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ORGANIZED CRIME



LEVIN SOURCES



A Rapid Assessment of Gold and Financial Flows linked to
Artisanal and Small-Scale Gold Mining in Mongolia

FOLLOW THE MONEY: MONGOLIA

October 2017

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The project is encompassed and receives financial support from the Global Environment Facility program: Global Opportunities for Long-term Development of the ASGM Sector (GEF Gold). The objective of GEF Gold is to reduce the use of mercury in the artisanal and small-scale gold mining (ASGM) sector in the participating countries through facilitating the access to finance to artisanal miners and mining communities for the introduction of low and non-mercury technologies and techniques and through the development of sustainable ASGM gold supply chains. To achieve this objective, at its October 2016 meeting the GEF Council approved a \$45 million global program with \$135 Million in co-financing to address the ASGM sector.

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Acronyms and Abbreviations

ARM	Alliance for Responsible Mining
ASGM	Artisanal and Small-Scale Gold Mining
ASM	Artisanal and Small-Scale Mining
ASMers	Artisanal and Small-Scale Miners
BOM	Bank of Mongolia
FRM	Frugal Rehabilitation Methodology
GDP	Gross Domestic Product
GEF GOLD	Global Environment Facility project: Global Opportunities for Long-term Development of the ASGM Sector
GIFF	Gold and Illicit Financial Flows
GoM	Government of Mongolia
LNL	Law with Long Name: To Prohibit Mineral Exploration and Mining Operations at Headwaters of Rivers, Protected Zones of Water Reservoirs
LSM	Large-Scale Mining
MNT	Mongolian Tughrik
MoET	Ministry of Environment and Tourism
MoMHI	Ministry of Mining and Heavy Industry
MRPAM	Minerals Resources and Petroleum Authority of Mongolia
MSM	Medium-Scale Mining
NGO	Non-Governmental Organization
NRGI	Natural Resource Governance Index
OECD	Organization for Economic Cooperation and Development
OH&S	Occupational Health and Safety
SAM	Sustainable Artisanal Mining
SDC	Swiss Agency for Development and Cooperation
SPEAK	Survey on Perceptions and Knowledge of Corruption in Mongolia
UB	Ulaanbaatar

Interviews

Listed below are the occupations and coded references for the interviews conducted during this study.

Occupation	Reference	Date of interview
Goldsmith	GSA24032017	23 March, 2017
Environmental NGO in Mandal soum	ENM23032017	23 March, 2017
ASM Federation Representative	ASM17032017	17 March, 2017
Mandal Police Officer	BOM22032017	22 March, 2017.
State-Owned Processing Plant Representative	PPM21032017	21 March, 2017
Buyer/Runner of a Processing Plant	BPP23032017	23 March, 2017
Head of ASM Partnership	ASP20032017	20 March, 2017
Mandal soum Government Representative	SGM20032017	20 March, 2017
Local Researcher	HDA23032017	23 March 2017
State-Owned Processing Plant Representative	SPP21032017	21 March, 2017
Assay Office Representative	AOR20032017	20 March, 2017
Head of ASM Partnership	SOA22032017	22 March, 2017
Local Reporter	LMR21022017	21 March, 2017
MRPAM's Division of Mining production and technology representative	PAM17032017	16 March, 2017

Preface

In artisanal and small-scale gold mining (ASGM)¹, a sector that employs approximately 15 million people around the world, mercury is often used to help extract gold from mined ore. Although inexpensive and relatively effective in extracting gold from ore, mercury emissions and releases can cause serious harm to people and the environment when handled unsafely.² Recognising the threat, a call for global action was initiated in 2009 which culminated in 2013 when the Minamata Convention on Mercury was adopted. The Convention mandates a reduction, and elimination, if possible, in mercury usage around the world, including in ASGM.³ As of this writing, the 50th instrument of ratification has been submitted to the Minamata Secretariat and the Convention will enter into force on Aug. 16, 2017. Signatories to the Convention include many gold-mining countries, including Mongolia and the Philippines.

While ASGM is a significant global sector, the vast majority of ASGM is informal (and/or illicit) and unregulated, i.e. operating without the required licenses or legal approval. Pervasive informality is a result of several factors, including: onerous licensing requirements that create a barrier to entry for many miners; a lack of clarity in legal texts governing artisanal and small-scale mining (ASM); insufficient or inaccessible legally mandated mining areas; a lack of awareness of legal requirements amongst miners; and miners' inability to access administrative capitals.⁴ This omnipresent informality can prevent miners from accessing necessary resources such as trainings and legitimate forms of credit; render them vulnerable to bribery and extortion attempts (particularly by police and other government officials); and drive them to work in dangerous locations that are less accessible to law enforcement.

Experience has shown options to introduce and maintain environmental compliance through pure voluntary compliance ("formalization-free") are unlikely to see long-term success.⁵ Specifically with regard to mercury usage by ASGM, the informality of much of the sector can impede the delivery of non-mercury technology, trainings and the distribution of information materials to miners and processors, thus creating a knowledge vacuum in the sector about the dangers of mercury. It can also prevent authorities from adequately policing the use of mercury in mining communities and processing regions, and controlling its distribution.

Financial flows, in particular illicit financial flows (IFFs), play an integral role in perpetuating informality (as well as illegality) in the ASGM sector. IFFs are defined as "money illegally earned, transferred or used" and can flow

1 The Minamata Convention defines ASGM as: "gold mining conducted by individual miners or small enterprises with limited capital investment and production" (UNEP 2013a). However, there is no universally accepted definition of artisanal and small-scale mining (ASM), nor uniformity in national legislation. The Organisation for Economic Co-operation and Development's (OECD) definition of ASM, which is widely used, offers some additional guidance: "formal or informal mining operations with predominantly simplified forms of exploration, extraction, processing, and transportation. ASM is normally low capital intensive and uses high labour-intensive technology. "ASM" can include men and women working on an individual basis as well as those working in family groups, in partnership, or as members of cooperatives or other types of legal associations and enterprises involving hundreds or even thousands of miners." (OECD 2016).

2 UNIDO 2008

3 UNEP 2013a

4 Villegas, et al. 2012

5 Swiss Agency for Development and Cooperation (SDC) 2011

into and out of ASM operations.⁶ The informality of much of the sector is often appealing to illicit financiers, as it helps to keep illicit activities and related profits, such as gold smuggling, tax evasion and money laundering, hidden from governments. Thus, wide-scale formalisation of ASM is arguably not something such financiers would want to see occur, nor would they be likely to advocate it in the mines they help to finance.⁷

In addition, the lack of access to formal financing means informal or illicit financing options are often the only options available to artisanal and small-scale miners (ASMers), making investment a low-risk, high-profit venture for illicit financiers. Moreover, IFFs are often reinvested back into the sector and community, with buyers providing economic benefits to local populations outside of mining, further perpetuating informality and contributing to a sense of legitimacy around informal ASGM practices and associated financial flows.⁸ Consequently, financial flows can significantly contribute to a self-reinforcing cycle of informality (and illegality in some instances), which can be difficult to break without a nuanced understanding of the financial flows linked to ASGM and their impacts on mining communities and local populations.

The formalisation of ASGM and the elimination of mercury usage go hand-in-hand. Building a better understanding of financial flows and their impact on ASGM is therefore vital. Recognizing the need for a greater understanding of gold-related financial flows to strengthen international responses, the Global Initiative against Transnational Organized Crime (Global Initiative) and Levin Sources established the GIFF Project in 2015 to provide greater insight into this issue and to develop solutions that will improve efforts to formalize the ASGM sector globally.⁹ UNIDO has become a strong partner and advocate of the GIFF Project and advocating for a better understanding of financial flows linked to ASGM.

6 Global Initiative Against Transnational Organized Crime 2016

7 Hunter, Smith and Levin-Nally 2017

8 Hunter, Smith and Levin-Nally 2017

9 Find out more about the GIFF Project on the Global Initiative (<http://globalinitiative.net/portfolio-posts/giff-illicit-financial-flows-from-gold/>) and Levin Sources (<http://www.levinsources.com/projects/the-giff-project>) websites.

Illicit Financial Flows (IFFs)

IFFs, in their broadest sense, are defined as “value illegally earned, transferred or used”. In practice, money equates to many financial instruments and commodities which confer value, including gold. The definition of IFFs is intentionally broad in order to encompass a wide range of financial flows. Without taking a broad, holistic approach, while in parallel appreciating the importance of domestic and microeconomic flows, it is impossible to fully capture, analyse and develop appropriate responses to IFFs linked to ASGM.

IFFs are closely linked to criminal economies. This term refers to trade transactions that entail a component of illegality. This illegality may be how the goods were sourced or produced, how they were traded, and/or if they avoided taxation. In relation to ASGM, gold and related transactions fall within the criminal economy when the people involved with their extraction, trade, financing, and/or export engage in illicit activity at some point in the commercial chain.

In practice, it can be very difficult to make the distinction and determine if an activity or financial flow is illicit or informal. This is particularly difficult in states or regions with an expansive informal economy, where many people in ASGM regions generate their livelihoods. Oftentimes the act of gold mining or the local trade in gold is best characterised as an informal activity or financial flow. When assessing financial flows, the legitimacy, as well as the legality, of financial flows should be considered.

For more information on IFFs, including impacts and the criminal allure of gold, please see the GIFF Project Handbook which can be found on the Global Initiative website: <https://goo.gl/mDEmwk>.

These two reports are a component of the preparatory phase of the GEF GOLD child project (under the program: Global Opportunities for Long-term Development of ASGM Sector: GEF GOLD) entitled *Contribution towards the elimination of mercury in the ASGM sector: from miners to refiners* in Mongolia and the Philippines. UNIDO and UNEP are co-implementing the child project in Mongolia and the Philippines in association with the Ministry of Environment, Green Development and Tourism of Mongolia and the Department of Environment and Natural Resources of the Philippines. The program’s objective is to reduce the use of mercury in the ASGM sector through (i) facilitation of access to finance the introduction of low and non-mercury technologies for artisanal miners and mining communities and through (ii) the development of sustainable ASGM gold supply chains.

Over a period of five years, the program will initiate the following four components:

- a) Legal framework and formalisation: Review of policy and legal framework supporting formalisation of the sector;

- b) Financing: Introduction of financing schemes allowing miners to adopt and subsequently invest in mercury free technologies in a sustainable manner and access international gold markets more directly;
- c) Technology transfer: Upscale mercury free technologies and support the development of health programs for the ASGM sector; and
- d) Knowledge management: Develop a communication strategy in order to replicate the project activities in participating countries and contributing to the global knowledge management platform established under the global child project of the GEF GOLD program.¹⁰

To enable the finalization of components a) and b) of the program, the Global Initiative, in collaboration with Levin Sources and BAN Toxics and from financing from UNIDO in the framework of the GEF GOLD project implemented jointly with UNEP, have undertaken a rapid assessment of gold and financial flows linked to ASGM in Mongolia and the Philippines. These assessments are designed to inform the writing of a subsequent proposal and the early stages of the associated project's execution through increasing understanding of gold and financial flows linked to the Mongolian and the Philippines ASGM sectors.

Through a brief situational analysis, the reports identify red flags and vulnerable points in gold supply chains and financial flows which may inhibit efforts to formalize the ASGM sector in Mongolia and the Philippines. In addition, key findings and recommendations provide guidance on additional investigation and action that is necessary to enable financing schemes and other interventions which facilitate the introduction of mercury-free technologies. Together, these two reports provide a nuanced first-look at how stakeholders can better understand and respond to the role gold supply chains and financial flows play in formalisation efforts in Mongolia and the Philippines. Moreover, it is hoped the reports will provide inspiration and guidance for similar assessments in other gold producing nations.

10 For more information visit: https://www.thegef.org/sites/default/files/project_documents/GOLD_PFD-Signed-CI-UNDP-UNEP.pdf

Executive Summary

Although Mongolia has made significant inroads to formalising the ASGM sector, informal practices including the clandestine use of mercury continue.¹¹ Mercury use has been prohibited in Mongolia since 2008.¹² In 2013, Mongolia became a signatory to the Minamata Convention, the 92nd nation to join the treaty, ratifying the convention on 28 September 2015.¹³ However, the use of mercury, although largely unacknowledged by the Government, persists.

In most cases, ASMs extract gold from ore using mercury. By law, processing plants in Mongolia cannot process ore or smelt gold that is contaminated by mercury. However, because of their restricted access to processing plants, the vast majority of gold produced by ASGM operations is processed using mercury at home. It is then sold in the informal sector before it is either smuggled out of the country or laundered into the formal supply chain and sold to the Bank of Mongolia (BoM), which holds a legal monopsony in Mongolia.¹⁴ Tracking these supply chains is very difficult because **legal and illegal ASGM gold supply chains, within and out of Mongolia, are intrinsically entangled and gold moves between them with very little traceability.**

To curb mercury use in Mongolia, formalisation of the ASGM sector is essential. The informality of much of the sector can impede the delivery of trainings and the distribution of information materials to miners and processors, thus creating a knowledge vacuum in the sector about the dangers of mercury. It can also prevent authorities from adequately policing the use of mercury in mining communities and processing regions and controlling its distribution. The formalisation of ASGM and the elimination of mercury usage go hand-in-hand.

Currently **the vast majority of Mongolian ASGM operates in the informal sector**, in contravention of national laws, a major obstacle to introducing mercury-free technologies and establishing sustainable ASGM gold supply chains.

There are a number of challenges to increasing rates of formalisation in Mongolia. Practical inaccessibility of the legal supply chain is a key barrier to formalisation for Mongolia's ASGM. The geographical size of Mongolia, low population density, lack of developed transportation infrastructure, remote mine sites and centralization of the legal gold supply chain in Ulaanbaatar make engaging with the legal supply chain unrealistic for many ASMs. The use of changers and informal trade networks is common practice for both the sale of gold, as well as financial assistance such as loans, providing an appealing and immediate alternative to official routes. In addition, ASMs are largely unable to access legal forms of credit (due to their high-risk status), pushing them to rely on informal financial arrangements. Furthermore, ASGM is an important livelihood for rural Mongolians. As such, policies which promote curbing activity or eradicating the sector are not only unlikely to be effective, but also risk having detrimental impacts on rural development.

11 Artisanal Gold Council 2009

12 Swiss Agency for Development and Cooperation (SDC) 2015

13 Zoljargal 2013

14 Law on Minerals 2006, amended 2014

A limited understanding of gold supply chains and financial flows linked to ASGM in Mongolia is a significant obstacle to formalizing the sector. Financial flows, in particular illicit financial flows (IFFs)¹⁵, play an integral role in perpetuating informality (as well as illegality) in the ASGM sector, as detailed in the Preface. IFFs can both cause and perpetuate informality in this sector.¹⁶ IFFs can flow into and out of ASM operations. The informality of much of the sector is often appealing to illicit financiers as it helps to keep their activities, such as gold smuggling and money laundering, hidden from the Government. Thus, the wide-scale formalisation of ASM is arguably not something such financiers would want to see occur, nor would they be likely to advocate it in the mines they help to finance.¹⁷ Building a better understanding of IFFs and their impact on ASGM, which this report seeks to do, is therefore vital for developing practical solutions to addressing this challenge.

This report takes the first steps to achieving a better understanding gold and financial flows linked to Mongolia's ASGM sector, which is essential to informing practical strategies for tackling informality in ASGM. Official government data is unreliable and offers a limited picture of the scale of ASGM and related financial flows. This undermines efforts by policy makers and practitioners to develop interventions that serve to contribute to the formalisation of ASGM activities.¹⁸ Without a knowledge of gold supply chains and financial flows, it is impossible to identify which actors may champion or blockade efforts to formalize the ASGM sector and where interventions may have the greatest impact.

This report is the product of the Mongolia/Philippines regional project under the GEF GOLD program. The Global Initiative managed this assignment and co-authored the report in collaboration with Levin Sources and Mongolian researcher Khandarmaa Ayush. Data presented in this report is based on desk research and a rapid field assessment of the ASGM sector and related gold and financial flows conducted in the Mongolian capital Ulaanbaatar and Mandal soum during March 2017. Interviews were conducted with 14 stakeholders, including: mine labourers, miners, dealers, goldsmiths and local authorities. A semi-structured interview format was used, which was based on the research methodology outlined in the handbook 'Follow the money: A handbook for identifying financial flows linked to Artisanal and Small-scale Mining', another publication of the GIFF project.¹⁹

Key Findings: Challenges and Obstacles



Potential significant obstacles to formalization of the ASGM sector in Mongolia include the ease with which foreign, illicit actors can tap into Mongolia's supply chain, as illustrated in Figure 5, and a limited understanding of the likely influential role soum governors and processing plants play in financial flows.



15 IFFs are defined as "money illegally earned, transferred or used".

16 Global Initiative Against Transnational Organized Crime 2016

17 Hunter, Smith and Levin-Nally 2017

18 Hunter, Smith and Levin-Nally 2017

19 Hunter, Smith and Levin-Nally 2017

Key findings and how they pose a challenge are:

- **Practical inaccessibility, a product of the vast geographical size of Mongolia paired with the centralization of the legal supply chain, is a key barrier to formalisation for Mongolia's ASGM.** While the remote location of ASGM operations is a challenge to formalisation in nearly all gold-producing nations, the immense geographical size of Mongolia, low population density, lack of developed transportation infrastructure, and remote mine sites spread across the country significantly amplify the challenges of engaging with ASGMers and establishing sustainable supply chains. The centralization of Mongolia's legal gold supply chain in Ulaanbaatar is a significant contributing factor to the high portion of ASGM gold that moves through illegal channels, as it is impractical, if not impossible, for most ASGMers to access the formal supply chain. As such, ASGMers rely on informal and illicit networks with little interest in reducing mercury emissions. Thus, it is doubtful that interventions which focus solely on introducing non-mercury technology to mine sites will result in sustainable, lasting change if efforts are not made to secure supply chains.
- **The BoM conducts very limited due diligence on supply chains, enabling gold extracted using mercury to be easily laundered into formal supply chains.** The BoM relies on gold buyers ('changers') to buy gold from ASGM operations and transport it to Ulaanbaatar. This practice reinforces informal and illicit gold supply chains and financial flows, as changers can easily move between the often-intertwined flows. While the BoM is actively working to improve the supply chain, limited capacity and inherent challenges to decentralizing government operations mean the BoM will continue to face significant challenges in establishing a sustainable legal supply chain in Mongolia.
- **A lack of coordination between central and local government (soum level²⁰) in the management of ASGM and lack of manpower and resources to implement legislation, at all levels, is a barrier to the efficacy of mining reforms and formalisation initiatives.** Without an improved dialogue between national and local governments and an increase in resources allocated to managing the ASGM sector, stakeholders will face significant challenges in ensuring non-mercury technologies are used and gold using mercury does not enter formal supply chains.
- **Soum governors play a pivotal and potentially dichotomous role, which can jeopardize formalisation efforts.** Soum governors are tasked with regulating the ASGM sector. However, soum governors can easily exercise their position of power (both government and economic), to amass profits from the ASGM sector. This may take the form of bribes, financing illicit ASGM operations, or engaging in the gold trade. It is impossible to make a blanket statement about the activity of soum governors across Mongolia, and as such individual assessments will need to be made. What is clear is that soum governors play a pivotal role in either championing or impeding formalisation efforts.
- **Processing plants hold a key position in supply chains and financial flows, which can pose a significant challenge to securing supply chains and financial flows.** ASGMers use significantly less mercury, or eliminate its usage altogether, when they have access to adequate processing facilities.²¹ However, there are only three licensed processing plants in the whole of Mongolia. Consequently, there is little regulation of this critical point in the supply chain and a very weak understanding of financial flows involving processing plants. For example, there is the potential that processing plants may finance (directly or indirectly) gold operations which utilize mercury. In turn, processing plants are vulnerable to exploitation by illicit actors who have little interest in supporting the formalisation of the sector or non-mercury technologies.
- **Ingrained illegal trade networks and financial relationships with Chinese nationals are likely to under-**

20 A soum is a second-level administrative district, below the Aimags (provinces). There are 21 Aimags in Mongolia and over 300 soums.

21 Alliance for Responsible Mining (ARM) 2016

mine efforts to secure gold supply chains. While Chinese national activity in the Mongolian ASGM sector is reported to have substantially decreased since the reduction of the royalty on gold exports in 2014 (reduced from 10% to 2.5%), it is unlikely Chinese nationals (and the accompanying illicit gold flows and IFFs) have disappeared. Established criminal networks do not often “disappear”. Rather, they adapt operations to protect their criminal markets and ensure illicit income streams continue. For example, they may have become more adept at hiding their activity and employing Mongolian nationals as the ‘face’ of the business. These ingrained networks are especially challenging because they have numerous (potential) connections with actors all along the ASGM supply chain, starting at the mine site. As such, ingrained illicit networks involving Chinese nationals are likely to challenge efforts to secure gold supply chains in Mongolia.

- **ASGM is an important livelihood activity for rural Mongolians.** Thus, efforts to eradicate the sector, rather than formalize it, are likely to push the sector further into the illicit sphere. Efforts to eliminate ASGM are more likely to negatively impact marginalized populations than disempower criminal actors. Eradication does not need to be an explicit policy to be counterproductive. In many cases, the creation or maintenance of laws that keep ASGM in a state of informality, such as insurmountable barriers to professionalization and/or a lack of support for professionalization, are equally counterproductive.

Preliminary Recommendations and Further Research

In light of these findings, and in recognition of the nascence of research examining these issues in Mongolia’s

ASGM sector, the research team makes the following preliminary recommendations, which are further explained in the Recommendations section:

- 1) Conduct further investigations into the activities of soum governors to better understand their role in gold supply chains and financial flows linked to ASGM, identifying how they may be an obstacle to or a champion of formalisation efforts.*
- 2) Conduct further investigations into the role processing plants play in gold supply chains and financial flows, identifying potential vulnerabilities and how they may be leveraged to secure sustainable ASGM gold supply chains.*
- 3) Develop and implement policies which focus on decentralization, seeking to engage with actors across the supply chain, including upstream actors such as ASMs.*
- 4) Engage with local communities to understand the economic impacts of ASGM and the potential effects formalisation has on local economies.*
- 5) Engage with past and present initiatives active in Mongolia’s ASGM sector.*

Report Structure

This report is structured as follows:

Sections	Topic
2. Overview of Gold and ASGM in Mongolia	Overview of Gold and ASGM in Mongolia
3. ASGM Governance	A brief situational analysis of Mongolia's mercury and gold trading regulations and conditions, taxation schemes, monitoring and enforcement structures in place, and an appreciation of the key stakeholders involved and how they interact with one another.
4. ASGM Gold Supply Chain 5. Key Stakeholders and Financial Flows	An analysis of gold supply chains and financial flows linked to the ASGM sector in Mongolia, specifically identifying challenges and obstacles that are present in the flow of gold and finances in each country which inhibit formalisation in the ASGM sector, and the mapping of key stakeholders in Mongolia's ASGM and their roles in facilitating or impeding formalisation.
6. Recommendations	Preliminary recommendations on the necessary steps to improve the organization of financial flows in order to promote formalisation of the ASGM sector and legal trading of responsible artisanal gold in domestic and international markets in each country, thereby contributing to a reduction of mercury usage

2. Overview of Gold and ASGM in Mongolia

Mongolia's economy is heavily reliant on the mining sector, especially gold. Foreign direct investment into the extractives industry has fuelled the country's commodities sector. As of 2014, 94% of the mining companies operating in Mongolia were gold producers.²² In addition, exports (mainly commodities) now account for more than 40% of GDP; Mongolia's key trading partner is China, which received 84% of Mongolia's exports (by value) in 2015.²³

The narrow base of Mongolia's economy makes it highly vulnerable to natural disasters and the volatility of global markets. Between 2009 and 2014, for example, four (out of a total of ten) of Mongolia's biggest banks were either bankrupted or required to merge to avoid insolvency.²⁴ Despite the volatility experienced in recent years, poverty within Mongolia has decreased, dropping from 38.8% in 2010 to 21.6% in 2014.²⁵

Mongolia is unusual in the fact that it is one of the few countries where ASM is an entirely non-traditional activity that only developed over the past fifteen years.²⁶ Mongolia shed its Soviet "satellite" status in 1990 after a peaceful revolution and is now a semi-presidential republic. However, the embracing of a market economy led to an increase in social disparity and considerable unemployment and underemployment. Mongolians who live in the countryside were particularly affected by high rates of inequality, exacerbated by extreme weather events, known as 'zud', and climate change.²⁷ The economic reforms that accompanied Mongolia's shift towards the free market, including privatization without sufficient government monitoring, also meant that Mongolia's mineral wealth was capitalized more by foreign investors than the local population.²⁸

22 Cane, et al. 2015

23 Central Intelligence Agency (US) n.d.

24 Rolle 2014

25 World Bank 2017c

26 Hruschka 2015

27 Rolle 2014

28 Sindelar 2009

Table 1 Mongolia's Key Demographic Indicators²⁹

Population	3,031,330 (July 2016 est.)
GDP per capita	\$12,200 (2016 est.)
Population below the poverty line	21.6% (2014 est.)
Labour force by occupation	agriculture: 28.6% industry: 21% services: 50.4% (2014)
Literacy rate	98.4% (2015 est.)
Unemployment rate	lowest 10%: 3% highest 10%: 28.4% (2008) Youth 15-24: 16.6%
Life expectancy	69.6 years (2016 est.)
Urbanization	urban population: 72% of total population (2015) rate of urbanization: 2.78% annual rate of change (2010-15 est.)

As a result, workers from other sectors were driven into ASGM out of economic necessity, forced to abandon more traditional forms of employment.³⁰ For example, one ASMer interviewed for an investigative journalism piece stated that ASGM is “better than trading cattle”; until a couple of years prior the man was one of the nomads who inhabit Mongolia’s northeast region and had lost most of his herd during the winter of 2010.³¹ However, it has been observed in recent years that the incentive to engage with ASM increasingly comes not from financial desperation, but from the belief that it will bring greater and more easily acquired profit than other occupations.³²

ASGM in Mongolia takes place across a vast geographic region, as illustrated in Figure 1 and Figure 2. A 2013 study found ASM is carried out in 238 deposits across Mongolia, in more than 8 different provinces. The average number of ASMs at each deposit can greatly vary, with figures as high as 420 reported around Ulaanbaatar and as low as 11 in more remote locations such as Umnugovi province.³³

29 Central Intelligence Agency (US) n.d.

30 Swiss Agency for Development and Cooperation (SDC) 2015

31 Aldama 2016

32 PAM17032017, 16 March, 2017

33 Mongolia Extractives Industries Transparency Initiative (MEITI) 2016

Figure 1 Map of ASGM Activities in Mongolia (source: authors)

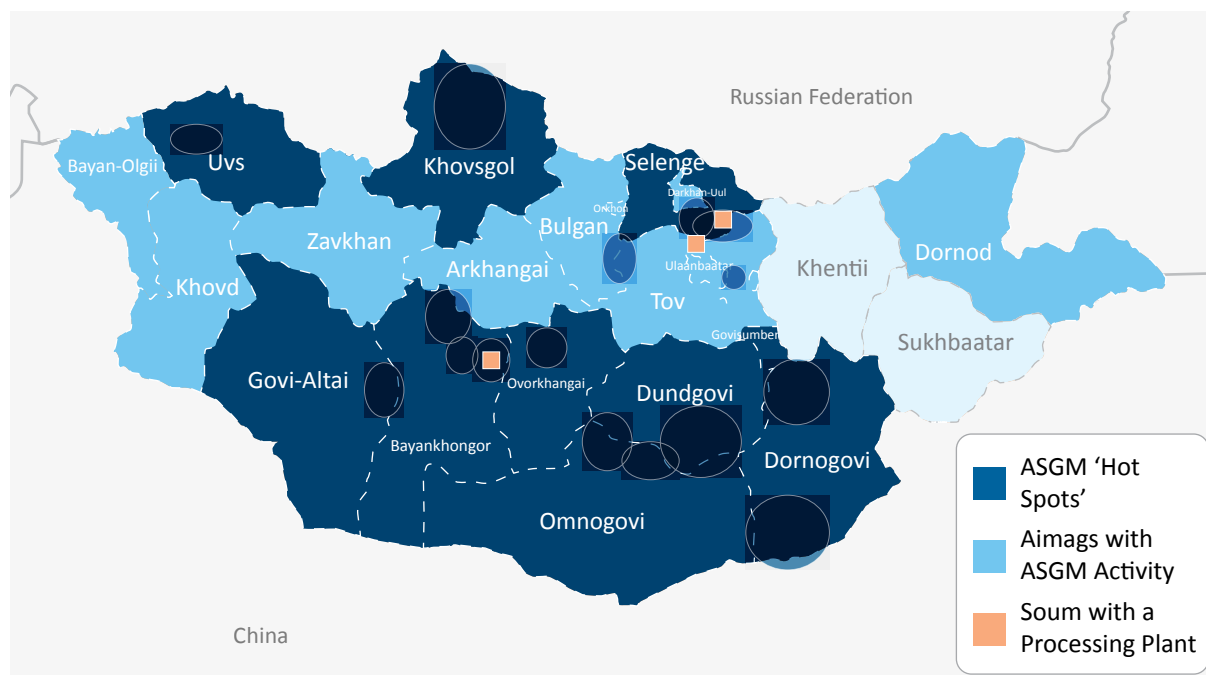
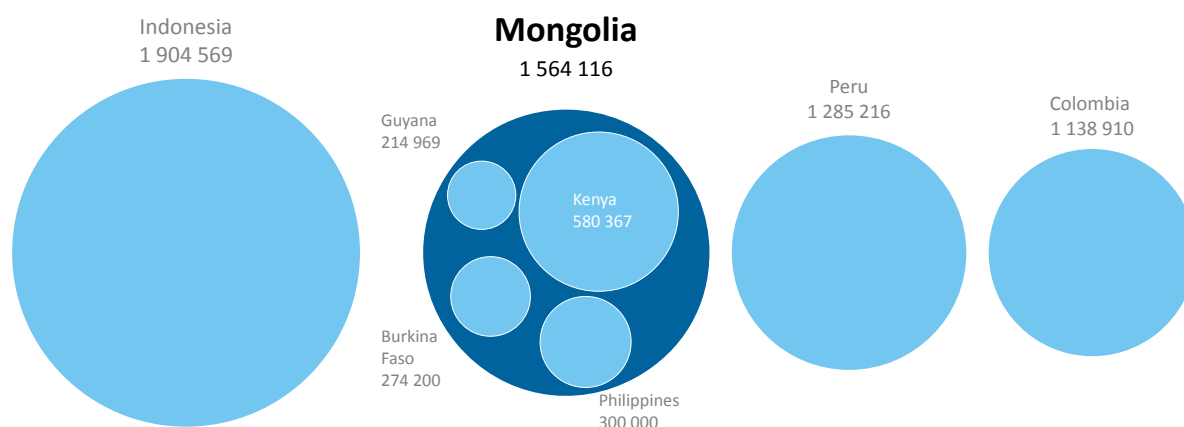


Figure 2 Land Area of Mongolia and Other GEF Gold Child Project Countries (km²) ³⁴



In Mongolia, gold is mined from placer, dry placer, hard rock, and as a by-product from copper ore, and the ASGM sector accesses both hard rock and alluvial deposits.³⁵ The amount of gold being produced is seasonal, with more mining taking place in late spring and summer. The majority of ASM-dominated gold deposits in Mongolia are located outside of Ulaanbaatar.

Estimates of the size of Mongolia's ASM sector have varied between 30,000 during the warmer months,³⁶ up to 100,000 people, who indirectly support more than 400,000 Mongolians (about 15 percent of the population).³⁷ Though the latter estimate is extreme and unlikely to be accurate, it shows the perceived prevalence of ASM as

³⁴ World Bank 2017b

³⁵ Swiss Agency for Development and Cooperation (SDC) 2015

³⁶ Mongolia Extractives Industries Transparency Initiative (MEITI) 2016

³⁷ Swiss Agency for Development and Cooperation (SDC) 2015

a source of income for Mongolians. However, due to the clandestine nature of ASM (most activity is carried out illegally/informally), and the fact that it is a seasonal activity (frozen earth during winter makes it impossible to mine), definitive estimates of the number of people involved are difficult to determine.

Despite a trend towards formalisation in recent years (11% of formerly informal ASM miners were formalized from 2012-2015³⁸), the Mongolian ASM sector remains largely informal. The sector is dominated by gold mining, with an estimated 70% of informal artisanal miners operating in the gold sector.³⁹ Gold mining is more popular in formal ASM as well, with 60 out of 69 legal ASM NGOs (as representative bodies of ASM partnerships) mining gold rather than other minerals, most likely because it is more profitable to do so.⁴⁰

The negative perception of ASM in Mongolian society by government officials and those not engaged in ASGM is due largely to its featuring poor health and safety standards, environmental damage, conflicts over land ownership, and human rights abuses.⁴¹ Indeed, there are reports of violence between illegal ASMs and security and police officers.⁴² This negative perception is, however, being challenged and changed in recent years by the work of initiatives such as the SAM project, and the establishment of a successful Fairmined mine by Alliance for Responsible Mining (ARM).⁴³

ASGM Production Estimates

It is very difficult to accurately measure due to the scale of ASGM informality and the illicit gold market. Gold production from ASGM is estimated in the range of 4 to 7 tons, depending on the estimating institution.⁴⁴ The percentage of the gold supplied by ASGM to the BoM has significantly increased from 0.1% in 2013 to 25.5% in 2014 and 45.7% in October 2015.⁴⁵ An assessment in 2012 determined that ASMs on average produce 0.4 grams per day, working approximately 20 days per month for four months of the year.⁴⁶

The rate at which gold is taxed on purchase has significantly impacted whether or not ASGM gold is sold to the BoM. The Windfall Tax, which taxed gold at a rate of 68% from 2006 until 2011, negatively impacted official production and sales, as it made the formal gold supply chain much less profitable and incentivized selling to illegal traders (see Figure 3).⁴⁷ The repeal of this law in 2011, as well as the reduction of the BoM's gold royalty rate in 2014 from 10% to 2.5%, resulted in gold sales to the BoM rising from 3.2 kilograms in 2013 to 3.2 tons in 2014.⁴⁸

Nonetheless, it remains difficult to determine what percentage of these gold sales originated in ASGM, in part because medium-scale mining (MSM) companies have also tended to sell gold to BoM in the name of ASMs. This is because selling gold as a citizen or ASGM member allows MSM companies to avoid a higher taxation rate, resulting in the potential contribution of their masked gold sales to the rise in overall gold sales from this demo-

38 Hruschka 2015

39 Swiss Agency for Development and Cooperation (SDC) 2015

40 ASM17032017, 17 March, 2017

41 Swiss Agency for Development and Cooperation (SDC) 2015

42 Aldama 2016

43 Fairmined 2015

44 Swiss Agency for Development and Cooperation (SDC) 2011

45 Mongolia Extractives Industries Transparency Initiative (MEITI) 2016

46 Swiss Agency for Development and Cooperation (SDC) 2015

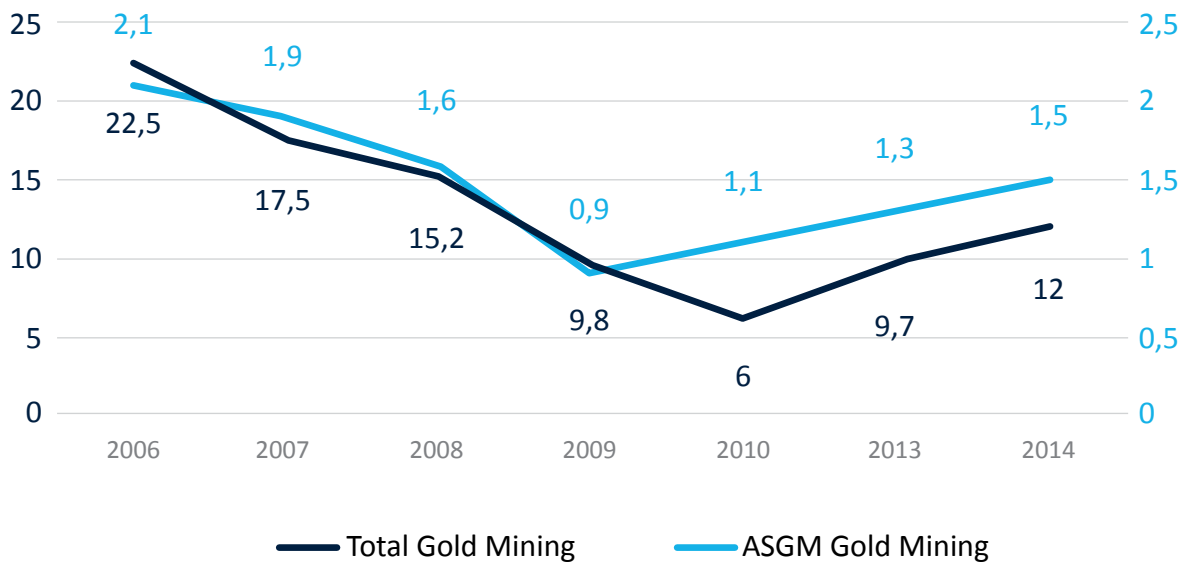
47 SGM20032017, 20 March, 2017

48 Cane, et al. 2015

graphic. Therefore, although official statistics for the BoM of citizen sales in 2016 were 9.7 tons, this number is not viewed as an accurate reflection of ASM gold production levels.⁴⁹

Another obstacle to determining accurate gold production levels is the lack of statistics available that quantify the amount of gold that has been bought by the local jewellery industry, or a centralized database on the amount of gold sold on the market by ASMers and gold traders. (It must be noted that a database would be difficult to establish given the scale of the illicit market).

Figure 3 Estimate of Mongolian Gold Production (tonnes/year)⁵⁰



49 HDA23032017, 23 March 2017

50 Minerals Resources and Petroleum Authority (MPRAM) 2015

3. ASGM Governance⁵¹

Regulation No. 308 “Regulation on Extraction of Minerals from Small-Scale Mines” (2010) currently governs the ASGM sector.⁵² Regulation 308 defines ASGM as the methods by which ASMs can legally access mining land and income tax levels of formal ASMs. However, the development of minerals legislation in Mongolia has hardly been a linear evolution. Since the Minerals Law on Minerals was approved in 2006, it has subsequently been amended 18 times to include licence requirements and an expansion of mineral scope, most notably in 2010 to include provisions for small-scale mining (which was passed in federal parliament with a majority vote of 86%), which resulted in Regulation No. 308.

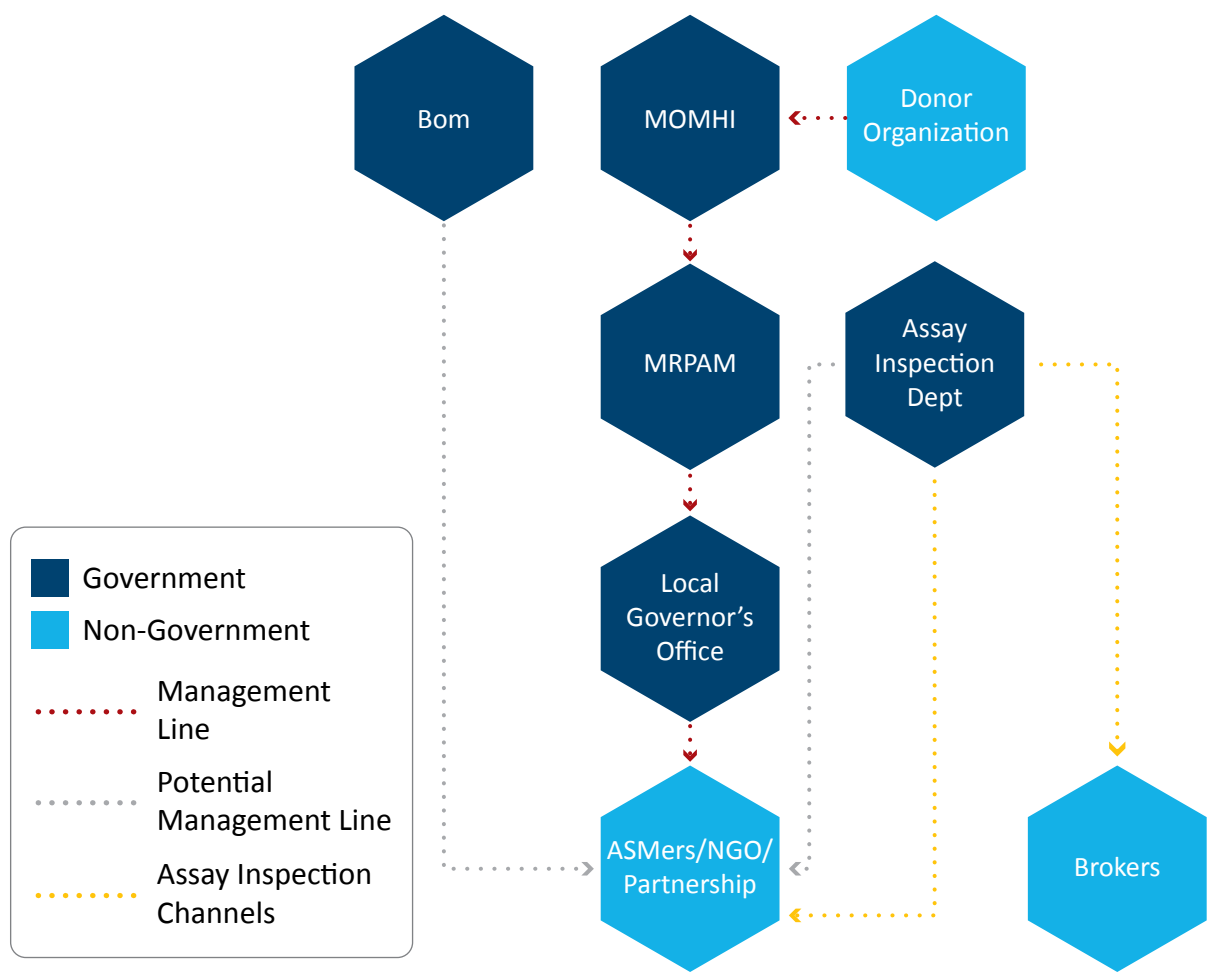
Table 2 Government Stakeholders

Ministry of Mining and Heavy Industry (MoMHI)	The MoMHI’s mission is to develop a transparent and responsible mining and heavy industry sector through increasing mineral resource funding and establishing a balanced economy with a multi-pillar structure. The Mining Policy Department, jointly with the Policy Implementation and Coordination Department and the Monitoring and Evaluation Department, enforces and implements state policy on the minerals sector including Regulation on Extraction of Minerals from Small-scale, 2010 and the Minerals Law.
Minerals Resources and Petroleum Authority of Mongolia (MRPAM)	The MRPAM is charged with implementing federal mining policy and supporting the government in developing policies on geology and mining. MRPAM is involved in all stages of mining, including the issuance of mining licenses.
Soum governments	Soum governments directly manage the ASM sector, and liaise with MRPAM to award mining land to ASMs. At the soum level there is an officer in charge of mining issues which controls all ASM registration, and monitoring of ASM sites.
Assay Office	The Assay office is the only place gold traders can have their gold assayed prior to its sale to the BoM. It is affiliated with the Mongolian Agency for Standardization and Metrology and works to ensure the assay monitoring system is in line with state policy and regulations in its chemical testing of precious metals and jewelry.
Bank of Mongolia (BoM)	The BoM has, by law, a monopsony on the country’s gold trade; it is the principle actor in buying, exporting, and storing gold, and supplying the domestic gold sector (although this is not a common practice), in addition to select private banks.

51 The publication Legislation Related to Artisanal and Small-Scale Mining provides an unofficial English translation of all relevant legislation. It is available on the SDC ASM Knowledge Hub: <http://sam.datacom.mn/en/categories/3>

52 Regulation on Extraction of Minerals from Small-Scale Mines 2010

Figure 4 Mapping of Regulatory Bodies⁵³



The Ministry of Mining and Heavy Industry (MoMHI) and the Minerals Resources and Petroleum Authority of Mongolia (MRPAM) are the government institutions charged with developing, implementing and enforcing national legislation. The MoMHI, via the Mining Policy Department jointly with the Policy Implementation and Coordination Department and the Monitoring and Evaluation Department, enforces and implements state policy on the gold sector including Regulation 308 and the Minerals Law.⁵⁴ The MRPAM is charged with implementing federal mining policy and supporting the government in developing policies on geology and mining. MRPAM is involved in all stages of mining, including the issuance of mining licenses.

The Government is becoming increasingly receptive to engagement with ASMers, although this has not been a linear transition.⁵⁵ It was not until 2008 that the Government began taking steps to integrate ASM into the Mongolian legal framework when it enacted “Temporary Regulation on Artisanal Mining Operations”.

Positive recent action includes changes to the Minerals Law in 2014 with the approval of the trading of gold from the ASGM sector, a decision made to enable ASM gold to enter the National Treasury stockpiles, which Mongolia

53 Mongolian Exporters' Association 2015

54 PAM17032017, 16 March, 2017

55 HDA23032017, 23 March 2017

has been working to grow since 2013.⁵⁶ These legal changes have contributed to a shift in the characterization of miners from lawless and harmful, to responsible citizens that contribute to the country's development and economy. Also, the Mongolian government is working jointly with the Sustainable Artisanal Mining (SAM) project, run by the Swiss Agency for Development and Cooperation (SDC), to enable formalisation.⁵⁷ (Although the SAM project is set to end in 2018.) During a consultation meeting on ASM formalisation held in December 2016, the MoMHI recognized the potential of ASM to contribute to the economy and local development, and highlighted the vital need to officially register ASMers.

In January 2017, it was announced by the Mongolian government that due to the inability of current legislation to effectively manage certain issues such as mineral extraction, mine closure and site rehabilitation, the government is establishing a task force to prepare a new draft law on mining.⁵⁸ By creating a new mining law, the government also hopes to create a more favourable legislative environment that attracts investment in the mining sector. This legislative reform is expected to have significant impact on the Mongolian mining context, and could be relevant to GEF GOLD's formalisation work in ASM. Further analysis will be required once the law has been finalized.

However, **corruption remains a key challenge to formalizing Mongolia's ASGM sector**. According to The Asia Foundation's annual SPEAK survey, from 2006 to 2014, "Mining" or the "State Administration of Mining" repeatedly ranked second in the top five corruption concerns for Mongolians.⁵⁹ D. Enkhbold, President of the National Mining Association of Mongolia, which represents large multinational corporations operating in the country, also concedes corruption as well as bureaucracy as major problems for multinationals.⁶⁰ The prevalence of corruption has been attributed to regulations that are unclear in their requirements and overly generalized; as a consequence, the Natural Resource Governance Index (NRGI) classified Mongolia as having insufficient governance of the mining sector.⁶¹ Constant changes to the minerals laws have contributed to an unstable legislative environment, which has allegedly facilitated corruption and unlicensed ASGM operations. Other corruption associated with the ASGM sector includes 'facilitation' payments to increase the speed of application processes and misconduct by soum government officials such as the allocation of land access to friends and family in the mining sector.

Gold Mining

Soum governments directly manage the ASM sector, and liaise with MRPAM to award mining land to ASMers. At the soum level there is an officer in charge of mining issues which controls all ASM registration, and monitoring of ASM sites, although their activities are limited by budget constraints. According to Regulation 308, small-scale miners may form partnerships that are controlled and advised by the soum governor.⁶² To legally access land for the establishment of mine sites, soum governors, on behalf of petitioning ASMers or their NGOs, request the MRPAM for land to be used for ASM purposes. MRPAM, prior to approving this request, checks that the site is not already owned, licensed, or in a protected area (using coordinates provided by the applicant). The maximum size of land approved for ASM is 5ha; each soum (of which there are more than 300 in Mongolia) should not have more than ten lots of land allocated for ASM.⁶³

56 Cane, et al. 2015

57 Swiss Agency for Development and Cooperation (SDC) 2016b

58 Ministry of Mining and Heavy Industry (MOMHI) 2017

59 The Asia Foundation 2016

60 Aldama 2016

61 Ministry of Mining and Heavy Industry (MOMHI) 2017

62 Regulation on Extraction of Minerals from Small-Scale Mines 2010

63 Law on Minerals 2006, amended 2014

Tri-partite agreements can also be a means of accessing land for ASM. In such cases, contracts must be signed between ASMers and ASM partnerships, and then between those partnerships and the soum government, with the consent of MRPAM. Existing concession holders, such as large-scale mining companies, can also be involved in tri-partite contracts in the case of land areas that are already licensed—these companies may approve ASM on a portion of their concession.⁶⁴ Upon receipt of the request for a tri-partite agreement's access to land for mining, MRPAM will determine whether this land is suitable for mining. Once an ASM land use permit is issued, ASM activities on that land are subject to Regulation 308.⁶⁵

MRPAM stated that in 2016, it granted ASM permission to operate in 20 soums in 10 aimags, and in total has issued 96 licenses in 34 soums in 10 aimags.⁶⁶ However, due to issues such as lack of material resources, low mineral content of the land and the high transportation costs, only about 30 of these licensed areas are currently operational.⁶⁷ Although it is expected that soum governors condemn illegal ASM, cases of mining in areas where licenses aren't permitted or without the approval of MRPAM are still common. A MRPAM representative expressed to our researcher that soum governors are often negligent in their reporting obligations.⁶⁸

Limited government capacity is also a significant hurdle to ensuring ASMers are operating in compliance with the law. For example, there are only three staff members in charge of ASM at MRPAM, focusing on ASM research, ASM labour and the environment, and ASM licensing and land allocation, who partner with the aimag state inspectors working on geology and mining to monitor ASM areas.⁶⁹

In addition, the fact that soum governments are responsible for enforcing the laws that govern the ASM sector means that their capacity limitations are a key threat to the effective governance of the sector. Capacity development is also required at the national government level. Key capacity constraints of government in Mongolia (national, soum) include:

- A general lack of capacity to manage the mining sector in terms of both manpower and technical knowledge;⁷⁰
- Lack of institutionalized knowledge of the ASM sector and how to manage it.
- At the soum levels, the lack of institutionalization of ASM management know-how, and knowledge-building as to how formalisation/professionalization can be facilitated;
- Poor communication and data management between national and soum governments, which can result in soum governments awarding concessions to ASM that overlap with existing MSM and LSM concessions, or protected areas;⁷¹
- A law enforcement vacuum in Mongolia that prevents the monitoring of compliance with relevant laws, by both actors in government and the mining industry;
- Lack of resources to support capacity-building efforts at the ASM level, and the technology required to do so is not included in government-run training initiatives because of budgetary concerns;

64 Hruschka 2015

65 Regulation on Extraction of Minerals from Small-Scale Mines 2010

66 PAM17032017, 16 March, 2017

67 PAM17032017, 16 March, 2017

68 PAM17032017, 16 March, 2017

69 PAM17032017, 16 March, 2017

70 ASM17032017, 17 March, 2017

71 ASP20032017, 20 March, 2017

- Significant delays in government approval for specific technology required at mine sites undermines project efficiency and the management of environmental issues.⁷²

Another challenge is that it is unclear which government actors are charged with enforcing ASGM laws. According to MRPAM “ninja miners” are the responsibility of police and inspection officers and do not fall within their mandate of work.⁷³

Gold Trade

Mongolia is one of the few countries in the world that uses the gold standard; approximately 15% of its currency, the Tugrik, is backed by the country’s gold reserves. The BoM is charged with implementing state monetary policy and ensuring the stability of the Tugrik. The BoM is operationally independent from the Government, though the Parliament of Mongolia monitors whether the BoM’s activities are consistent with legislation.

To boost the country’s gold reserves, and thus further support the stability of Mongolia’s currency (as the BoM is by law required to do), in 2014 the cabinet:

- **Mandated that the BoM must act as monopsony buyer of the country’s gold** (as well as sole exporter and registrant of national gold production), although gold can also be sold to commercial banks (of which there are approximately 17) and exported with the approval of relevant agencies (including the BoM and customs); and
- **Reduced the gold taxation rate from 10% to 2.5%**, to reduce the incentive for producers to sell to the black market.⁷⁴

As such, the BoM is the principle actor in buying, exporting, and storing gold, and supplying the domestic gold sector (although this is not a common practice), in addition to select private banks.⁷⁵ The BoM’s monopsony status is designed to have the following impacts on the market:

- Limit the amount of Mongolian gold on the domestic and global market (to enable stockpiling);
- Limit direct accessibility for foreign gold buyers;
- Make the legal export process more complicated.

It also has the following, unintended impacts:

- Affects the transparency of Mongolia’s gold supply chain (the BoM does not conduct due diligence of any kind on gold purchases);
- Restricts legal sales opportunities to the capital, a place where no gold mining takes place; and
- Minimizes opportunities for local value-addition (in the form of jewellery manufacturing, etc.) by severely limiting supply to the domestic market.

The Assay Office is the only place gold traders can have their gold assayed prior to its sale to the BoM. To legally

⁷² BPP23032017, 23 March, 2017

⁷³ PAM17032017, 16 March, 2017

⁷⁴ Law on Minerals 2006, amended 2014

⁷⁵ Law on Minerals 2006, amended 2014

record the production, the trading of gold mine production must be recorded by the State Assaying Agency, after which the laboratory smelts the delivered material to a gold ore and the gold is returned to the miner, while also informing the MRPAM about the amount of gold assayed.⁷⁶ It is affiliated with the Mongolian Agency for Standardization and Metrology and works to ensure that the assay monitoring system is in line with state policy and regulations in its chemical testing of precious metals and jewellery.⁷⁷ The gold smelting capacity of the Assay Office is 50-100 kilograms per day, and is most active from June to October when warmer weather allows for more mining to take place.⁷⁸

The BoM is also actively seeking to increase gold production by the ASM sector. A new policy (December 2016) by the BoM to purchase gold at the London fix (instead of USD2 below, as it did previously) is designed to increase the incentive to sell to the BoM rather than elsewhere.⁷⁹ In addition, the BoM has tried to facilitate the easy sale of gold by streamlining and incorporating multiple stages of the process including physical delivery of gold, testing by the assay, storage, and signing of gold trade contracts.⁸⁰

In January 2017 the Government adopted the ‘Gold II’ national program within its 2016-2020 action plan, part of an effort to aid the country’s economic recovery. The ‘Gold II’ program aims to increase the amount of gold that is being produced and sold to BoM. It will be realized in two phases up to 2020 to increase gold production and create a legal environment to purchase extracted gold from artisanal miners. The government plans to assist the implementation of this by issuing loans to large-scale gold mining companies to update their equipment and build their technical capacity, as well as maintenance loans to ASM miners. The rate of gold extraction is expected to increase by 2-3 tons annually, gradually reaching 25 tons by 2020. If this program is a success, it is estimated that MNT33-59 billion will be added to the state budget.⁸¹

While the efforts of the BoM are encouraging, the centralization of gold sales in Ulaanbaatar forces the BoM to rely on gold traders (‘changers’) who buy gold locally and bring it to the capital. As such, it is very difficult for the BoM to track gold supply chains and ensure the gold they are buying has not been extracted using mercury.

International Development/Mining Organizations

In the last decade, the Mongolian ASM sector has been assisted and developed via several international initiatives. These actors have been influential in changing perceptions of ASM both in Mongolia and internationally, and demonstrating powerful examples of best practices. In particular, the Frugal Rehabilitation Method (FRM) developed by the Asia Foundation has seen great success. FRM is an economically affordable, socially acceptable and ecologically viable method of mine site rehabilitation and restoration.⁸² FRM’s success has been a very influential initiative in the Mongolian ASGM sector, pushing formalisation efforts and legislative reform by demonstrating a new practical and feasible option for best practices in environmental management.⁸³

76 Law on Minerals 2006, amended 2014

77 AOR20032017, 20 March, 2017

78 AOR20032017, 20 March, 2017

79 PAM17032017, 16 March, 2017

80 Muff, et al. 2012

81 Minerals Resources and Petroleum Authority of Mongolia (MRPAM) 2017

82 Sathananthan and Rebert 2016

83 ENM23032017, 23 March, 2017

Table 3 Development Organizations Active in the Mongolian ASGM Sector

EITI	Mongolia became a signatory to the Extractives Industry Transparency Initiative (EITI) in 2006. A National EITI Council and stakeholder working group, comprised of representatives of the government, mining companies, and civil society, were established to implement the EITI within Mongolia's mining sector. This program is the main way with which civil society seeks to engage with the mining sector. ⁸⁴
Fairmined	Fairmined Certification was created by ARM and traces responsibly produced gold from mine to market. The Fairmined certified ASM operation in Mongolia, XAMODX, has been instrumental in demonstrating the benefits of ASM formalisation and was the first ever ASM mining organization outside of South America to receive this certification. ⁸⁵ However, XAMODX has faced challenges exporting its Fairmined gold, due to the export restrictions imposed by the BoM.
The Asia Foundation	The Asia Foundation was the first non-profit to be invited into Mongolia in 1990 after the fall of the USSR and has been a key stakeholder working for stable economic growth in the country ever since. ⁸⁶ The Asia Foundation has recently been working in the mining sector through the development and promotion of the FRM. ⁸⁷
SAM Project by SDC	The SAM project of the SDC, and the Asia Foundation's Engaging Stakeholders in Conservation Phase II (ESEC II) project have had considerable success in addressing capacity constraints both within the ASM sector and government, with the goals to improve ASMers' license to operate and enhance government recognition of the sector's social and economic contributions. ⁸⁸

The National Federation of Artisanal and Small-Scale Mining (The National Federation) is the industry association representing Mongolia's ASM sector. Established in 2013, and with 6,200 members from 49 partnerships of 69 registered NGOs to date, it is charged with the responsibility of responding to the needs of ASMers, promoting positive public attitudes towards ASM, and safe working conditions within the sector.⁸⁹ All members pay a fee of MNT1,000/month, which funds the organization. As part of the registration of new ASM partnerships, the National Federation conducts trainings on human rights, ASM laws and regulations, and mine management.

84 Mongolia Extractives Industries Transparency Initiative (MEITI) 2016

85 Fairmined 2015

86 The Asia Foundation n.d.

87 Sathananthan and Rebert 2016

88 Swiss Agency for Development and Cooperation (SDC) 2015

89 Swiss Agency for Development and Cooperation (SDC) 2016

4. ASGM Gold Supply Chain

In a legal gold value chain, miners mine gold-bearing ore, or wet or dry pan for gold in alluvial deposits. The gold is then extracted and refined in a processing plant, and transported to Ulaanbaatar to the Assay Office, where the purity of the gold is tested, prior to its sale to the BoM. Gold that BoM chooses to sell is exported to Argor-Heraeus (a Swiss refinery that currently holds the contract for refining Mongolia's gold), where it is further refined and turned into bullion, before being sold on the market.

More than 50% of the gold trade in Mongolia is thought to be controlled by the black market.⁹⁰ According to the MRPAM, while Mongolia on average exports 40 tons of gold per year, only 17 tons is bought annually by the BoM (9.7 tones of which were sold to the BoM by citizens), despite its possession of a legal monopsony.⁹¹ This indicates that a large proportion of Mongolia's gold is being exported illegally. Specifically, it is thought illegal gold supply chains in which gold is smuggled to China persist.

Royalty rates for the legal sale of gold to the BoM also influence the sector, although to a lesser degree since it was reduced to 2.5% in 2014. This reduced royalty rate has made selling to the BoM more profitable, but it is only fixed at this rate until 2019, after which it is not clear what the policy will be.⁹² ASM miners also have difficulty purifying gold before sale, which is required by the BoM. Operating in the informal/illegal sector also requires far less documentation to do business.⁹³ These challenges can contribute to pushing ASM miners to sell gold on the easily accessible black market.⁹⁴

An overview of the gold supply chain is provided here, with a more detailed examination of the roles of various stakeholders in the section 'Stakeholder Analysis'.

90 SOA22032017, 22 March, 2017

91 PAM17032017, 16 March, 2017

92 HDA23032017, 23 March 2017

93 BPP23032017, 23 March, 2017

94 BPP23032017, 23 March, 2017

Figure 5 Mongolia ASGM Gold Supply Chain

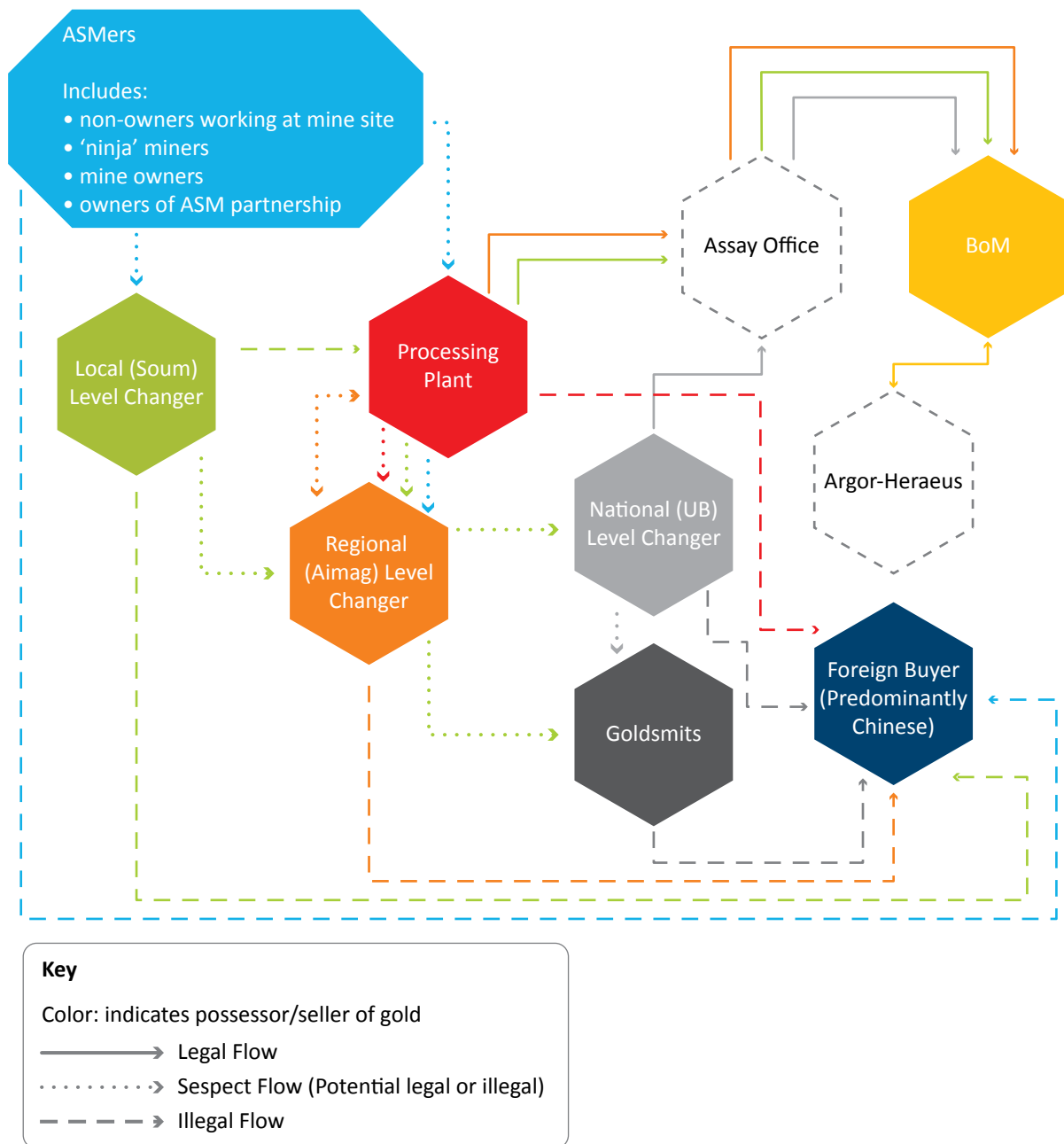


Table 4 Case Study: Mandal Soum – mining and gold supply chains

Legal ASM	<ul style="list-style-type: none"> • 351 members of 51 partnerships from 5 ASM NGOs. • 3 official gold buyers who are required to buy gold and sell to the BoM (these changers are at the processing plant) • 17 hectares of land have been designated for ASM purposes.⁹⁵
Illegal ASM	<ul style="list-style-type: none"> • Illegal ASMs are still a big problem in Mandal soum, and the local police struggle to control them.⁹⁶ • In 2015, Mandal soum had a gold rush which saw large numbers of ‘ninja miners’ coming from all over the country to Mandal soum, after reports of the presence of more than 50 tons of gold there. During this time, miners settled in tents in the forest, usually mining at night. There was widespread environmental damage as a consequence, and reported violence between miners, including one murder case.⁹⁷
Gold Deposits	<ul style="list-style-type: none"> • Both placer and hard rock deposits exist in Mandal⁹⁸ • Land issued for ASGM is primarily in the northern part of the soum. • ASM partnership leaders estimated that ASMs could mine a maximum of 15 grams of gold per day.⁹⁹
Processing Plant	<ul style="list-style-type: none"> • The processing plant was established in 2012, and until recently, had been out of operation due to financial and political issues. It opened again in March 2017.¹⁰⁰ • The plant receives around 4-6 tons of gold ore per day. The maximum capacity of the plant is 7 tonnes per day, but there are plans to buy more equipment and increase its capacity.

95 SGM20032017, 20 March, 2017

96 ENM23032017, 23 March, 2017

97 LMR21022017, 21 March, 2017

98 SGM20032017, 20 March, 2017

99 ASP20032017, 20 March, 2017

100 SPP21032017, 21 March, 2017

Mercury in Mining

Use of mercury in the refining of ASM gold has existed in Mongolia since the sector's emergence in the 1990s, with usage further increasing in the 2000s.¹⁰¹ Mercury usage in the ASM sector has declined in the last decade, but, despite its prohibition, has not ceased.¹⁰²

Mercury continues to be used but in an underground fashion, often out of a perceived necessity. In most cases, the miner is responsible for extracting the gold from the ore, and often uses mercury in the home to do so (at enormous risk to members of the household¹⁰³). Hard rock gold miners often have no alternative technology available to efficiently process their ore since the government has been extremely reluctant to allow the establishment of gold processing plants—there are currently only two legal processing plants in operation across the whole of Mongolia. By law, these processing plants cannot process ore or smelt gold that is contaminated with mercury.

The use of mercury in this manner in turn limits the accessibility of processing plants for further gold refining. The gold then enters the illegal market, perhaps changing hands a few times between traders, before being smuggled out of the country, or illegally processed by an official processing plant that takes advantage of inadequate government monitoring of mercury contamination.

Mining

The legality of ASM in Mongolia can be classified into three main categories:

1. Illegal miners who are operating without any government sanction;
2. Mining that has been approved by the soum governor but fails to comply with national law; and
3. Legal miners who are practicing in accordance with all legal requirements.

Although the first category accounts for what is estimated to be over 85% of ASM taking place in Mongolia, it does not appear to be recognized by the government as mining with any degree of legitimacy.

Types of mine labourers and working groups include:

- **ASMers** are non-owners working at the mine site. Typically miners will be from the soum in which the mine is located, but in rush scenarios miners may temporarily migrate from elsewhere.
- **Partnerships** are legal ASM groups of approximately 5-10 people with one leader.¹⁰⁴
- **Non-governmental organizations (NGOs)** are a representative body for a group of registered ASM partnerships (usually between 10-35 in total). It advocates for them and manages legal compliance. NGOs

101 Zoljargal 2013

102 ASP20032017

103 World Health Organization (WHO) n.d.

104 PPM21032017, 21 March, 2017

were legalized by the Government at the end of 2013 in order to reduce the number of illegal ASMs and allow people to legally benefit from the exploitation of a national resource. These types of organizations can acquire more advanced digging equipment, some of it funded through development grants, and may work to improve the working conditions of its members.¹⁰⁵

Gold Processing

The processing plant is where ore is processed to extract gold, and where smelting can also take place. The legal gold value chain is dominated by the processing plant (where one exists), however illegal ASM gold is also often processed at these plants (which do not always check the legality of the miners using their services). It is estimated that 60% of the ASGM sector sells its ore directly to a processing plant, a figure that rises to 100% for miners that are located in very close proximity to a plant (which are the minority of miners); “close” tends to be considered anything less than a one day drive (8 hours) away. Processing plants will also sometimes buy ore from the miners and sell the refined gold to the BoM (sometimes via a gold trader).

There are also other, more rudimentary, processing options available to ASMs. In 2016, one man reportedly described how he and his wife did not dig, but paid others to deliver the soil in a truck to them and “cleaned it” using a hopper and pressurized water. Several tons of raw material are necessary to yield a couple of nuggets. The man reported only working between April and October, when the ground was not frozen, and reportedly finds about six or seven grams of gold every day they’re on the job. He stated that the gold is sold at night in a small shop in the middle of the local town. The gold is reported to be of very high purity (as much as 24 carats).¹⁰⁶

Illegal processing plants also exist, again to fill a gap in access to formal processing facilities. Illegal plants are unlikely to prohibit the use of mercury given that doing so could deter a large number of its clients.

Processing plants can therefore play a significant role in moving gold through formal and informal supply chains and enabling the continued use of mercury.

Domestic Gold Trade

Gold buyers, known as ‘changers’ in Mongolia, play an important role in the ASGM gold supply chain by moving gold from the mine site to Ulaanbaatar (or abroad). Most miners do not have the time or resources to travel to the capital and sell their gold themselves. There are three levels of middlemen who operate in Mongolia’s ASGM supply chains. These are: soum level, aimag level and national level (located in Ulaanbaatar). Soum level changers engage directly with the miners or processing plants and visually assess the value of the gold. Aimag changers will then sell to national buyers in Ulaanbaatar, including goldsmiths, the BoM, or foreign traders.¹⁰⁷ For example, one local gold buyer reported in a 2016 investigation that a trusted courier will take gold to Ulaanbaatar to sell to brokers, who will introduce it to the international market once it’s been combined with other metals and its quality has been lowered to the standard 18 carats. However, as discussed further below, it is known that foreign buyers from China also come directly to local shops to purchase gold.¹⁰⁸

105 Aldama 2016

106 Aldama 2016

107 BPP23032017, 23 March, 2017

108 Aldama 2016

Goldsmiths manufacture gold jewellery for the domestic market. They almost exclusively buy gold from individuals like changers and do not conduct background checks on the origin of the gold they buy.¹⁰⁹

It is important to note that by concentrating gold assaying and buying in the capital, the government is effectively requiring, and thus implicitly condoning, the existence of intermediary traders to ensure the flow of gold from ASGM regions to Ulaanbaatar. Given the fact that most if not all work in both legal and illegal gold supply chains, in doing so, the government is in turn implicitly condoning changers' role in the black market.

International Gold Trade

It is thought that a significant portion of ASGM gold from Mongolia ends up in China, and to a much lesser degree Korea, with foreign buyers.¹¹⁰ In 2006, it was reported that most black-market gold is smuggled across the 4,677km border with China.¹¹¹ It is relatively easy to cross the border by car, and it is reportedly common knowledge customs officers may be bribed if you are caught smuggling goods. In particular, illegal ASMs are more likely to sell to Chinese buyers that smuggle gold across the border than formalized operations. Ten years on, it is thought little has changed. For example, in 2016 the president of a small association of artisanal miners alleged that the activities of illegal miners are an economic loss for the country, "because they don't pay taxes and sell the gold to Chinese middlemen".¹¹² In addition, a local buyer reported that Chinese buyers will come directly to the shop to save on the commission of intermediaries; the gold will then be bought in China and Hong Kong by investors and jewellers who will eventually channel it to the legal market.¹¹³

Although there is a perception amongst some stakeholders that the lowering of the BoM's royalty rate has had a significant impact on rates of illegal gold smuggling into China,¹¹⁴ it is unlikely Chinese nationals (and the accompanying illicit gold flows and IFFs) have disappeared or will dissolve with any rapidity. This is discussed in further detail in the next section 'Key Stakeholders and Financial Flows'.

These ingrained networks are especially a challenge because they have numerous (potential) connections with actors all along the ASGM supply chain, starting at the mine site. As illustrated in Figure 7, due to the close proximity and established ties to ASGM operations, foreign buyers can tap into the supply chain directly at the mine site or at any other subsequent transaction point. Thus, ingrained illicit networks involving Chinese nationals are likely to challenge efforts to secure gold supply chains in Mongolia.

It has been assumed that such gold is extracted from the ore prior to it being smuggled across the border in China, given the relative size and weight of the ore versus the extracted gold. However, due to challenges in accessing processing plants and low-level technology which does not maximize gold yields, there may be cases where it is economically feasible—and attractive from a risk perspective—to smuggle ore across the border for processing in China.¹¹⁵

109 GSA24032017, 23 March, 2017

110 Muff et al. 2012

111 The Economist 2006

112 Aldama 2016

113 Aldama 2016

114 PAM17032017, 16 March, 2017

115 BPP23032017, 23 March, 2017

5. Key Stakeholders and Financial Flows

USD 1 = MNT 2,421.63¹¹⁶

1g of gold = USD 40.50 = MNT 98,012¹¹⁷

1 kg gold = USD 40,500 = MNT 98 million¹¹⁸

It is important to understand who the key stakeholders are in Mongolia's ASGM sector to shed light on its current context and the obstacles to formalisation that still exist. However, due to a dearth of information on financial flows, it is difficult to set out not only who the various participants are in the artisanal gold sector, but also what their interests/benefits are and how resources flow between them. The rapid assessment provided in this report attempts to do so, but more insight is necessary in order to facilitate the formalization of gold supply chains, and in turn the introduction and maintenance of mercury-free technologies, in Mongolia.

Stakeholders in the informal and formal gold sector in Mongolia interact with one another fluidly along the value chain. This is because there are incentives and means for illegally mined gold to easily enter the legal trading sphere via the BoM, and for legally mined gold to enter illegal supply chains via unlicensed traders who often seek to avoid taxes by smuggling gold across the border into China.

There are strong financial incentives to engage in informal and illegal transactions. The profits from the legitimate gold market are said to be only 5%, while those from the black market are 10%. MRPAM stated that it believes the tax regime in the country, including royalty rates, export fees and income taxes all combine to cancel out the benefits of engaging in the legal gold market. For example, the purported potential profit margins of changers and goldsmiths are larger if they choose to sell gold that will be smuggled and avoid the 2.5% royalty tax.¹¹⁹

When faced with overwhelming barriers to accessing formal financing options, those who want to engage in ASGM are forced to seek out and utilize informal financing options, which can include relying on financiers who are engaged in IFFs. In Mongolia, these challenges can push ASM miners into illegal activity, including seeking financing via loan sharks, mining on non-ASM designated land, and selling gold to the easily accessible black market.¹²⁰ These activities could also potentially include financing from soum governors (or other influential business or government actors), processing plants, and foreign buyers. If ASMs risk destroying established business relationships and economic safety nets by cutting ties with informal (or even illicit) financiers, they are less likely to engage in formalisation programs.¹²¹

¹¹⁶ XE Currency Converter n.d.

¹¹⁷ Gold Price n.d.

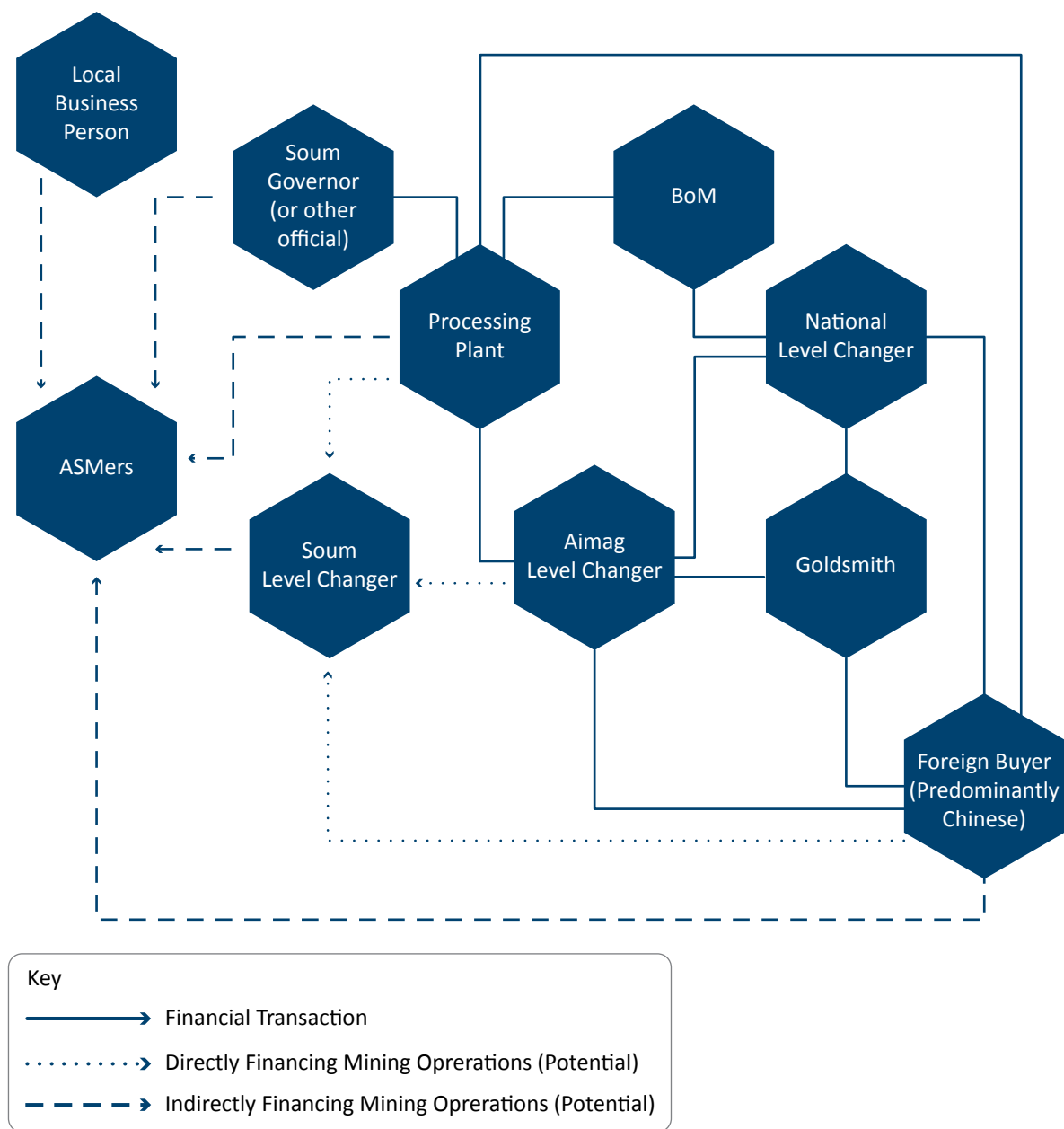
¹¹⁸ Gold Price n.d.

¹¹⁹ BPP23032017, 23 March, 2017

¹²⁰ BPP23032017, 23 March, 2017

¹²¹ Hunter and Smith 2017

Figure 6 Financial Flows and Stakeholder Mapping



Key stakeholders consist of both government and private actors. In some cases, individuals may have a dichotomous role – charged with regulating the ASGM sector as a government official, while also actively participating for personal gain. Private actors in the ASGM sector include any non-state entity that plays a role in the value chain, from mining (and its surrounding support systems, such as financing), to processing and trading, to (illegal) export.

Table 5 Case Study: Mandal Soum – financial flows

Actor	Description of Activities / Transactions
ASMers	<ul style="list-style-type: none"> • ASM partnership leaders estimated that ASMers could mine a maximum of 15 grams of gold per day – placer mining, not 100% pure.¹²⁰ • 15g of gold (100% purity) is worth MNT 1.47 million (USD 607.50)
Processing Plant	<ul style="list-style-type: none"> • The plant receives around 4-6 tons of gold ore per day. • The plant charges each miner MNT 13,000 (USD 5.37) per bag of 160-180 kilograms of gold ore to process.¹²¹ • Sell to legal changers MNT 74,000 (USD 30.57) per gram of processed gold, not 100% pure.
Changers	<ul style="list-style-type: none"> • The price they pay for ASM gold changes depending on the distance from the capital, accounting for their transport costs of selling it on to the BoM. If gold is bought from somewhere remote like Khvod, the difference between the changer price and BoM rate (approximately MNT 10,000 [USD 4.13]) can be as much as MNT 3,000 (USD 1.29) less per gram. • Changers sell the gold according to the rate set by Bloomberg¹²² • Partnership leader: Claims changers buy their gold for the 'lowest possible rate', approximately MNT 72,000 - 74,000 (USD 29.74 – 30.56) per gram.¹²³ This is equal to 74% - 75% of the value of a gram of pure gold.
Goldsmith	<ul style="list-style-type: none"> • Buys at MNT 85,000 (USD 35.11) per gram. This is equal to 87% of the value of a gram of pure gold. • Believes that it is sold by changers at MNT 3,000 (USD 1.24) higher, which is MNT 88,000 (USD 36.34). This is equal to 90% of the value of a gram of pure gold.

In addition to individuals directly financially linked to ASGM and gold supply chains, local communities also financially benefit from the economic stimulus ASGM delivers. When IFFs generate income locally, they grow the economy as a whole and create livelihood opportunities. These livelihood opportunities in turn attract people from across the region and accrue local legitimacy. Where IFFs generate local income, local communities are more likely to attempt to defend against efforts made to restrict their incomes.¹²⁶

As such, local communities may not welcome formalisation efforts and may prove to be an obstacle to formalisation if they see their income potentially jeopardized. For example, in north-eastern Mongolia it is reported that the Tsaatan, a native nomadic people, ferry supplies to ASGM camps (a three-day reindeer ride from the closest town) for profit. In addition, local entrepreneurs may make money from renting out mining equipment. Metal detectors for example, are too expensive for any one miner to purchase, so the devices are rented out for a percentage of the gold that is found.¹²⁷ As such, when developing intervention strategies to facilitate formalisation, it is important to not only take into account the financial interests of those directly engaged, but also local communities indirectly economically benefitting from ASGM.

The role and function of stakeholders in gold and financial flows linked to the Mongolian ASGM sector is detailed below.

122 ASP20032017, 20 March, 2017

123 SPP21032017, 21 March, 2017

124 SPP21032017, 21 March, 2017

125 BPP23032017, 23 March, 2017

126 Reitano forthcoming

127 Rowat 2012

Government Actors

The federal government actors that play a key role in the ASGM sector fall into one of two categories: those that monitor ASGM activities and those that play a significant role in the gold value chain. In relation to local government actors (at the soum level), these two categories can become intertwined, which may cause a skewing of incentives that may propagate informality in the sector.

Nepotism may cloud soum governance of the ASM sector, thus limiting ASMers' access to legal mining land, and potentially causing or perpetuating informality in the sector. As soum officials are the formal intermediaries between ASMers and MRPAM, they can choose to advocate for land access for specific people, such as friends and family. Their intermediary status also opens opportunities for corruption, as they can request 'fees' or other favours from petitioning miners, which would put miners who will not, or are unable to pay these bribes at a disadvantage. Soum governors may also act as financiers of ASGM activities, which would add another conflict of interest to their governance of the sector. Moreover, they may be active, direct participants in the ASGM section, financing ASGM operations or engaging in the gold trade.

Political and economic elites are often heavily invested in the informal ASM sector and may block efforts to eradicate the activity. Subsistence-level activities taking place in an informal economy, such as ASGM, are more susceptible to predatory behaviour from opportunistic authority figures seeking to capture profits and extort actors. These individuals may be able to parlay profits from IFFs into political power, and thus act with impunity, as they will not be held accountable by government agencies.¹²⁸ If these elites do not see benefit in formalisation, they are likely to resist formalisation attempts. Without adequate support, lower-level actors (who make up the vast majority of ASGM participants) are unable to engage in formalisation efforts due to a reliance on more powerful actors who are more likely to be engaged in illicit activity.¹²⁹

This is an issue that requires further research. The fact that federal agencies do not have adequate resources to monitor soum government activities, combined with Mongolia's status as a high-risk country for corruption,¹³⁰ makes it likely that these corrupt practices are occurring. More research is required to examine the scale of these problems, and their impacts on formalisation.

Mine Labourers

A variety of different types of miner labourers are engaged in ASGM in Mongolia. Informal ASMers are often pejoratively referred to as 'ninja miners'.¹³¹ This is because of the pans they wear on their backs (evoking comparisons to the Teenage Mutant Ninja Turtles) and the fact that they seem to appear and disappear very quickly.¹³² In addition to full-time mine labourers, some are opportunistic and 'rush' a new deposit when it is discovered. Some only mine occasionally or seasonally to supplement other forms of income, particularly from farming, while others are semi-mechanized small and medium-scale operators who have had their mining licenses revoked and have chosen to move into the informal sector.

128 Reitano forthcoming

129 Hunter, Smith and Levin-Nally 2017

130 Transparency International 2017

131 Swiss Agency for Development and Cooperation (SDC) 2015

132 Swiss Agency for Development and Cooperation (SDC) 2015

Most mine labourers of all types, work on a subsistence basis. Although wages are low, they are often greater than what individuals could earn elsewhere. As of 2012, it is estimated that ASGM miners in Mongolia earn on average USD 176 US per month, approximately 57% above the minimum wage.¹³³ In a 2016 investigative journalism piece, one interviewee stated, “The main goal is to feed my family”. He reported that one gram of gold traded for MNT 55,000 (USD 22.80), though the price varies according to the market, and that he generally earned MNT 100,000 (USD 41.46) for every day he worked.¹³⁴

Financial arrangements by types of mine labourers includes:

- **ASMers** are usually not paid salaries, but are paid according to how much gold they mine and the price for which it sells. As one individual reported, “Working as a ninja can return more money, but it is dangerous and illegal.”¹³⁵
- In **partnerships**, the leader usually puts down the initial capital. Once the down payment is fully repaid to the partnership leader, profits are then shared within the group.¹³⁶ It is likely similar financial arrangements can be found in both legal and illegal groups.
- **NGOs** collect membership fees from partnerships in return for advocating for them and managing legal compliance. It is up to the NGO leader to decide on how to allocate the fees to various needs. Often it is used for expenses such as taxes, land rehabilitation, maintenance and training costs. The president of a union of legal ASMers described their financial arrangement in which everyone pays MNT 53,000 (USD 21.97) in taxes per month and are guaranteed a minimum salary of MNT 500,000 (USD 207.30); they do not pay for tools, have health insurance, and have 10 days of holidays after each month working.¹³⁷

These figures are important because they illustrate the weak financial position ASMers are in compared to other actors in ASGM financial flows. Buyers further downstream are able to pay ASMers a fraction of the value of gold, while still paying them far more than they would earn in other occupations. As such, neither buyers (who are deriving large profits) nor ASMers (who are earning more money than they would otherwise) may be motivated to engage in formalisation efforts.

133 Singo 2012

134 Aldama 2016

135 Aldama 2016

136 PPM21032017, 21 March, 2017

137 Aldama 2016

Table 6 Formalisation costs for ASMs

Type of Cost	Amount
Income tax (flat rate)	10% of income
Affiliation to Social Insurance	Unfixed rate
Environmental Impact Assessment	Cost covered by government, free for miners
Gold processing fee	Approximately MNT 130,000 (USD 52) to process one ton of ore. ¹³⁸
Royalty fee for Bank of Mongolia	2.5% of gold value

Most ASMs face an inability to access legal forms of credit. Their informal status, and the environmental impacts they are perceived as creating, are the key issues undermining the sector's license to operate, and why ASMs are typically unattractive loan candidates. This means that ASMs are often reliant on the illicit financing sector, which may be populated by actors who do not want formalisation efforts to succeed because of a desire to hide their financial activities from the government.

Another reason few ASMs are fully licensed is that there are increasingly fewer land areas that the government (national and soum) are willing to allow ASM to access. In 2009, the introduction of the Law with Long Name (LNL: To Prohibit Mineral Exploration and Mining Operations at Headwaters of Rivers, Protected Zones of Water Reservoirs) cancelled over 200 mining and exploration licenses that operated within 200 sq. meters of water and forest sources, and caused the large-scale loss of jobs and livelihoods in the mining sector.¹³⁹ The amount of gold officially sold by ASM miners also declined drastically.¹⁴⁰ Although this law was amended in 2015, it caused substantial damage to the mining industry and has led to both a lack of stability in the legal operating context and an increase in illegal mining by making legal licensing of so many ASM sites unattainable.

Gold Buyers ('Changers')

Gold buyers play an important role in the Mongolian supply chain and move gold from the mine site to Ulaanbaatar. Most miners do not have the time or resources to travel to the capital and sell their gold themselves. As briefly described in the section on gold supply chains, there are three levels of middlemen (known as 'changers') who operate in Mongolia's ASGM supply chains. These are: soum level, aimag level and national level (located in Ulaanbaatar). Soum level changers engage directly with the miners or processing plants and visually assess the value of the gold. They, on average, buy gold at a price between 10-15% lower than what the BoM pays.¹⁴¹ These soum changers then normally sell on to larger intermediaries, such as aimag changers.¹⁴² An aimag changer will collect 2-3kg of gold before transporting the gold for sale. The aimag buyer uses a water weight method for valuing the gold, and then sells it to national changers at a gold market, typically the Urt Tsagaan market in Ulaanbaatar where gold buyers and goldsmiths are concentrated. The national buyer will also use the water weight method to value the gold.¹⁴³

¹³⁸ HDA23032017, 23 March 2017

¹³⁹ Els 2013

¹⁴⁰ Mongolian Exporters' Association 2015

¹⁴¹ HDA23032017, 23 March 2017

¹⁴² Muff et al. 2012

¹⁴³ Muff et al. 2012

Soum changers buy directly from ASMerS and sell on to aimag changers. Aimag changers will then sell to buyers in Ulaanbaatar, including goldsmiths, the BoM, or foreign traders.¹⁴⁴ Changers can provide loans to partnerships, which typically come with the condition that they receive their payment back in mined gold.

When considering methods for increasing formalisation rates in the Mongolian ASGM sector, it is important to note the role that these different levels of changers currently have in the informal supply chain. Changers link both legally and illegally mined gold from across Mongolia to the BoM, goldsmiths or other purchasers. Changers, and the entities that fund them, would both impact and be impacted by attempts to alter Mongolia's gold supply chain. As mentioned above, illicit markets can be stoic; the challenges of dissolving them should not be overlooked, nor should their acceptance of formalisation efforts be assumed—indeed, they will likely try to fight against such progress.

It is also important to note that by concentrating gold assaying and buying in the capital, the Government of Mongolia is effectively requiring, and thus implicitly condoning, the existence of intermediary traders to ensure the flow of gold from ASGM regions to Ulaanbaatar. Given the fact that most if not all, work in both the legal and illegal gold supply chains, in doing so, the government is in turn implicitly condoning changers' role in the black market.

Goldsmiths

Goldsmiths manufacture gold jewellery for the domestic market. The current legislation awarding the BoM a monopoly over gold, and the government's goals for building the state's gold stockpiles, effectively exclude jewellers from the legal supply chain. Goldsmiths rarely buy from the BoM because of high tax rates and the challenges associated with buying from the institution (due to its mandate to stockpile gold, not distribute it). Thus, goldsmiths almost exclusively buy gold from changers and do not conduct background checks on the origin of the gold they buy.¹⁴⁵ In doing so, goldsmiths provide an alternative market to the BoM, resulting in a strong demand for gold in the informal economy, and one without any barriers to entry.

Furthermore, due to the legal classification of gold jewellery as personal property, gold jewellery can leave the country without paying the customs fees required of gold ore or bullion. Once gold is made into jewellery it is no longer classified as gold by customs, but rather as private property. This transformation can facilitate gold smuggling. Although, according to goldsmiths, due to the associated costs it is likely to be a rare occurrence. Goldsmiths therefore may contribute to facilitating gold smuggling.

Processing Plants

The processing plant is where ore is processed to extract gold, and where smelting can also take place. There are currently three plants in Mongolia that are mercury free and process gold at the soum level. Two of these are legally allowed to operate, however the other is unable to operate because it failed its Environmental Impact Assessment (EIA).

Table 7 overviews the findings of a field research visit to three of Mongolia's processing plants.

While the legal gold value chain is dominated by the processing plant (where one exists), illegal ASM gold is also often processed at these plants (which do not always check the legality of the miners using their services). Pro-

144 BPP23032017, 23 March, 2017

145 GSA24032017, 23 March, 2017

cessing plants will also sometimes buy ore from miners and sell the refined gold to the BoM (sometimes via a gold trader). In this scenario, processing plants can also act as financiers for the ASM sector: the processing plant will provide pre-financing to the miner to extract the ore, and the miner will repay the loan via the sale of the ore.¹⁴⁶ Such informal financial services help to address the credit gap experienced by formal and informal miners alike. If these financiers do not prohibit their lenders from using mercury, they are also likely to be processing or refining mercury contaminated ore or gold.

Table 7 Processing plants in Mongolia¹⁴⁷

Location	Features
Bayan-Ovoo-soum:	<ul style="list-style-type: none"> • Ore processing plant owned by Khongor Khuder company in Bayankhongor aimag. • 300 miners from 30 different soums process gold ore at the plant, many coming from other aimags including Khovd, Arkhangai and Umnugobi. Reported more than 1,000 miners access plant each month. • Charges MNT 130,000 (USD52) to process of one ton of ore with a fineness of 860-940 (equivalent to roughly 20 to 22.5 carats). • The percentage of gold extracted is on average 70-74%. • Remaining gold dust tailings are divided between the following groups: aimag (50%), processing plant (30%), soum government (10%), miners (10%). • The total income from selling of tailing at Bayan Oyoo plant was MNT 1.7 billion in 2015
Bornuur-soum:	<ul style="list-style-type: none"> • The first government built mercury-free processing plant in 2009 with a local ASM NGO and support from the SAM project. • Serves over 200 members of the local ASM NGO as well as ASM partnerships from Tuv, Selenge, Bulgan, Bayankhongor, Umnugobiabnd, and Khentii aimags. • Plant combines pre-concentration, high-grade concentration, and direct smelting technology and allows for a gold recovery presumably in the same range as amalgamation. • Currently closed due to issues concerning its EIA, although suspected to still be illegally operating.
Mandal soum	<ul style="list-style-type: none"> • Duush Mandal Processing plant was established with support from Chinese investors in 2012. • Has officially been closed recently by the government for failing to pass its EIA, although locals suspect it is also due to claims of smuggling to the Chinese and its Chinese connections. • Served over 500 miners and was built primarily to process ASM gold. • Charged ASMers 13,000 MNT (USD 5) per bag of 160-180 kilograms of ore.

Illegal processing plants also exist, again to fill a gap in access to formal processing facilities. An owner of an illegal processing plant may also pre-finance mining activities, with the illegal miners selling ore and tailings to the owner to repay the loan. The poor quality of the technology used at this type of illegal plant (which can often result in up to 40-50% of the gold remaining in the tailings), means that processors will then often sell the tailings onto illegal buyers such as Chinese traders who are prepared to buy lower quality ore and process it further elsewhere.¹⁴⁸ Illegal plants are unlikely to prohibit the use of mercury given that doing so could deter a large number of its clients.

146 HDA23032017, 23 March 2017

147 HDA23032017, 23 March 2017

148 HDA23032017, 23 March 2017

Processing plants can therefore play a significant role in moving gold through formal and informal supply chains, financing the mining sector, and potentially perpetuating mercury usage. Importantly, little is known about the financial arrangements and flows processing plants (specifically the individuals operating and profiting from them) are involved in. For example, illicit actors, such as foreign buyers engaged in gold smuggling, may be financing processing plants. There is potential possibility that processing plants are financing local ASGM operations, which may be using mercury, either directly or indirectly through buying agents.

These findings indicate low recovery rates of gold by processing plants in Mongolia, suggesting problems with accessing adequate technology. They also show the challenges government agencies have with policing illegal processing activities, and thus, by logical extension, their processing of mercury contaminated ore and gold. Finally, they suggest that Chinese investment in processing, either rightly or wrongly, may raise concerns within government about gold smuggling across Mongolia's southern border. As stated above, Chinese-dominated illegal gold supply chains have been well established in Mongolia. It would be surprising if this penetration and corruption of the sector has not included processing plants, although this issue requires further research.

Foreign Buyers

The reduction in royalty rates from 10% to 2.5% has led some to believe that gold smuggling to China has decreased, however there are several reasons why this is unlikely to be significant:¹⁴⁹

- Illicit supply chains, particularly those that have existed for a long period of time, are often entrenched in an industry, and the communities that support them. Established criminal networks do not often “disappear”. Rather, they adapt operations to protect their criminal markets and ensure the illicit income stream continues. For example, they may have become more adept at hiding their activity and employing Mongolian nationals as the ‘face’ of the business; this has been the case in Ghana, which has faced similar challenges¹⁵⁰;
- The challenges of accessing the capital for assaying and buying services still exist, and thus, changers, who flit in and out of legal and illegal gold supply chains, are still a vital part of the ASGM sector, as well as a key route through which gold can enter China;
- A 2.5% tax rate is still costlier than paying no tax at all, enabling smuggling;
- Hong Kong officials have recently noted a significant increase in gold smuggling from mainland China.¹⁵¹ Hong Kong is often the route through which gold smuggled into China reaches the international market. Although China is a smuggling route for several gold-producing countries, including the Philippines, the price of gold is still relatively stable, meaning that it remains in steady demand internationally. Therefore, the appeal of continuing to smuggle gold from Mongolia is unlikely to have decreased, despite the tax reduction.

The role of these foreign buyers in the financing of illegal ASGM activities could also be significant, however this could not be examined in this study, and requires further research.

149 SGM20032017, 20 March, 2017

150 M. Hunter forthcoming

151 Lo 2016

6. Recommendations

This report on gold and financial flows linked to Mongolia's ASGM sector is important for informing practical strategies for tackling informality in ASGM. The formalisation of ASGM and the elimination of mercury usage go hand-in-hand. The GEF GOLD project will need to understand and take into account these obstacles in its work for its formalisation efforts and eventual introduction of mercury free technology to be successful. Some of the most important challenges are summarized in the Executive Summary.

Experience, including that in Mongolia, has shown options to introduce and maintain environmental compliance, specifically mercury-free technology, through pure voluntary compliance ("formalization-free") are unlikely to see long-term success.¹⁵² Rather, the implementation of technical environmental improvements requires a balanced combination of demonstrated feasibility, capacity building (both of ASMs and regulatory bodies), and realistic enforceable requirements for which the technology provides a solution.¹⁵³ Only through formalization is it possible such interventions will be effective.

With regards to mercury usage by ASGM, the informality of much of the sector can impede the delivery of trainings and the distribution of information materials to miners and processors, thus creating a knowledge vacuum in the sector about the dangers of mercury. It can also prevent authorities from adequately policing the use of mercury in mining communities and processing regions, and controlling its distribution.

The recommendations below, organized according to key point/challenges, provide a starting point for addressing obstacles to formalisation. The following key findings have resulted from this study of Mongolia's ASGM sector:

- 1) Conduct further investigations into the activities of soum governors to better understand their role in gold supply chains and financial flows linked to ASGM, identifying how they may be an obstacle or champion of formalisation efforts.***

Further investigation into the activities of soum governors would enable stakeholders to better understand financial flows and how soum governors may act as a barrier to formalisation efforts. Political and economic elites are often heavily invested in the informal ASM sector and may block efforts to eradicate the activity. If these elites do not see benefit in formalisation, they are likely to resist formalisation attempts. Attempts to cut out soum governors rather than engage them in solutions may risk ostracizing not only an influential actor, but also the communities they work with. Without adequate support, ASMs are unable to engage with formalisation efforts due to a reliance on more powerful actors who are more likely to be engaged in illicit activity.

- 2) Conduct further investigations into the role processing plants play in gold supply chains and financial flows, identifying potential vulnerabilities and how they may be leveraged to secure sustainable ASGM gold supply chains.***

152 Swiss Agency for Development and Cooperation (SDC) 2011

153 Swiss Agency for Development and Cooperation (SDC) 2011

Processing plants play an influential and critical role in Mongolia's ASGM sector. Interventions should examine financial arrangements (especially pre-financing) which involve processing plants and assess and appreciate how they shape ASGM supply chains and financial flows. Similar to soum governors, attempts to cut out processing plants rather than engaging with them in solutions may risk ostracizing not only an influential actor, but also the communities they work with. The complexity of the sector and related challenges will require the development of innovative, if not ideal, responses and interventions. For example, interventions could investigate the feasibility and potential benefits of partnering with or opening new processing plants across Mongolia. Increased accessibility to processing plants could draw in illegal ASMers. This would allow them to legalize their activities and may increase the incentive for ASMers to engage in formalisation efforts and adopt non-mercury technologies. While there are foreseeable obstacles, it may be a pragmatic approach to pulling gold supply chains and financial flows into the formal sector.

3) Develop and implement policies which focus on decentralization, seeking to engage with actors across the supply chain, including very upstream actors such as ASMers.

As illustrated in Figure 5 and Figure 6, (foreign) downstream actors engaging in illicit activity can easily engage in Mongolian ASGM gold supply chains at nearly any point, including at the mine site. As such, decentralization policies are necessary which engage with stakeholders all along the supply chain. Importantly, lessons learned from the experiences of other gold-producing countries which have worked to decentralize legal supply chains ought to be taken into account. There are significant challenges, including a lack of capacity and corruption, which may hamper (or even be counter-productive) to formalisation efforts.

4) Engage with local communities to understand the economic impacts of ASGM and potential effects formalisation on local economies.

ASGM can play an important role in poverty alleviation and economic development, especially in rural communities. Any attempt to formalize the sector must recognize the intrinsically intertwined nature of financial flows if it hopes to be successful without further marginalizing vulnerable populations. By mapping and assessing financial flows, it is possible to identify how and to what degree the ASGM sector is positively contributing to the economy. Engaging with the communities themselves is also very important. The nature of harm is subjective and there are no universal standards that can be applied. Thus, examining the impact and prioritising the question of harm is an exercise that needs to be shared with those experiencing it, with a view to enhancing their development prospects.

5) Engage with past and present initiatives active in Mongolia's ASGM sector.

Mongolia has been a focus of investment by many development agencies and initiatives which have been important in changing perceptions about ASGM within the country, and providing new examples of best practices to imitate such as the FRM. These groups have laid a solid foundation to build on efforts to formalise the sector, introduce new technology and reduce negative environmental impacts. To the greatest extent possible, interventions should work to engage with and build on these past initiatives.

7. Works Cited

- Aldama, Z. 2016. "Winners and losers in Mongolia's mining gold rush." *South China Morning Post*, 29 April.
- Alliance for Responsible Mining (ARM). 2016. *Our Impact: ARM's impact on artisanal and small-scale mining from 2014 to 2016*. Envigado: ARM. http://www.fairmined.org/wp-content/uploads/2016/08/Reporte-Uso-del-Premio_-ENG.compressed.pdf.
- Artisanal Gold Council. 2009. *Mercury Watch*. Accessed April 2017. <http://www.mercurywatch.org/Default.aspx?PaneName=DATABASE>.
- Cane, I., A. Schleger, S. Ali, D. Kemp, N. McIntyre, P. McKenna, A. Lechner, B. Dalaibuyan, K. Lahiri-Dutt, and N. Bulovic. 2015. *Responsible Mining in Mongolia: Enhancing Positive Engagement*. Brisbane: Sustainable Minerals Institute. Accessed May 2, 2017. <https://www.csr.mq.edu.au/publications/responsible-mining-in-mongolia-enhancing-positive-engagement>.
- Central Intelligence Agency (US). n.d. *Mongolia*. Accessed February 22, 2017. <https://www.cia.gov/library/publications/the-world-factbook/geos/mg.html>.
- Els, F. 2013. "Mongolia Working Hard to Avoid the Mistakes of 2009 with New Mining Law." *MINING.com*. 10 March. Accessed June 1, 2017. <http://www.mining.com/mongolia-working-hard-to-avoid-the-mistakes-of-2009-with-new-mining-law-40989/>.
- Fairmined. 2015. "Ecological Gold from Mongolia: Artisanal Miners Obtain Fairmined Certification ." 25 February. Accessed June 1, 2017. <http://www.fairmined.org/ecological-gold-mongolia-artisanal-miners-obtain-fairmined-certification/>.
- Global Initiative Against Transnational Organized Crime. 2016. *Global Initiative Against Transnational Organized Crime*. Accessed April 2017. <http://globalinitiative.net>.
- Gold Price. n.d. *Gold Price*. Accessed June 4, 2017. goldprice.org.
- Hruschka, F. P. 2015. *Comparative rapid assessment of ASM legalization and formalization strategies in nine countries of Africa, Asia and Latin America- preliminary draft for consultation*. ACT, Estelle Levin Limited and IPIS.
- Hunter, M., A. Smith, and E. Levin-Nally. 2017. *Follow the Money: Financial Flows linked to Artisanal and Small-Scale Mining*. Geneva; Cambridge: The Global Initiative Against Transnational Organised Crime; Estelle Levin Limited.
- Hunter, M. forthcoming. "ASGM in Ghana and Liberia." In *Illicit Financial Flows: Criminal Economies in West Africa*. Paris: OECD.
- Hunter, M. and A. Smith. 2017. *Follow the Money: Financial Flows linked to Artisanal and Small-Scale Gold Mining in Sierra Leone*. Geneva: The Global Initiative against Transnational Organized Crime, Estelle Levin Ltd.
- 2006, amended 2014. "Law on Minerals." Accessed June 1, 2017. <http://sam.datacom.mn/en/categories/3>.
- Lo, C. 2016. "Hong Kong customs officers detect rising trend of gold and silver bars being smuggled from mainland China." *South China Morning Post*, 5 September.

- Minerals Resources and Petroleum Authority (MPRAM). 2015. *"Gold" Program Baseline Report 2025*. Ulaanbaatar: MPRAM.
- Minerals Resources and Petroleum Authority of Mongolia (MRPAM). 2017. *The Annual Report 2016*. Ulaanbaatar: MRPAM.
- Ministry of Mining and Heavy Industry (MOMHI). 2017. "Press release: Ideology on draft law on Mining has been approved." 12 January.
- Mongolia Extractives Industries Transparency Initiative (MEITI). 2016. *Mongolia Tenth EITI Report 2015*. Ulaanbaatar: Mongolia EITI Secretariat.
- Mongolian Exporters' Association. 2015. *Policy recommendations on artisanal gold supply chain and its contribution to macroeconomic development*. Ulaanbaatar: SAM.
- Muff, R., and et al. 2012. *Gold in Mongolia - Overview of value chain from mine to fine gold jewelry*. Ulaanbaatar: Mineral Resources Authority of Mongolia.
- OECD. 2016. *OECD Due Diligence for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas: Third Edition*. Paris: OECD Publishing.
- Reitano, T. forthcoming. "Overview of criminal economies in illicit financial flows." In *Illicit Financial Flows: Criminal Economies in West Africa*. Paris: OECD and AfDB.
- Rolle, K. 2014. "The EU- Mongolia Economic Partnership: The Mining Sector and beyond." (European Institute for Asian Studies) 3.
- Rowat, A. 2012. "Ninja Mining in Mongolia's Far North." *Bloomberg*, 7 March.
- Sathananthan, D. and J. Rebert. 2016. "Asia Foundation Launches Frugal Rehabilitation Methodology for Small-Scale Mining in Mongolia." *The Asia Foundation*. 18 April. <https://asiafoundation.org/2016/04/18/asia-foundation-launches-frugal-rehabilitation-methodology-small-scale-mining-mongolia/>.
- Sindelar, D. 2009. "RadioFreeEurope/RadioLiberty." *Mongolian Democracy: From Post-Soviet Success To Post-Transition Struggle*. 9 December. https://www.rferl.org/a/Mongolian_Democracy_From_PostSoviet_Success_To_PostTransition_Struggle/1899808.html.
- Singo, P. 2012. *Analysis of formalization approaches in the artisanal and small-scale gold mining sector based on experiences in Ecuador, Mongolia, Peru, Tanzania and Uganda – Mongolia Case Study*. UNEP.
- Swiss Agency for Development and Cooperation (SDC). 2011. *SDC experiences with Formalization and Responsible Environmental Practices in Artisanal and Small-scale Gold Mining in Latin America and Asia (Mongolia)*. Bern: Swiss Agency for Development and Cooperation (SDC).
- Swiss Agency for Development and Cooperation (SDC). 2015. "Sustainable Artisanal Mining Project (SAM) Phase 4, 2015-2018."
- . 2016. "The Mongolian ASM National Federation's Journey." *Sustainable Mining Project*. Accessed June 1, 2017. <http://sam.mn/the-mongolian-asm-national-federation-s-journey/>.
- . 2016. *Where we work*. Accessed June 1, 2017. <http://sam.mn/where-we-work/>.
- The Asia Foundation. n.d. *Mongolia*. Accessed May 3, 2017. <http://asiafoundation.org/where-we-work/mongolia/>.
- The Asia Foundation. 2016. *Survey on Perceptions and Knowledge of Corruption: 2016 Survey*. The Asia Foundation.

- The Economist. 2006. "Battle for Mongolia's Soul." *The Economist*, 19 December.
- Transparency International. 2017. "Corruption Perceptions Index 2016." *Transparency International*. 25 January. Accessed June 4, 2017. https://www.transparency.org/news/feature/corruption_perceptions_index_2016.
- UNEP. 2013. *Global Mercury Assessment 2013: Sources, Emissions, Releases and Environmental Transport*. UNEP Chemicals Branch, Geneva, Switzerland: UNEP.
- UNEP. 2013. *Minamata Convention on Mercury*. Geneva: UNEP.
- UNIDO. 2008. *UNIDO Technical Guidelines on Mercury Management in Artisanal and Small-Scale Gold Mining*. Vienna: UNIDO.
- Urjinlhundev, P. 2014. *THE SMALL-SCALE MINING LEGAL FRAMEWORK*. Sustainable Artisanal Mining Project (SAM).
- Villegas, C., R Weinberg, E. Levin, and K. Hund. 2012. *ASM-PACE: A Global Solutions Study*. Gland; Cambridge: World Wildlife Fund; Estelle Levin Ltd. <http://www.estellelevin.com/wp-content/uploads/2013/11/Global-Solutions-Study.pdf>.
- World Bank . 2017. "Global Economic Prospects." Accessed May 4, 2017. <https://openknowledge.worldbank.org/bitstream/handle/10986/25823/9781464810169.pdf>.
- World Bank. 2017. *Land area* (sq. km). Accessed June 1, 2017. http://data.worldbank.org/indicator/AG.LND.TOTL.K2?year_high_desc=true&locations=MO.
- . 2017. *Mongolia: Overview*. 11 April. Accessed June 1, 2017. <http://www.worldbank.org/en/country/mongolia/overview>.
- World Gold Council. 2016. *Interactive gold mining map*. Accessed March 2017. <http://www.gold.org/gold-mining/where-gold-mining-occurs/interactive-gold-mining-map>.
- World Health Organization (WHO). n.d. "Mercury and health: Factsheet." *World Health Organization*. Accessed May 5, 2017. <http://www.who.int/mediacentre/factsheets/fs361/en/>.
- XE Currency Converter. n.d. *XE Currency Converter: USD to MNT*. Accessed June 4, 2017. <http://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=MNT>.
- Zoljargal, M. 2013. "Mongolia joins Minamata Convention on Mercury." *News Mongolia*, 18 October.

