CASE STUDY #2

IMPROVING NATIONAL ESTIMATES OF MERCURY USE IN ASGM

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INTRODUCTION

Artisanal and small-scale gold mining (ASGM) is increasingly recognized as an opportunity to alleviate poverty, provide rural employment where little alternative exists, and contribute to local, national, and regional development. Nevertheless, mercury use in ASGM operations poses a threat to human health and the environment. Despite the impacts of mercury, data on its use and releases in ASGM as well estimates on the number of miners engaged is scarce in many parts of the world. ASGM is often informal, operates in remote areas, and can be seasonal or temporary, contributing to the high uncertainties in estimating mercury use. Mercury use estimates are critical to targeting assistance to miners and form a baseline against which the progress in mercury reduction can be measured. The UNEP Global Mercury Assessment 2018 (UNEP 2019a) includes estimates of mercury use in ASGM by country (Figure 9). However, for many countries data is scare, old, or simply lacking, meaning that margins of error are high.

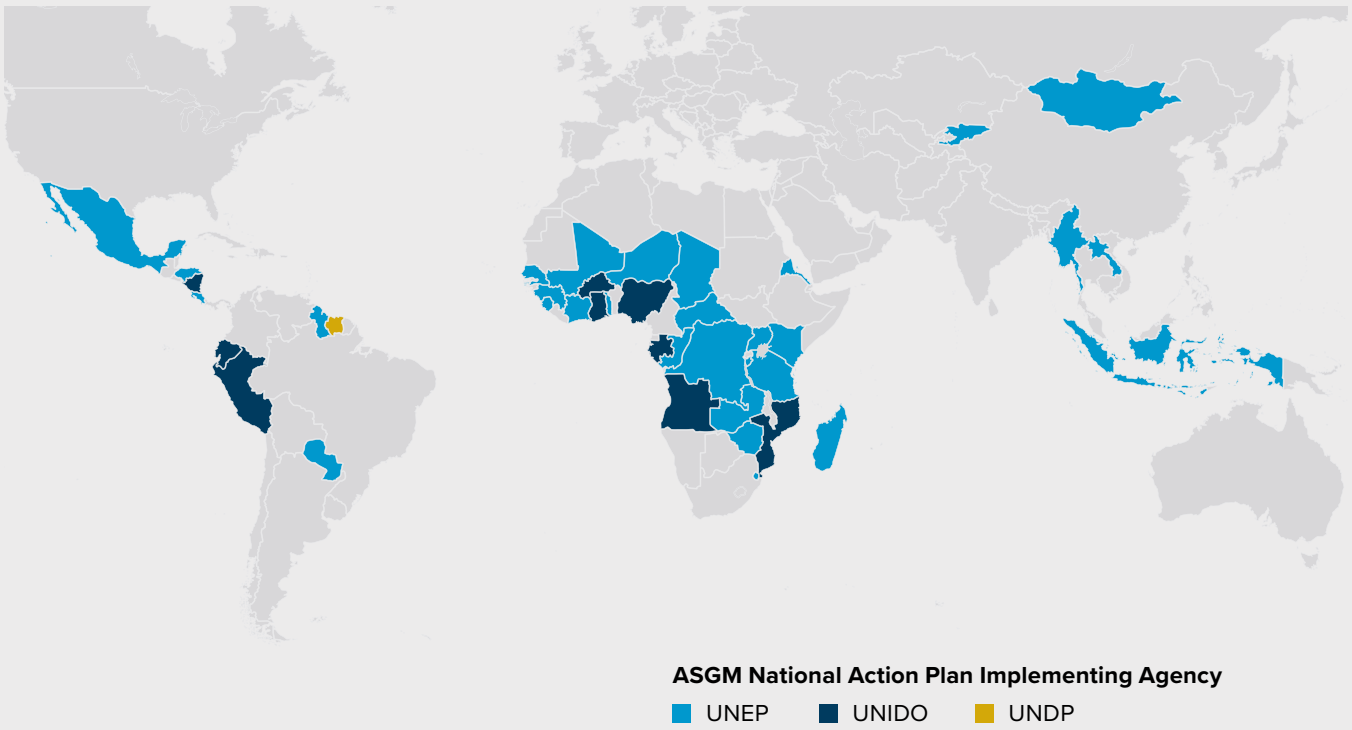
The Minamata Convention on Mercury, a global legally-binding treaty ratified by 123 countries[1] that entered into force in 2017, requires parties with more than insignificant ASGM to develop and implement National Action Plans (NAP) to reduce, and where feasible eliminate, the use of mercury in the sector (UNEP 2017). Out of the approximately 70 countries worldwide with ASGM activity, 41 have begun developing their NAP with funding from the Global Environment Facility (Figure 10).

Recalibrating national mercury-use estimates

Before setting national strategies to reduce or eliminate mercury as part of their NAP, countries must understand, among other socio-economic and environmental factors, and the extent of mercury use by the sector. Desk and field studies are undertaken as part of the NAP to gather up-to-date local information on ASGM practices to estimate mercury use. UNEP, in collaboration with partners, has created a series of tools and methodologies (O'Neill and Telmer 2017) for characterizing mercury use by the sector, including data collection, management, and analysis.

The data emerging from the NAP projects will allow for the recalibration of national estimates. For example, in most countries the data gathered by the first six NAP projects to be submitted to the Minamata Convention Secretariat (UNEP 2020) indicates a significant increase in the estimated amount of mercury use in contrast to previous estimates (AMAP and UNEP 2018). In Madagascar and Burundi, estimates increased by over tenfold (Table 7). The reported increase in mercury use in the ASGM sector does not necessarily mean that actual mercury use by miners increased by the same amount. Rather, the increase reflects, in part, the availability of better information collected through the nationwide field study undertaken by the NAP projects.

FIGURE 10. **Global Spread of Countries Developing NAPs and Implementing Agency**



Source: Data from UNEP, UNIDO and UNDP created for case study.

TABLE 7. **ASGM Mercury Use Estimates Before and After National Action Plans**

	Previous estimates (AMAP and UNEP 2019)		Country National Action Plan (UNEP 2020)	
Country	**Reported range of mercury use in ASGM** (ton per year)	**Year**	**Reported mercury use in ASGM** (ton per year)	**Year**
Burkina Faso	17.6-52.7	2011	77. 6	2018
Burundi	0.1-0.5	2010	2	2018
Madagascar	0.4-2.6	2003	18.4-43.8	2018
Mali	5-20	2016	33	2019
Mongolia	5.8-17.3	2007	0.2	2018
Senegal	2.1-3.9	2015	5.2	2018

Sources: Ministère de L'Environnement, de l'Economie verte et du Changement climatique (2020, 22); MINAGRIE (2019); MEEF (2018); DNACPN (2019). MEADD (2020), Ministry of Environment and Tourism (2020).

Challenges with collecting reliable data on mercury use

Countries developing NAPs reported multiple challenges associated with the collection of reliable data (UNEP 2019b). Time and budgetary constraints that limit the possibility to visit all ASGM sites as well as the amount of time that could be spent in each locality is one key challenge. This can be compounded by further operational challenges, such as the decentralization of ASGM operations meaning ore extraction, processing, and mineral trade often take place in different locations requiring more time to visit all parts of the operation, seasonality meaning that the number of miners per locality is variable day-to-day and can also change, challenges with access to ASGM sites due to weather conditions and remoteness, and physical measurements of mercury use which can be difficult due to the long ore processing time.

Additional social challenges include the informality of the ASGM in contrast to the formality of the NAP field researchers, which may cause suspicion and distrust. Many miners and traders are reluctant to share information on mercury use and gold production, as they are suspicious of government intentions. Accessing ASGM sites can also be challenging due to illegal or criminal activity, such as in conflict or protected areas, or foreign-owned and operated sites.

Engaging directly with ASM through NAPs

To address these challenges, many countries have engaged miners, traditional authorities, and local informants from ASGM communities from the outset to build trust and obtain reliable information about the sector. Better coordination with academia and civil society, such as to further investigate the extent of mercury contamination or the mercury supply chain, was also highlighted as key to ensuring good quality data. The validation of the data collected and the use of this information by the key stakeholders at the national level is also an important part of the NAP process. Information sharing on the methodology used for data collection, estimation, and extrapolation is essential to ensure data accuracy and comparability.

For some stakeholders the NAP project is the first opportunity to visit ASGM sites and learn first-hand about the mining practices used. For others, it is an opportunity to recalibrate their approach, overcome previously encountered challenges, and deepen understanding of the sector. This new information will allow for more precise estimates and stronger baselines against which mercury reduction can be monitored.

END NOTES

1 As of 11th August 2020.

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