
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



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**World Health
Organization**

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Abbreviations

ASGM	artisanal and small-scale gold mining	KII	key informant interview
CSO	civil society organization	NAP	national action plan
FGD	focus group discussion	RHA	rapid health assessment
HFA	health facility assessment	UNEP	United Nations Environment Programme
ICA	institutional capacity assessment	UNIDO	United Nations Industrial Development Organization
ILO	International Labour 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).

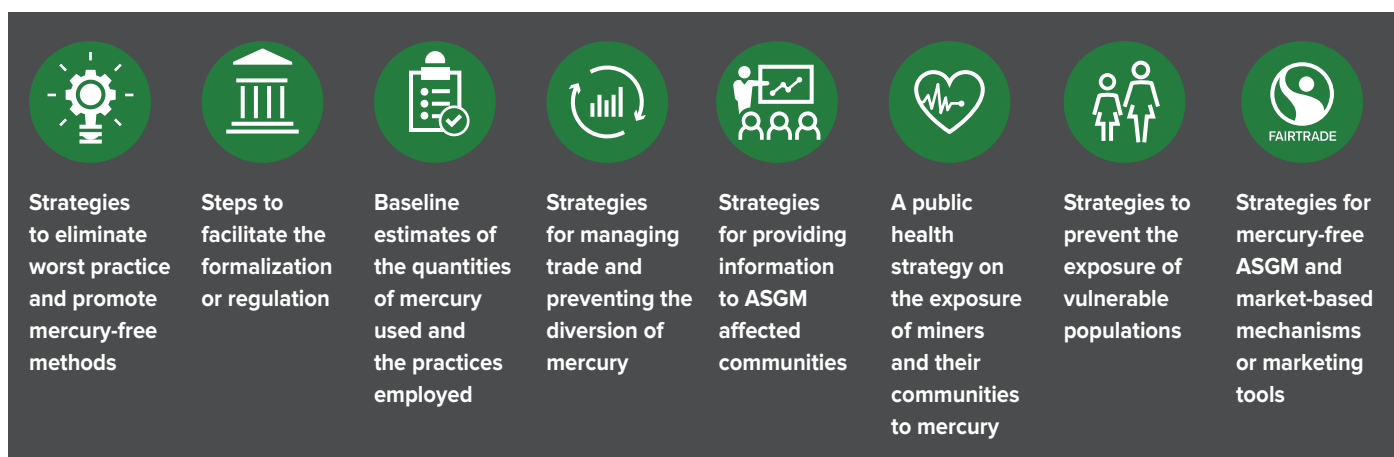
ASGM-related health hazards are categorized as chemical, biological, biomechanical, physical and psychosocial. The most prevalent hazards in each category are summarized below (6):

- 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 Nations 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

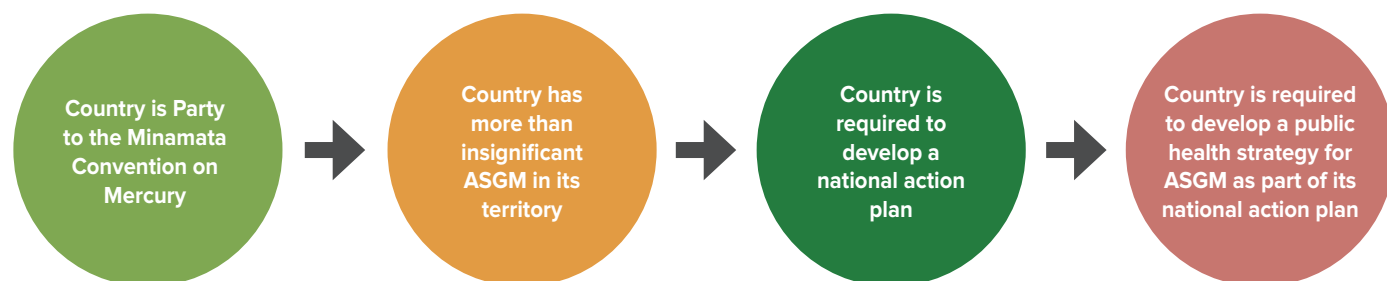


Source: National action plans, UNEP (11).

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, Mozambique and Nigeria – between 2017 and 2019.

Objectives of the step-by-step guide are as follows:

- provide guidance on the overall approach, including templates and tools, for conducting the assessment activities that will provide an evidence base;
- offer guidance for translating evidence, other findings and insights gained from the assessments into a public health strategy;
- share lessons learned from the three pilot studies in Ghana, Mozambique and Nigeria that applied the approach.

The step-by-step guide has been developed with the understanding that countries will include health aspects in their public health strategies in ways that are most suited to their

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 capacities to address those challenges in a country. The two assessments are:

- an institutional capacity assessment (ICA) to evaluate the institutional capacities at national and subnational levels to address ASGM-related health issues;
- a rapid health assessment (RHA) to evaluate the health situation in ASGM communities and the capacity of the health system to respond to their particular health needs.

The ICA and RHA can be conducted one after the other, or they can be conducted simultaneously. Results from the pilot tests revealed, however, that it is helpful to conduct the ICA before the RHA to gain a deeper understanding of the country's institutional health context.

The methods and tools presented in this guide are not expected to provide an in-depth epidemiological overview. They are designed to develop an evidence-based understanding of the public health challenges faced by artisanal and small-scale gold miners and their communities,

and the capacities of health facilities and institutions to address and respond to these public health issues.

Figure 3 shows the steps of the approach described in this guide.

Figure 3. Steps of the process to develop a public health strategy



Background, guidance and report documents are listed under [additional resources](#) at the end of the guide.

Templates and tools for the research approach described in this guide are presented in the [annexes](#) at the end of the guide.



Step 1: Read WHO guidance document

As the first step when developing a public health strategy for ASGM in the context of the Minamata Convention on Mercury, researchers or other type of assessors should carefully read the WHO guidance document [Addressing health when developing national action plans on artisanal and small-scale gold mining under the Minamata Convention on Mercury \(10\)](#). It describes where health issues should be addressed in the wider process of developing the NAP and presents an orientation for the

public health strategy. The WHO guidance document is intrinsically linked with this step-by-step guide.

The step-by-step guide presents an approach to collecting evidence and gaining a detailed understanding of the health issues in the ASGM sector that should be considered when developing the public health strategy as part of the overall NAP.



Step 2: Stakeholder engagement

To coordinate, manage and conduct the assessments and then develop the public health strategy, all relevant stakeholders in the process must be identified and engaged from the beginning of the work. A stakeholder is a person, group or organization that has interest in the NAP process and can affect or be affected by the actions, objectives or policies of the process.

Stakeholder mapping

Examples of key stakeholders in the context of the Minamata Convention on Mercury are as follows:

- national authorities (such as ministries of health, environment, natural resources, mining, labour, education, social development, finance, and commerce or trade);
- local authorities (such as government officials, health and environment authorities, community leaders);
- intergovernmental organizations (such as WHO, the United Nations Industrial Development Organization (UNIDO), UNEP, ILO);
- civil society organizations (CSOs);
- miners, their communities and their representatives;
- vulnerable populations (such as women and children, people with disabilities);

- mining associations;
- groups specifically representing women or other vulnerable groups;
- members of academic and research institutions.

Roles and responsibilities

After the initial mapping of the key stakeholders, the roles and responsibilities of each stakeholder can be discussed and determined in a multistakeholder meeting. Responsibilities can include the following tasks:

- planning, coordination and implementation of the assessments and stakeholder workshops;
- facilitating information sharing with the communities;
- coordinating and implementing the public health strategy as part of the NAP.

Throughout the development of the public health strategy, multistakeholder engagement should be ensured in order to help the ASGM sector to develop in an environmentally friendly and sustainable manner. Although ASGM may be an illegal activity in some settings, miners and their communities have a human right to health and safety protection.



Lessons learned

- Engagement of a broad range of stakeholders, including representatives of miners and their communities, is essential for developing a relevant, realistic and meaningful public health strategy. Public health experts typically lead such strategy development but often are not aware of many of the characteristics and realities of artisanal and small-scale gold miners and their communities, which need to be considered and included in the strategy.

- A visual representation, such as that shown in Figure 2, can help to ensure that all stakeholders fully understand the rationale and justification for the development of the public health strategy for ASGM within the NAP.
- Informing stakeholders of a timeline to complete their work can help in getting people to work together. A realistic time frame could be 6–12 months.
- Working groups can be created including representatives from various ministries, academic and research institutions, mining associations, and CSOs to coordinate different activities and focus on their implementation.



Step 3: Plan the assessments

The third step is to plan and prepare the two assessments. This guide provides pre-tested and robust methods for the assessments, including templates and tools.¹

Step 3.1: Institutional capacity assessment

A. Research questions

The research questions guiding the ICA are:

1. To what extent are existing regulations, policies, structures and processes in place at the national and subnational levels to respond to ASGM health-related issues?
2. Are the current institutional capacities at the ministry of health available to deal with health issues in the context of ASGM?
3. What are the strengths and opportunities to enhance existing capacities and what are the challenges that need to be addressed?

B. Familiarization with the ICA methods

The method for conducting the ICA is described in detail in [Annex 1](#). In brief, it is based on three complementary components: (a) operationalization of institutions (referred to as “institutional dimensions”); (b) clustering of relevant health hazards (referred to as “priority areas”); and (c) indicators for assessing institutional components per content topic (referred to as “topical indicators”) (Table 1). The pilot country ICA reports describe how the ICA was carried out in several countries (see [additional resources](#)).

Table 1. Logic of the methodological framework

Institutional dimensions Priority areas	Policy and regulatory set-up	Structure-level set up	Procedural set-up and performance
Health hazards in ASGM communities	Topical indicators	Topical indicators	Topical indicators
Occupational health hazards related to ASGM	Topical indicators	Topical indicators	Topical indicators
Environmental hazards related to ASGM that have implications for health	Topical indicators	Topical indicators	Topical indicators
Chemical management related to ASGM	Topical indicators	Topical indicators	Topical indicators

C. Document review

The document review consists of the analysis of information such as laws, regulations, decrees and reports gathered at public institutions, international organizations and CSOs. The documents should be collected prior to the interview phase, for example by internet download. Those that are not available online can be gathered in print during fieldwork.

- subnational governmental bodies
- academia
- ASGM organizations
- civil society
- international organizations (such as WHO, UNIDO, UNEP).

It is recommended that a detailed mapping be obtained of the government ministries responsible for the four health priority areas (see Table 1) to help identify people from government bodies for KIIs.

D. Selection of key informants

Essential people for key informant interviews (KIIs) need to be identified. Potential key informants may be identified among the following sectors and groups:

- national governmental bodies

E. Adjusting the tools

Questions in the interview scripts for the key informants are designed to help the assessor understand to what extent the following are implemented:

¹ Outlined in detail in the methodological framework for the ICA (see [Annex 1](#)) and the study protocol for the RHA (see [Annex 3](#)).

- regulations and policies;
- elements at the structural level (that is, the setup of organizations);
- elements at the process level (that is, the way in which critical functions are planned and managed).

Templates for the KII questionnaire can be found in [Annex 2](#). When existing regulations, structures or processes exist partially or are not in place, questions in the interview scripts can be used to address how these could be enhanced, adapted or expanded to address ASGM-related health issues.



Lessons learned

- Organigrams are helpful to understand the organization of a ministry and the allocation of tasks and responsibilities, but are not always available or up to date.
- To ensure essential government connection with ASGM communities, horizontal coordination within and between ministries must be complemented with

vertical coordination between the various levels of institutions involved.

- Including CSOs and academic institutions working on ASGM complements the available knowledge and increases stakeholders' understanding of day-to-day ASGM realities. Strategies and policies need to be grounded in reality in order to be relevant and to keep people engaged.

Step 3.2: Rapid health assessment

A. Research questions

The research questions guiding the RHA are:

1. What are the health issues as reported by miners and by health care providers living and working in ASGM areas?
2. What are miners' perceptions of health risks?
3. How is the access to health care, what are the health care-seeking behaviour patterns, and what are the related challenges?
4. How are the capacity and readiness of the health system, and how qualified are health care providers to address health problems specific to artisanal and small-scale gold miners, their families and the broader community?

B. Familiarization with the RHA methods

Users can familiarize themselves with the methods used in the RHA by reading the pilot country RHA reports (see [additional resources](#)).

In brief, the assessment consists of a document and literature review followed by fieldwork in selected ASGM sites. The fieldwork comprises interviews with key informants (such as local authorities, traditional leaders or health facility staff), focus group discussions with community members, a health facility capacity and readiness assessment in health facilities in the ASGM site or referral facilities, and an observational visit to the mining site.

C. Document and literature review

A review of available peer-reviewed or grey literature and reports produced on ASGM within the country is carried out. This includes

information that may have been collected by relevant government authorities as a requirement of the Minamata Convention. This should provide an overview on what is already known about the ASGM sector in general, and in particular with regard to health. The literature review can help to refine the questionnaires used for the KIIs and focus group discussions (FGDs).

D. Developing the study protocol and obtaining ethical clearance

A detailed study protocol needs to be developed. An RHA study protocol template, including tools that were specifically developed for the assessment, can be found in [Annex 3](#). The protocol should include the following obligatory sections:

- introduction and short background of the study, including a summary of the baseline ASGM activities in the country and a review of relevant literature;
- rationale for conducting the study and its goals and objectives;
- research methods used, including study sites, study population and data collection tools;
- community mobilization and sensitization activities;
- data management and privacy, analysis and reporting, and ethical considerations;
- workplan, funding and budget.

The completed study protocol must be submitted for ethics review. An ethics review is necessary to ensure the scientific merit and ethical acceptability of the proposed research approach and activities, and to ensure that the proposed research is aligned with the health needs and priorities of the community in which the research is being carried out. An ethics review is typically conducted through a country's

national ethics review body. Where the research is sponsored by an organization outside the country of research, the research protocol should be submitted for review in both the host country and in the country of the sponsoring organization.

This is to ensure that the ethical and scientific standards applied are not less stringent in one country than in the other. Investigators must obtain approval or clearance from all ethics review bodies prior to the initiation of research activities.



Ethical considerations

- Interaction with ASGM communities is sensitive as artisanal and small-scale gold miners tend to be a vulnerable, marginalized group, and in some countries ASGM is an illegal activity. Conducting research in such settings risks further exposing these communities and potentially exacerbating workers' situations that are already difficult.
- Because of the sensitivities associated with ASGM, the ethical clearance process may be particularly rigorous and long. It is therefore recommended that a robust study protocol be developed and submitted early in the preparatory process for the assessments. Furthermore, it is recommended that relevant partners are briefed about this at the design stage. The study protocol template provided in this guide has been pre-tested and is a robust starting point (see [Annex 3](#)).
- Once ethical clearance is granted, each participant needs to be informed about the risks and benefits of the study, and written consent is required from all participants, including those being photographed (see [Annexes 4, 5 and 13](#)).
- In ASGM settings, it may be useful to measure levels of chemical biomarkers in humans, for example mercury in the urine of miners, to determine their levels of exposure. The WHO document [Human biomonitoring in the context of artisanal and small-scale gold mining: ethical and scientific principles](#) provides guidance on ethical and scientific principles that should be adhered to as part of any research involving human subjects in the ASGM context (14).

E. Selection of the ASGM sites and study populations

Study sites must have ongoing ASGM activities at the time of study. It is advisable to choose sites where CSOs or community-based associations are present in order to have a local partner to facilitate conducting the study and to improve acceptance and participation of miners and community members.

Data are collected through KIIs, FGDs, direct observation of ASGM sites, and health facility assessments (HFAs). FGDs and

KIIs should be conducted by the assessors, including CSOs, not by national or local authorities.

Health facilities to be assessed ideally include the nearest primary health care facilities serving ASGM communities and the next-level referral hospitals. Participants for KIIs and FGDs may be identified among the participant groups (Table 2).

Table 2. Types of participants for KIIs and FGDs

Key informant interviews	Focus group discussions
Local government officials	Artisanal and small-scale gold miners, including women involved in mining activities
Local health authorities	Community members in communities surrounding ASGM sites (excluding community leaders)
Local environment authorities	Miners' wives and female community members not involved in mining activities
Representatives of international organizations	
Health care providers at peripheral health facilities in ASGM areas	
Community leaders	
ASGM community leaders	
Leaders of organizations representing miners	
CSOs working on ASGM-related issues	

Women make up a significant share of the ASGM workforce in some countries. It is important to collect data with gender sensitivity in mind, for example by having a woman conduct FGDs with women in the ASGM community in order to help the women feel more comfortable and able to speak openly. It is equally important to ensure government officials and authorities are not present in FGDs so that miners and community members feel safe about speaking openly.

F. Adjusting the tools

KII and FGD questionnaires (see [Annexes 6 and 7](#)) should be specific to the different types of participant groups and key informants, as well as adapted to country contexts. Tools should be translated into the local languages where necessary.

G. Community sensitization and mobilization activities

Community sensitization and mobilization activities prior to conducting the study are crucial to build trust, increase

acceptance of conducting the study, and ultimately ensure participation of the ASGM communities. Close collaboration with CSOs can facilitate these activities. The following steps can help to set up collaboration and mobilization activities:

1. explore and identify CSOs and associations at the national, regional, and subregional levels that are representative of the study population;
2. engage with the identified CSOs to understand how best to approach the communities and reduce potential harms that could result from the study;
3. work together with the identified CSOs to engage with the communities and to explain the purpose and nature of the study and the risks and benefits associated with it.

A social mobilization plan is required in the study protocol (see [Annex 8](#)). It should describe the process of:

- informing the community about the assessments
- gathering the data
- defining the roles and responsibilities of local stakeholders.



Lessons learned

- It is useful to conduct FGDs with different subgroups, such as females only, elderly persons only, or young women and men mixed. For example: (a) in certain societies, women are hesitant to speak their mind in the presence of men; or (b) elderly persons may have been identified as a marginalized and vulnerable group in ASGM settings, and it is thus useful to specifically gain their insights.
- Community mobilization through local CSOs was indispensable in the pilot ASGM communities, which were potentially marginalized or criminalized, and often

socially precarious. Due to their familiarity and existing engagement with the communities, their leaders and the miners, CSOs are well situated to communicate the objectives and activities of the study.

- ASGM settings and their broader communities often include migrants and foreigners who may speak different languages. Considered a marginalized group by themselves, migrants and foreigners as well as any other subpopulation groups need to be considered in the assessment. It is therefore important during the preparation phase to identify whether there is a need for an assessor or a translator.



Step 4: Conduct the assessments

Step 4 describes the process of data collection, analysis and reporting of the findings, separately for the ICA and RHA. Prior to conducting any KII or FGD, written consent must be provided

by each participant and informant as stated in the study protocol (see [Step 3: Plan the assessments](#)).

Step 4.1: Institutional capacity assessment

A. Key informant interviews

Conduct the interviews with key informants who represent the governmental entities that have an interest, role or responsibility regarding ASGM, as identified in Step 2. Key

informants from academia, research institutions, ASGM organizations, and CSOs active in ASGM-related fields should also be interviewed, as well as key informants from international organizations.

B. Reporting

The main findings obtained during the ICA process can be summarized in four categories:

- health hazards in ASGM communities
- occupational health hazards related to ASGM
- environmental hazards related to ASGM that have implications for health
- chemical management related to ASGM.

The findings in each of these categories can be analysed separately for each of the three institutional levels: regulatory and policy level, structural level, and process level.

For each indicator defined in the methodological approach, the results should outline which institutional capacities are either absent or existing, and if existing, the extent to which they are available. The methodological approach provides a five-point scale to rate each indicator (ranging from “capacity is absent” to “capacity exists and is available to a good extent”). For instance, the *institutional capacity of the regulation of biological health hazards* may be judged as “exists and is available to a good extent”, whereas the *institutional capacity of training programmes for health personnel* might be assessed as “exists but is not available”.

The findings should be written and presented in the form of a national report (see [additional resources](#)).



Lessons learned

- **Horizontal coordination.** Different ministries and units within ministries have responsibilities for the four priority areas covered by the ICA (Table 1). The ICA analysis should pay sufficient attention to the awareness and interaction of all the different actors involved, as well as to the formal mechanisms for coordination within and between ministries.
- **Vertical coordination.** For most topics covered in the ICA, responsibilities, particularly for implementation, lie at different national and subnational levels. This has two implications for the ICA.
 - First, close attention needs to be paid to the allocation of roles and responsibilities, that is, whether there is an overlap (duplication of responsibilities) or an underlap (tasks with no clearly assigned responsibilities).
 - Second, since the ICA typically takes place at the central level, assessing process capacity at subnational level might be difficult. The ICA will benefit from visits to subnational entities in ASGM-relevant regions of the country.
- Approximately five days are required for one person to do all the required KIIs for the ICA in a country.

Step 4.2: Rapid health assessment

A. Key informant interviews

Conduct the KIIs using the questionnaires specific to the different types of key informants (see [Annex 6](#)). The total number of KIIs should be determined at the time of the study when the assessor feels that all questions asked have been answered with sufficient depth and with representation of all population groups of interest. Responses should be written or typed; it is not recommended that interviews be recorded or audiotaped.

B. Focus group discussions

Conduct the FGD using the questionnaires specific to the different types of participant groups being targeted (see [Annex 7](#)). Leave the discussion open after posing a question, encouraging active participation. Try to engage passive members of the group and encourage everyone to express their opinions. Responses should be written or typed; it is not recommended that interviews be recorded or audiotaped.

C. Health facility assessments

HFAs are conducted to assess the capacity and readiness of the health system to provide health services. The HFA for the RHA (see [Annex 9](#)) is conducted with health facility staff using a tool adapted from the WHO Service Availability and Readiness Assessment (SARA) tool (15). The HFA assesses aspects of universal health coverage, such as primary health care services and availability of qualified health workers, as well as emergency surgical services or chemical (including mercury) intoxication diagnosis and management specifically required in ASGM areas. Where possible, health statistics with a specific focus on health conditions related to ASGM issues are retrieved from the routine health information system.

D. Direct observations

Use the site walk-through tool to describe an ASGM site, ideally with the support of the local ASGM leader or a worker who can provide accurate information on the site (see [Annex 10](#)).

E. Reporting

The analysis of the qualitative and quantitative data collected consists of a systematic description of:

- environmental and social determinants of health, with an emphasis on environmental and socioeconomic impacts of ASGM activities;
- health-related issues in the ASGM context (such as the

general health situation in ASGM communities, health risks related to occupational activities, health-seeking behaviour, gender issues, vulnerable groups and security concerns);

- local health system capacity and readiness (such as physical health infrastructure, health system coverage and public health programmes).

The findings should be written and presented in the form of a national report (see [additional resources](#)).



Lessons learned

- Flexibility is needed in gaining the acceptance of key informants, and interesting key informants might be outside the predefined key informant categories.
- Be mindful that in some contexts asking about the origin of the miners can be a sensitive topic.
- It can be helpful to have multiple respondents simultaneously for the HFA as they could each give information about their area of expertise (such as human resources or medical equipment).
- Four to five days per site are required for one person to do all the required KIIs, FGDs and HFAs.



Step 5: Synthesize findings and make recommendations

Step 5.1: Institutional capacity assessment

The ICA methodological approach is designed to describe main strengths and main challenges for each health priority area, at all three levels (policy and regulation, structural, and process levels). In addition, radar graphs are useful in visualizing the institutional capacities (that is, the rating of each topical indicator within a priority area, see Table 1) at a glance. Ensure radar graphs have titles and are accurately labelled.

This synthesis allows an evaluation of the institutional capacities at national and subnational levels. They will be used

to guide the formulation of public health recommendations from an institutional perspective. The recommendations can be formulated according to the different institutional levels:

- policy and regulation level
- structural level
- process level.

Step 5.2: Rapid health assessment

The findings are synthesized in line with the main research questions of the RHA:

1. What is the health situation and what are the main health challenges in ASGM communities?
2. Is the health system ready to respond to those challenges?

Based on and derived from the findings and their synthesis, the assessors are in a position to formulate public health recommendations. This should be a comprehensive list of

recommendations that will later guide the selection of priority public health interventions within the NAP.

For the RHA, the public health recommendations can be formulated at different levels of intervention:

- individual level
- community level
- institutional level.



Step 6: Conduct a national multistakeholder workshop to develop the public health strategy

The last step is to translate the findings and recommendations from the ICA and RHA into a public health strategy. The synthesized findings should be communicated in multiple formats tailored to the different decision-makers and stakeholders.

The objectives of the national multistakeholder workshop are to:

- inform stakeholders of the findings and recommendations of the two assessments;
- jointly develop the public health strategy based on the findings and recommendations of the assessments.

The workshop should include representatives of all stakeholders identified in the initial stakeholder engagement (see [Step 2](#)), plus any additional stakeholders at national, regional or local level that were identified during subsequent steps (see [Annex 11](#) for a sample workshop agenda based on experiences in the pilot countries).

In the pilot tests, at least two full days were needed for the workshop to allow sufficient time to present all of the study findings and recommendations and to undertake group work to develop the public health strategy. In some cases, more than two days may be needed. The workshop should be as participatory as possible, with participants engaging actively.

A. Workshop day 1: Dissemination of findings and recommendations

Day 1 of the workshop focuses on information dissemination. The assessors play a central role.

Information provided during day 1 should include:

- a general overview of the ASGM and NAP activities in the country in the context of the Minamata Convention on Mercury;
- how the public health strategy fits into the NAP;
- presentation of the overall research project;
- presentation of the findings and the recommendations of both the RHA and ICA.

B. Workshop day 2: Development of the public health strategy

Day 2 of the workshop is devoted to the development of the public health strategy, largely using group work. A summary of day 1 is useful to refresh the memory of the workshop participants and will help them to extract key elements of the synthesis and recommendations from the two assessments to use in developing the public health strategy.

Drawing from the syntheses and recommendations from the ICA and RHA, workshop participants should agree on three to five priority areas for inclusion in the public health strategy.

Then, for each priority area, participants should work in groups to formulate:

- the objectives,
- activities,
- responsibilities, and
- monitoring indicators.

Representation of the different stakeholders in each of the breakout groups is recommended; however, participants may wish to decide among themselves how they form the groups. For the drafting of the public health strategy the workshop participants play a central role, while the assessors assume a consulting function.

The minimum goal at the end of the workshop is for the ministry of health to have a draft public health strategy, which can be further refined after the workshop (see [Annex 12](#) for a sample template for one priority area for a public health strategy). To maintain stakeholder engagement, it is recommended that the ministry of health obtain endorsement of the final public health strategy by the various stakeholders before presenting it to the ministry responsible for the NAP.²

An example of a completed public health strategy for inclusion in the NAP, prepared by the Nigeria Federal Ministry of Health, is based on evidence collected using the research approach and the national multistakeholder workshop: [Public Health Strategy of the National Action Plan for Reduction/Elimination of Mercury Use in Artisanal and Small-Scale Gold Mining \(ASGM\) in Nigeria](#).

² The Minamata Convention on Mercury requires that the completed NAP be submitted to the Minamata Convention Secretariat.



Lessons learned

- Public health strategic priority areas: The pilot study countries chose different approaches to structure the priority areas. The strategic priority areas for the public health strategy in the pilot countries were:

Nigeria	Ghana and Mozambique
1. Awareness-raising	1. Direct impacts of mining
2. Generation of evidence through data gathering	2. Indirect impacts of mining
3. Strengthening of coordination within the health system	3. Health system capacities
4. Capacity-building for effective prevention, detection and response	4. Other institutional capacities

- Feedback from participants in the three country workshops showed that the national multistakeholder workshop was a powerful approach to disseminate the findings and recommendations that informed the development of the public health strategy within the same workshop. Stakeholders emphasized the direct benefits of the presentation of the findings and recommendations in helping them to develop the public health strategy and envision how it could be implemented, and the value of group work as part of the process.

Next steps: implementation of the public health strategy

Once the public health strategy is completed, the next step is for the national or regional health authorities to develop a detailed plan to support implementation of the public health strategy as part of implementation of the overall NAP. The public health strategy implementation plan should detail what

activities will be carried out, by whom, and within what time frame; indicators to inform monitoring and reporting of the strategy;³ a budget; and a mechanism for review of the public health strategy implementation plan (10).

³ The Convention also requires reporting on implementation of the NAP, including implementation of the public health strategy, every three years following the initial submission to the Convention Secretariat.

Additional resources

Developing public health strategies for artisanal and small-scale gold mining within the Minamata Convention on Mercury: findings and lessons learned from country workshops. Geneva: WHO; 2021. [Arabic, English, French, Portuguese, Russian, Spanish.]

Available at: <https://apps.who.int/iris/handle/10665/340192>

Advocacy brief providing experiences of developing public health strategies for ASGM communities within the NAP during three national stakeholder workshops.

Public Health Strategy of the National Action Plan for Reduction/Elimination of Mercury Use in Artisanal and Small Scale Gold Mining (ASGM) in Nigeria. Abuja, Nigeria: Federal Ministry of Health, supported by WHO; 2020.

Available at: <https://www.afro.who.int/publications/public-health-strategyof-national-action-plan-reductionelimination-mercury-use>

Nigeria Federal Ministry of Health public health strategy for the national action plan on ASGM.

Quick start guide to preparing an artisanal and small-scale gold mining national action plan to fulfil obligations under Article 7 of the Minamata Convention on Mercury. Nairobi: UNEP; 2018. [English, French, Spanish.]

Available at: <https://web.unep.org/globalmercurypartnership/quick-start-guide>

Document providing a quick start guide to preparing an ASGM NAP.

Template for the NAP document. Nairobi: UNEP; 2018. [English, French, Spanish.]

Available at: <https://web.unep.org/globalmercurypartnership/template-nap>

The UNEP Global Mercury Partnership has developed a template with a suggested table of contents for the NAP document to be submitted to the Secretariat of the Minamata Convention.

Strategic planning for implementation of the health-related articles of the Minamata Convention on Mercury. Geneva: WHO; 2019. [Arabic, Chinese, English, French, Russian, Spanish.]

Available at: <https://apps.who.int/iris/handle/10665/329449>

Document providing guidance to health ministries in planning measures to implement the health-related articles of the Minamata Convention on Mercury and to protect public health from exposure to mercury.

Strategic planning for implementation of the health-related articles of the Minamata Convention on Mercury: results from country workshops. Geneva: WHO; 2019.

Available at: <https://apps.who.int/iris/handle/10665/330146>

Advocacy brief describing experiences of ministries of health applying the WHO guidance *Strategic planning for implementation of the health-related articles of the Minamata Convention on Mercury* during two national stakeholder workshops.

Mercury and health fact sheet. Geneva: WHO; 2017. [Arabic, Chinese, English, French, Russian, Spanish.]

Available at: <http://www.who.int/mediacentre/factsheets/fs361/en/>

Fact sheet for the general public providing key facts about mercury and the effects on human health.

Preventing disease through healthy environments. Exposure to mercury: a major public health concern. Geneva: WHO; 2021. [Arabic, Chinese, English, French, Portuguese, Russian, Spanish.]

Available at:

Information note for decision-makers providing detailed information about mercury and its implications for public health, WHO guideline values for mercury in water and air, WHO recommendations for national, regional and global actions, and more.

Guide on incorporating gender dimensions into national strategy setting in the context of chemicals management: Minamata Convention national action plans for artisanal and small-scale gold mining and Stockholm Convention national implementation plans. Nairobi: UNEP; 2021 (in progress).

Gender guide examining the role of women along the ASGM value chain and the challenges and opportunities women and men face in the sector, and providing recommendations and considerations for incorporating a gender dimension into the process of NAP development and into the implementation strategies.

Institutional capacity assessment reports: piloting a new WHO framework to support the development of public health strategies on artisanal and small-scale gold mining in the context of the Minamata Convention on Mercury. Swiss Tropical and Public Health Institute and WHO; 2020.

Available at:

Ghana: <https://www.afro.who.int/publications/institutional-capacity-assessment-report-ghana-piloting-new-who-framework-support>

Mozambique [English and Portuguese]: <https://www.afro.who.int/publications/institutional-capacity-assessment-report-mozambique>

Nigeria: <https://www.afro.who.int/publications/asgm-nigeria-ica-report-21052020>

Institutional capacity assessment pilot-tested in Ghana, Mozambique and Nigeria to provide an evidence base for ministries of health to develop a public health strategy as part of the ASGM NAP.

Rapid health situation assessment reports: piloting a new WHO framework to support the development of public health strategies on artisanal and small-scale gold mining in the context of the Minamata Convention on Mercury. Swiss Tropical and Public Health Institute and WHO; 2020.

Available at:

Ghana: <https://www.afro.who.int/publications/rapid-health-situation-assessment-reportghana-piloting-new-who-framework-support>

Mozambique [English and Portuguese]: <https://www.afro.who.int/publications/rapid-health-situation-assessment-report-mozambique>

Nigeria: <https://www.afro.who.int/publications/asgm-nigeria-rha-report-21052020>

Reports on the rapid health assessment pilot-tested in Ghana, Mozambique and Nigeria to provide an evidence base for ministries of health to develop a public health strategy as part of the ASGM NAP.

ILO Chemicals Convention, 1990 (No. 170), and Chemicals Recommendation, 1990 (No. 177). Geneva: ILO; 1990.

Available at: <https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:1:0::NO::>

Convention obliging ratifying States to implement a general national policy on the prevention of occupational accidents and work-related diseases caused by chemicals (including mercury) and to minimize the causes of hazards inherent in the working environment, including in ASGM.

Annexes [\(https://www.who.int/publications/i/item/9789240022768\)](https://www.who.int/publications/i/item/9789240022768)

- Annex 1.** Institutional capacity assessment: methodological framework
- Annex 2.** Institutional capacity assessment: key informant interview questionnaires
- Annex 3.** Rapid health assessment: study protocol
- Annex 4.** Rapid health assessment: key informant informed consent
- Annex 5.** Rapid health assessment: focus group discussion participant informed consent
- Annex 6.** Rapid health assessment: key informant interview questionnaires
- Annex 7.** Rapid health assessment: focus group discussion questionnaires
- Annex 8.** Rapid health assessment: social mobilization plan
- Annex 9.** Health facility assessment: questionnaire and tool
- Annex 10.** Rapid health assessment: ASGM site walk-through tool
- Annex 11.** Sample agenda for the two-day national multistakeholder workshop
- Annex 12.** Sample template for public health strategy priorities
- Annex 13.** Informed consent form: photographs

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