USAID
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ISSUE BRIEF
ARTISANAL & SMALL-SCALE MINING: USAID ACTIVITIES & APPROACHES

USAID and its partners have invested over $140 million since 2014 to make the artisanal and small-scale mining sector more environmentally and socially responsible.

SUMMARY

This Issue Brief outlines the relationship between artisanal and small-scale mining and development, describes USAID's programs, highlights illustrative best practices, and shares key resources.

Approximately 40 million people worldwide work in artisanal and small-scale mining (ASM), which describes mining conducted by individuals, families, or groups using rudimentary and often non-mechanized processes to extract minerals or gems. An additional three to five times that number receive support from the ASM sector indirectly (Buxton, 2013; World Bank, 2019). Thus, more than 300 million people in more than 70 countries depend directly and indirectly on artisanal mining to provide for themselves and their families (Stocklin-Weinberg et. al 2019).

Accounting for approximately 20 percent of the world's production of gold, diamonds, tin, and tantalum, and 80 percent of colored gemstones, ASM is a major source of minerals for electronics, investment (in the case of gold), and jewelry (IGF, 2017). ASM has economic potential but also many challenges, such as environmental degradation; uneven distribution of benefits; conflicting claims to resource rights; illicit trade, armed conflict, corruption, human rights, and labor violations; and discriminatory practices. To

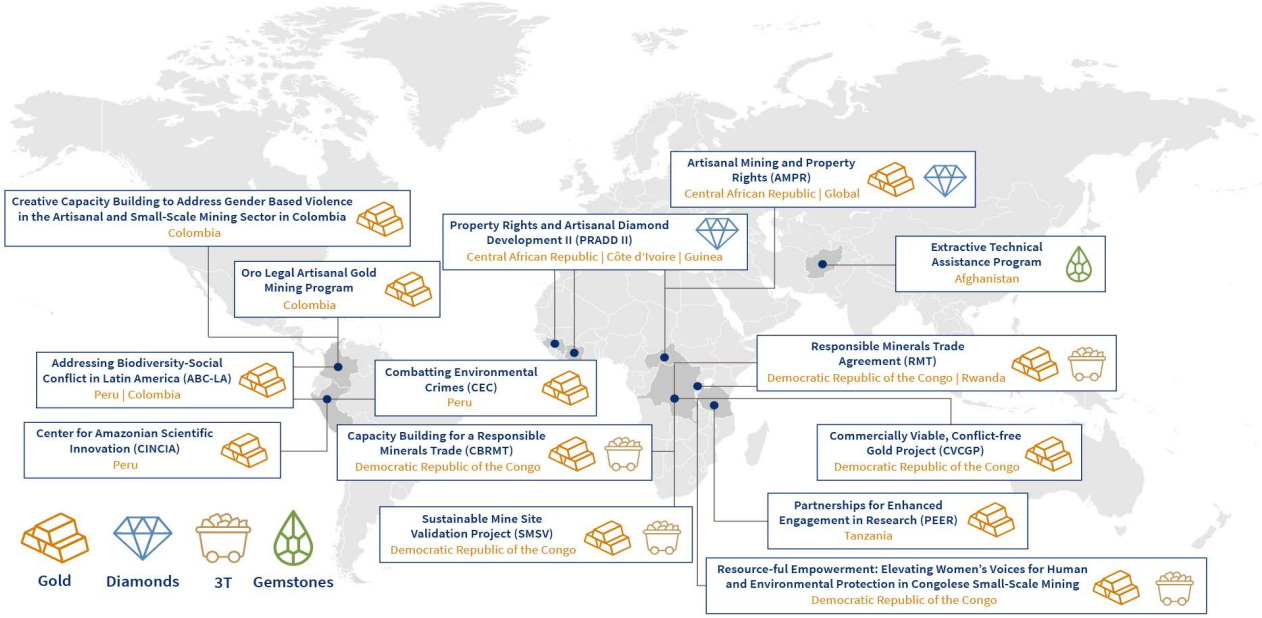
achieve its potential as a driver of sustainable social and economic development, the United States Agency for International Development (USAID) supports formalization and regulation of ASM.

Formalization of the ASM sector aims to ensure "responsible" artisanal minerals production and trade through transparency, due diligence, and compliance with legal frameworks. This includes the active management of risks such as avoidance of human rights abuses, financing of terrorism, money laundering, and public corruption (OECD 2016; RAGS Forum, 2018). A formalized and well-regulated ASM sector can be a powerful engine for economic growth for men and women and an important source of domestic resource mobilization for developing countries. Importantly, formalization can help address problems that sometimes characterize ASM, such as human rights abuses and the use of minerals to finance conflict, armed groups, criminal networks, and terrorist organizations (OECD, 2016).

> *"Formalization of the sector aims to assure 'responsible' artisanal mineral production and trade through transparency and due diligence."*
> —Responsible Artisanal Gold Solutions Forum 2018

USAID works with partner countries to formalize and regulate ASM gold; diamonds; tin, tantalum, and tungsten; and semi-precious stones. USAID programs foster ASM supply chains that are not only legal, but also environmentally and socially responsible. USAID is working closely with the US Departments of State, Labor, and Commerce; the US Geologic Survey (USGS); and the Environmental Protection Agency to tackle the complex array of ASM-related development challenges. Since 2014, USAID has implemented 14 projects with an ASM focus in Africa, Latin America, and Central Asia (see Figure 1 and Annex 1), and ASM is an integral component of at least four additional projects. USAID's ASM-related projects are cross-sectoral in nature and advance a variety of development goals, such as economic growth, women's economic empowerment, the environment, land tenure, governance, peace, justice, and human rights (see Figure 2 and Annex 2).

Figure 1. USAID Artisanal and Small-Scale Mining Activities (2014–2020)



In recognition of the permanent and growing nature of the ASM sector and the vital role it plays in the journey to self-reliance for millions of men and women, USAID continues to address ASM's development challenges. Through innovative solutions in partnership with the US Government (USG), civil society, and private sector partners, USAID is helping improve ASM, through respect of women's rights, rule of law, environmental considerations, property rights, peace, justice, security, and human and labor rights. A summary of ASM development challenges and corresponding programming considerations follows.

Figure 2. Artisanal Mining in the Journey to Self-Reliance

ASM PROGRAMS SHOULD RECOGNIZE THE FOLLOWING

- **ASM is here to stay.** Increasing global demand for minerals and the inability of governments to sideline the sector despite efforts throughout the decades mean that ASM will continue to be a development challenge—as well as an opportunity.
- **It is an important livelihood and driver of investment and employment.** In many developing countries, ASM is one of the most important sources of rural livelihoods and can play a positive role in poverty reduction efforts. It also generates more local investment and employment than most industrial mines.
- **Women play a key role.** Women comprise up to 50 percent of the ASM workforce, but their meaningful participation is constrained, and they often have little awareness of their rights.
- **Implementation of law, policy, and best practices often lags.** National and international legal and policy frameworks regulate the ASM sector, and numerous best practices and due diligence

systems have been developed. However, many countries struggle to implement regulatory systems due to poor design, lack of resources and lack of political will.

- **ASM can contribute to conflict.** ASM is often cited as a factor that sparks, escalates, or sustains conflicts, ranging from localized disputes to wars.
- **Illicit supply chains contribute to crime and corruption.** Illegal ASM supply chains are often tied to powerful elites and criminal networks. Illegal mining is estimated to be worth $12–$48 billion annually and is an easy and profitable way to launder money.
- **Labor and human rights abuses are common.** ASM often operates outside of the formal economy in remote areas with limited governance, making the sector particularly susceptible to labor and human rights abuses.

ASM PROGRAM DESIGN RECOMMENDATIONS

1. Employ an integrated approach that considers a broad range of development challenges and is based on a comprehensive understanding of ASM within the targeted region/country, including conflict dynamics, political economy assessment, and gender considerations.
2. Adopt a pragmatic, inclusive development approach that recognizes the ASM sector as an important livelihood and seeks to minimize social and environmental harm.
3. Support formalization of the sector in close coordination with and leveraging resources from key government, civil society, and private sector actors.
4. Pair efforts to increase compliance with national and international policy, law, and best practices, with support for mining communities (e.g., livelihood diversification).
5. Encourage all actors involved in the sector to implement and enforce laws to protect women's rights, the rule of law, and environmental compliance.
6. Favor participatory analysis and information sharing, engagement with key ministries, and strengthening of multi-stakeholder groups (government, private sector, and civil society).
7. Emphasize the prevention of mercury use over remediation.
8. Support actions that increase security of tenure and clarity between land rights and sub-surface mineral rights.
9. Analyze local conflict dynamics and existing dispute resolution systems and structures.
10. Engage directly and thoughtfully on issues of corruption and organized crime.

The remainder of this Issue Brief provides an overview of ASM's relationship to the aforementioned development challenges as well as strategies and opportunities for promoting responsible ASM.

ASM & ECONOMIC GROWTH

In many developing countries, ASM is one of the most important sources of rural livelihoods and can play a positive role in poverty reduction and tackling youth unemployment. USAID programs acknowledge the economic importance of ASM and emphasize adding value and helping diversify livelihoods.

The complex role played by ASM in national economies demonstrates the need for a nuanced perspective on the relationship between natural resources and development. ASM is one of the most indispensable—if not the most important—rural non-farm activity in the developing world. The ASM sector in many developing countries contributes an important stream of revenue for national

economies. In the Democratic Republic of the Congo (DRC), 382,000 artisanal miners across 2,700 mine sites produce a substantial proportion of that country's minerals (Feeney, 2010; IPIS 2019). In many cases ASM is far more lucrative that other livelihoods. For example, a cocoa farmer in Ghana can earn in two weeks from artisanal gold mining the equivalent of a whole year in cocoa (DeJong, 2019). In addition, ASM provides a desperately needed source of income for people living in the poorest and most isolated areas, magnifying the impact on local economies through its associated activities. Up to eighty percent of the value of ASM gold is paid locally, and ASM generates 15–20 times more employment than industrial mining. Associated economic activities make four times more people reliant on ASM than the actual number of miners worldwide (World Bank, 2008). Some scholars and international organizations point to the positive role of artisanal mining in poverty reduction, while others argue the evidence is mixed and that ASM it is not realizing its local economic development potential (Lahiri-Dutt, 2006; Tshakert, 2009; Hilson, G., & McQuilken, J. 2014).

ASM is a diverse sector, and challenges vary from region to region and often from site to site. People working in ASM are also diverse, ranging from those whose livelihoods rely on subsistence farming to skilled workers who migrate from urban areas in search of work—possibly with often unfulfilled hopes to "get rich quick" (IGF, 2017). Attempts to shift miners toward other livelihoods can be challenging. Many miners are migrants who may not have access to land or capital, and there may be limited employment opportunities in areas where mining is prevalent (IGF, 2017). Programs that acknowledge the economic importance of ASM and emphasize adding value, as well as programs that help miners supplement their income through farming, have shown positive results, with men and women investing in farm inputs from their mining and earning more revenue through gemstone cutting and polishing (IGF, 2017). For example, a USAID program in Côte d'Ivoire introduced beekeeping to help cashew farmers in diamond-mining communities increase yields and diversify their livelihoods away from a dependence on diamonds.

Whether a country harnesses its mineral wealth for inclusive economic growth or its mineral wealth leads to a downward spiral of corruption and violent conflict depends largely on good governance, including transparency and accountability (see section on ASM and Governance), and the relative strength of transnational criminal networks. In many countries, governments, private companies, and powerful non-state actors, including criminal networks and armed groups, use intimidation, violence, and corruption to acquire wealth and control over the minerals sector. In these cases, economic and other benefits are concentrated within a small minority of the population, while negative environmental, social, and economic impacts are borne by many. Over time, such a dynamic can seriously distort economic development at the national level. The problem is particularly severe in countries that suffer from a lack of government accountability to the public; a high level of complicity between the state, the private sector, and criminal networks; and weak systems of land and mineral administration.

> *"Capacity building interventions alone are insufficient and must take place within a viable market and supply chain structure."*
> —Responsible Artisanal Gold Solutions Forum 2018

In the face of these challenges, USAID programs have increased prosperity by bringing the ASM sector into the formal economy and ensuring that it is well-regulated, often in partnership with the private sector (see Table 1). USAID also provides technical assistance to improve the productivity of diamond and gold mining. This includes the provision of geological data to help miners pinpoint productive sites

and the introduction of adapted techniques to render ore processing more efficient. To ensure that miners receive fair value for their minerals, USAID has introduced diamond valuation training and tools and increased access to market information. USAID has also helped to maximize the economic value of former diamond sites, guiding their conversion to other uses, such as fish ponds or vegetable farms. Illustrative examples of USAID's approaches to furthering the role of artisanal mines in economic growth are outlined in Table 1 below.

Table 1. ASM & Economic Growth: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
Colombia	Bring artisanal and small-scale gold mining (ASGM) sector into the formal economy; diversify income sources.	Formalize operations; introduce alternative income-generating activities (e.g., beekeeping and the cultivation of annatto [a natural dye]).	42 mining operations formalized $110 million of legal gold sales facilitated $8 million of domestic resources mobilized
CAR	Prepare communities for when gold and diamond reserves become exhausted.	Encourage economic diversification in mining areas, including transforming exhausted mines into fish ponds.	Nearly 800 fishponds created between 2010 and 2012; all still operational in 2020.
Côte d'Ivoire, DRC	Incentivize formalization and work with new buyer.	Improve diamond production; increase gold recovery.	Highest rates of diamond exports captured at mine-site level in CDI (66%) Miners in DRC acquired skills in more efficient, mechanized ore processing

ASM, GENDER & WOMEN'S ECONOMIC EMPOWERMENT

Women comprise up to 50 percent of the ASM workforce but often face significant obstacles and have little awareness of their rights. USAID programs aim to increase awareness and support of women's rights in artisanal mining.

The role of women in ASM is significant; they comprise as much as 50 percent of the workforce in some regions and serve in a wide variety of roles (IISD, 2018; World Bank, 2019). The sector draws women in part because of its "relative ease of entry in comparison to other sectors: it requires virtually no formal education or skills, and little or no capital" (Hayes & Perks, 2012). Women perform a range of tasks in the sector, including crushing, washing, panning, sieving, and sorting (IISD, 2018). Women are also active in the provision of goods (e.g., food and drink, artisanal equipment, and cell phones) and services (e.g., transporting dirt and water, cleaning, and doing laundry) in mining areas (IISD, 2018). Women are also assuming leadership roles in mining cooperatives and women's mining advocacy networks, and there are examples of women serving as negotiators, mine managers, financiers, and traders.

However, women often face enormous obstacles in finding safe and non-exploitative opportunities and have a very limited awareness of their rights. Women face a host of discriminatory practices in the ASM sector. Cultural beliefs and practices can limit women's access to

> *"By enhancing gender equity and equality within ASM, the sector can spur social transformations to achieve poverty reduction, inclusive growth and sustainable development."*
>
> — IISD 2019

minerals; mining laws can be misapplied to exclude women from mine sites. Most women are given lower status tasks that are physically difficult but pay much less than their male counterparts. Differential access to credit limits women's ability to purchase the necessary equipment to mine, while information asymmetry limits women's awareness of their rights and the value of the minerals they mine. The risk of gender-based violence (GBV) in and around mine sites and lack of appropriate sanitation facilities and childcare options can further inhibit women's participation in the sector (World Bank, 2019). Some women are the victims of trafficking, forced labor, and sexual exploitation. USAID integrates gender and women's empowerment considerations into its ASM activities through gender analysis, participatory action plans, awareness raising, and advocacy. Impacts include increased protection of women's rights, health, and safety; integration of women miners into meaningful roles within cooperatives; and improved economic well-being of women in the mining sector.

Table 2. ASM & Women's Empowerment: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
Colombia	Address GBV in mining communities.	Use a movement-building approach and create safe spaces for women to identify specific GBV challenges and build solutions and advocate for change collectively.	Social and economic GBV addressed in mining standards and policies.
Côte d'Ivoire	Improve livelihoods of women in mining communities.	Support 22 women's groups to secure land rights on abandoned diamond sites, which women rehabilitated for horticultural production.	Nearly 100 tons of food crops produced and over $50,000 in revenue generated.
DRC	Increase awareness of women's rights in mining.	Use participatory theater as a catalyst for dialogue and training for cooperatives.	Changes in awareness and attitudes about women's role in mining.

ASM GOVERNANCE

International, regional, and national policy frameworks provide guidance on international best practices. Through a coordinated approach, USAID helps to improve ASM governance via policy change, miner registration, due diligence and traceability initiatives, and mine site validation.

INTERNATIONAL LAWS IMPACTING ASM TRADE

The Kimberley Process (Diamonds): Public outcry over "blood diamonds" led to the establishment of the Kimberley Process Certification Scheme (KPCS) in 2003, a certification system aimed at regulating and monitoring the diamond supply chain to combat the trade in diamonds used to finance rebel groups seeking to undermine legitimate governments. The US Clean Diamond Trade Act of 2003 authorized technical assistance to exporting countries to align with the scheme. In close coordination with the US Department of State, USAID supports development projects to improve the diamond supply chain and enhance compliance with the KPCS. USAID participates in the Working Group on Alluvial and Artisanal Production of the KP and working groups and provides technical input to the U.S. government KP delegations. USAID helped launch the Washington Declaration Diagnostic Framework, a standard to

assess countries' artisanal diamond mining practices, and thereby encourage formalization (Kimberly Process, 2020).

US Conflict Minerals Legislation (Tin, Tantalum, Tungsten, and Gold): A decade after the launching of the Kimberley Process (KP), international concern over reports that revenue from ASM was financing armed groups and contributing to widespread violence and human rights abuses in Eastern DRC led to the addition of Section 1502 to the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. The act (commonly referred to as "the US conflict minerals legislation") requires US-listed companies to disclose publicly where they source their minerals, under potential penalty for non-compliance as enforced by the Securities and Exchange Commission (SEC). Currently, US-listed companies that source tantalum, tungsten, tin, and/or gold from the DRC and neighboring countries and claim their products are "conflict-free" must submit an annual third-party audited report to the SEC (United States Security and Exchange Commission, 2010). USAID programs in the DRC and Rwanda helped establish conflict-free supply chains that are compliant with the Act.

European Union Conflict Minerals Legislation (Tin, Tantalum, Tungsten, and Gold): Based on the Organization for Economic Cooperation and Development (OECD) Due Diligence Guidelines, which in turn was influenced by the US conflict minerals legislation, the European Union (EU) passed legislation in 2017 that will enter into force on January 1, 2021. The EU's conflict minerals legislation covers the same minerals—tin, tantalum, tungsten, and gold—but is global in scope and will apply to all conflict-affected and high-risk areas around the world (OECD, 2019).

The Minamata Convention on Mercury (Gold): The Minamata Convention on Mercury, adopted in 2013 and entered into force in 2017, is a global treaty that aims to "protect the human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds" (Article 1, Minamata Convention). The Convention requires that party countries reduce, and where feasible eliminate, the use of mercury in ASGM, and control its release and emission into air, land, and water. Article 7 of the Convention calls upon countries to develop ASGM National Action Plans (NAPs) that articulate steps to facilitate the formalization or regulation of the ASGM sector, including strategies to promote mercury-free gold extraction methods and address related environmental and health concerns. Requirements for developing ASGM NAP's are outlined in Annex C of the Minamata Convention text. See the section on ASM and the Environment for more information on mercury in ASGM.

In addition to these international laws, countries often also have national-level policies and frameworks governing ASM. Unfortunately, such laws risk treating ASM as smaller versions of industrial mines rather than tailoring requirements to miners' realities. Further, as noted in the ASM and Land Tenure section, some statutory policies may contradict customary laws governing resource use. USAID has helped inform land and mining policies through participatory policy analysis, coordinated advocacy, and applied systems, such as those described below.

DUE DILIGENCE AND TRACEABILITY SYSTEMS

Due diligence guidance and traceability systems help governments, companies, and civil society identify and manage risks associated with ASM. International due diligence standards establish strict criteria for responsible (or "conflict-free") minerals. Adherence to standards is monitored through traceability systems that trace minerals from mine site to final point of sale. The most widely used international due diligence framework is the OECD's *Due Diligence Guidance for Responsible Supply Chains of Minerals from*

Conflict-Affected and High-Risk Areas (2019). OECD's Due Diligence Guidance helps companies identify and address supply chain risks. It provides guidance to companies on how to identify and manage risks throughout the mineral supply chain. The five-step process requires companies to adopt a responsible minerals policy, identify and assess risks in the supply chain, manage risks, conduct an audit, and publicly report due diligence efforts (OECD, 2019). The OECD's *Supplement on Gold* offers guidance on supply chain due diligence of gold from conflict-affected and high-risk areas (OECD, 2012). In addition to the OECD, industry due diligence standards include those from the London Bullion Market Association (LMBA), the Responsible Minerals Initiative, and the Responsible Jewelry Council. USAID, along with other USG Departments and Agencies, attends the OECD's annual Forum on Responsible Mineral Supply Chains and contributes to global discussions on due diligence and new guidance documents.

Figure 3. Illustrative Due Diligence & Traceability Standards

Fairmined. An assurance label that certifies gold from empowered responsible artisanal and small-scale mining organizations, transforming mining into an active force for good and ensuring social development and environmental protection (see https://www.fairmined.org/).

CRAFT. A code of risk-mitigation for artisanal and small-scale mining engaging in formal trade helps miners to assess critical social and environmental risks in artisanal supply chains and demonstrates conformity with the requirements of global markets (see https://www.resolve.ngo/craft.htm).

USAID is facilitating the validation of mine sites as "conflict-free" through multi-stakeholder governance structures and independent audits to ensure that sites comply with international and national due diligence standards. Furthermore, USAID is supporting traceability systems that adhere to international and national laws, while also adapting to the minerals and the contexts where ASM occurs. USAID is also testing sustainable models for scaling up due diligence and traceability initiatives. Examples of two due diligence and traceability standards can be found in Figure 3.

MULTI-STAKEHOLDER FORUMS

Multi-stakeholder forums are critical to USAID's approach to ASM and helps ensure that USAID investments are aligned with civil society and industry concerns. Two forums supported by USAID are the Public Private Alliance (PPA) for Responsible Minerals Trade and the Responsible Artisanal Gold Solutions (RAGS) Forum, both chaired by Resolve. The PPA is a multi-sector initiative between leaders in civil society, industry, and the USG that supports projects in the DRC and the surrounding Great Lakes Region of Central Africa that improve the due diligence and governance systems needed for ethical supply chains. The RAGS Forum is a multi-stakeholder, public-private partnership to address critical barriers to a legitimate artisanal gold trade in the African Great Lakes Region. In addition to these international forums, country-level resources are leveraged through coordination with industry, government, donor, and civil society partners through coordinating bodies, which are often co-chaired by USAID.

"In a subject area as sensitive as conflict diamonds, the coordination between the political and technical levels…is a model of effective governance programming."
— USAID's PRADD II Program Final Report

USAID employs a systems approach to policy change, developing functioning institutions that can effectively carry out the roles and responsibilities required by a responsible mineral supply chain. Success at the policy level has been achieved through participatory analysis and information sharing, engagement with key ministries, and strengthening multi-stakeholder groups (government, private sector, and civil society). USAID's projects conduct policy analyses and provide ASM-related recommendations to improve mining codes. Applied skill-building targets mining cooperatives, line ministries, civil society organizations, and community-based organizations. Trainings cover such topics as international and national mining laws, due diligence and traceability systems, environmental health and safety, financial management, cooperative leadership, mercury reduction techniques, mineral identification, and valuation techniques.

Table 3. ASM & Governance: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
Afghanistan	Increase oversight of mining by Afghan government.	Train the Afghanistan Geological Survey (AGS).	AGS playing a greater role in monitoring and assessing ASM
Afghanistan, CAR, Colombia, Côte d'Ivoire, DRC	Protect rights of mining communities.	Conduct rigorous participatory research and analysis. Strengthen role and capacity of mining communities to influence policy change.	Changes in mining codes and land laws include health, environment, and safety laws and regulations and ensure the prevention of incidents.
Colombia, CAR, Côte d'Ivoire, and DRC	Enhance informal compliance with international and national mining law.	Support responsible mineral sourcing initiatives, including due diligence and traceability systems.	Successful formalization pilots demonstrate ability to adhere to international due diligence requirements.
CAR, Côte d'Ivoire, DRC	Leverage partnerships to improve governance.	Conduct country-level diplomatic engagement with close coordination with USG, and donors, private sector, donor, and diplomatic stakeholders.	Political issues blocking technical progress are resolved, private sector funding is leveraged, and duplication of efforts is minimized.
CAR, Côte d'Ivoire, DRC	Strengthen chain of custody.	Validate mine sites as meeting due diligence standards. Record mining claims in registries and other databases.	315 artisanal mine sites in the Eastern Congo are validated as conflict-free and legally registered. Legal diamond exports in the CAR increased by 450 percent between 2010 and 2012.

ASM & THE ENVIRONMENT

Artisanal and small-scale gold mining is the largest source of mercury pollution in the world and, in some countries, threatens critical forest landscapes. USAID activities aim to prevent the use of mercury and to protect and restore landscapes. In non-protected areas, USAID incentivizes land reclamation for farming through land tenure clarification and technical assistance.

MERCURY

Mercury-dependent artisanal gold mining is the largest source of mercury pollution globally and accounts for 38 percent of total anthropogenic emissions of mercury (UNEP, 2018; Esdaile & Chalker, 2018). According to the National Institutes of Health, between 10 and 19 million people, including children, use mercury to mine for gold in more than 70 countries, resulting in significant health impacts (Esdaile & Chalker, 2018). Mercury contamination stemming from widespread mercury use in ASGM has raised serious concerns over human and environmental health in the Amazon Basin and the gold producing countries of West Africa. Methyl mercury, the more biohazardous form of mercury, bioaccumulates in the food chain and has been documented at high levels in people and wildlife near mines, in indigenous peoples far from active mining areas in the Amazon Basin, and in fish and wildlife as far away as the Arctic, where breeding bird populations may be declining due to elevated mercury deposition. In addition to global transport of mercury, contamination can impact large areas downwind and downstream from mines and processing centers. Even small periods of exposure can cause negative health effects in children; mercury's impacts are particularly severe for the developing fetus in women who are exposed while pregnant.

USAID's Sector Environmental Guidelines on Mining emphasize prevention of mercury use rather than remediation. Remediation is expensive—in some cases not financially feasible—and less effective overall. For example, instead of focusing on removing mercury from the surrounding environment, activity managers should emphasize methods that avoid mercury in the first place, which is often reflected in the country's ASGM NAP. Moreover, mercury capture devices are an effective interim solution for preventing mercury emissions until mercury-alternative technologies can be adopted (EPA, 2019), although these devices have not been successfully adopted on a wide scale in ASM communities. See section on ASM and Governance for more information on the Minamata Convention on Mercury and NAPs.

Since ASGM often occurs outside of the formal economy, regulating mercury use is challenging. USAID programs have supported efforts to improve research and monitoring of mercury contamination, reduce mercury use in mining, formalize the ASM sector, enforce national laws, introduce mercury-free technologies, address environmental degradation, and combat the criminality of ASM.

BIODIVERSITY CONSERVATION

Encroachment of artisanal mining within protected areas is permanently transforming critical forest landscapes into highly degraded areas. Illegal and unregulated ASM is the leading cause of deforestation in many biodiverse areas in Africa and Latin America. The extent of biodiversity impacts from ASM depend on the type of mining and the area in which it occurs. Some communities have practiced local small-scale mining for generations with minor local impacts. Other regions, such as the Madre de Dios in

Peru and highly biodiverse regions of Colombia, the Congo Basin, and West Africa have experienced widespread devastation of primary tropical forests, with illegal alluvial gold mining serving as a key driver of deforestation. This can either be directly contributing to deforestation or indirect through the opening of new roads and an influx of a population that then proceeds to destroy more forest for crops and other activities.

ASM impacts on waterways is also severe as it often occurs in alluvial gold and diamond deposits in and along rivers through use of open pit digging and simple stream dredging techniques. As a result of the mining operation, the land is severely altered. Massive amounts of sediment are released into waterways from alluvial mining, negatively affecting freshwater fish populations. Sediment plumes can impact rivers for many miles downstream and may also affect estuaries and coral reefs. Impacts on biodiversity from ASM range from local habitat destruction or degradation to watershed-scale impacts from pollution and global lethal and sub-lethal effects of mercury bioaccumulation.

USAID is supporting research to determine the best methods for reforestation of lands degraded by mining, strengthening the systems for prosecution of environmental crimes, and partnering with indigenous and civil society organizations to serve as effective watchdogs. Techniques are also being shared to enforce laws against mining in protected areas; bench terracing mining with backfilling to reduce environmental impacts; and reforestation of exhausted mine sites.

Table 4. ASM & the Environment: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
Colombia	Address impunity for environmental crimes.	Strengthen judiciary system and partner with indigenous and civil society organizations.	Oversight by civil society and indigenous organizations increased.
DRC	Help mining cooperatives implement environmental guidelines.	Develop and pilot a simplified environmental assessment approach.	Measures taken to prevent degradation and loss of soil, damage to water resources, and avoid or mitigate deforestation.
Peru	Advance scientific capacity and promote better data on mercury contamination.	Peruvian and US research organizations establish the first mercury analysis laboratory in the Peruvian Amazon.	Data on and awareness of mercury contamination of rivers, wildlife, and human communities increased.
Guinea, Côte d'Ivoire, Liberia, CAR	Rehabilitate diamond mine sites.	Supported a bench terracing technique (SMARTER mining).	Quick recolonization of native plant species in the area.

ASM & LAND TENURE

Security of tenure and clarity between land rights and sub-surface mineral rights is a basic requirement for building responsible mineral supply chains. USAID activities enhance resource tenure security.

Rights to exploit mineral resources can be a source of contention; for example, a lack of clarity on rights to surface versus sub-surface resources can lead to tensions within ASM communities and between ASM and large-scale mining operations. Laws on mining often vest all sub-surface with the government, without addressing how existing rights to surface resources (land, trees, and water) may be

harmonized with the state's right to allocate mineral concessions. Because of the profitable nature of the minerals sector, government institutions may follow mining laws while ignoring land tenure, forestry, labor, and other laws. Mining codes often stipulate payment of compensation or require environmental remediation, but these measures are not enforced.

In many countries, the central problem is that a "bundle of rights" exists on the land: complex and overlapping rights to land, trees, and water resources often derived from long-held historical claims. The central problem is that these rights frequently clash with those companies and individuals holding sub-surface property rights. Statutory and customary land tenure systems are not harmonized; customary systems may grant traditional landowners the authority to allocate land and sub-surface mineral rights, but there may be a lack of clarity on how national laws interact with these customary systems. For this reason, artisanal and small-scale miners often face tenure insecurity. To further compound confusions, governments often grant overlapping exploration rights for mineral and natural resources. In situations where neither government nor traditional authorities enforce rules governing access to sub-surface resources, a free-for-all ensues whereby the most powerful dominate. Boundaries of mine sites are sometimes ill-defined and poorly defended, and artisanal miners encroach upon concessions of diamond and gold mining companies with growing frequency.

"Participatory research, social dialogue, and local development plans can clarify resource ownership and rules."
— USAID's PRADD Program

Security of tenure is a basic requirement for the stability of a responsible mineral supply chain and likewise for successful mining companies. Clear tenure lowers the risk of investment for mining companies while improving the legal status of artisanal miners. When an artisanal miner's rights to prospect and dig for diamonds are formal and secure, he or she is more likely to sell through legal channels, enabling the government to track the origin of diamonds and gold. In turn, increasing profits and legal sales is a precondition for attracting investors. USAID activities enhance resource tenure security by recording mining claims in registries and other databases, facilitating legal access to minerals (including through the designation of specific ASM mining areas), strengthening land policies, clarifying claims through village demarcation and participatory mapping, leveraging the private sector to address tensions between ASM and large-scale mining, and supporting the formalization of artisanal mining on large-scale concessions.

Table 5. ASM & Land Tenure: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
CAR and Guinea	Secure public records such as mineral concessions, contracts, titles, and production figures.	Record and digitize mining claims.	Digitized records provided back-up to paper copies in case of destruction or loss during conflict.
Côte d'Ivoire	Clarify boundaries to address minerals conflicts.	Facilitate village-level land use planning and demarcation between mining areas and other uses.	Plans endorsed by state authorities and rules are codified in zoning decisions and by local institutions.
Côte d'Ivoire, CAR, DRC	Secure resource rights and provide basis for compensation and restitution.	Record use rights of artisanal and small-scale miners and local landholders and access rights to common pool resources.	The responsibilities and long-term use rights to the land from which minerals are extracted are refined and documented.

ASM & CONFLICT

ASM is often cited as a factor that sparks, escalates, or sustains conflicts. USAID's activities seek to reduce conflict through analyzing conflict, strengthening dispute resolution, supporting social cohesion, and ensuring that revenue from responsible mineral supply chains does not finance armed groups.

> *"Conflict programming must be rooted in local dynamics if it is to be effective."*
>
> — USAID 2012

Valuable minerals can finance conflict, catalyze disputes, and increase vulnerability and corruption, which in turn can open the door to violence. The ASM sector is often cited as a factor that starts, escalates, and sustains conflict, with mineral sales having long been an important source of revenue for governments, militias, and warlords to purchase arms. Three African civil wars of the 1990s and early 2000s were largely fueled by insurgent forces who used the artisanal mining sector to pay for arms and ammunition (Human Rights Watch, 2009; Prunier, 2011). Artisanal diamond, gold, coltan, and tungsten mining has contributed to the financing of conflicts in countries like Liberia, Sierra Leone, Angola, CAR and DRC. ASM can also foster violence without igniting full-scale civil war. Lower-scale conflicts include tensions between land rights holders and artisanal miners (especially when the miners are migrants) over mineral claims, disagreements between large-scale concessions and surrounding artisanal miners, and tensions between miners and non-miners.

When communities possess well-established statutory and/or customary land rights, the presence of mineral resources does not necessarily undermine social harmony. Case studies of artisanal mining in West and Central Africa illustrate how local communities can extract rent from outsiders or demand other forms of compensation for the use of the land. USAID facilitates research of resource rights conflicts, supports data gathering (including mapping of resource conflicts), supports independent dispute resolution mechanisms, strengthens the capacity of institutions to resolve disputes, catalyzes behavior change through outreach and communications strategies, and supports inter-group dialogue between key stakeholders.

Table 6. ASM & Conflict: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
CAR	Reduce tensions and conflicts between contending forces in zone.	Peace and reconciliation committees negotiate "Local Pacts," or conventions.	Initiatives taken by local communities to rebuild trust and confidence codified.
Colombia	Resolve conflict between miners and title holders.	Strengthen governance through formalization model.	Culture of legality promoted.
Côte d'Ivoire	Reduce disputes at the community level.	Conduct participatory mapping and social dialogue.	Measures for "clean," conflict-free diamond supply chains enhanced.
DRC	Cut off an important source of income for armed groups. Establish conflict-free supply chains.	Support the Government of the DRC to designate eligible mine sites as conflict-free. Pilot a new due diligence and traceability system.	In 2018, approx. 15,800 tons of tin and tantalum worth over $285M legally exported from validated conflict-free mine sites. First export made of artisanal gold to meet LBMA due diligence standards.

ASM & CRIME

Illegal ASM is often tied to powerful individuals with vested interests. Illegal mining is estimated to be worth $12–$48 billion annually and is the easiest and most profitable way to launder money. USAID supports formalization efforts to reduce fraud and increase transparency within the sector.

Illegal mining is estimated to be worth $12–$48 billion annually—more than double the estimated value of illegal wildlife trafficking (May, 2017). In addition to often being a crime in and of itself, the exploitation of natural resources is a lucrative source of financing for transnational criminal organizations, terrorist organizations, and insurgent groups. Estimated to be more valuable than cocaine trafficking, illegal gold mining in nine Latin American countries is worth approximately $7 billion each year (May, 2017).

The trade and export of ASM production is an effective vehicle for money laundering, transfer pricing and tax evasion. The minerals are used to hide the origin of the dirty funds or to transfer large sums of money outside the formal banking system. In Afghanistan, extractives are the second-largest source of revenue for the Taliban after narcotics; annual revenue from illegal mining is estimated to be between $200 and $300 million a year—at least 300 times more than reported government revenues from licensed mineral extraction (USIP, 2017).

The US signed a memorandum of understanding (MOU) with Peru in 2017 to increase cooperation on small-scale gold mining and promote strong bilateral partnership on shared priorities. As a part of this initiative, USAID is promoting a national framework in Peru on environmental crimes. In 2018, the United States signed an MOU with Colombia to combat illegal gold mining that damages the environment, harms human health, and funds transnational criminal organizations.

USAID is furthering the development of responsible mineral supply chains through formalization of the ASM sector. ASM formalization is the process of collaborative rule-setting and rule enforcement across supply chain actors, governments, and communities with the aim of enabling ASM to contribute to local and national peace and prosperity, both now and for future generations (DeJong, 2018). Formalization includes a range of interventions: labor and environmental compliance, mine site validation, traceability, due diligence, certification systems, establishment of mining organizations, and development of legal/responsible supply chains. ASM formalization necessitates engaging and collaborating with law enforcement or diplomats to address organized crime and vested political interests. Research on fraud and the root causes of smuggling is shared with officials to catalyze action to address criminality. This helps to address criminality deeply embedded in economies, making them less attractive environments for outside transnational criminal organizations who otherwise risk capturing supply chains.

> *"Political economy considerations are critical when seeking to address organized crime. Efforts to strengthen accountability may quickly stall if those involved have a strong stake in the status quo."*
> — USAID 2019

Table 7. ASM & Crime: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
CAR, Côte d'Ivoire	Identify barriers to meeting the KP Operational Framework.	Complete a rigorous and participatory diamond fraud diagnosis on the root causes of smuggling.	Government commitment secured to address fraud.
Côte d'Ivoire	Ensure compliance with the KP Operational Framework.	Organize workshops on specific law enforcement challenges.	Trust, communication, and coordination established between the political and technical level to collectively address fraud.
Peru	Reduce environmental crimes.	Develop and promote a national framework on environmental crimes. Bring miners into the formal economic sector.	Negative impacts of extractive industries reduced.

ASM & HUMAN RIGHTS

ASM often operates outside of the formal economy in remote areas with limited governance, making the sector particularly susceptible to human rights abuses. In partnership with the US Department of State, USAID promotes citizen-responsive governance and protection of rights for security and prosperity.

ASM activities are largely concentrated in areas with limited governance, making them more suspectable to human rights abuses (STRADE, 2018). ASM communities with unstable or unsafe mining operations, a transient mining workforce, or shifting market forces may be more vulnerable. Human rights issues may include violation of labor rights, discriminatory practices in access to land and minerals, human trafficking, or hazardous working conditions, and might be particularly acute for women, children, and indigenous peoples. Labor rights violations encompass unpaid or underpaid employment, forced labor, child labor, and unsafe working conditions. Discriminatory practices may not only favor men over women, but may also privilege the rights of some ethnic or geographic groups over others. Mining practices may ignore the rights of indigenous groups or migrants to protect their forested land or mine minerals, and favor the interests of wealthier groups, including large-scale mining companies, powerful elites, and in some cases, organized crime networks. Hazardous working conditions may involve mining in deep tunnels where oxygen levels can be dangerously low; mining in conditions with high risk of landslides; and ferrying excessively heavy loads. Forced labor is "all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily" (ILO, 1930; ILO, 1999). Some men and women are lured to mine sites with the promise of good wages and are subsequently forced to relinquish their meager pay to reimburse the equipment, food, and lodging for their work.

Child labor can be a serious problem in local, small-scale mining operations worldwide. Children may be involved in virtually all stages of ASM and its supply chains. Child labor in mining is a "worst form of child labor" under ILO Convention No. 182 (USDOL, 2018). In 2005, the ILO estimated that more than one million children were engaged in gold artisanal mining (ILO 2005). These children incur developmental and excessive occupational and environmental risks from working with heavy loads and toxicants. Children engaged in ASM often work long hours and are exposed to dangerous tools, hazardous

substances, toxic gases, explosives, and dangerous chemicals such as nitric acid. The DOL's current list of goods and products produced by child labor include more than 15 minerals and gemstones from 30 countries (USDOL, 2018).

Human trafficking involves the recruitment, transportation, transfer, harboring, or receipt of persons through force, fraud, or coercion for the purposes of exploitation in forced labor or commercial sexual exploitation (USAID, 2019). Women can fall victim to sex trafficking particularly in rural areas controlled by guerrilla, paramilitary, and narco-trafficking groups (GIATOC, 2016). USAID confirmed its commitment to addressing and preventing sexual exploitation, abuse, and harassment by joining other donors in endorsing OECD's Recommendation on Ending Sexual Exploitation, Abuse, and Harassment in Development Co-operation and Humanitarian Assistance.

> *"Incorporate anti-trafficking measures into conflict-free certification processes."*
> — USAID 2014

In partnership with the US Department of State, USAID promotes citizen-responsive governance and protection of rights for security and prosperity (USDOS & USAID, 2018). Through formalization initiatives, USAID is helping countries pilot due diligence initiatives that address human rights considerations. These combined efforts promote a rights-based approach to mining. As a part of its Countering Trafficking in Persons (C-TIP) Policy, USAID conducts Trafficking in Persons assessments and integrates recommendations into projects, including ASM projects. Activities also seek to leverage community-based organizations to identify, report, and address possible cases of human trafficking. USAID supports efforts in accordance with the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests, which includes a provision to, "protect indigenous peoples against un-authorized use of their land, fisheries, and forests" (FAO, 2012). See Table 7 for illustrative USAID activities to protect human rights in the ASM sector.

Table 8. ASM & Human Rights: Illustrative USAID Approaches & Impacts

COUNTRY	OBJECTIVES	APPROACHES	IMPACTS
Global	Prevent and reduce human trafficking.	Conduct Trafficking in Persons assessment and propose measures.	Trafficking in Persons analysis informs responsible sourcing initiatives.
Peru	Address exploitative practices, including human trafficking.	Supported Ministry of Justice to publish a "Public Defense Action Guide" to improve technical knowledge of public defenders to better serve victims.	400 Trafficking in Persons care providers trained and individualized legal and psychological support provided to 195 victims.
Colombia, Peru	Elevate the voices of indigenous populations in land use decision-making. Protect indigenous lands and resource rights.	Support national and regional government efforts to prevent and combat illegal mining in indigenous lands.	Participation of indigenous groups in gold mining formalization increased. Measures taken to reduce illegal mining.
DRC	Apply a rights-based approach to formalization.	Carry out a mine site validation process	Only sites meeting rigorous human rights standards are validated as "green" and can export minerals through responsible supply chains.

CONCLUSION

In recognition of the permanent and growing nature of the ASM sector and the vital role it plays in the journey to self-reliance for millions of men and women, USAID continues to address ASM's development challenges. Through innovative solutions in partnership with USG, civil society, and private sector partners, USAID is helping improve ASM, through the respect of women's rights, the rule of law, environmental considerations, property rights, peace, justice, security, and human and labor rights.

Formalization is an ongoing process of reconciling legality with legitimacy (DeJong, 2018). ASM is likely to increase given climate change impacts on other rural livelihoods, employment challenges, and ongoing demand for minerals. A coordinated, process-driven, and multidisciplinary approach is needed to ensure ASM's challenges are minimized and opportunities for long-term growth are captured. In the context of self-reliance, ASM is a tremendous opportunity if given the right conditions and support.

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Annex 1. Overview of Recent and Current USAID Artisanal and Small-Scale Mining Activities (2014–2020)

PROJECT	COUNTRIES	MINERALS	VALUE (USD)	YEARS
Addressing Biodiversity-Social Conflict in Latin America (ABC-LA)	Peru, Colombia	Gold	$1.3M	2013-2016
Artisanal Mining and Property Rights (AMPR)	CAR + Global	Diamonds, Gold	$6M	2018-2023
Capacity Building for a Responsible Minerals Trade (CBRMT)	DRC	3TG	$14M	2014-2018
Center for Amazonian Scientific Innovation (CINCIA)	Peru	Gold	$12.5M	2019-2021
Combatting Environmental Crimes (CEC)	Peru	Gold	$24M	2019-2024
Commercially Viable, Conflict-free Gold (CVCG)	DRC	Gold	$11.9M	2019-2024
Creative Capacity Building to Address Gender Based Violence in the Artisanal and Small-Scale Mining Sector	Colombia	Gold	TBD	2020-2022
IOM Responsible Minerals Trade (RMT)	DRC, Rwanda	3TG	$10.8	2012-2018
Artisanal Gold Mining Environmental Impact Reduction (Oro Legal)	Colombia	Gold	$20M	2015-2020
Partnerships for Enhanced Engagement in Research (PEER)	Tanzania	Gold	$207K	2017-2020
Property Rights and Artisanal Diamond Development II (PRADD II)	Côte d'Ivoire, CAR, and Guinea	Diamonds	$18M	2013-2018
Resource-ful Empowerment: Elevating Women's Voices for Human and Environmental Protection in Congolese Small-Scale Mining	DRC	3TG	TBD	2020-2022
Sustainable Mine Site Validation (SMSV)	DRC	3TG	$3.7M	2018-2022
USAID Extractive Technical Assistance Program	Afghanistan	Gemstones	$18.2M	2018-2023

Annex 2. USAID Approaches to ASM Development Challenges

ASM ISSUE	DEVELOPMENT CHALLENGES	ILLUSTRATIVE USAID APPROACHES & PROJECTS	
ECONOMIC GROWTH	Inequitable economic benefits Loss of revenue Elite capture of cooperatives Migration or demographic shifts	▪ Support income diversification + local processing ▪ Improve identification & valuation of deposits ▪ Facilitate LSM-ASM partnerships ▪ Promote responsible supply chains	AMPR, CVCFG, CBRMT, PRADD II
WOMEN'S EMPOWERMENT	Discriminatory practices Unequal access Increased risks of gender-based violence	▪ Conduct gender + social inclusion analysis to inform approach ▪ Awareness-raising campaigns on mining laws, women's rights ▪ Financial management training ▪ Support measures to reduce SGBV risks	CVCFG, CBRMT, Oro Legal, PRADD II
GOVERNANCE	Weak policy frameworks Poor adherence to policies Weak institutions Low presence of state structures	▪ Conduct policy and political economy analysis ▪ Facilitate adherence to KPCS, Minamata Convention ▪ Leverage other actors to inform/influence policy ▪ Create spaces and processes for stakeholder engagement ▪ Adopt a systems approach to policy change	AMPR, CBRMT, ETA, Oro Legal, PRADD II, RMT
ENVIRONMENT	Mercury contaminates soils and water Mining in protected areas Sedimentation of rivers	▪ Awareness raising campaigns-focusing on risks to children ▪ Mercury-free mining techniques ▪ Mercury testing, participatory monitoring of water quality ▪ Establish designated ASM sites ▪ Leverage science and technology	ABC-LA, CEC, CINCIA, Oro Legal, PEER
LAND TENURE & PROPERTY RIGHTS	Surface and sub-surface rights Customary and statutory systems	▪ Facilitate recognition of ASM mining rights ▪ Participatory mapping ▪ Promote fair compensation for land used in mining ▪ Facilitate land use pacts with local communities	AMPR, CBRMT, Oro Legal, PRADD II, RMT
CONFLICT	Mines captured by armed groups Disputes over tenure rights Tensions with large scale mining	▪ Validate mine sites ▪ Support ASM formalization, due diligence, traceability ▪ Offer dispute resolution training ▪ Map and analyze conflicts	ABC-LA, AMPR, CBRMT, CVCFG, PRADD II, RMT, SMSV
CRIME	Illegal trade linked to criminal networks	▪ Support due diligence and traceability schemes ▪ Development of legal/responsible supply chains ▪ Formalize ASM f ▪ Engage directly on organized crime + political vested interests	AMPR, CEC, CBRMT, RMT
HUMAN RIGHTS	Forced labor, human trafficking, child labor, indigenous rights Hazardous working conditions	▪ Countering Trafficking in Persons (C-TIPS) measures ▪ Mine site validation, traceability, due diligence, certification systems ▪ Policy advocacy for indigenous rights, working conditions	ABC-LA, CEC, CBRMT. Oro Legal, RMT, SMSV