrial-scale production.⁸³ Artisanal mining in Tanzania employs an estimated 500,000 artisanal miners producing colored gemstones, diamonds, gold, and other commodities; by comparison, formalized mining amounts to 8,000 jobs.⁸⁴ Despite the sector’s potential to fuel rapid economic growth, concerns that minerals have not contributed enough to improving the lives of the poor are widespread, particularly for those living in the vicinity of the mines themselves.

Consequently, a number of revisions have been adopted in the new Mining Policy (2009) and Mining Act (2010), interesting aspects of which include:

- The government will set up a new Mineral Development Fund, whose purpose will be, among other objectives, to support artisanal and small scale miners.
- Only local Tanzanians will be able to mine gemstones and non-Tanzanians wanting to be involved in mining must form joint ventures with Tanzanian citizens.
- Mining royalties on rough diamond and colored gemstones were increased from 5 to 7%; and cut diamond and colored gemstones were reduced from 3% from 0%.⁸⁵
- Government will set aside specific areas that will function as buffer zones to reduce conflicts between corporate (large scale) and artisanal miners.

Most artisanally mined diamonds are mined informally at and around the Mwaui mine,⁸⁶ a 146 hectare site located in northern Tanzania. Artisanal mining has occurred here since the early 1900s. Supported by a large and well-developed financing and buying network, prior to 2008, an estimated 20,000 carats of the area’s average 80,000–120,000 carats were thought to be illegally produced and sold.⁸⁷ Artisanal mining is the most significant income source for 75% of area families; however,

⁷⁹ Based on June exchange rate of 3850 Leones = \$1. (Andrew Keili, CEMMATS, email to Levin, 5 October 2010).

⁸⁰ Andrew Keili, CEMMATS, email to Levin, 5 October 2010.

⁸¹ Levin, 2005, p. 79.

⁸² U.S. Geological Survey, 2008a.

⁸³ KPCS, 2008; Macfarlane, 2008; Levin, Mitchell, Macfarlane, 2008, Annex 12.

⁸⁴ Tanzania Ministry of Finance and Economic Affairs, 2008.

⁸⁵ Mining Journal, 2008.

⁸⁶ KPCS, 2008; Macfarlane, 2008; Levin, Mitchell, Macfarlane, 2008, Annex 12.

⁸⁷ McFarlane, 2008.

because it is informal, little revenue reaches local government coffers and it makes little impact on the area's development.⁸⁸

The Williamson Diamond Mine at Mwadui was recently part of a joint venture between the Tanzanian government and De Beers, although an estimated 20,000 artisanal miners were and continue to be active. Much attention was focused on the Mwadui Community Diamond Partnership, a process which stalled in 2008 when De Beers' stake in the Williamson Diamond Mine was taken over by Petra Diamonds.⁸⁹ Plans had included the creation of a digger cooperative to provide credit access for diggers as well as initiatives to introduce transparency in diamond prices and, in partnership with the Tanzania Ministry of Energy and Minerals, creation of a Diamond Valuation Centre.

3.2 OTHER JURISDICTIONS

A number of other countries have taken action to support formalization of ASM. Useful components that have led to some successes are described.

3.2.1 MADAGASCAR⁹⁰

It is estimated that 100,000 to 150,000 Malagasy gold miners produce one to two tons of gold annually.⁹¹ Recent changes in Madagascar's Mining Code (2005) sought to increase formalization of ASM through substantial reductions in license and permitting fees, simplifications in procedures and outreach to artisanal mining communities, including reinforcing the capabilities of local authorities and sensitization of ASM on the new law. Important aspects of the Madagascar example include:

- A gold miner or group pays only 10,000 Ariary (US\$5.50) for an annual permit (*Carte d'Orpailleur* or gold washer's card) granting the individual or mining association the right to pan gold in a washing channel (river beds or recent alluvial deposits).
- The card is available only to individuals over 18 years old of Malagasy nationality or local groupings of legally established gold washers, payments go to their "commune" which is a unit of local government that is authorized to grant permits and is responsible for ensuring that gold washers employ safe and environmentally protective practices (Art. 85).
- Collectors (local buyers) must obtain a *Carte de Collecteur d'Or* from the *commune* at a price of 100,000 Ariary (US\$105) per annum for each *commune* where they are registered. The 2% royalty on production, paid by the collector based on their purchase price from the producer (requiring a jointly signed invoice on-site).

Individual production and incomes range from \$1 to \$5 per day; internationally, alluvial gold miners produce approximately 0.2 gram/day which, at local prices, would sell for approximately US\$3, roughly giving a ratio of monthly income to annual licensing costs of 10.9.

Barriers to licensing still exist. These include high rates of illiteracy (discouraging documentation of sales); confusion of collection procedures for royalties returned to the *commune* and respective governments; lack of *commune* capacity to promote and advise miners in safe, environmentally responsible practice; and delays in mapping the 'gold panning corridors' in which artisanal panning would be permitted, included on other mining concessions. Still, in areas with outside assistance there is a high rate of registration. Of 1,500 gold panners in the *commune* of Antanimbaray in 2006, 1,383 had obtained their permits. Declines the subsequent year were largely attributed to heavy rains and the distance to the administrative center, while 40 of 55 registered collectors renewed the following year.

⁸⁸ McFarlane, 2008 citing Progress report February 2007.

⁸⁹ McFarlane, 2008.

⁹⁰ Levin, 2007 and based on further research in Madagascar in 2008; ONG Green, 2006.

⁹¹ U.S. Geological Survey Minerals Yearbook, 2005.

The Madagascar experience shows that a concerted sensitization campaign, combined with demonstrated benefits to the local community, can encourage formalization.

3.2.2 UGANDA⁹²

While Uganda is not a diamond producing country, almost 200,000 women (45%) and men (55%) are engaged in artisanal mining of gold, tin, coltan, wolfram, and a range of industrial minerals (limestone, stone aggregate, salt, clay, etc). In an effort to support formalization, the Government of Uganda, with support from the World Bank, undertook massive training and sensitization campaigns targeting over 1,000 artisanal miners between 2007 and 2009. In order to ensure both women and men realized benefits from the program, the committee included a gender expert and gender was mainstreamed throughout the campaign.

In the short time since implementation, results have included:

- Granting of over 80 prospecting licenses; requests for 50 location licenses (and granting of 10) to trainees.
- Formation of more than 20 local small scale mining associations and a National Artisanal and Small Scale Miners Association (NASMA).
- Demonstrated improved practices in savings, increased selling prices, value addition activities, and miner-initiated measures to improve environmental management and health and safety.
- Distribution to miners of contact information of licensed mineral dealers and outreach to dealers has also resulted in almost tripling of royalties over the past two years and doubling of non-tax revenue within a four-year period.

A National Strategy for the Advancement of Artisanal and Small Scale Mining in Uganda marked the culmination of this project, included in which are detailed work plans, budgets, and performance monitoring and evaluation frameworks.⁹³ As identified in the National ASM Strategy, major constraints to formalization relate to bureaucratic and costly centralized licensing (~\$350 USD exclusive of transport and fees for assistance),⁹⁴ lack of skills and awareness of procedures and, despite Mineral Policy commitments, the absence of institutional roles and mandates in the Mining Act (2003) and Regulations (2004). Recommendations for specific legal, policy, and institutional reforms are accordingly being reviewed. Successful outcomes from training and outreach activities thus far attest to the benefits of “walking the talk” of good policy while doubts in long term program financing threaten future progress.

The Uganda experience shows that success lies in extensive training and outreach with artisanal miners, including the importance of gender mainstreaming.

3.2.3 GHANA

Perhaps more than any other country, Ghana exemplifies that (i) there is no “best practice” without practice; and (ii) formalization and legalization of ASM is a long process requiring steadfast government commitment to creating incentives through grassroots interventions. Lessons learned over the course of one decade provide useful insight.

In 1989, when a Small Scale Mining Implementation Committee was formed to oversee “The Regularisation of Small Scale Gold and Diamond Mining Project,” formalization efforts commenced

⁹² Hinton, 2009.

⁹³ Hinton, 2009.

⁹⁴ Based on the monthly incomes of an average Ugandan gold miner, the ratio of license cost to miners monthly incomes in Uganda is approximately 2.3.

with the demarcation of eight small scale mining districts.⁹⁵ Between 1989 and 2002, milestone efforts included:

- Provision of extension services supplemented by the hiring of district officers and mines wardens, who were charged with carrying out the Small Scale Gold Mining Law (PNDC Law 218).
- District officers were trained in the Mining Law, health and safety issues in ASM, and geology before deployment. Subsequent “Training of Trainers” courses were provided to the officers, including environmental management, health and safety, basic bookkeeping, and project planning and management.⁹⁶
- Subsequent government partnerships with development organizations in order to extend support through “Rent-A-Pump” and “Hire-Purchase” (or rent-to-own) Schemes, technical assistance in introducing Chinese Hammer mills (which are now in widespread use), pilot testing of hard rock and alluvial mining equipment, a program to make geological information available to small scale miners (resulting in a number of suitable demarcated areas), and reclamation of three degraded sites.⁹⁷
- Subsequent projects saw adaptation of the Mercury Law to enable miners to legally purchase small quantities of mercury for gold mining and training in the safe use of mercury.

Earlier efforts to support ASM produced variable results but demonstrated outstanding commitment on the part of government and some notable progress was achieved. Between 1998 and 2002, officially reported production rose from 2% to 7% for gold and 40% to 80% for diamonds.⁹⁸ And yet, only 620 licenses were granted in this period, to which miners attribute to a complex licensing process that can take up to six months.⁹⁹

As Ghana’s diamond and gold experiences demonstrate, a simple licensing process is paramount to encouraging miners to register.

3.2.4 PERU

Lack of proper consultation with women and men miners and other ASM stakeholders (i.e. sole reliance on top down approaches) can easily lead to failures in formalization. Peru successfully avoided this pitfall in its Law 27651 “Formalization and Promotion of Small Scale and Artisanal Mining,” a remarkable example of constructive consultation and engagement where formal proposals for reforms of both laws and regulations were received from ASM associations and were largely enshrined in legislation.

Peru’s mining sector rapidly expanded since the early 1990s. In 1993, mining accounted for almost 3% of GDP and increased to 11% by 2000.¹⁰⁰ In 2000, it contributed almost half of foreign exchange earnings with export revenues of US \$24 billion.¹⁰¹ By 2005, mining accounted for more than 60% of the country’s total export revenues. From a near totally informal sector in 2000, by 2008 50% of artisanal miners were operating formally, thanks to facilitative legal frameworks.¹⁰²

⁹⁵ Yakubu, 2003.

⁹⁶ Yakubu, 2003.

⁹⁷ Yakubu, 2003.

⁹⁸ Aryee, 2003.

⁹⁹ Azameti, 2003.

¹⁰⁰ *Trade and Environment*, 1994.

¹⁰¹ U.S. Geological Survey, 2008.

¹⁰² CASM, 2008.

Prior to 2002, the mining code in Peru was initially developed to facilitate large scale, multinational investment in the country. Between 2001 and 2002, artisanal miners organized themselves to persuade their government to revise the mining code in order to also make it appropriate to the way that they mined; the system at the time simply precluded licensing of artisanal miners. In 2002 the code was changed to recognize ASM on the basis of title area and production capacity, and made provisions in line with artisanal mining realities.¹⁰³

*The success of the Peru experience lies in a number of factors:*¹⁰⁴

- Strong political will to support formalization.
- A receptive environment and the desire of artisanal miners to be formal, as well as the establishment of a Swiss-funded development intervention, Proyecto GAMA, which was designed to formalize the sector.¹⁰⁵
- Efforts to identify similar interests among otherwise polarized parties.
- Organizing talent and initiative of artisanal mining leaders; and a close connection between traditional leaders and their base, who were also willing to include women miners as leaders.
- A constructive multi-stakeholder environment and the presence of impartial external stakeholders who could act as mediators and facilitators, and provide funding and other resources for advocacy activities.

3.2.5 PHILIPPINES

Republic Act No. 7942 known as the "Philippine Mining Act of 1995" regulates mineral resources development in Philippines. Section 42 of the Act states that small scale mining is to be governed by Republic Act No. 7076 (Philippines People's Small Scale Mining Law, 1991) and other pertinent laws.

Almost 100% of the Philippines' industrial minerals and up to 80% of its gold are produced mainly through ASM.¹⁰⁶ More than 300,000 artisanal and small scale miners are active in the Philippines, two-thirds of which are engaged in gold mining. In recognition of its economic and social significance, the government has instituted a number of laws pertaining to gold panning and sluicing (PD 1150), mining of small deposits (PD 1899), identification and segregation of ASM zones (RA 7076) and ASM mine safety rules (AO No. 97-30).

Interesting features of these laws include:

- Miners can obtain a range of renewable permits, which can be granted for one to three year periods contingent on limited production, non-mechanization, explosives bans, and exclusion of child labor.¹⁰⁷ Permits are commodity specific.
- PD 1899 requires that all gold be sold directly to the Central Bank or its official buying stations in gold areas.
- When a small scale mining area is designated within an existing mining right, PD 1899 also exempts small scale miners from annual work obligations, payments and payment of fees, rents and property taxes, and they are further afforded a reduced royalty rate of 1.5%.

¹⁰³ Medina 2002; Hruschka, 2003.

¹⁰⁴ Hruschka, 2003, p. 24.

¹⁰⁵ Hruschka, 2003.

¹⁰⁶ Bugnosen, 2004.

¹⁰⁷ Ibid.

Decentralized Small Scale Mining Offices undertake most ASM-related regulation, monitoring, and technical assistance functions. Much of this work is funded by the 15% share in government revenues from mining via the People's Small-scale Mining Protection Fund. Funds are mainly allocated towards information dissemination and training of small scale miners on safety, health, and environmental protection, and the establishment of mine rescue and recovery teams, including the procurement of rescue equipment necessary in cases of emergencies such as landslides, tunnel collapse, etc. The fund is also accessible to the small scale miners in case of accidents and/or serious unforeseen events.

Bugnosen (2004) contends that a number of ASM-related legislative measures have failed, while others have succeeded. Failures include: attempts to designate ASM areas, permitting activities within existing concessions, overly restrictive provisions for obtaining permits, and the need for multiple permits depending on the stage of operations (mining, permitting and marketing). Successes have been observed in terms of gold rush control measures that have enabled tax collection, environmental protection in these areas, and efforts to inhibit damaging sand and gravel operations. The emergence of "contract mining" wherein formal companies purchase minerals from ASM producers, has been deemed promising, although local indigenous communities have expressed concern over their capacity to stimulate uncontrolled activities.¹⁰⁸

The Philippines experience demonstrates how the decentralization of ASM governance, coupled with extension services to help artisanal miners manage their occupational health and safety and environmental responsibilities, can encourage formalization.

¹⁰⁸ Bugnosen, 2004; Caballero, 2004.

4.0 CRITICAL COMPONENTS OF A CONDUCTIVE FISCAL AND LEGAL REGIME

This section outlines the main components needed to create a fiscal and legal regime that supports the legalization of ADM so that it can better contribute to development. One of the main lessons learned from other countries is that reduced licensing costs, royalties, and export taxes *can* stimulate licensing; however immediate results are unlikely, except in areas where sufficient on-site intervention and support is provided. Consequently, fiscal provisions must be harmonized with sensible mining policies and the institutional mechanisms needed for implementation.

This section outlines the main fiscal, legal, and institutional lessons learned from other countries to inform the CAR's efforts to develop a regime that supports formalization—and increased development contributions—of its ADM subsector. The main components of ASM fiscal and legal policy are outlined in Annex Three.

4.1 FISCAL PROVISIONS

Fiscal provisions that support legalization of ASM *can* generate revenues to the state and national economy overall. For example, part of Ugandan formalization efforts was to distribute to miners the contact information of licensed mineral dealers as well as outreach to dealers. This has been cited as one of the main factors that led to almost tripling of royalties since 2008 and doubling non-tax revenue within a four-year period.

While tax and non-tax revenues from ASM can provide some motivation to government, it is important to recognize that ***the primary intent of formalization is to unleash its overall development potential to expand revenue potential from wider economic sources***. In the past, many countries (e.g. Brazil, Lao PDR, Ghana) have, via heavy handed regulation and enforcement in the interest of state revenues, led only to further marginalization of ASM, driving miners “deeper into the jungle.” In effect, overzealous attention to state revenue generation alone often results in continued losses in terms of taxes, fees, and royalties and limited improvements to the ASM subsector and its development contributions.¹⁰⁹

Many countries now seem to recognize the potential fiscal *and* broader development potential of ASM and have adopted a number of related measures in order to support legalization. Important fiscal provisions that seem to support formalization include: (i) low-cost licensing of producers as well as buyers/traders; (ii) low tax rates and regional harmonization of taxes; (iii) payment of royalties and taxes by mineral dealers rather than miners; (iv) other fiscal incentives to legalize; and (v) returning a portion of revenues to ASM affected communities.

¹⁰⁹ Caballero, 2004.

(i) Low-Cost Licensing of Producers and Buyers

A number of case study countries have instituted low-cost licensing of artisanal miners, which, when combined with other legal and institutional mechanisms, have resulted in comparatively high rates of legality. In Guyana, annual license fees of only US\$5 for diamond diggers, US\$50 for dredges and US\$75 for traders and exporters combined with low royalties (3%) on a set standard diamond value (US\$75) have been major factors that have led to legalization of almost 100% of the sector.¹¹⁰

Madagascar's low-cost, locally administered permit model enabled gold panners to legalize activities at a price of only US\$5.50. In one region of Madagascar where panners were intensively sensitized, 1,383 of 1,500 gold panners obtained permits for their activities.¹¹¹

Another remarkable example can be drawn from Sri Lanka's gemstone sector. When heavy machinery is not used, gemstone mining licenses can be obtained from the National Gem and Jewelry Authority (NGJA) for a fee of only US\$10 for licensing plus US\$10 for site reclamation, which is refundable pending acceptable restoration of land.¹¹² The one-year licenses are issued within two to three weeks of application and require either two-thirds share in the land or leasing agreements with the owner. The NGJA further encourages mining in Sri Lanka by holding auctions for gem-bearing sites identified by government geologists on crown land or in water bodies. These legal conditions resulted in issuance of 3,702 gem mines licenses in one year alone while the country boasts a high proportion of legal miners (~80%).¹¹³

In some cases, low-cost permits have *not* yielded as favorable results, largely because legal provisions must be appropriate to the nature of ASM in a given area and implemented together with other measures. For example, DRC's well-meaning, low-cost registration card (*carte d'exploitant artisanal* at US\$25) fails to recognize the broad areas covered by migratory artisanal miners, thereby requiring them to register in multiple locations at great financial and bureaucratic costs and with no notable benefit. This is compounded by the logistical and implementation challenges expanded on above.

The case for low-cost licensing is nevertheless strong and is further supported by the lack of success in formalization in countries with high license costs. In Uganda, only ~10% of miners are working under a *location license*, which costs US\$350 and is granted for mining operations whose capital investment is below US\$5,000. In Sierra Leone, where a license cost around US\$270 in 2005, at that time an estimated 48% of miners were operating legally in the diamond heartland of Kono where, supported by international programs, government efforts to formalize the sector were intensively focused.¹¹⁴

(ii) Low Tax Rate and Regional Harmonization of Taxes

As shown in Mano River countries, harmonizing the export tax can help discourage smuggling. However, it may not discourage illegal mining as informal miners are able to sell to formal miners and dealers, so laundering their diamonds into the official chain.¹¹⁵ In Guyana, however, an export tax rate of 3% is believed to be a key factor in increased reporting and reduced smuggling as well as reduced informal mining. The key difference is that in Guyana diamonds are registered from the point of production, whereas in Sierra Leone they are not.

¹¹⁰ Blore, 2008; Shawn Blore, email to Jennifer Hinton, 4 October 2010.

¹¹¹ ONG Green, 2006.

¹¹² Dharmaratne, 2004.

¹¹³ Dharmaratne, 2004.

¹¹⁴ In 2005, nearly 2,400 artisanal mining licenses were granted in Sierra Leone (Levin & Gberie, 2006). At the time, total ADM population was estimated at 200,000, with the vast majority (perhaps 150,000) being in Kono District, the ADM heartland. (Levin 2005) ADM licenses cover up to 50 laborers; a typical number would be closer to 30, giving a rate of 48% legality.

¹¹⁵ Based on interviews with artisanal miners and dealers in Sierra Leone by Estelle Levin 2004, 2006, 2007.

(iii) Payment of Royalties and Taxes by Mineral Buyers/Dealers

Some countries (e.g. Liberia, Ghana, Uganda, the CAR) still require payment of royalties on production by artisanal miners themselves, adding an additional level of bureaucracy that few miners manage to fulfill. However, in the Philippines and Uganda, the law obligates a dealer (exporter) to pay royalties on production from informal miners before export. While this scenario is far less complicated for artisanal miners, costs are often passed to the miner during price negotiations who, in the case of the Philippines, are also obligated to pay a 1.5% royalty to the claim owners or owners of private lands. In this way informal minerals enter the formal chain and still get taxed.

It is interesting that in Madagascar, local gold buyers (*collecteurs*) pay royalties based on the purchase price from the producer (using a jointly signed invoice) while export taxes are paid by exporters based on a more realistic valuation. Although a practical mechanism, low literacy levels of both buyers and sellers often prevent declaration of sales.¹¹⁶

(iv) Other Fiscal Incentives for Legalization and Advancement of ASM

A number of countries have identified other fiscal incentives to promote legalization as well as progressive improvements to the performance of ASM. In Ghana, and based on 2002 data, all licensed small scale miners are exempted from payment of taxes and royalties for the first three years of operation.¹¹⁷ In Uganda, a zero import duty is charged for importation of mining equipment, a policy which helps advance the sector.¹¹⁸ Some legislation provides for discretionary powers to allow for temporary or one-time waiving of certain types of taxes, typically royalties. This is usually only applied for projects experiencing short term financial downfalls, particularly if it is due to uncontrollable circumstances (e.g. commodity price drops).

A number of governments have instituted financing schemes for ASM with varying results (see Annex Four).¹¹⁹ Challenges faced in programs implemented in Zimbabwe, Mozambique, and Namibia in the past decade, and more recent models in Papua New Guinea and Nigeria, provide insight. The Government of Zimbabwe has likely implemented the greatest number of financial support programs for the ASM subsector.¹²⁰ Unfortunately, many loans were used to set up “ghost mines” or fronts for buyers of gold and gemstones from illegal artisans. In Mozambique, the government administered Mineral Development Fund (*Fundo do Fomento Mineiro*, FFM) provides financing to small scale miners in Mozambique. Although the funding criteria may be out of reach for most artisanal miners, the program provides a viable mechanism to encourage improvements to more advanced small scale mines. The Fund is challenged with common misuse of funds and a lack of monitoring of implementation and use of funds.¹²¹ By contrast, the Namibian Mineral Development Fund has largely been a success. It has provided US\$92 million in loans and US\$9 million in grants for large and small scale projects. With low interest rates, an ample repayment period (five years plus a two-year grace period), sufficient management resources and minimal bureaucratic requirements, over 90% of loans have been repaid. However, it is mostly aimed at medium and large scale producers.¹²²

Mining Ministries are *not* commercial banks or microfinance institutions (MFIs) and so are often challenged by inadequate experience and skills to administrate these programs effectively. Two recent programs rely on *existing* financial institutions while raising their awareness of the needs of the ASM subsector. In Papua New Guinea, support from the Japanese Government has allowed the Social

¹¹⁶ Levin, 2007.

¹¹⁷ Hilson, 2002.

¹¹⁸ Hinton, 2009.

¹¹⁹ Hinton, 2009.

¹²⁰ Dreschler, 2001.

¹²¹ Dreschler, 2001.

¹²² Malango, 2004.

Development Fund to focus on building business and microfinance skills in ASM communities. In the target region of Wau, over 25% of trainees have opened accounts at a local MFI.¹²³ In Nigeria, the Loan Guarantees for Mine Development are funded by the Nigerian Government, but builds on available financing from commercial banks. The Ministry of Mines and Steel Development (MMSD) is responsible for providing the technical support needed to verify feasibility, ensure proper use, and therefore guarantee the loans. Intensive sensitization of banks, including bank branches in mining areas, has resulted in the establishment of “Mining Desks” in some banks.¹²⁴

It is important to note that most of the earlier financing schemes have targeted small to medium scale rather than *artisanal* miners. Although coverage of local savings and credit cooperative associations (SACCOS), MFIs, and banks is sparse in many remote areas, building on existing financing programs with approaches adapted for the rural poor with **supportive loans guarantees and reasonable interest and payment period requirements** are a start. Grassroots support for numeracy, literacy, organization formation, business skills development, and group savings can help artisanal miners take crucial first steps out of poverty.¹²⁵

(v) Distribution and Use of Financial Revenues from Mining

Revenue sharing describes arrangements whereby minerals taxes and other revenues are collected by the central government, with a certain portion of the revenues take being directed back to the areas in which mining occurs.¹²⁶ While sensible fiscal measures can increase the legality of ASM and generate substantial revenues for the state and economy, the success of these measures largely depends on the capacity of miners and traders to comply with legal requirements and whether it provides any real advantage. Consequently, measures to redistribute wealth generated from mining and increase the benefits to and *capacity* of miners and their communities have become an important component of fiscal policy.

Royalty Sharing for Local Development

An increasingly common mechanism to redistribute benefits is via royalty sharing. Typically, communities around mining areas bear the brunt of environmental impacts and social disturbances (e.g. HIV/AIDS, increased price of goods, etc.) associated with mining. Different countries distribute these revenues differently. For example, under Uganda’s Mining Act (2003), sharing of royalty is 80% for government, 17% for local governments (intended to equalize provision of services and infrastructure across a district) and 3% for owners or lawful occupiers of land subject to mineral rights (to compensate for negative side effects associated with mining). A major shortfall is lack of requirements for use and accountability for returned revenues.

While challenges in collecting royalties from the national treasury have been referred to, the most commonly cited challenge relates to capacity to plan and accountability by local government for their use. In some cases, these funds are disbursed to local government without clear specifications about their use. It has been suggested that—much like many health ministries track and provide guidelines and support to local government for use of health related transfer payments—the same capacity development and procedures are needed for transfers from the minerals sector.¹²⁷

In other cases, such as Ghana and Sierra Leone, community development funds are targeted towards development projects in mining-impacted communities. Under Ghana’s Mineral Development Fund (MDF), 9% of royalties paid by a mining project are to be divided between the District Assembly (the

¹²³ Hayes & Van Wauwe, 2009.

¹²⁴ Hayes & Van Wauwe, 2009.

¹²⁵ Hinton, 2009.

¹²⁶ Okedi , 2010.

¹²⁷ Okedi , 2010.

local political administrative unit) and the local traditional authorities.¹²⁸ Main complaints concerning the MDF relate to the amount of funds and delays in their release, lack of information about amounts transferred (between institutions and with communities), inadequate reporting procedures by traditional institutions concerning use of funds absence of auditing mechanisms, and omission of the MDF from legislation.¹²⁹

In Sierra Leone, 25% of the 3% export royalty (0.75% of total export value) is returned twice yearly to Chiefdom Development Committees, who disburse 15–40% to district councils and 5% to town councils through the Diamond Area Community Development Fund. This is done to incentivize local authorities to encourage miners to not just pay surface rents to traditional authorities, but to legalize their activities with the central government too. Nearly \$1 million was returned to chiefdoms in 2007. Chiefdoms receive amounts in proportion to their share of artisanal mining license numbers out of the national total, though the National Advocacy Coalition on Extractives has recommended that this be tied to local production levels instead. In practice, strengthening of local governance and administration as well as improving accountability mechanisms is typically needed to ensure real benefits are felt on the ground.¹³⁰

Funding Artisanal Mining Formalization and Development

A portion of proceeds is sometimes applied directly to respond to the needs of artisanal miners. Support delivery mechanisms in the form of small scale mining units or departments have been established in Mozambique, Papua New Guinea, DRC (under SAESSCAM), and Philippines. In all cases, as with the Community Development Funds in Ghana and Sierra Leone, implementation of what appears to be good policy has been hindered by a lack of resources to these units and limited accountability for their performance.

The most obvious mechanism to finance ADM subsector support activities is via a levy on fees, royalties and export taxes. Although it has not yet been institutionalized, in Uganda's *National Strategy for the Advancement of Artisanal and Small Scale Mining*, detailed gender-responsive work plans and budgets were developed to determine that only 5% of mineral royalties was needed to finance a cross-section of training, outreach, regulation, and data collection activities needed to responsibly manage and develop the ASM subsector.¹³¹ The Strategy recognizes that these efforts would support further legalization, including by women miners who constitute 45% of the ASM workforce. These activities would, in turn, generate progressively increasing royalty returns. This direct link between institutional performance and financing of activities was supported by a clear institutional monitoring and evaluation framework that promotes accountability and outcomes by individuals as well as units and departments responsible for undertaking the work.

Besides royalty sharing, a number of other mechanisms exist to finance government support for ADM licensing and communities affected by ADM.¹³² For example, government institutions can institute “trading accounts” wherein products or services (e.g. maps, reports) are provided at a fee to the minerals sector. This, as well as creation of a quasi-independent, self-financed Mines Authority or Minerals Commission, typically relies on large inputs from a highly active exploration and large scale mining sector, as found in Ghana. The GGMC in Guyana is an autonomous body and therefore self-financing with any surpluses rendered to the National Treasury while its operations also rely heavily on large scale mining. National Facilities can also be created to subsidize costs by linking complimentary and overlapping functions of other government agencies (e.g. laboratory services, documentation and statistics requirements, enforcement). However, unless coordination and

¹²⁸ International Study Group, 2010.

¹²⁹ International Study Group, 2010.

¹³⁰ National Advocacy Coalition on Extractives, 2009, p. 34.

¹³¹ National Advocacy Coalition on Extractives, 2009.

¹³² National Advocacy Coalition on Extractives, 2009.

collaboration agreements are extremely solid and capacity to understand and commit to the minerals sector exists in other agencies (e.g. police, statistics bureaus), which is rarely the case, these arrangements tend to function poorly.

The Philippines *People's Small-scale Mining Protection Fund*, derived from 15% of royalties on mineral production, is used mainly for information dissemination and training of small scale miners on safety, health, and environmental protection, and emergency response measures.¹³³ The Philippines has faced a number of challenges, such as designation of ASM areas or permitting activities within existing concessions, and overly restrictive requirements. However, it has been successful in terms of gold rush control measures that have enabled tax collection and environmental protection in highly degraded areas.¹³⁴ A similar financing approach could also be used to fund support for the organization and registration of miners, training in diamond valuation and pricing, introduction of intermediate, safe methods, and other key needs.

These examples demonstrate that many countries *have* recognized the importance of redistribution of benefits from taxes, royalties, rents, and fees from ASM. In the past, many countries (e.g. Brazil, Lao PDR, Ghana) have overzealously given attention to generating revenue from ASM via heavy handed regulation and enforcement alone. It has been demonstrated throughout the world that ***top down enforcement and policing without clear benefits does not work and there must be clear local level incentives to encourage compliance.*** The next sections, therefore, address the legal and institutional mechanisms needed to complement fiscal provisions to develop a functioning ASM subsector.

4.2 LEGAL AND REGULATORY REQUIREMENTS

ADM policies, laws, and regulations are only useful if they are realistic to the way people mine artisanally, if artisanal miners have the capacity to obtain licenses and benefit from them, and if they are enforced. Key lessons drawn from other countries relate to the capacity of both the ADM subsector and those institutions and agencies responsible for executing policy and legislation. In terms of legal and regulatory frameworks, key success factors primarily relate to: (i) recognition of the diversity and different categories of miners; (ii) legislating mandates of mining institutions; (iii) reconciling international, national, and local priorities; and (iv) making artisanal mining laws realistic to the existing structures of production and trade.

(i) The Diversity and Different Categories of Miners

Artisanal and small scale miners vary in terms of organization of work (independent, small teams or production units, associations, etc); scale of activities; permanent, migratory, or seasonal nature of work (determined by their overall livelihood strategy and motivation for mining); and degree and capacity for mechanization, among others. In some countries, this requires more than one category of ASM license to account for the in-country diversity *and* provide a step-up opportunity as activities become more formal. Increased capacity brings increased legal obligations, which in turn should bring increased benefits.

For example, Levin's work in Sierra Leone in 2004 demonstrates how different types of miners have different reasons for choosing (or being obliged) to mine legally or illegally (see detailed case study in Annex One). In many countries, women constitute large proportions of the workforce and can face even greater barriers in terms of literacy, mobility (e.g. to travel to regional offices), autonomy, among others factors.¹³⁵ *“Despite claiming to be “gender neutral,” many policies, even mineral policies, can affect women and men differently and can actually serve to worsen gender inequalities.”*¹³⁶

¹³³ Bugnosen, 2004.

¹³⁴ Bugnosen, 2004.

¹³⁵ Hinton et al., 2003.

¹³⁶ Hinton, 2010b.

Understanding *who* your miners are, how they use the mining, and what it brings them is therefore key to designing the right incentive structures for formalization.

Some countries develop ASM legislation with the intent of promoting mechanization, thereby integrating “artisanal” with “small scale” miners in a single category. This practice can serve to exclude and further marginalize the artisanal majority (especially people who mine on an occasional basis and women reliant on ASM who face far greater barriers) in favor of the few relative “elites” who are positioned to take advantage of such efforts. For example, a small stationary jig used by many diamond miners in South America costs on the order to US\$30,000–75,000,¹³⁷ well out of reach of average CAR miners who earn ~US\$723 per year.¹³⁸ Promotion of mechanization must also consider that measures are usually needed to minimize the effects of their introduction. For example, siltation of more than 300km of the Tapajos River in Brazil, a tributary of the Amazon River, is largely attributed to widespread use of hydraulic monitors and intensive dredging activities.¹³⁹ In Burkina Faso, introduction of one mill for ore grinding effectively put 300 women out of work, while a combined crusher-grinder unit decreased labor requirements from 425 to 14 people.¹⁴⁰

(ii) Legislate Institutional Mandates

*“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.”*¹⁴¹ Many countries outline ambitious and well-crafted policy objectives related to ASM yet do not provide a legal mandate for mining institutions to execute them.

Tanzania’s Mineral Policy outlines ASM-specific roles, objectives, and strategies for each of: provision of extension services, licensing and related transparency measures, financial services, health and safety, women’s issues, child labor issues, and institutional framework (including information flows, roles of regional offices, and establishment of training centers). Although an implementation plan for the policy is currently being developed, the Ministry of Energy and Mines has not enshrined in law to institute these measures.¹⁴²

Recognizing the importance of institutional support, under Article 90 of the Nigerian Minerals and Mining Act (2007), the government through the Ministry commits to provide services to registered mining cooperatives in: prospecting and exploration; mineral testing and analysis; assistance in mine planning and design; teaching adequate technical skills; making proper links and guarantees related to plant-for-hire and equipment leasing-to-own; introducing appropriate mineral processing methods; providing EIA reports and detailed guidelines for waste and water management; introducing health and safety procedures; and holding regular workshops on legal, marketing, and business skills.

Defining institutional roles, functions, and obligations of mining departments, units, and offices in mining law, and even more specifically in regulations, not only provides a clear, legal mandate, but provides a basis to lobby for and receive funds from the central government to fulfill this mandate. Furthermore, this can serve to reduce discretionary powers and can hold management, departments, and their officers accountable to fulfill legally defined mandates while providing a legal basis for the monitoring and evaluation of performance.¹⁴³

¹³⁷ Blore, 2008.

¹³⁸ Chupzei et al., 2009, p. 24.

¹³⁹ Hinton, 2003.

¹⁴⁰ Jacques et al, 2002. For further information on the relationship between mechanisation and formalization, see Priestler et al. 2010.

¹⁴¹ Hinton, 2009.

¹⁴² Personal Communication, Government Officer (anon), Ministry of Energy and Minerals of Tanzania

¹⁴³ Hinton, 2009.

(iii) Reconciling international, national, and local priorities

Institution of policy measures without sufficient attention to context and consequence can have negative repercussions, potentially exacerbating artisanal miners' poverty and marginalization and driving the minerals trader deeper underground. For example, the Government of Ghana halted diamond exports between 2006 and 2007 until charges were cleared concerning the country's role in harboring stones from Côte d'Ivoire. Effects on communities in the main diamondiferous area were severe.¹⁴⁴ Similarly, recent moves in Tanzania to prohibit export of Tanzanite without in-country value addition appear to serve the interests of national development. However, the infrastructure needed to cut and polish the gems is, at present, extremely insufficient to meet the demands given current Tanzanite production levels.¹⁴⁵

In both cases, the policy decisions of government may have received much international acclaim and are, by all appearances, sound. However, the impacts at the village level can prompt gemstone miners, who largely subsist hand-to-mouth, to strengthen informal channels of diamond dealing, thereby worsening the illicit minerals trade and encouraging smuggling.

(iv) Making artisanal mining laws realistic to the existing structures of production and trade

Successes and constraints in Liberia,¹⁴⁶ Sierra Leone,¹⁴⁷ DRC,¹⁴⁸ and Peru¹⁴⁹ all point to the importance of formalizing existing arrangements that work on the ground, rather than attempting to force artisanal miners to adopt a legal model that may be ideal from a government perspective, but unachievable for the artisanal miners. Extensive consultation with artisanal miners to understand: i) how and why they presently mine, ii) what operating in legal structures can bring them and their communities, iii) what obligations would be reasonable on their part is a prerequisite for developing a legal and fiscal structure that is appropriate. It also ensures that the miners have a sense of ownership over the process, which brings greater legitimacy to the final legislation, meaning that the miners are more likely to abide by it.

4.3 INSTITUTIONAL REQUIREMENTS

The success of any fiscal measures ultimately hinge on a conducive legal framework and political and institutional commitment to their implementation. *The main challenges in each case study country largely relate to inadequate disbursement of funds to fulfill mandates, weak governance (particularly at local levels), and a lack of transparency and accountability.* As such, understanding the key institutional arrangements, administrative structures, and mechanisms as well as the needs in terms of performance monitoring and evaluation provide insight into how fiscal measures can be best implemented.

Institutional Arrangements

Many countries face the challenge of spreading mandates across a wide range of institutions, making focused implementation and accountability for implementation of mining policies more difficult, particularly if coordination is poor. Very few countries seem to have succeeded in effectively sharing the information needed to track minerals (for example between revenue authorities collecting export data and mining departments compiling production statistics).

¹⁴⁴ Hilson & Clifford, 2010.

¹⁴⁵ Personal Communication, Government Officer (anon), Ministry of Energy and Minerals of Tanzania.

¹⁴⁶ Temple, 2010.

¹⁴⁷ Mitchell, Garrett & Levin, 2008.

¹⁴⁸ Mitchell, Garrett & Levin, 2008.

¹⁴⁹ Hruschka, 2003.

Quasi-independent “authorities” or “commissions” that partially or wholly generate operating funds through their activities are, in principle, more likely to fulfill their functions. However, these typically require well-established revenue generation systems to “get off the ground” (as is the case for Ghana’s Mineral Commission, whose large scale mining sector has been well established for several years) and effective means to ensure proper use of funds.

Regional versus Central Management

Regional management makes sense in large countries especially, or where there is a lot of artisanal mining activity. However, good management can be hindered by a lack of institutional capacity and resources, especially where taxes collected from the mining sector are to be disbursed from central to local government (which may not happen). While it may be administratively sensible to place responsibility for an area under a single individual, group, or organization (through local government or otherwise), using such a system to register, monitor, and regulate a large number of miners dispersed across an area also requires consistent application of laws, and indeed *understanding* of the law. This can be a challenge if the law is to be administered by local officials who typically have little experience in the technical and organizational needs of ASM.¹⁵⁰ Mechanisms that ensure capacity and good governance at this level are therefore important.

In particular, verification procedures need to be observed by and between central and regional mines offices to prevent abuse of low-cost ASM licensing systems by buyers seeking to maintain control of a site. In countries such as Uganda, for example, a significant proportion of small scale mining licenses are actually held by mineral dealers rather than producers themselves. This is also the case in CAR and Guyana. In the latter case, many of the claim blocks in the diamond bearing areas have been bought by Georgetown diamond traders and by established Guyanese mining firms, rather than by actual miners.

Administration, Regulation, and Enforcement

Administrative mechanisms to collect taxes and royalties differ from country to country. A unique model is found in Ghana, which produces an average of 500,000 carats of diamonds from alluvial deposits, about 10% of which are gem quality.¹⁵¹ Official exports in 2009 were valued at only \$US7.32 million yet the Government supports local buying through the Precious Minerals Marketing Company Ltd (PMMC), a state owned enterprise overseen by the Ministry of Lands, Forests, and Mines. The PMMC has 70 staff that serve offices located in all gold and diamond regions of the country. Companies who receive a license for buying and exporting diamonds (at a cost of US\$30,000) are housed in the PMMC Diamond House Building in Accra, where they undertake buying. PMMC handles export documentation, sealing of parcels and transport of diamond parcels to the airport.¹⁵² Export taxes are set 2.3% of value, well below that of other countries in the region.

Other diamond and gemstone countries, like Madagascar, the DRC, and Sierra Leone, have also set up dedicated offices to manage exports and collect royalties. In Sierra Leone, this job falls to the Gold and Diamond Department (GDD), based in Freetown where most exporters have their offices. Under the previous administration this came under the authority of the National Revenue Agency, but was returned to the Ministry of Mineral Resources by the new Mines and Minerals Act (2009).¹⁵³ The GDD levies a 3% export tax, which is based on the highest of three valuations done by the exporter, the GDD’s valuator, and an independent valuator. Like the PMMC, it manages all procedures relative to compliance with the KPCS.

¹⁵⁰ Levin, interviews with local authorities in Madagascar, 2007, 2008.

¹⁵¹ Precious Minerals Marketing Company Ltd., 2010.

¹⁵² Precious Minerals Marketing Company Ltd., 2010.

¹⁵³ Samuel Koroma, Government Gold and Diamond Office, telephone call with Levin, 4 October 2010.

Chain-of-Custody Tracking

Where incentives to formalize the export phase have largely worked, a major weakness with the KPCS has been identified as the inability of nations to formalize the mining and trading stages and the possibility of illegally mined diamonds entering the legal chain.¹⁵⁴ Effective, simple mechanisms to report production and track it through to export are needed to not only ensure KPCS compliance, but also to promote official reporting, payment of royalties and taxes, and evaluate the effectiveness of changes to fiscal and legal provisions.¹⁵⁵

Inspiration has come from Guyana's successful experience with diamonds, where the simplicity of the approach seems to set the standard:¹⁵⁶

- Each week, the operator of each dredge fills out a "production sheet." This includes the location where they are working, working hours, diesel consumption, and weekly diamond production.
- A copy of the production sheet accompanies the dredge's weekly production as they are sold to buyers in the field and then exporters in the capital city.
- Each production sheet in an exporter's parcel is checked by a representative from the GGMC and entered into a database.

This basic system has many benefits. It is simple enough to follow which supports official reporting and, because GGMC keeps a record of all dredges (including the pump size, number of workers and their weekly production data), production as well as export statistics have effectively been tracked since 2003. While organized, mechanized dredging is much different than practices and arrangements in CAR, this model suggests that focusing on the mining units (groups, teams, sites) provides a practical means of administration. In the case of a large number of relatively dispersed miners, Madagascar's *Commune* system of registration may be a more workable example if local technical and management capacity is sufficiently developed.

Although procedures in Liberia are well-established and known to many registered buyers, they are far more complex which, together with high trading license costs, is cited as the main reason why only ~10% of the 750 initially licensed brokers and traders renewed their licenses. Procedures under the KP require site managers or license holders to report production to regional offices once a diamond is found, receive a voucher for sales, return to the mine site, use the voucher to sell the diamond to a local buyer, who also returns to the regional office to submit a copy prior to continuation to the Government Diamond Office in Monrovia (requiring further valuation and paperwork). Given incomes of miners (~\$66 per month), transport costs, access to regional offices, and literacy constraints of miners, it is perhaps not surprising that only ~12% of artisanal diamond miners work on Class C licenses.¹⁵⁷

Different outcomes from the Guyana and Liberia examples show the advantage of simplified procedures for registering production as an incentive for formalization: make it a weekly activity rather than an "as and when" one; have the reporting accompany the sales for official corroboration at export, rather than reporting to government at point of production.

¹⁵⁴ Global Witness, 2008; Mitchell, Garrett & Levin, 2008.

¹⁵⁵ The same issue of supply chain traceability applies to tin, tantalum, and tungsten ore and gold exports from DRC, and has inspired a number of regional and international initiatives to develop chain of custody systems from mine to smelter with a view to curbing illegal mining. A Regional Certification Mechanism to track minerals from source and aid the collection of revenues by national governments is being developed by the Intergovernmental Conference for the Great Lakes Region. See Levin, 2010 and Blore and Smillie, 2010.

¹⁵⁶ After Blore, 2008.

¹⁵⁷ Hinton, 2010a.

5.0 CONCLUSIONS

ADM is an important livelihood for around 80,000 women and men in the CAR and provides more than 60% of the country's export earnings.¹⁵⁸ Currently, it is estimated that more than 2.8 million women, men, and children directly and indirectly rely on ADM while economic spin-off effects may inject as much as US\$144.7 million into local economies, thereby stimulating local businesses while providing a non-agricultural source of rural employment.

Legalization of artisanal diamond miners in the CAR holds even greater promise in terms of national development. While official statistics suggest that the mining sector in the CAR contributes only 4% to the national GDP and more than 25% of the country's alluvial diamond production is attributed to artisanal miners, the likelihood of substantial losses in government revenue due to smuggling and illegal exports is high.¹⁵⁹ Legal operation can bring benefits such as access to financing, training, and support that can increase diamond production and stimulate multiple spin-offs in terms of micro- and small-enterprise development and growth of market gardens, fish farms, and other agricultural ventures.

In numerous ASM countries, it has been widely demonstrated that the costs of licensing, fees, rents, taxes, and royalties are a common obstacle for informal miners. The primary objective of this Comparative Study was to assess whether lowering the fee of the *patente* can encourage legalization of artisanal miners in CAR. Comparisons between artisanal diamond mining fiscal regimes from Liberia, Sierra Leone, Guyana, Tanzania, and DRC, and valuable experience from several other ASM countries, provide interesting insights concerning the importance of low license costs and specific fiscal mechanisms that can support entry of artisanal miners into the formal system.

5.1 FISCAL PROVISIONS: KEY SUCCESS FACTORS

Certain elements of fiscal regimes *have* emerged as key factors in formalization:

- **Low-cost Licensing:** Guyana has reportedly formalized almost 100% of its sector (in terms of production units), largely due to low-cost licenses for both miners and buyers. Almost 80% of gemstone miners in Sri Lanka operate legally at a fee of only US\$10 per license, which is typically issued within only two to three weeks of application.
- **Incentives for Payment of Royalties and Taxes:** Again, Guyana's low royalty (3%) paid on a standard diamond value of US\$75 per carat (combined with an easy to administer reporting and tracking system) sets the standard. Payment of royalties by buyers (rather than miners) prior to export, as in Philippines, Sierra Leone, and Uganda, also reduce the bureaucracy incurred by miners, who often face literacy, numeracy, and logistical challenges. Ghana's PMMC provides assistance via provision of an office in a central buying office and even goes so far as to help prepare export documentation, seal parcels, and transport diamond parcels to the airport.

Additional provisions, such as zero import duties on mining equipment, thereby helping to mitigate costs of mechanization, are found in many countries while Ghana also offers a three-year deferral on royalty payment for new small scale mining license holders.

- **Re-investing in ASM and ASM Communities:** Measures to redistribute wealth generated from mining and increase *benefits to* and the *capacity of* miners and their communities have become an important component of fiscal policy. Countries such as Mozambique, Papua New Guinea, the

¹⁵⁸ Mbendi Information Services, 2010a.

¹⁵⁹ ARD, 2007.

DRC, and the Philippines have established small scale mining units or departments in order to provide outreach to artisanal miners. As with Community Development Funds in Ghana and Sierra Leone, which intend to bring benefits through grassroots level development projects, implementation of what appears to be good fiscal policy has been hindered by a lack of resources to these units and limited accountability for their performance.

Most countries cannot rely substantially on the direct tax and non-tax revenue from ADM, particularly in the early phases of formalization. Rather, taking the attitude that taxes from the ADM sector should be used to support the ADM sector's development and contribution to wider economic growth can bring more sustainable, longer-term revenues to government and benefits to the country from a wider economic base.

While a semi-autonomous, self-financing authority or minerals commission can provide a useful implementation mechanism for such support, these tend to function only in cases where a significant large scale mining sector exists and can provide considerable input. Particularly when a largely informal subsector is the starting point, the most obvious mechanism to finance ADM subsector support activities is *subsidizing* implementation costs via a levy on *all* mineral royalties and export taxes with awareness that formalization takes time.

In terms of next steps for CAR, a simple economic model derived from case study data suggests that lowering the *patente* cost to US\$5 license fee could encourage legalization of more than 65,000 artisanal miners and yield *official* diamond exports of US\$82.4 million, thereby providing an additional 4.2% of the nation's GDP and bolstering foreign exchange earnings. Even with a reduction of royalty (1.5%) and export tax (3%) rates, this could generate as much as US\$3.5 million in tax and non-tax revenue. Remarkably, by comparison with the US\$5 license fee, a *patente* cost of US\$50 would expect to attract only 28,000 miners to the legal system, while officially reported diamond production could *decrease* by over US\$47 million and generate ~US\$0.8 million *less* in tax and non-tax revenue.

It is important to recognize that fiscal measures alone are insufficient to achieve such impressive outcomes. Thus, it is not surprising that, with respect to legalization success, "high performing" countries, such as Guyana and Sri Lanka (where a license costs only 0.1–0.3 months of a miners income) have spent years putting in place extensive support mechanisms to complement their fiscal and legal frameworks. "Mid-range" performers such as Madagascar, whose license requires only 0.1 months of a miner's income, have fiscal and legal measures in place but have done only marginal outreach to ASM areas which has stifled uptake. "Lower performing" countries, such as Liberia and Uganda (who charge 3.9–5.3 times the monthly income of a miner for a license) have only very recently begun to revisit their legislation and take steps towards establishing regulation, enforcement, and extension service mechanisms that are appropriate given the nature of their respective ASM subsectors.

While sensible fiscal measures *do* seem to increase the legality of ASM and generate significant benefits for the state and economy, success of these measures largely depends on the capacity of miners and traders to comply with legal requirements and whether it provides any real advantage. Progress will be slow, except in areas where sufficient on-site intervention and support is provided. Consequently, fiscal regimes must be harmonized with a conducive legal framework and the institutional measures to support implementation.

5.2 SUPPORTIVE LEGAL AND INSTITUTIONAL FRAMEWORKS: KEY SUCCESS FACTORS

For any artisanal miner, the benefits of legal operation *must* be greater than costs of licenses, rents, taxes, and royalties. However, not only must artisanal miners see advantages from operating legally, they must have the *financial, personal, and technical capacity* to fulfill bureaucratic and legal obligations.

Effective legal and institutional models for the minerals sector consider the following:

- ***The Diversity and Different Categories of Miners.*** Different types of miners have different reasons for choosing (or being obliged) to mine legally or illegally. Understanding *who* your miners are, *how* they use the mining, and *what* it brings them is central to designing the right incentive structures for formalization. Legal frameworks may require more than one category of ASM license to account for the diversity *and* provide a step-up opportunity as activities become more formal. Increased capacity brings increased legal obligations, which in turn should bring increased benefits.
- ***Legislate Institutional Mandates:*** Many countries outline ambitious and well-crafted policy objectives related to ASM yet do not provide a legal mandate for mining institutions to execute them. ASM support must be formally enshrined in mining authorities' work programs and budgets. Defining institutional roles, functions, and obligations of mining departments, units, and offices in mining law, and even more specifically in regulations, not only provides a clear, legal mandate, but provides a basis to lobby for and receive funds from the central government to fulfill this mandate. It can also reduce discretionary powers and aid accountability.
- ***Reconciling International, National, and Local Priorities.*** Institution of policy measures without sufficient attention to context and consequence can have negative repercussions, potentially exacerbating artisanal miners' poverty and marginalization and driving the minerals trader deeper underground. Certain policy decisions of government may receive much international acclaim and, by all appearances, be sound. Consideration to the impacts at the village level is essential; however, what is logical for government may not be logical for miners and may actually impede development.
- ***Making Artisanal Mining Laws Realistic to the Existing Structures of Production and Trade.*** Various examples point to the importance of formalizing existing structures, rather than attempting to reconfigure artisanal mining into a legal model which may be ideal from a governance perspective, but unachievable for artisanal miners. Extensive consultation with artisanal miners is a prerequisite for developing a legal and fiscal structure that is appropriate and ensuring that the miners have a sense of ownership over the process. This in turn brings greater legitimacy to the final legislation, meaning that the miners are more likely to abide by it.
- ***The Right Institutional Arrangements.*** Quasi-independent "authorities" or "commissions" that partially or wholly generate operating funds through their activities are, in principle, more likely to fulfill their functions. However, these typically require well-established revenue generation systems to "get off the ground" and effective means to ensure proper use of funds.
- ***Regional versus Central Management.*** Regional management makes sense in large countries especially, or where there is a lot of artisanal mining activity. However, good management can be hindered by a lack of institutional capacity and resources at the local level. Mechanisms which ensure capacity and good governance at this level are therefore important.
- ***Administration, Regulation, and Enforcement.*** Various diamond and gemstone countries, including CAR, have set up dedicated offices to manage exports and collect royalties. This has helped to formalize the export phase but does not induce the legalization of mining activity. Effective, simple mechanisms to report production and track it through to export are needed to promote official reporting, payment of royalties and taxes, and evaluate the effectiveness of changes to fiscal and legal provisions. The Guyanese system is instructive. However, organized, mechanized dredging is much different than practices and arrangements in the CAR. In the case of a large number of relatively dispersed miners, Madagascar's *Commune* system of registration may be a more workable example if local technical and management capacity is sufficiently developed.

5.3 THE FINAL FACTOR

While results of the economic model are promising, the main lesson learned from other jurisdictions is that reduced licensing costs, royalties, and export taxes *can* stimulate licensing, particularly if

supported by well-conceived mining legislation, but the biggest challenge to formalization lies in implementation.

Reduced licensing fees and taxes would mark the first critical step towards achievement of the full development potential of ADM in CAR. Outcomes of these much needed reforms, however, shall ultimately be determined by incentive-focused fiscal and mining legislation, institutional commitment, adequate financing for implementation and, most importantly, accountability for performance.

ANNEX 1: CASE STUDIES

Detailed case studies for ADM countries and brief summaries of useful approaches from other ASM countries are provided in this section.

DEMOCRATIC REPUBLIC OF CONGO

Between 75 and 95% of the DRC's diamonds are deemed to come from informal artisanal miners, predominantly in the Kasai Provinces.¹⁶⁰ In 2009, DRC produced around 22 million carats of diamonds, predominantly of industrial quality, with a total value of \$US226m.¹⁶¹

DRC's artisanal mining sector is governed by the national Mining Code (*Code Minière*), Law No. 007/2002 of July 11, 2002,¹⁶² and the protocol for its application contained in Decree 038/2003 of 26 March 2003.¹⁶³ Under DRC law, artisanal mining encompasses simple non-industrial methods of mineral exploitation with the use of artisanal tools and processes only, and it is available to all Congolese nationals who hold a valid Artisanal Exploration Card (Art. 5). Exploitation must take place within a designated AMZ, and cannot be deeper than 30 meters. Any artisanal mining taking place in an area that is not designated for this use is technically illegal. Groups of artisanal miners who wish to perform mineral exploration within an artisanal mining zone, using industrial or semi-industrial methods, are required to form a cooperative and seek the consent of the Minister of Mines. The cooperative must consist of persons holding Artisanal Exploitation Cards, and they the organization must have a non-profit character (*Reglement Minier*, Art. 234).

In DRC, artisanal mining is under the authority of the National Ministry of Mines (*Ministère des Mines*), which has ultimate control over granting mining rights¹⁶⁴ and manages the mining sector based on the national Mining Code (*Code Minière*).¹⁶⁵ The Ministry is responsible for creating artisanal exploitation zones, authorizing traders to purchase artisanal mining products and issuing permits for the products' processing.¹⁶⁶ Directly under the Ministry of Mines, there is the General Secretariat of the Mines (*Secretariat General des Mines*), which is responsible for all issues related to administration of mines. The sole governing body endorsed to inspect and control artisanal and small scale mining exploitation in terms of health, safety, production, transport, labor procedures, and sales is the Directorate of Mines (*Direction des Mines*). Importantly, the Directorate lacks the technical and logistical capacity to fully perform these tasks, which is a major impediment to incentivizing miners to formalize.¹⁶⁷ In addition, the Directorate processes applications for approval of authorized traders of artisanal mining products.¹⁶⁸

¹⁶⁰ Wardell Armstrong, 2008.

¹⁶¹ KPCS, 2009.

¹⁶² Government of Democratic Republic of Congo (GoDRC), 2003.

¹⁶³ Pole Institute, 2010.

¹⁶⁴ GoDRC, 2003.

¹⁶⁵ GoDRC 2003.

¹⁶⁶ PACT, 2010.

¹⁶⁷ PACT, 2010.

¹⁶⁸ PACT, 2010.

SAESSCAM, CTCPM, CEEC, and CAMI are a group of governing bodies reporting directly to the Ministry of Mines, and known as technical support to artisanal mining within DRC. Of these, the most important for determining the formalization of ASM are:

- **SAESSCAM** - The Service for Assistance and Organisation of Artisanal and Small-scale Mining (*Service d'Assistance et d'Encadrement d'Artisanal et Small Scale Mining*) was officially created to improve organization of ASM practices, and help formalize the sector. Currently, SAESSCAM collects 15% of artisanal exploitation revenue, out of which 5% is officially meant to be spent on reclaiming land and social development. Unfortunately, SAESSCAM is severely constrained due to lack of resources.¹⁶⁹
- **CEEC** - The Centre for Evaluation, Expertise and Certification (*Centre d'Evaluation, d'Expertise et de Certification*) assesses and certifies the value, quality, and quantity of precious and semi-precious minerals—including diamonds—prior to export out of DRC.¹⁷⁰
- **CAMI** - Mining Registry (*Cadastre Minier*) manages land allocation for mining activities and makes sure that there is no overlap between the land granted for industrial mining operations and artisanal mining zones. CAMI has jurisdiction over granting mining rights.¹⁷¹

Provincial authorities also have responsibilities in artisanal mining sector governance, including in determining where artisanal mining zones should be (e.g. Provincial Governor) and issuing artisanal miners' cards (e.g. head of the mining division). In important artisanal mining areas, district authorities may also play a role in controlling mining activities and enforcing the law.

To perform artisanal mining in DRC, a miner is required to obtain an Artisanal Exploration Card, granted by the Head of the Provincial Division of Mines for one year, and renewable without limitation for another. All Congolese nationals over the age of 18, who have not been penalized under Article 27 of the Mining Code or Article 215 of the Family Code, are eligible to obtain the Artisanal Exploration Card. Other eligible entities include: “a) any individual of age and who is a foreign national and has a domicile in the National Territory; b) any legal entity incorporated pursuant to Congolese law which has its administrative registered office in the National Territory and whose corporate purpose is the purchase and sale of mineral substances from artisanal mining.”¹⁷² Those ineligible to obtain the cards are i) officials of the state (armed forces, judiciary, police, security, employees, agencies); ii) any individuals who were incapacitated under the Family Law Code; iii) any person convicted for violations of mining codes; iv) a person whose Exploitation/Trade Card was withdrawn (Art. 26 and 27). The card does not authorize the holder to sell or process minerals obtained through artisanal production, and can be withdrawn if standards are violated (Art. 112). Officially all diggers should carry this card, but very few do.¹⁷³

Holders of an Artisanal Exploitation Card holder have a variety of obligations under law in relation to, for example, health, safety, and environmental protection; compensation of farmers and landowners; respect for local customary laws and traditions; as well as all relevant territorial regulations and legislation, and more.¹⁷⁴

Dealers who go to the bush are known as *trafiquants*. The great majority have not paid for the \$500 *carte de négociant*. Typically they might pay the *Division des Mines* about \$20 a month for a card.¹⁷⁵

¹⁶⁹ PACT, 2010.

¹⁷⁰ Specifically diamonds, gold, coltan, and other precious metals (Government of the DRC, 2003b).

¹⁷¹ Government of the DRC, 2003, pg. 14

¹⁷² PACT, 2010.

¹⁷³ Partnership Africa Canada and CENADEP, 2007.

¹⁷⁴ Partnership Africa Canada and CENADEP, 2007.

¹⁷⁵ Partnership Africa Canada and CENADEP, 2007.

The Mines Ministry estimates that there are as many as 100,000 *négociants* and *trafiquants* in the diamond mining areas.¹⁷⁶

The formalization rate of artisanal diamond miners in DRC is low for two main reasons. Firstly, the state institutions which govern the sector have huge capacity constraints, even to the point that they are not able to print enough cards. Secondly, there is a collection of disincentives that prevent miners seeking to get the card. For example, though the card is supposed to cost US\$25, miners may find that they are obliged to pay more. They also face logistical difficulties in reaching issuing centers, are not penalized for not holding a card, and many perceive that there are no real benefits to having a card.¹⁷⁷ A further, major reason is that the card only allows the digger to mine within a certain zone but miners are highly mobile, requiring purchase of multiple cards. This reflects the importance of understanding the local situation when designing licensing systems. One suggested approach is to validate the card for the entire province and/or drastically reduce this fee in order to make the cards accessible to the miners at nominal cost.¹⁷⁸

GUYANA

Mining and quarrying contributed 11% to Guyana's GDP in 2009. Gold alone accounted for some 36.7% of Guyana's exports and bauxite for another 10.3% in 2009.¹⁷⁹ Diamond exports were worth \$14.6m in 2009, accounting for just 1.9% of Guyana's exports, owing to depression in world diamond markets and a move of ASM from diamonds to gold.¹⁸⁰ Therefore it is not surprising that formalizing the mining industry is a high priority for the national government.

Mineral rights in Guyana are owned by the state and regulated by the GGMC. Diamond trading licenses issued by the GGMC are required to buy, sell, and export diamonds. To register, diamond traders must have a registered place of business and licenses must be renewed yearly by simply visiting the GGMC and paying the required fees (US\$75 for the trading license and US\$50 for a business authorization). Only Guyanese citizens, legal residents, or Guyana-incorporated companies are permitted to obtain trading licenses.

With formalization of the entire artisanal mining *sector* in mind, Guyanan authorities have taken a number of proactive, successful steps to formalize the industry at all stages of the production chain (from the miners to the exporters). The reforms are generally considered successful because of their simplicity. First, licensing fees were lowered to accessible rates. Permits are easily accessible at rates of only US\$5 for diamond diggers, US\$50 for dredges and US\$75 for traders and exporters. Secondly, in a measure aimed at buyers/traders, royalties and export taxes, where the government generates revenue, are simple and streamlined. Royalties (3%) are paid based on a standard value of US\$75 per carat, regardless of quality. An average Guyana diamond is valued at US\$100 per carat and thus exporters see this as a fair and simple royalty system.¹⁸¹ Thirdly, a simple tracking system was devised based on a system of mining site and buyer-side reporting. Fourthly, the license is issued for the main production unit, the dredge, which must be registered and licensed either at GGMC headquarters or at a regional office.

Similar to many jurisdictions, Guyana has a first come, first served system of mineral claims. Rent is also paid in addition to license fees and rises over time and is based on surface area.¹⁸² Most claims are

¹⁷⁶ Partnership Africa Canada and CENADEP, 2007.

¹⁷⁷ PACT, 2010.

¹⁷⁸ World Bank, 2008.

¹⁷⁹ Bank of Guyana, 2009.

¹⁸⁰ KPCS, 2009; Bank of Guyana, 2009.

¹⁸¹ Blore, 2006.

¹⁸² Shawn Blore, email to Jennifer Hinton, 4 October 2010.

for medium scale mining operations; small scale operations are rare and large scale operations require additional steps, such as exploration assessments.¹⁸³ The vast majority of diamond mining in Guyana, however, is done using mechanized jigs called dredges or *resumidores*.¹⁸⁴ The dredge owner must be a citizen or legal resident of Guyana, and while the miners who work in the dredge in theory should have work permits, in practice, most do not.¹⁸⁵ Usually a four-inch dredge will employ a four-person team, a five-inch dredge will use a five-person team, and a six-inch dredge will have a six-person mining team. Dredge owners will often employ an extra miner in case of sickness or injury.¹⁸⁶ Once a dredge is registered, an entry is made in the GGMC's master ledger, and the administrative clerks open a dredge file where all production records are centrally kept in a numbered system. There were 3,683 registered dredges in Guyana as of April 2006. Dredge owners are required to maintain production sheets containing information on the dredge's location, hours, diesel use, and, most importantly, its weekly production of diamonds. Coordinated and consistent field checks by Guyanan authorities contribute to the accuracy of the data being processed.¹⁸⁷

When dredge owners sell their diamonds to a buyer, the dredge operator/manager removes two of the three copies of that production sheet. One copy is placed in the dredge's production record and one copy accompanies the diamonds throughout the buying chain; diamonds without a production sheet are at risk of seizure. The third copy is sent to the Guyana Revenue Authority, which calculates the royalties due based on the standard value. Once the royalty is paid, that sheet is then forwarded on to the GGMC, where it is stored in the dredge file that contains all production sheets associated with that dredge. When the final exporter applies to export the diamonds, the production sheet submitted (that which accompanies the diamonds) is checked against the information in the GGMC's database on dredge production records to ensure legitimacy.¹⁸⁸ As a complementary measure, diamond buyers are required to keep a daily ledger of all of their diamond purchases using a form (called a "Statement of Daily Diamond Transactions") provided by the GGMC. For each purchase, the forms record the date, the name of the seller, the number of the production sheet, the number of stones and carats, and the number of the claim block on which the diamonds were produced. These forms are submitted monthly to the GGMC, which records them in the trader's file.¹⁸⁹

Under this system, buyers can only buy from registered miners, diamonds have been tracked from source to export, government royalties are consistently paid, and auditing is possible. While sourcing is restricted and subject to participation in the tracking system, exporters are not restricted in their selling. They can sell to whoever they decide, can receive payment in US currency, and are not subject to profit repatriation conditions.¹⁹⁰ However, to address illicit financing, the GGMC instituted mining-financing reforms requiring traders to show, via bank or other money transfer records, a clear and legal source for the funds with which they purchase *Garimpeiros'* (small scale miners') diamonds.

With the integrated approach targeting the whole supply chain, low fees, simple tracking, disincentives (seizure of goods, field checks), and incentives to participate (successful sale and export), Guyana has managed to formalize nearly all the mining sector. Illegality has become a cost, not a cost-savings.¹⁹¹

¹⁸³ Shawn Blore, email to Jennifer Hinton, 4 October 2010.

¹⁸⁴ Shawn Blore, email to Jennifer Hinton, 4 October 2010.

¹⁸⁵ Shawn Blore, email to Jennifer Hinton, 4 October 2010.

¹⁸⁶ Blore, 2006.

¹⁸⁷ Elbow, 2010.

¹⁸⁸ Blore, 2006.

¹⁸⁹ Blore, 2006.

¹⁹⁰ Blore, 2006.

¹⁹¹ Shawn Blore, email to Jennifer Hinton, 4 October 2010.

Whilst the measures Guyana has undertaken are generally hailed as successful, Guyana has a number of attributes that may affect trans-operability.¹⁹² First, Guyana has a small population (approximately 800,000 people) and small and manageable surface area. Secondly, diamond quality is relatively consistent and does not require individual valuation. Thirdly, the government has a good level of capacity relative to other diamond producing regions, such as those in Sub-Saharan Africa. Fourthly, Guyana has a track record of establishing competent and semi-autonomous state agencies for key economic sectors such as mining; the GGMC, for example, was established in 1979. Lastly, the system is believed to work because it targets and works through production units, i.e. dredges, which is believed to be far more manageable, traceable, and accessible than targeting individual miners.

LIBERIA

In 2009, Liberia officially produced 28,368 carats worth approximately US\$11.25 million, with an average per carat value of around \$400. Approximately 98% of Liberia's mineral exports come from ASM and support at least 100,000 artisanal miners.¹⁹³ In acknowledgement of the critical role diamonds play in the livelihoods of thousands of artisanal miners in Liberia, and the role of diamonds in the conflict, the Ministry of Lands, Mines, and Energy (MLME) has undertaken a number of progressive measures to develop the ASM sector. These include adopting a new Mineral Policy (2010) which has aims consistent with international best practice; pursuing legislation supporting the implementation of the KPCS; establishing a transparent licensing system and clarifying access procedures; training, fielding, and retaining diamond mining inspectors; and establishing regional field offices for the diamond authority.

The MLME is currently in the process of bringing into force new regulations specific to licensing of artisanal mining (Class C License). The Mining and Minerals Law (MML, 2000) and its Ch. 40 Amendment to the MML (2004) specific to diamonds and the KP include provisions that are believed to provide some constraints to "best practice."¹⁹⁴ Different proposals for Class C Regulations are currently under review, one of which complies with the MML (2000, 2004) and provides interim measures for licensing artisanal miners. Key and unique features suggested in the proposed regulations will be shortly published in an upcoming USAID report but broadly include reducing the license fee, simplifying the application process, ascribing rights to miners to receive advisory support from government, and prohibiting the use of heavy, earth-moving equipment.

Furthermore, over the past several months, Liberia's Diamond Task Force Committee has been regularly meeting to define a course of action and assign responsibilities and targets for their achievement. Several targets have reportedly already been fulfilled related to auditing the tracking process for diamonds with the intent of eliminating fake receipts, conducting outreach to dealers to bring them closer to the process, promoting formation of ASM cooperatives, and increasing collaboration with revenue authorities while important gaps still involve establishment and capacity building of a functioning mines inspectorate, enforcement mechanisms and engagement of the judiciary, among other efforts.

Liberia still faces a challenge with regard to formalization of its artisanal mining sector. Only 8–12% of the country's approximately 100,000 artisanal miners work under a Class C License.¹⁹⁵ The low numbers of formalized miners and large smuggling operations is due to a combination of lack of incentives, a plethora of disincentives, a lack of enforcement, low awareness of the laws and procedures, and, in many cases, capacity to fulfill them.

Firstly, it is logistically difficult for ASM to formalize. Since licensing is centralized in Monrovia, miners must invest time and money to travel to the capital. Prohibitively intense rainy seasons

¹⁹² Elbow, 2010.

¹⁹³ Garrett & Lintzer, 2010.

¹⁹⁴ Hinton, 2010a.

¹⁹⁵ Garrett & Carstens, 2008. In 2008, the MLME issued just 877 Class C licenses (Temple, 2010).

restricting transport make licensing more amenable for Monrovia-based business people rather than miners.

Secondly, the Mining agency's lack of capacity is problematic. Mining agents and inspectors are paid paltry salaries, and are not given the funds, allowances, or even transport required for the execution of their duties. As a result, field officers can walk up to nine or ten hours to reach ASM sites. In remote forest areas, the only means of accommodation and food may come from the artisanal miners themselves, which is a conflict of interest for the officer.¹⁹⁶ Although accompanied by a patrolman, MLME officers carrying out their duties are frequently confronted and outnumbered by groups of illegal miners who may be threatened with loss of livelihoods. Telephone networks are poor or absent in many areas and MLME officers are often completely isolated from any form of outside support.¹⁹⁷ In reality, taking a hard-line authoritarian stance (which is promoted by some) is impractical and can place MLME officers at great risk in terms of injury or loss of life. In addition, the potential is high for activities such as taking funds for infractions, providing unregistered claims, overlooking license infractions in exchange for payment, involvement in mineral buying, and collusion with outside (foreign or Monrovia-based) parties is likely. Exacerbating all these problems is that most Mines Inspectors and Regional Officers have marginal training and many have only limited education.

Lastly, the structure of legal artisanal mining, as promoted by the Mining Code, is not compatible with the reality of how mining is structured on the ground, making it either impossible or unattractive for artisanal miners to formalize their activities.¹⁹⁸ For example, the standard plot size allowed is 25 acres which "forces the artisanal miner to look for financial support to effectively mine such a plot, thereby increasing levels of indebtedness and poverty."¹⁹⁹

SIERRA LEONE

Since the turn of the decade, the GoSL has been restructuring its mineral sector with a view to encouraging its formalization and compliance with the KPCS. Sierra Leone was the first "conflict diamond" country to trial a certificate for its diamond exports in 2000, before enforcing the KPCS in 2003. In 2005, its "Policy Measures relating to Small Scale and Artisanal Mining and Marketing of Precious Minerals" was developed to stipulate provisions, including fees, for the artisanal sector. The 2004 Mining Code was recently replaced by Parliament passing the Mines and Minerals Act 2009, and the country is in the process of devising a revised Artisanal Mining Policy. In the meantime, the 2005 Policy Measures still apply.²⁰⁰

The Mines Department under the Ministry of Mineral Resources issues artisanal mining, small scale mining, dealers', and exporters' licenses. Licenses for reconnaissance, exploration, and large scale mining are also issued by the Mines Department on the recommendation of the Minerals Advisory Board, and with the approval of the government.

The regulations governing artisanal mining are set out in the Mines and Minerals Act, but the marketing of diamonds, including export and associated taxes and fees, is presently covered by the 2005 *Policy Measures*. Artisanal miners are awarded a mineral right of up to half a hectare, and small scale licenses can be from one to 100 hectares. Only indigenous Sierra Leoneans may apply for and be issued artisanal mining licenses, whether they are applying as individuals or in an organization. Artisanal mining licenses are issued by the Mines Department, and only if accompanied by a "certified copy of the agreement between the applicant and the Chiefdom Mining Allocation Committee or the rightful occupiers or owners of the land over which the artisanal mining license is granted" (Art. 88.2).

¹⁹⁶ Temple, 2010.

¹⁹⁷ Temple, 2010.

¹⁹⁸ Temple, 2010.

¹⁹⁹ Temple, 2010.

²⁰⁰ Samuel Koroma, Government Gold and Diamond Office, telephone call with Levin, 4 October 2010.

Artisanal miners do not have to pay any royalty on their production (exporters pay a 3% royalty at point of export, which is consistent with the regional export taxes on diamonds in neighboring countries). Whilst the new Act sets out a schedule of fees for artisanal miners, the old fees are still being applied.²⁰¹ Miners only pay a fee to government at the point of application for a license. Under the previous legislation, the total cost to license an acre for artisanal mining was around Le800,000 (about US\$270 by 2005 exchange rates).²⁰²

As part of post-war recovery and efforts to formalize the sector and introduce the KPCS, Sierra Leone's diamond exports underwent a dramatic increase from 226,000 carats (2001) to almost 700,000 carats in 2004, but then fell from this peak down to 240,000 carats in 2008 and 400,000 carats in 2009. Since 2004, artisanal production has been declining as a proportion of total exports, owing primarily to land take by larger operators, the dematerialization of reserves which has led to the consolidation of artisanal operations into "small scale" units, and a move by many post-war artisanal miners to return to their traditional livelihoods. At the same time, gains in formalizing the sector have been lost as many artisanal diamond miners have returned to mining without licenses (though with permission from traditional authorities to whom they will pay their traditional "surface rent"²⁰³), disillusioned that formalization is not worth it in a sector which is increasingly risky from a financial perspective, and does not bring the benefits, such as security of tenure, originally conceived.²⁰⁴

Research from 2006 is informative. In 2005, and at the height of USAID's Integrated Diamond Management Program, which aimed to encourage miners to register, the formalization rate in the main diamond district of Kono was around 50%.²⁰⁵ However, the licensing rate was down by 18% on the previous year owing to heavy rains which had increased miners' costs, the introduction of significant back-taxes on exporters, and an increase in the licensing fees by about \$100.²⁰⁶ Based on this experience—and further to the near collapse of the country's artisanal diamond sector due to the worldwide recession—in early 2009 the Ministry of Mines made the decision to lower the cost of licensing to Le500,000 plus surface fees (Le100,000) (US\$156).²⁰⁷ As the sector is presently recovering, the Ministry is now considering returning them to Le800,000.²⁰⁸

In 2004, Levin conducted research with artisanal diamond miners in Kono District to determine what motivated them to formalize their activities, or not. She found that the structure of a miner's livelihood and assets determines his/her decision to mine legally or illegally:²⁰⁹

"The choice of whether to mine legally or not is framed by the strength of a person's protection networks, whether they can finance themselves, what other livelihood options are available to them, and the relative attractiveness of these other options. Legal mining is the optimum choice for someone who can afford to

²⁰¹ Andrew Keili, CEMMATS, email to Levin, 5 October 2010. Under the new Act, total cost is 550,000 Leones per half acre (\$143), which is nearly \$300 per acre.

²⁰² Licensing fees for an artisanal or co-operative mining lease per acre, per year: Le200,000. Other fees: rehabilitation fees (Le 200,000), Mine's Manager's certificate (Le 100,000), monitoring fees (Le100,000), and payments to traditional authorities, including surface rent of around Le100,000. (Government of Sierra Leone, 2005)

²⁰³ Andrew Keili, CEMMATS, email to Levin, 5 October 2010. To get their license, artisanal miners must also pay "surface rent" to local chiefdom authorities, the price of which varies by chiefdom and according to the social position of the miner. In cases where miners choose not to get a mining license from the central government, they generally pay surface rents to "formalize" their activities at the local level, although their activities remain technically illegal.

²⁰⁴ Estelle Levin, interviews with GOSL officials and artisanal miners 2007, 2009.

²⁰⁵ In 2005, nearly 2,400 artisanal mining licenses were granted in Sierra Leone (Levin & Gberie, 2006). At the time, total ADM population was estimated at 200,000, with the vast majority (perhaps 150,000) being in Kono District, the ADM heartland (Levin 2005). ADM licenses cover up to 50 laborers; a typical number would be closer to 30, giving a rate of 48% legality.

²⁰⁶ Levin & Gberie, 2006.

²⁰⁷ Based on June exchange rate of 3,850 Leones = \$1. (Andrew Keili, CEMMATS, email to Levin, 5 October 2010).

²⁰⁸ Andrew Keili, CEMMATS, email to Levin, 5 October 2010.

²⁰⁹ Levin, 2005, p. 79.

obtain the licence and conduct the mining without support. Independent legal miners have explicit and enforceable rights and greater freedom to sell to whomever they please... For others, the legal option requires that they go into a supported arrangement in order to afford the licence and/or the costs of production. If the mine is unproductive, the miner might find himself with no earnings at the end of the year, or worse still, in debt ... Illegal mining ... offers people greater independence and a higher share of the winnings ... For diggers who mine to supplement another, principal livelihood therefore, illegal operations (i.e. gado or overkicking) are more feasible than working in a legal gang.”

For others, mining legally is not an option: “Either they cannot afford the license or they are excluded from participating in a legal gang because of their gender or age.” At the other end of the spectrum, “where people have strong social contacts, illegal mining is the optimum choice because it offers greater profitability and greater independence. In other words, illegal mining is the strong person’s preferable option and the poor person’s fate.”²¹⁰

Understanding *who* your miners are, how they use the mining, and what it brings them is therefore key to designing the right incentive structures for formalization.

TANZANIA

Tanzania’s mining sector has grown dramatically in recent years, growing by 15.6% in 2006 and 10.7% in 2007 and comprising approximately 3.5% of GDP.²¹¹ Diamonds represented approximately 1% of total mineral exports in 2008 and are worth approximately US\$22.3m, of which the vast majority came from industrial-scale production.²¹² Though the artisanal mining sector officially produces a minority of Tanzania’s minerals, it employs an estimated 500,000 artisanal miners producing colored gemstones, diamonds, gold, and other commodities; by comparison, formalized mining amounts to 8,000 jobs.²¹³

Despite the sector’s potential to fuel rapid economic growth, concerns that minerals have not contributed enough to improving the lives of the poor are widespread, particularly for those living in the vicinity of the mines themselves. This has led the government to appoint the Mining Review Contracts Committee in November 2007 to review all industrial mining contracts. In July 2008, the Committee recommended that mining royalties on rough diamond and colored gemstones be increased from 5% to 7%; and cut diamond and colored gemstones, to 3% from 0%.²¹⁴ These recommendations were ultimately included in the Mining Act of 2010, which was signed into law in April 2010. This law is coupled with the government’s 2009 National Mining Policy.

Both the old legislation (under the 1997 Mineral Policy) and the 2009 Policy emphasize Tanzania’s commitment to assist indigenous artisanal miners. Under the new mining code, the government will set up a new Mineral Development Fund, whose purpose will be, among other objectives, to support artisanal and small scale miners.

Under the new law, only local Tanzanians will be able to mine gemstones and non-Tanzanians wanting to be involved in mining must form joint ventures with Tanzanian citizens. The law calls on the government is to set aside specific areas that will function as buffer zones to reduce conflicts between large scale mining and small scale miners. Finally, while the government is prohibited from

²¹⁰ Levin, 2005, p. 79.

²¹¹ US Geological Survey, 2008a.

²¹² KPCS, 2008; Macfarlane, 2008; Levin, Mitchell, Macfarlane, 2008, Annex 12.

²¹³ Ministry of Finance and Economic Affairs, 2008, The economic survey 2007: Dar Es Salaam, Tanzania, Ministry of Finance and Economic Affairs, p. 208.

²¹⁴ Mining Journal, 2008, Political debate, in Tanzania—A supplement to Mining Journal: Mining Journal, August, p. 5.

issuing new gemstone mining licenses to foreign companies, current agreements are unaffected. Another recent law passed by Parliament has banned the export of rough diamonds and other gemstones (tanzanite, emeralds, rubies, sapphires, turquoise and topaz) from Tanzania. The aim of the export ban is to develop a home-grown cutting and polishing industry and increase gemstone-related local employment.

Most artisanally mined diamonds are mined informally at and around the Mwadui mine,²¹⁵ a 146 hectare site located in the Shinyanga region of northern Tanzania. Artisanal mining has occurred here since the early 1900s. The Williamson Diamond Mine at Mwadui was recently part of a joint venture between the Tanzanian government and DeBeers, though artisanal mining was still active during that time. Both legal and illegal miners currently work in the area's alluvial gravels. An estimated 20,000 artisanal miners are currently active, supported by a large and well-developed financing and buying network. Prior to 2008, an estimated 20,000 carats of the area's average 80,000–120,000 carats in artisanal diamond production is thought to be illegal and from the Williamson Diamond Mine site. Annual ASM diamond revenue is worth an estimated US\$14 million.²¹⁶ Artisanal mining is by far the most important income source in the area; 75% of area families surveyed said it was their most significant income source.²¹⁷ However, because it is informal, it makes little impact on the area's overall development as little revenue reaches local government coffers.²¹⁸

A variety of efforts have been made in recent years to formalize artisanal diamond mining, but much intention has notably been focused on the Mwadui Community Diamond Partnership, which stalled in 2008 when the Williamson Diamond Mine was taken over by Petra Diamonds.²¹⁹ Plans included the creation of a digger cooperative that could provide credit access for diggers, contributing to their financial independence, as well as initiatives to introduce transparency in diamond prices. As such, the Tanzania Ministry of Energy and Minerals promised to create a Diamond Valuation Centre that would allow artisanal miners in the region to find out the value of their finds.

OTHER JURISDICTIONS

A number of other countries have taken action to support formalization of ASM. Useful components that have led to some successes have been highlighted.

1. MADAGASCAR²²⁰

It is estimated that 100,000 to 150,000 Malagasey gold miners produce one to two tons of gold annually.²²¹ Recent changes in Madagascar's Mining Code (2005) sought to increase formalization of ASM through substantial reductions in license and permitting fees and simplifications in procedures. A gold miner or group pays only 10,000 Ariary (US\$5.50) for an annual permit (*Carte d'Orpailleur* or gold washer's card) granting the individual or mining association the right to pan gold in a washing channel (river beds or recent alluvial deposits). Available only to individuals over 18 years old of Malagasy nationality or local groupings of legally established gold washers, payments go to their "commune" which is a unit of local government that is authorized to grant permits and is responsible for ensuring that gold washers employ safe and environmentally protective practices (Article 85). Individual production and incomes range from US\$1 to US\$5 per day; internationally, alluvial gold

²¹⁵ KPCS, 2008; Macfarlane, M. 2008; Levin, Mitchell, Macfarlane, 2008, Annex 12.

²¹⁶ McFarlane, 2008.

²¹⁷ McFarlane, 2008.

²¹⁸ McFarlane, 2008 citing Progress report February 2007.

²¹⁹ McFarlane, 2008.

²²⁰ Levin, 2007; ONG Green 2006.

²²¹ U.S. Geological Survey, 2005.

miners produce approximately 0.2 gram/day which, at local prices, would sell for approximately US\$3, roughly giving a ratio of monthly income to annual licensing costs of US\$10.9.

Collectors (local buyers) must obtain a *Carte de Collecteur d'Or* from the *Commune* at a price of 100,000 Ariary (US\$105) per annum for each *Commune* where they are registered. The 2% royalty on production, paid by the collector, is based on their purchase price from the producer (requiring a jointly signed invoice on-site). Barriers include high rates of illiteracy (discouraging documentation of sales), confusion of collection procedures for royalties returned to the *commune* and respective governments and lack of *commune* capacity to promote and advise miners in safe, environmentally responsible practices.

Still, there is a high rate of registration. Of 1,500 gold panners in the *Commune* of Antanimbary in 2006, 1,383 had obtained their permits. Declines the subsequent year were largely attributed to heavy rains and the distance to the administrative center while 40 of 55 registered collectors renewed the following year.

2. UGANDA²²²

While Uganda is not a diamond producing country, almost 200,000 women (45%) and men (55%) are engaged in artisanal mining of gold, tin, coltan, wolfram, and a range of industrial minerals (limestone, stone aggregate, salt, clay, etc). In an effort to support formalization, the Government of Uganda, with support from the World Bank, undertook massive training and sensitization campaigns between 2007 and 2009. This involved training and collaboration between a 20-member committee from multiple relevant government agencies, intensive training of almost 200 trainers comprised of local government officers and miner-leaders, and subsequent grassroots training of over 1,000 artisanal miners. In order to ensure both women and men realized benefits from the program, the committee included a gender expert and was trained in the early phases; gender was mainstreamed in curriculum and extra efforts (e.g. on-site child care) were made to support mobilization, participation, and benefits to women miners.

In the short time since implementation, results have included:

- Granting of over 80 prospecting licenses, requests for 50 location licenses (and granting of 10) to trainees.
- Formation of more than 20 local small scale mining associations and a NASMA.
- Demonstrated improved practices in savings, increased selling prices, value addition activities, and miner-initiated measures to improve environmental management and health and safety.
- Distribution to miners of contact information of licensed mineral dealers and outreach to dealers has also resulted in almost tripling of royalties over the past two years and doubling of non-tax revenue within a four-year period.

A National Strategy for the Advancement of Artisanal and Small Scale Mining in Uganda marked the culmination of this project, included in which are detailed work plans, budgets, and performance monitoring and evaluation frameworks.²²³

In efforts to track gold and diamonds illegally exported from the nearby DRC, the Mines Division in the Department of Geological Survey and Mines has taken steps to increase information sharing with the Uganda Customs and Revenue Authority and via an intersectoral Technical Working Group under the Uganda Bureau of Statistics. Problematically, import-export taxes of 0.5% (below that required of royalties at 3%) have prompted many mineral dealers to declare foreign origin for locally mined gold, further undermining the economic significance of the minerals sector. Additional measures have

²²² Hinton, 2009.

²²³ Hinton, 2009.

included quarterly written notification to districts of their royalties (17% of royalties) due for collection from the Ministry of Finance while the Mines Division is also slowly sensitizing land owners (and collecting copies of land titles) in order to ensure they can be notified to collect their 3% royalty share.

As identified in the National ASM Strategy, major constraints to formalization relate to bureaucratic and costly centralized licensing (~\$350 USD exclusive of transport and fees for assistance),²²⁴ lack of skills and awareness of procedures, and, despite Mineral Policy commitments, the absence of institutional roles and mandates in the Mining Act (2003) and Regulations (2004). Recommendations for specific legal, policy, and institutional reforms are accordingly being reviewed. Successful outcomes from training and outreach activities thus far attest to the benefits of “walking the talk” of good policy while doubts in long term program financing threaten future progress.

3. GHANA

Perhaps more than any other country, Ghana exemplifies that (i) there is no “best practice” without practice; and (ii) formalization and legalization of ASM is a long process requiring steadfast government commitment to creating incentives through grassroots interventions. Lessons learned over the course of one decade provide useful insight.

In 1989, when a Small Scale Mining Implementation Committee was formed to oversee “The Regularisation of Small Scale Gold and Diamond Mining Project,” formalization efforts commenced with the demarcation of eight small scale mining districts.²²⁵ Shortly thereafter, the provision of extension services to these districts was supplemented by the hiring of district officers and mines wardens, who were charged with carrying out the Small Scale Gold Mining Law (PNDC Law 218).

Recognizing the capacity gaps of government officers mandated to implement the Law, officers were trained in the Mining Law, health and safety issues in ASM, and geology before deployment. Subsequent “Training of Trainers” courses were provided to the officers, including environmental management, health and safety, basic bookkeeping, and project planning and management.²²⁶ Although gold miners’ previous fears of arrest had created a huge disconnect with government, perceptions of illegal miners as “criminals” had further heightened tensions. District officers began to overcome this slowly through efforts to fraternize with the miners on a social basis, which enabled them to gain their trust, communicate the benefits of legalization, and provide the added incentive of technical support.²²⁷

This was supplemented by subsequent government partnerships with development organizations in order to extend support through “Rent-A-Pump” and “Hire-Purchase” (or rent-to-own) Schemes, technical assistance in introducing Chinese Hammer mills (which are now in widespread use), pilot testing of hard rock and alluvial mining equipment, a program to make geological information available to small scale miners (resulting in a number of suitable demarcated areas), and reclamation of three degraded sites.²²⁸ Subsequent projects saw adaptation of the Mercury Law to enable miners to legally purchase small quantities of mercury for gold mining and training in the safe use of mercury.

Earlier efforts to support ASM produced variable results but demonstrated outstanding commitment on the part of government and some notable progress was achieved. Between 1998 and 2002, officially reported production rose from 2% to 7% for gold and 40% to 80% for diamonds.²²⁹ And yet, only 620

²²⁴ Based on the monthly incomes of an average Ugandan gold miner, the ratio of license cost to miners’ monthly incomes in Uganda is approximately 2.3.

²²⁵ Yakubu, 2003.

²²⁶ Yakubu, 2003.

²²⁷ Yakubu, 2003.

²²⁸ Yakubu, 2003.

²²⁹ Aryee, 2003.

licenses were granted in this period, to which miners attribute to a complex licensing process that can take up to six months.²³⁰

Ghana has also had challenges formalizing its artisanal diamond sector, as this extract from Hilson (2008) shows:

“Few diamond miners outside of the GCD concession have a license. As of August 2008, there were only six licensed small-scale diamond miners in the country not operating on GCD land, and at the time, only one was active. The rapid depletion of diamonds on the GCD concession, however, has fuelled an upsurge in illegal galamsey activity, particularly southwest of Akwatia toward Oda and as far as AssinFosu. The drivers of this rampant illegal diamond mining activity are likely similar to those of illegal artisanal gold mining: time delays with processing licenses, costly fees payments for processing applications, and an unavailability of geologically-viable land on which to register (Hilson & Potter, 2005).”²³¹

As Ghana’s diamond and gold experiences demonstrate, a simple licensing process is paramount to encouraging miners to register.

4. PERU

Lack of proper consultation with women and men miners and other ASM stakeholders (i.e. sole reliance on top down approaches) can easily lead to failures in formalization. Peru successfully avoided this pitfall in its Law 27651 “Formalization and Promotion of Small Scale and Artisanal Mining,” a remarkable example of constructive consultation and engagement where formal proposals for reforms of both laws and regulations were received from ASM associations and were largely enshrined in legislation.

Peru’s mining sector rapidly expanded since the early 1990s. In 1993, mining accounted for almost 3% of GDP and increased to 11% by 2000.²³² In 2000, it contributed almost half of foreign exchange earnings with export revenues of US \$24 billion.²³³ By 2005, mining accounted for more 60% of the country’s total export revenues. From a near totally informal sector in 2000, by 2008 50% of artisanal miners were operating formally, thanks to facilitative legal frameworks.²³⁴

Prior to 2002, the mining code in Peru was initially developed to facilitate large scale, multinational investment in the country. Between 2001 and 2002, artisanal miners organized themselves to persuade their government to revise the mining code in order to also make it appropriate to the way that they mined. The system at the time simply precluded licensing of artisanal miners. In 2002 the code was changed to recognize ASM on the basis of title area and production capacity, and made provisions in line with artisanal mining realities.²³⁵

The success of the Peru experience lies in a number of factors.

First, whereas in many other countries “informality represents a major problem for the authorities but only a minor problem to the artisanal miners themselves,” in Peru the situation was the reverse, largely due to criminalization of possession of dynamite and the dependence of artisanal miners on concession

²³⁰ Azameti, 2003.

²³¹ Hilson, 2008.

²³² *Trade and Environment*, 1994.

²³³ U.S. Geological Survey, 2008b.

²³⁴ CASM, 2008.

²³⁵ Medina 2003; Hruschka, 2003.

owners for water.²³⁶ Second, a particular constellation of events, namely, a receptive environment and the desire of artisanal miners to be formal, as well as the establishment of a Swiss-funded development intervention, Proyecto GAMA, which was designed to formalize the sector, provided a combination of positive factors.²³⁷ Other success factors included the identification of similar interests among otherwise polarized parties; the requisite political will to address an unsustainable situation; the organizing talent and initiative of artisanal mining leaders; and a close connection between traditional leaders and their base, who were also willing to include women miners as leaders. This was further buttressed by a constructive multi-stakeholder environment and the presence of impartial external stakeholders who could act as mediators and facilitators, and provide funding and other resources for advocacy activities.²³⁸

Hruschka (2003) identified key lessons from the Peru experience related to how legal framework can induce formalization in terms of “the equilibrium between obligations and compliances:”²³⁹

- “If obligations for artisanal miners are unsubstantial, compliance will become irrelevant and will not occur.
- “As long as the costs for artisanal miners necessary to meet the obligations of formality are less than the costs of informality or compensated by complementary benefits from formalization, voluntary compliance will occur at an adequate level of enforcement.
- “If the costs for artisanal miners to comply with the obligations of formality are equal or greater than the costs of informality and not outweighed by benefits, compliance has to be enforced by threat of coercive force.
- “If the cost of enforcing compliance exceeds the public revenue from formalization, enforcement of obligations will become increasingly impossible and compliance will be replaced by evasion.”

5. PHILIPPINES

Republic Act No. 7942 known as the "Philippine Mining Act of 1995" regulates mineral resources development in Philippines. Section 42 of the Act states that small scale mining is to be governed by Republic Act No. 7076 (Philippines People’s Small Scale Mining Law, 1991) and other pertinent laws.

More than 300,000 artisanal and small scale miners are active in the Philippines, two-thirds of which are engaged in gold mining. Almost 100% of the Philippines’ industrial minerals and up to 80% of its gold are produced mainly through ASM.²⁴⁰ In recognition of its economic and social significance, the government has instituted a number of laws pertaining to gold panning and sluicing (PD 1150), mining of small deposits (PD 1899), identification and segregation of ASM zones (RA 7076) and ASM mine safety rules (AO No. 97-30). Miners can obtain a range of renewable permits, which can be granted for one- to three-year periods contingent on limited production, non-mechanization, explosives bans, and exclusion of child labor.²⁴¹ Permits are commodity specific. PD 1899 requires that all gold be sold directly to the Central Bank or its official buying stations in gold areas. When a small scale mining area is designated within an existing mining right, PD 1899 also exempts small scale miners from annual work obligations, payments and payment of fees, rents and property taxes, and they are further afforded a reduced royalty rate of 1.5%.

²³⁶ Hruschka, 2003, p. 10.

²³⁷ Hruschka, 2003.

²³⁸ Hruschka, 2003, pps. 25–26.

²³⁹ Hruschka, 2003, p. 24.

²⁴⁰ Bugnosen, 2004.

²⁴¹ Bugnosen, 2004.

With some exceptions, decentralized Small Scale Mining Offices undertake most ASM-related regulation, monitoring, and technical assistance functions. The Natural Resources Development Corporation is responsible for the management of rushes, while the demarcation and designation of ASM zones is undertaken at a provincial level by multi-stakeholder Mining Regulatory Boards.²⁴² The Boards are further charged with the management and regulation of these areas, including resolution of conflicts.

Much of this work is funded by the 15% share in government revenues from mining via the People's Small-scale Mining Protection Fund. Funds are mainly allocated towards information dissemination and training of small scale miners on safety, health and environmental protection, and the establishment of mine rescue and recovery teams, including the procurement of rescue equipment necessary in cases of emergencies such as landslides, tunnel collapse, etc. The fund is also accessible to the small-scale miners in case of accidents and/or serious unforeseen events.

Bugnosen (2004) contends that a number of ASM-related legislative measures have failed, while others have succeeded. Failures include: attempts to designate ASM areas; permitting activities within existing concessions; overly restrictive provisions for obtaining permits; and the need for multiple permits depending on the stage of operations (mining, permitting and marketing). Successes have been observed in terms of gold rush control measures that have enabled tax collection, environmental protection in these areas, and efforts to inhibit damaging sand and gravel operations. The emergence of “contract mining” wherein formal companies purchase minerals from ASM producers, has been deemed promising, although local indigenous communities have expressed concern over their capacity to stimulate uncontrolled activities.²⁴³

²⁴² Bugnosen, 2004.

²⁴³ Bugnosen, 2004; Caballero, 2004.

ANNEX 2: ECONOMIC MODEL

The first worksheet in the economic model enables the user to edit key criteria (e.g. no. of miners, license fees, royalties, and taxes) to evaluate how different criteria affect outcomes.

INPUT DATA		
1 Est. Number of Diamond Miners (licensed and unlicensed)	80,000	← Enter Est. Number of Licensed & Unlicensed Miners
2 Annual Total License Costs (registration/permit)	\$5	← Enter Proposed Total Annual License Cost
3 Royalty Rate (%)	1.5%	← Enter Proposed Royalty Rate
4 Export Tax Rate (%)	3.0%	← Enter Proposed Export Tax Rate
Optional Economic Development Indicators		
1 Total National GDP (in millions of USD)	\$1,986	← OPTIONAL: Enter Total GDP
2 Total Foreign Exchange Earnings (in millions of USD)	\$500	← OPTIONAL: Enter Total Foreign Exchange Earnings

EXPECTED STATE REVENUES	
1 Non-tax Revenue (licenses and rents)	\$329,425
2 Royalties	\$714,562
2 Export Taxes	\$2,473,363
TOTAL	\$3,517,349

OTHER ECONOMIC AND DEVELOPMENT CONTRIBUTIONS	
1 Value of Officially Reported ADM Diamond Production	\$82,445,433
2 % ADM Contribution to GDP	4.2%
3 % ADM Contribution to Foreign Exchange Earnings	16.5%
GDP Contribution	\$82,445,433

1 Total Annual Miners Incomes - Local Economic Contribution	\$57,843,200
2 Economic Spin-Off (Local Economic Multiplier)	\$86,764,800
Total Local Economic Contribution	\$144,608,000

1 Direct Employment in Mining (no. of people)	80,000
2 Indirect Employment (Diggers, Labourers, Vendors, etc)	400,000
3 Induced Labour (Local and Regional) (no. of people)	240,000
4 Indirect Beneficiaries (no. of dependents)	2,160,000
Total ADM Beneficiaries	2,880,000

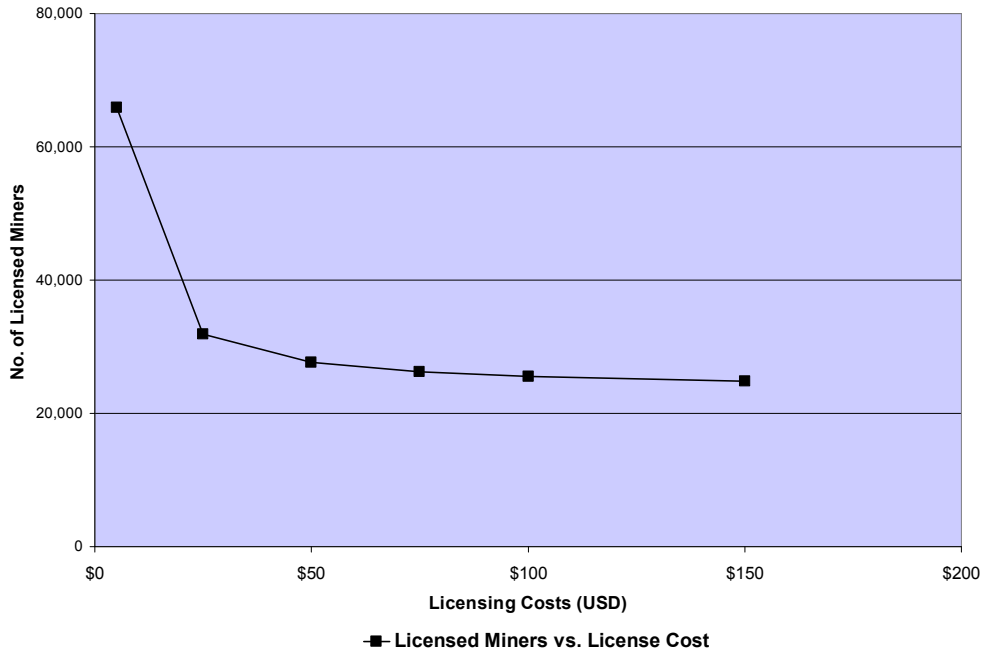
SUPPORTING ADM SECTOR DATA	
1 Total Estimated Number of Artisanal Diamond Miners	80,000
2 % of Licensed Miners (forecast from fiscal provisions)	82.4%
3 Average Annual Production (cts) per Miner	8
4 Average Value per Carat (Point of Sale at Production Site)	\$90.38
5 Average Value per Carat (Point of Export)	\$156.42
6 Average Annual Income per Miner	\$723.04

The second worksheet in the economic model predicts the effects of different license costs.

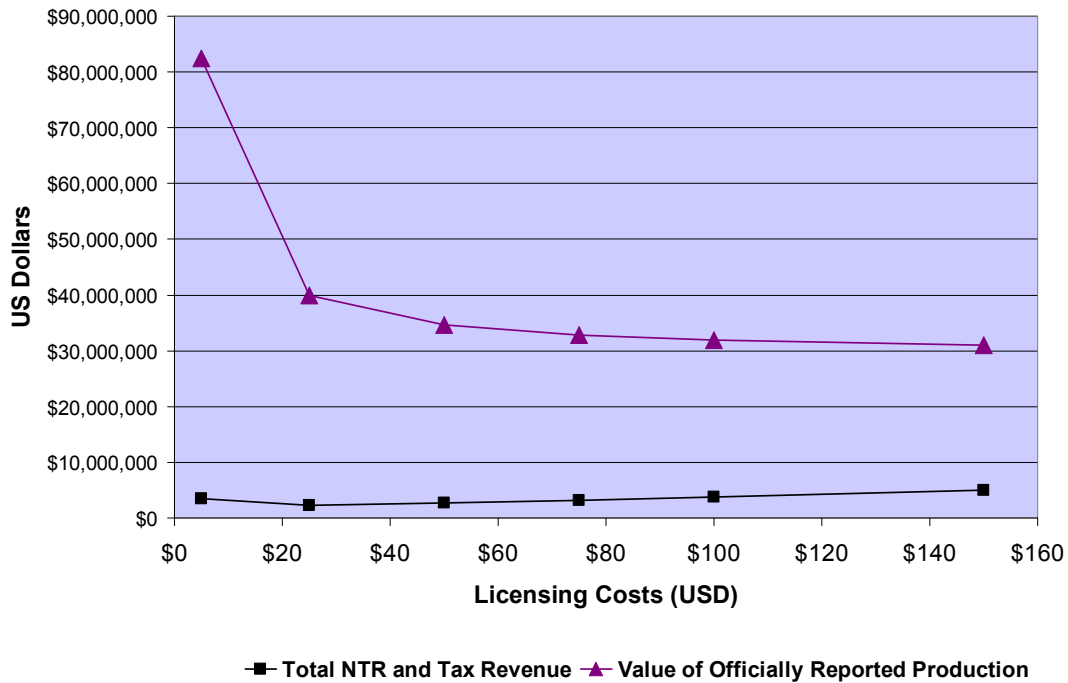
No. of Miners Licensed versus Cost of Licenses							
	INPUT DATA	COST 1	COST 2	COST 3	COST 3	COST 4	COST 5
1	Annual Total License Costs (registration/permit)	\$5	\$25	\$50	\$75	\$100	\$150
	Fixed Data						
2	Est. Number of Diamond Miners (licensed and unlicensed)	80,000	80,000	80,000	80,000	80,000	80,000
3	Royalty Rate (%)	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
4	Export Tax Rate (%)	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
EXPECTED BENEFITS							
	Expected No. of Licensed Miners	65,885	31,900	27,652	26,236	25,528	24,820
	Total Tax and Non-Tax Revenue	\$3,517,349	\$2,341,007	\$2,720,544	\$3,237,115	\$3,787,945	\$4,923,863
	Value of Officially Reported ADM Diamond Production	\$82,445,433	\$39,917,988	\$34,602,057	\$32,830,080	\$31,944,092	\$31,058,103
SUPPORTING ADM SECTOR DATA							
1	Total Estimated Number of Artisanal Diamond Miners	80,000	80,000	80,000	80,000	80,000	80,000
3	Average Annual Production (cts) per Miner	8	8	8	8	8	8
4	Average Value per Carat (Point of Sale at Production Site)	\$90.38	\$90.38	\$90.38	\$90.38	\$90.38	\$90.38
5	Average Value per Carat (Point of Export)	\$156.42	156.42	156.42	156.42	156.42	156.42
6	Average Annual Income per Miner	\$723.04	\$723.04	\$723.04	\$723.04	\$723.04	\$723.04
	RATIO OF MINER'S MONTHLY INCOME:LICENSE COSTS	12.1	2.4	1.2	0.8	0.8	0.4
	Expected % Licensed Miners	82%	40%	36%	33%	32%	31%

The third worksheet plots the effects of different license costs on predicted number of licensed miners, officially reported diamond production, and tax and non-tax revenues.

No. of Licensed Miners Predicted vs. License Cost



Government Revenue and Official Production versus Licensing Costs



ANNEX 3: COMMON COMPONENTS OF LEGAL AND FISCAL FRAMEWORKS

While countries vary in terms of fiscal requirements for ASM, most includes provisions for:

- License preparation and, in some cases, surveying, and demarcation fees.
- License fees and, in some cases, mineral rents (per unit area).
- Renewal and transfer fees.
- Royalties.
- Import or export taxes.
- Permitting (e.g. environmental, water extraction).

In order to encourage and support responsible mineral development, a supportive fiscal framework must be harmonized with prevailing mineral policies and legislation. Mineral policies of the most progressive countries that recognize the significance of ASM generally describe the subsector and its categories; state clear policy objectives with respect to ASM; identify the government roles, responsibilities and functions needed to achieve these objectives; and outline strategies to address constraints and opportunities.

ASM legislation varies somewhat from country to country, but often includes provisions for the following:²⁴⁴

- Country definitions of artisanal and small scale mining.
- Streamlined licensing procedures and/or specific legislation for small scale mining.
- Types of mineral rights.
- Size of concessions.
- Simplified environmental impact assessments and protection plans.
- Duration of tenure and renewability.
- Transparent, first-come, first-serve allocation of mineral rights.
- Entitlement to transfer and mortgage of mineral rights.
- Upgrading of mineral rights (for instance, from an ASM concession to larger scale mining leases).

²⁴⁴ Bugnosen, 2004; Hentschel et al., 2002; UNECA, 2002.

- Limitation of artisanal and small scale mineral rights to nationals.
- Designation of areas specific for artisanal and small scale mining.
- Decentralization of mineral rights allocation and administration.
- Informal/undocumented licensing.

Few regulatory frameworks make a distinction between “artisanal” and “small scale” mining. In Ethiopia, however, miners are able to obtain either an “artisanal mining lease” or “small scale mining lease,” which are differentiated on the basis of duration of tenure and concession size. The different needs of the different categories of miners are not always considered, usually presenting a barrier to the marginalized majority of artisans. Six main types of ASM licenses exist, as follows:

- *Informal or Undocumented Licenses*: Typically granted for noncommercial ASM activities (e.g. industrial mineral extraction for personal housing construction), these licenses seek to assist indigenous groups and landowners.
- *Strata Licensing*: Rights are provided to a specified depth (e.g. 15 meters in Ethiopia, 50 meters in Papua New Guinea).
- *Group Permitting*: Using simplified registration procedures, associations, or cooperatives of miners are permitted to mine in specified areas.
- *Licensing by Mineral Commodity*: Licensing requirements vary depending on the mineral being mined. Industrial or building minerals are often classed differently to high unit value commodities (gold, diamonds, gemstones). Frequently, industrial minerals licenses are regulated by local authorities, while other minerals are under the mandate of the central government.
- *Staggered and Single Licenses*: Staggered licensing requires separate permits for each stage of mining (e.g. prospecting, exploration, extraction), while single licenses span activities from exploration through to production and marketing.
- *National or Local Government Licenses*: As an alternative to licensing falling under either a national or local jurisdiction, in some cases, miners must follow regulations and licensing procedures at both a state and national level.

Alternative models of licensing, for instance the allocation of demarcated areas for ASM or ASM reserves, is provided for in the legislation of most African countries. Although the tensions between corporate concession holders and illegal artisans must still be reconciled, if regions of suitable mineral potential can be identified, this, coupled with other incentives, can effectively encourage the migration of artisans to demarcated areas to the satisfaction of both parties, particularly in the event of rush scenarios.

Many legal frameworks stipulate monitoring, the completion of simplified environmental assessments or statements, and reclamation of mine sites. However, requirements for surety bonds or environmental taxes for environmental protection have also been instituted in some countries (e.g. Guinea and Zambia) and are thought to give preference to “elite” or high level small scale miners.

Legal models for ensuring best practice in environmental management, health, and safety in ASM, such as that found in Tanzania, typically ensures:

1. Specific environmental legislation and regulations.
2. Procedures for environmental impact assessment.
3. Procedures and financing for site rehabilitation.
4. Legislation on health and safety.
5. Monitoring, reporting and data collection.

In many African countries, legislation also includes provision for the regulation of minerals marketing such as:

- Licensing of private mineral dealers.
- Strategies/incentives to discourage illegal trading.
- Mineral export procedures for producers and dealers.
- Incentives to encourage value adding practices such as securing royalty before export and collecting royalty on the value added mineral after deduction of processing costs.
- Value-adding industries such as beneficiation plants.

ANNEX 4: ADVANCING THE ASM SUBSECTOR THROUGH GOVERNMENT FINANCING SCHEMES

MOZAMBIQUE: MINERAL DEVELOPMENT FUND (MDF)²⁴⁵

A government administered, Mineral Development Fund (*Fundo do Fomento Mineiro*, FFM) provides financing to small scale miners in Mozambique. Miners must provide a copy of the mining license, proof of collateral (20% of loan amount), a feasibility study (including verification of market), and a plan for loan repayment. Although these criteria may be out of reach for most artisanal and small scale miners, the program provides a viable mechanism to encourage improvements to more advanced small scale mines. To qualify for funds, candidates need to make a request to the president of the FFM and if the funds required are for purchase of equipment they should append quotations. With common misuse of funds, lack of monitoring of implementation and use of funds has been identified as a major shortfall.

NAMIBIA: MINERAL DEVELOPMENT FUND (MDF)²⁴⁶

With coordination between the Namibian Small Miners Assistance Centre (NSMAC) in the evaluation of ASM projects and the Directorate of Mines and Geological Survey in technical assessments, the Namibian MDF is managed by a board comprised of representatives from government institutions, the Chamber of Mines, the small scale mining community, and a local mining expert. The Namibian MDF provided US\$92m in loans and US\$9m in grants for large and small scale projects.

With low interest rates, an ample repayment period (five years plus a two-year grace period), sufficient management resources and minimal bureaucratic requirements, over 90% of loans have been repaid. Projects, mainly aimed at medium or larger producers, included shaft sinking, an exploration project, expansion of an open pit fluorspar mine, diamond recovery vessels, a garnet mine, and two failed tourmaline projects. Current challenges faced by the Namibian government include ensuring the sustainability of NSMAC in order to continue with ASM assistance and training activities (potentially through revenue generating ASM projects). Improvements in the gemstone market, through macroeconomic policy reforms (e.g. elimination of royalties in favor of export duties) and establishment of gemstone buying centers are also envisioned.

Mining Ministries are *not* commercial banks or MFIs and so are often challenged by inadequate experience and skills to administrate these programs effectively. Two recent programs rely on *existing* financial institutions while raising their awareness of the needs of the ASM subsector.

²⁴⁵ Dreschler, 2001.

²⁴⁶ Malango, 2004.

PAPUA NEW GUINEA: SOCIAL DEVELOPMENT FUND²⁴⁷

With support from the Japanese Government, the fund has focused on building business and microfinance skills in ASM communities. In the target region of Wau, over 25% of trainees have opened accounts at a local MFI.

NIGERIA: LOAN GUARANTEES FOR MINE DEVELOPMENT²⁴⁸

Funded by the Nigerian Government, this model builds on available financing from commercial banks while making the MMSD responsible for providing the technical support needed to verify feasibility, ensure proper use, and therefore guarantee the loans. Intensive sensitization of banks, including bank branches in mining areas, has resulted in the establishment of “Mining Desks” in some banks.

It is important to note that most of the earlier financing schemes have targeted small to medium scale rather than *artisanal* miners. Although coverage of local savings and credit cooperative associations (SACCOS), MFIs, and banks is sparse in many remote areas, building on existing financing programs with approaches adapted for the rural poor ideally with **supportive loans guarantees and reasonable interest and payment period requirements** are a start. Grassroots support for numeracy, literacy, organization formation, business skills development, and group savings can help artisanal miners take crucial first steps out of poverty.

Taken From: Hinton, J., 2009, *National Strategy for the Advancement of Artisanal and Small Scale Mining in Uganda*, Report to Ministry of Energy and Mineral Development.

²⁴⁷ Hayes & Van Wauwe, 2009.

²⁴⁸ Hayes & Van Wauwe, 2009.

REFERENCES

- ARD, 2007. *The Mining Sector in Central African Republic with a Focus on Information Collection and Management Systems and Procedures*, Unpublished Report
- ARD, 2010. *Note de Travail, Discussions Préliminaires relatives à la Question de la Patente d'Artisan Minier*. Salle de Réunion du Ministère des Mines, 10 September 2010. Internal Document.
- Aryee, 2003. *Overview of Artisanal Mining and its Regularization in Ghana*, Presentation at the Second CASM Annual General Meeting, Elmina, Ghana, 8–10 September 2003. Retrieved from www.casmsite.org/programmes_learning_Elmina.htm.
- Armstrong, W., 2008. In K. Vlassenroet and S. Van Bockstael (eds), (2008) *Artisanal Diamond Mining: Perspectives and Challenges*. Egmont Institute: Belgium. [Available in French: l'exploitation minière artisanale des diamants: perspectives et défis (2009)].
- Azameti, E., 2003, *Regularization – A View from the Bottom*, Presentation at the Second CASM Annual General Meeting, Elmina, Ghana, 8–10 September 2003. Retrieved from www.casmsite.org/programmes_learning_Elmina.htm.
- Bank of Guyana, 2009. *Annual Report*. Georgetown, Guyana: Bank of Guyana. 115 p. Retrieved from <http://www.bankofguyana.org.gy/bog/images/Reports/annrep2009.pdf>.
- Blore, S, 2006. *Triple Jeopardy: Triplicate Forms and Triple Borders: Controlling Diamond Exports from Guyana*, PAC occ. Paper # 14, 2006.
- Blore, S, 2008. “The Misery and the Mark-up: Miners’ wages and diamond value chains in Africa and South America”, in Koen Vlassenroot and Steven Van Bockstael (Eds.), 2008, *Artisanal Diamond Mining. Perspectives and Challenges*. Egmont. Gent: Academia Press. 66–92. [Available in French: l'exploitation minière artisanale des diamants: perspectives et défis (2009)].
- Blore, S. and Smillie, I., 2010. *An ICGLR-Based Tracking and Certification System for Minerals from the Great Lakes Region of Central Africa*. Partnership Africa Canada. Ottawa, Canada March 2010.
- Bugnosen, E. 2004, *Small Scale Mining Legislation in Philippines: A General Review*. Presentation at the Third CASM Annual General Meeting, Colombo, Sri Lanka, 12–14 October 2004. Retrieved from www.casmsite.org/programmes_learning_Colombo.htm.
- Caballero, E., 2004, *Philippines: Traditional Artisanal Gold Mining In Indigenous Communities And Their Current Concerns*, Presentation at the Third CASM Annual General Meeting, Colombo, Sri Lanka, Oct 12-14, 2004. Retrieved from www.casmsite.org/programmes_learning_Colombo.htm
- CASM, 2008. *Small Stories: 12 Stories About Small-Scale Mining*. Washington, DC: Communities and Small-Scale
- CASM, 2008. *Short Stories*. Washington D.C.: World Bank. 32 pages. Retrieved from: http://www.artisanalmining.org/userfiles/file/CASMshortstoriesBooklet_FINAL_low.pdf
- Chupezzi, T.J., Ingram, V. & Schure, J., 2009. *Study on Impacts of Artisanal Gold and Diamond Mining on Livelihoods and the Environment in the Sangha Tri-National Park (TNS) Landscape, Congo Basin*. CIFOR and IUCN: Yaoundé, Cameroon.

- Dharmaratne, P., 2004, *Legal, Fiscal, Institutional And Infrastructural Development Of The Gem Industry In Sri Lanka*, Presentation at the Third CASM Annual General Meeting, Colombo, Sri Lanka, Oct 12-14, 2004, Retrieved from www.casmsite.org/programmes_learning_Colombo.htm
- Diamond Development Initiative, 2010. *Property Rights and Artisanal Diamond Development (PRADD) Pilot Project*. Retrieved from <http://www.ddiglobal.org/login/Upload/mod5PRADD.pdf>
- Dreschler, B., 2001, *Small-Scale Mining and Sustainable Development within the SADC Region*, Commissioned by MMSD, 165p. Retrieved from <http://www.iied.org/mmsd/>
- Economist Intelligence Unit, 2006. *Central African Republic: Mining*. London: EIU Ltd.
- Elbow, K., 2010. *Memo on the Diamond Development Initiative: Workshop on the Guyana Model*. 7p.
- Etats Généraux workshop proceedings document
- Garrett, N. & Lintzer, M., 2010. “Analysis of Past and Current Interventions in the Artisanal Diamond Mining Sector in Liberia” in K. Vlassenroet & S. Van Bockstael, Forthcoming book. Egmont.
- Garrett, N. and Carstens, J., 2008, *Implementing Transparency in the Artisanal and Small Scale Mining Sector*, Report to BGR, 122p.
- Global Witness, 2008. *Loupe Holes: Illicit Diamonds in the Kimberley Process*, 28 October 2008. London: Global Witness. Retrieved from http://www.globalwitness.org/media_library_detail.php/674/en/loupe_holes_illicit_diamonds_in_the_kimberley_proc.
- Hayes, K. and Van Wauwe, V., 2009. “Microfinance in Artisanal and Small Scale Mining” in *Background Papers: 9th Annual CASM Conference, Communities and Small Scale Mining* publ, pp. 1–8.
- Hentschel, T., Hruschka, F., and Priester, M. 2002. *Global Report on Artisanal and Small Scale Mining*. Report commissioned by the Mining, Minerals and Sustainable Development Project, IIED and WBCSD publ., 67p.
- Hentschel, et al., 2001. *Global Report on Artisanal and Small Scale Mining, Report commissioned by the Mining, Minerals and Sustainable Development Project*, IIED and WBCSD publication.
- Hilson, G., 2002. *A Contextual Review of the Ghanaian Small Scale Mining Sector*, MMSD/IIED Report No. 76, 29p.
- Hilson, G., 2008. “Mining and Rural Development: The trajectory of diamond production in Ghana” in K. Vlassenroet and S. Van Bockstael (2008) *Artisanal diamond mining: perspectives and challenges*. Egmont Institute: Belgium. [Available in French: *l'exploitation minière artisanale des diamants: perspectives et défis* (2009)].
- Hilson, G. and Clifford, M.J., 2010. “A ‘Kimberley Protest’: Diamond Mining, Export Sanctions, and Poverty in Akwatia, Ghana,” in *African Affairs*, London, v109 (436): 431–450.
- Hinton, J., 2003. *Organization and Formalization of Artisanal Mining in the Tapajos Region, Brazil*, Report to CETEM/IDRC, 55p.
- Hinton, J., 2006. *Communities and Small Scale Mining: An Integrated Review for Development Planning*, In Press, CASM (World Bank) publ, 214p.
- Hinton, J., 2009. *National Strategy for the Advancement of Artisanal and Small Scale Mining in Uganda*, Report to Ministry of Energy and Mineral Development.

- Hinton, J., 2010a. *Recommendations for Class C Mining Regulations and their Implementation and Future Amendments to the Mining and Minerals Act in Liberia*, Report to USAID Governance and Economic Management Project, 90p.
- Hinton, J., 2010b. *National Guidance Strategy for the Promotion of Gender Equity in Mining*, Report to Ministry of Energy and Mineral Development, 70p.
- Hinton, J., Veiga, M., and Veiga, T., 2003. "Clean Artisanal Mining Technologies, A Utopian Approach?" In *Journal of Cleaner Production*, 11:2, 99–115.
- Hinton, J, Veiga, M., & Beinhoff, C., 2003, "Women and Artisanal Mining: Gender Roles and the Road Ahead", Ch. 11 in G. Hilson (ed.), *Socio-economic Impacts of Artisanal and Small-scale Mining in Developing Countries*, Balkema publ, Rotterdam.
- Hruschka, F., 2003. *Review of the Organisation Process of the Artisanal Miners in Peru (2000–2002)*. Unpublished.
- International Monetary Fund, 2010. *Central African Republic Country Report, No.10/21*. Washington, DC: IMF. 75p. Retrieved from <http://www.imf.org/external/pubs/ft/scr/2010/cr1021.pdf>
- International Study Group, 2010. *Africa's Mining Regimes: Framework Report*. AU and UNECA, unpublished report, 217p.
- Jacques, E., Zida, B., Billa, M., Greffi é, C., et al, 2002, *Artisanal and Small-Scale Gold Mines in Burkina Faso: Today And Tomorrow*, unpubl BRGM report, 18p.
- Jha, R., 2007. *Fiscal Policy in Developing Countries: A Synoptic View*. ASARC Working Paper 2007/01. Australian National University, Australia South Asia Research Centre. 39p. Retrieved from <http://ideas.repec.org/p/pas/asarcc/2007-01.html>
- KPCS, 2007. *Annual Global Summary: 2007 Production, Imports, Exports and KPC Counts*. Retrieved from <https://kimberleyprocessstatistics.org/static/pdfs/AnnualTables/2007GlobalSummary.pdf>
- KPCS, 2008. *Annual Global Summary: 2008 Production, Imports, Exports and KPC Counts*. Retrieved from <https://kimberleyprocessstatistics.org/static/pdfs/AnnualTables/2008GlobalSummary.pdf>
- KPCS, 2009. *Annual Global Summary: 2009 Production, Imports, Exports and KPC Counts*. Retrieved from <https://kimberleyprocessstatistics.org/static/pdfs/AnnualTables/2009GlobalSummary.pdf>
- Levin, E., 2005. *From Poverty and War to Prosperity and Peace? Sustainable Livelihoods and Innovation in Governance of Artisanal Diamond Mining in Kono District, Sierra Leone*. University of British Columbia, Vancouver.
- Levin, E. 2006. "Reflections on the Political Economy of Artisanal Diamond Mining in Sierra Leone" in G. Hilson (ed.), *Small Scale Mining, Rural Subsistence, and Poverty in West Africa. Experiences from the Small-scale Mining Sector*. Intermediate Technology Development Group Publishing.
- Levin, E., 2007. *Ethical Assessment of Artisanally-Mined Gold. Antanimbary, Madagascar*, May 2007. Urth Solution. Unpublished report.
- Levin, E., 2008. *Scoping Study for Fairtrade Artisanal Gold: Tanzania*. 20th February 2008 Unpublished report. Medellin: Association for Responsible Mining.
- Levin, E., 2010. *Mineral Certification Schemes in the Great Lakes Region: A Comparative Analysis*. Bujumbura: GTZ.

- Levin, E. & Gberie, L., 2006. *Dealing for Development? A Study of Diamond Marketing and Pricing in Sierra Leone. FULL REPORT*. March 2006. Ottawa: PAC and DDI. At http://www.diamondfacts.org/pdfs/media/perspectives/case_studies/DDI_A_Study_of_Diamond_Marketing_and_Pricing.pdf.
- Levin, E., Mitchell, H. & Macfarlane, M., 2008. *Feasibility Study for the Development of a Fair Trade Diamond Standard and Certification System*. Unpublished report. Transfair USA.
- Macfarlane, M., 2008. “Annex 12. Mwadui Community Diamond Partnership” case study report for Transfair USA, in Levin, E., Mitchell, H. & M. Macfarlane (eds.) 2008, *Feasibility Study for the Development of a Fair Trade Diamond Standard and Certification System*. Unpublished report. Transfair USA.
- Malango, V., 2004, *Country Gemstone Experiences: Namibia*, Presentation at the Third CASM Annual General Meeting, Colombo, Sri Lanka, 12–14 October 2004. Retrieved from www.casmsite.org/programmes_learning_Colombo.htm
- Mbendi Information Services, 2010a. “Mining in Central African Republic- Overview.” Retrieved 25 September 2010 from <http://www.mbendi.com/indy/ming/af/cr/p0005.htm#5>
- Mbendi Information Services, 2010b. “Diamond Mining in Central African Republic – Overview.” Retrieved from <http://www.mbendi.com/indy/ming/dmnd/af/cr/p0005.htm>
- Medina, G., 2002. *Peru’s New Artisanal Mining Law*, Presentation to the First CASM Annual General Meeting, Ica, Peru, Sept. 23-28, 2002, www.casmsite.org/programmes_learning_Ica.htm
- Mining Journal, 2008. *Political Debate, in Tanzania—A supplement to Mining Journal: Mining Journal*, August, p5.
- Mitchell, H., Garrett, N., & Levin E., 2008. *Regulating Reality: Reconfiguring Approaches to the Regulation of Artisanally Mined Diamonds*. Egmont Institute: Belgium. At http://www.resourceglobal.co.uk/index.php?option=com_docman&task=doc_details&gid=46&Itemid=41
- National Advocacy Coalition on Extractives (NACE), 2009. *Sierra Leone at the crossroads: Seizing the chance to benefit from mining*. Retrieved from http://www.nacesl.org/NACE_Sierra%20Leone.pdf.
- Okedi J.P.O., 2010. *Mineral Investment for Sustainable Development in Uganda, An analysis of issues and challenges in the Fiscal and Regulatory Regimes*. Research Paper, University of Sydney, Australia. Unpubl. 22p.
- ONG Green, 2006. *L’expérience d’Antanimbary dans le Cadre du Projet de Gouvernance des Ressources Minérales (PGRM): “Appui à la Gestion Décentralisée des Ressources Minérales de la Commune Rurale D’Antanimbary – Maevatanana”*, presentation given at the 6th Annual CASM Conference, Antananarivo, 11 November 2006.
- Otchere, F., Veiga, M.M., Hinton, J.J., Farias, R., and Hamaguchi, R., 2004. “Transforming Mining Open Pits Into Fish Farms”, *Natural Resource Forum*, Vol 28, 216–228.
- PACT, 2010. *PROMINES Study: Artisanal Mining in the Democratic Republic of Congo*. Retrieved 4 October 2010 from <http://pactworld.org/galleries/resource-center/PROMINES%20Report%20English.pdf>.
- Pangea DiamondFields Plc., 2010. *Central African Republic: Political and Economic Climate & Mineral Industry, Policy and Regulations*. Retrieved from http://www.pangeadiamondfields.com/car_profile.htm.
- Partnership Africa Canada and CENADEP, 2007. *Diamond Industry Annual Review: Democratic Republic of the Congo*.

- Pole Institute, 2010. *Blood Minerals: The Criminalization of the Mining Industry in Eastern DRC*. Goma: Pole Institute. 46 p.
- Precious Minerals Marketing Company Ltd., 2010. *Diamond Production and Marketing Services*. Retrieved from <http://www.pmmcgghana.com/diamondproductionandmarketing.html>
- Priester, M., Levin, E., Carstens, J., Trappeniers, G. & Mitchell, H., 2010 (July). *Mechanization of Artisanal Alluvial Diamond Mining*. Diamond Development Initiative.
- Seab Gems Ltd. *Mining Opportunities in Tanzania: Primary Prospecting License*. Retrieved from <http://seabgems.com/Mining%20Opportunities%20Tanzania/Primary%20Prospecting%20License.html>
- Siegel, S., 2007. *The Needs of Miners: Political Ethics, Mercury Abatement, and Intervention in Artisanal Gold Mining Communities*. PhD Dissertation, University of British Columbia, 226p.
- Siegel, S. & Veiga, M., 2009 “Artisanal and small-scale mining as an extralegal economy: De Soto and the redefinition of ‘formalization’” in *Resources Policy*, 2009, Vol. 34, Issue 1-2, pp. 51–56.
- Tanzanian Ministry of Finance and Economic Affairs, 2008. *The Economic Survey 2007* Dar Es Salaam, Tanzania: Ministry of Finance and Economic Affairs, 208 p.
- Temple, P., 2010. “The Legal and Non-legal Framework” in K. Vlassenroet & S. Van Bockstael (eds.), Forthcoming book. Egmont Institute.
- Trade and Environment, 1994. *Case Study: Peruvian Mining*, Case 357. Retrieved from <http://www1.american.edu/TED/perumine.htm>.
- U.S. Geological Survey, 2005. “The Mineral Industry of Madagascar” in *U.S. Geological Survey Minerals Yearbook – 2005*. Retrieved on 11 April 2007 from <http://minerals.usgs.gov/minerals/pubs/country/2005/mamyb05.pdf>.
- U.S. Geological Survey, 2008a. *Minerals Year Book Tanzania*. Retrieved from <http://minerals.usgs.gov/minerals/pubs/country/2008/myb3-2008-tz.pdf>.
- U.S. Geological Survey, 2008b. *Minerals Yearbook: Peru*, US Geological Survey publ., 15p.
- UNECA, 2002. Compendium on Best Practices in Small-scale Mining in Africa, UNECA publ., Addis Ababa, Ethiopia, 112p.
- USAID, 2008. *Property Rights and Artisanal Diamond Development Pilot Program – Central African Republic. Progress Report (May – July 2008)*. September 2008. Unpublished report.
- Veiga, M., and Hinton, J., 2002. “Abandoned Artisanal Gold Mines in Latin America: A Legacy of Mercury Pollution”, *Natural Resources Forum*, Vol. 26: 13–24.
- World Bank, 2008. *Democratic Republic of Congo: Growth with Governance in the Mining Sector*. Retrieved 4 October 2010 from <http://siteresources.worldbank.org/INTOGMC/Resources/336099-1156955107170/drcgrowthgovernanceenglish.pdf>.
- Yakubu, B.R., 2003. *Regularization – Technical Approach and its Shortcomings*, Presentation at the Second CASM Annual General Meeting, Elmina, Ghana, 8–10 September 2003. www.casmsite.org/programmes_learning_Elmina.htm.

COUNTRY LEGISLATION

Central African Republic:

Mining Code 2009 (RCA Code Minier 2009)- Law n°9-005 from April 29, 2009
Ordonnance n°83.024 du 15 mars 1983 fixant les conditions de possession et de détention et réglementant l'exploitation et le commerce de l'or et des diamants bruts; Papiers officiels [TBC]

Democratic Republic of the Congo:

DRC Mining Code (RDC Code Minier 2002) - LAW No. 007/2002 of JULY 11, 2002;
DRC Mining Regulations 2003 (Reglement Minier 2003) - DECREE NO 038 / 2003_OF 26 March 2003
Family Code (Code de la famille) - Law No. 073/84 of 17 October 1984
Handbook of Environmental Legislation, 2003
Guide for the Mining Investor, 2003

Ghana:

Small Scale Gold Mining Law 218, 1989, PNDC Law 218
The Mercury Law, 1989, PNDC L 217

Liberia:

Mining and Minerals Law 2000
Minerals and Mining Law 2000, Chapter 40 amendment passed in 2004
Mining and Minerals Act 2006, Act 703 of 31 March, 2006

Madagascar:

Mining Code 1999, Law No. 99 022 of August 30, 1999
Mining Regulations 2000, Law No 2000-170, May 15, 2000
Revised Mining Code 2005, Law No. 2005-021 of October 17, 2005

Mozambique:

Mining Development Fund Statute (Decree nr. 17/2005) dated 06/24/2005

Namibia:

Minerals Development Fund of Namibia Act of 1996

Nigeria:

Minerals and Mining Act 2007

Peru:

Law 27651, 2002, "Formalization and Promotion of Small Scale and Artisanal Mining;"
General Mining Law of Peru, Supreme Decree No. 014-92-EM, Official Gazette 4 June 1992

Philippines:

People's Small-scale Mining Act of 1991 - Republic Act No. 7076
Mining Act of 1995 - Republic Act No. 7942
PD 1150 - Gold panning and sluicing regulation
PD 1899 - Mining of small deposits
RA 7076 - Identification and segregation of ASM zones
AO No. 97-30 - ASM mine safety rules

Sierra Leone:

Regulations to the Mines and Minerals Act 2009
The Mines and Minerals Act 2009 in Supplement to the Sierra Leone Gazette Vol. CXLI, No. 3, January 7, 2010
Schedule of Fees, First Schedule: Fees, Expenditures and Penalties, 2009.
Details of Policy Measures relating to Small Scale and Artisanal Mining and Marketing of Precious Minerals" 2005

Tanzania:

Mining Act 2010, Act No. 14/10 from April 24, 2010

The Mineral Policy of Tanzania 2009, The Ministry of Energy and Minerals, July 2009

The Mineral Policy of Tanzania 1997, The Ministry of Energy and Minerals, October 1997

Uganda:

Mining Act 2003

Mining Regulations 2004, Statutory Instruments Supplement No. 38 to The Uganda Gazette
No. 57 Volume XCVII dated 5th November, 2004 Printed by UPPC, Entebbe

Mining Regulations 2004, First Schedule

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