Step-by-step guide for developing a public health strategy for artisanal and small-scale gold mining in the context of the Minamata Convention on Mercury

World Health Organization

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Abbreviations

ASGM artisanal and small-scale gold mining

CSO civil society organization

FGD focus group discussion

HFA health facility assessment

ICA institutional capacity assessment

ILO International Labour Organization

KII key informant interview

NAP national action plan

RHA rapid health assessment

UNEP United Nations Environment Programme

UNIDO United Nations Industrial Development Organization

WHO World Health Organization

Introduction

Artisanal and small-scale gold mining (ASGM) is practised in over 70 countries, with an estimated 14–19 million people directly involved in this activity, including about 4–5 million women and children *(1, 2)*. It is estimated that ASGM contributes to 17–20% of global gold production. In many low- and middle-income countries, the work in the ASGM sector provides a primary or secondary income source *(3)*.

Mercury remains the most commonly used chemical to amalgamate gold in ASGM, despite its known adverse effects on human health and the environment *(4)*. ASGM is the single largest source of global anthropogenic (that is, caused by human activity) emissions, accounting for approximately 38% of emissions *(5)*.

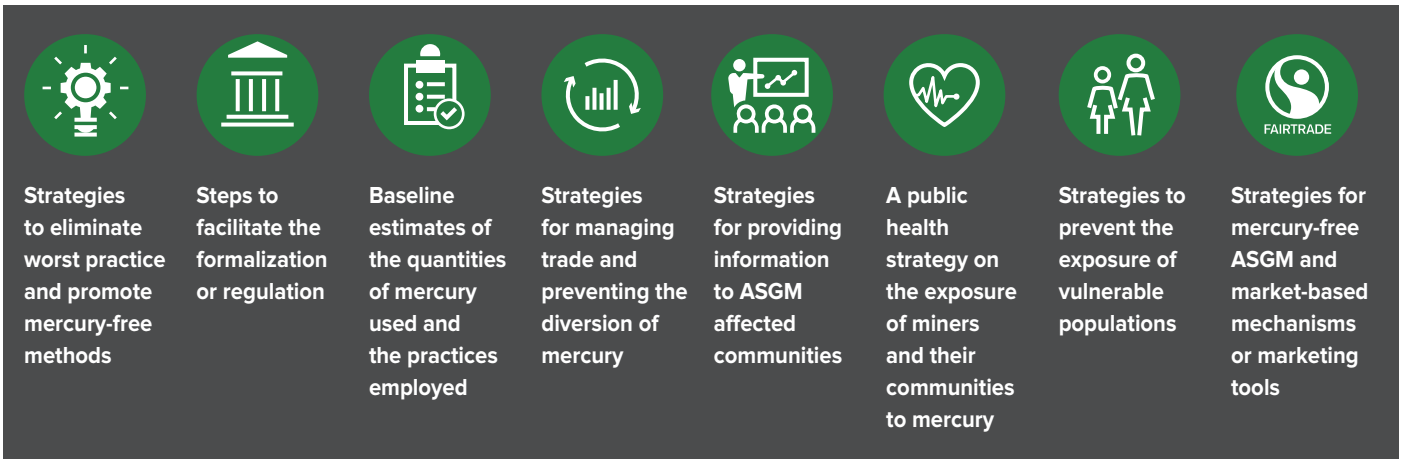
ASGM-related health hazards are categorized as chemical, biological, biomechanical, physical and psychosocial. The most prevalent hazards in each category are summarized below *(6)*:

- chemical hazards: mercury, cyanide, and other chemicals contained in dust and gases;
- biological hazards: waterborne and vector-borne diseases, sexually transmitted infections, HIV/AIDS, and tuberculosis;
- biomechanical hazards: heavy workloads, repetitive tasks, long working hours, and unsafe equipment;
- physical hazards: vibration, loud noise, radiation, low oxygen levels in pits, heat, and humidity;
- psychosocial hazards: drug and alcohol abuse, violence, nutritional deficits and other hazards arising from the social, cultural, and economic conditions faced by ASGM workers.

The Minamata Convention on Mercury is an international treaty that entered into force in 2017 with the goal of protecting human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds *(7)*. Each country that ratifies the Minamata Convention (thereby becoming a "Party" to the Convention) and formally notifies the Minamata Convention Secretariat that there is "more than insignificant" ASGM in its territory is obligated to develop a national action plan (NAP) describing its approach to reduce, and where feasible eliminate, the use and emission of mercury in ASGM (Figure 1). Parties and non-Parties that have ASGM can follow the guidance document *Developing a national action plan to reduce and, where feasible, eliminate mercury use in artisanal and small-scale gold mining* developed by the United National Environment Programme (UNEP) *(8)*.

World Health Assembly resolution WHA67.11 (2014) calls upon the World Health Organization (WHO) Secretariat to support ministries of health in meeting their obligations under the Minamata Convention on Mercury *(9)*. WHO offers guidance, creates tools, and provides training materials to support WHO Member States in this regard. The WHO guidance document *Addressing health when developing national action plans on artisanal and small-scale gold mining under the Minamata Convention on Mercury* details an approach to addressing health during the wider process of developing the NAP *(10)*.

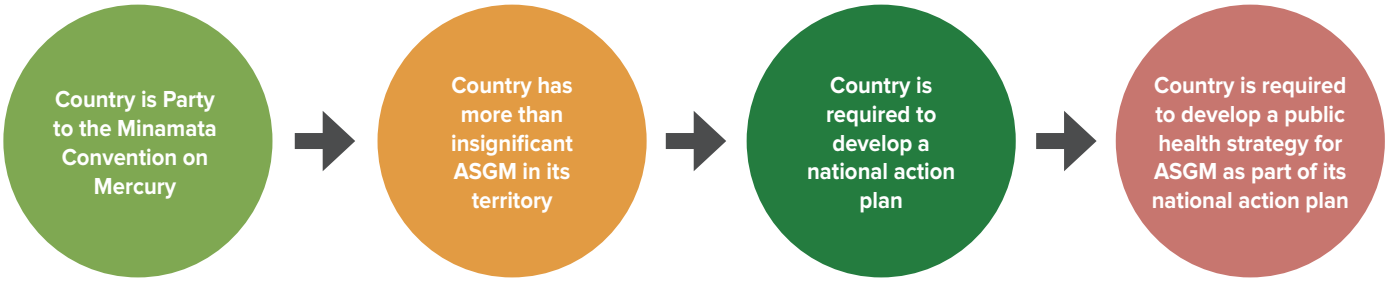
Figure 1. Content of the national action plan according to the Minamata Convention



Source: National action plans, UNEP *(11)*.

The Minamata Convention also states that the NAP must specifically include a public health strategy regarding the exposure of artisanal and small-scale gold miners and their communities to mercury (Figure 2). Developing the public health strategy is primarily the responsibility of ministries of health. The development of such a strategy in countries that have ASGM will be beneficial whether or not they are Parties to the Minamata Convention.

Figure 2. Country pathway to a public health strategy



The public health strategy should include the gathering of health data; training for health care workers and awareness-raising through health facilities; strategies to prevent the exposure of vulnerable populations, particularly children and women of childbearing age, especially pregnant women, to mercury used in ASGM; strategies for providing information to artisanal and small-scale gold miners and affected communities; and a schedule for the implementation of the NAP *(7)*. Children working in ASGM is considered among the worst forms of child labour, and is prohibited under the International Labour Organization (ILO) Worst Forms of Child Labour Convention, 1999 (No. 182), which has been ratified by 179 countries *(12)*. Pregnant women are particularly vulnerable, as prenatal exposure of the fetus to mercury can lead to irreversible neurological damage, including birth defects, developmental disorders and impaired cognition, and can lead to adverse pregnancy outcomes such as stillbirth *(6, 13)*.

Overview and purpose of the step-by-step guide

Researchers or other assessors should use this guide to help ministries of health develop a public health strategy as part of the ASGM NAP. The evidence collected will clarify key issues to consider for the public health strategy.

The approach for collecting and using the evidence was developed by WHO and the Swiss Tropical and Public Health Institute and pilot-tested in three countries – Ghana, particular needs, priorities and contexts. Users of this guide should adjust the templates and tools to their settings, since structural, institutional, cultural and other aspects can be highly context specific.

The approach for collecting and using information is based on two assessments that aim to describe the public health challenges specific to ASGM and the available institutional