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# Addressing health when developing national action plans on artisanal and small-scale gold mining under the Minamata Convention on Mercury

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# Preamble

This document provides World Health Organization (WHO) guidance to support Member States in ensuring that health aspects are appropriately taken into consideration as part of national action planning processes focused on artisanal and small-scale gold mining (ASGM).

A draft of this document was presented to the second Conference of the Parties (COP) to the Minamata Convention held in Geneva on 19–23 November 2018, as part of matters for consideration or action by the COP addressing 5 (h) of the provisional agenda. This guidance document was developed as part of a WHO technical series on ASGM and health, and specifically addresses how and where health considerations should be considered in the context of national action planning (NAP) processes related to ASGM, in particular as required under the Minamata Convention on Mercury.<sup>1</sup> It addresses the provision of Paragraph 3 (a) of Article 7 of the Convention stating that each Party that has notified the Secretariat that ASGM and processing in its territory are more than insignificant shall develop and implement a NAP in accordance with Annex C of the Convention. It also addresses the coverage of health in the wider NAP development process; for example, when establishing national coordination mechanisms, conducting stakeholder engagement activities, developing a national overview of the ASGM sector, etc. Furthermore, it provides a suggested orientation to support the development of the public health strategy component of the NAP. The latter is specifically focused on addressing content required under item (h) of Annex C of the Convention. However, as it addresses awareness raising activities as well – including in the context of engagement and identification of vulnerable groups – the document may also aid in the development of content required under items (i) and (j) of Annex C of the Convention.

This document incorporates feedback WHO has received from selected Member States after a period of consultation, as well as input from some United Nations sister agencies supporting ASGM and national action planning activities, so as to ensure that this guidance adequately addresses country needs and processes.

Based on ongoing country work aimed at supporting selected Member States in developing the health component of the NAPs and the related public health strategy, this guidance document will in future benefit from insights gained from practical experience.

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<sup>1</sup> The WHO guidance was developed in tandem with the development of the Global Mercury Partnership guidance on NAPs. Cross-references between the two documents are highlighted in this document.

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# Introduction

This document provides an approach to addressing health issues as part of the development of national action plans (NAP) to reduce, and where feasible, eliminate mercury use as required under the Minamata Convention on Mercury.

Under the Convention, NAPs are a requirement for those Parties that determine that “artisanal and small-scale gold mining and processing in its territory is more than insignificant.” A NAP must include public health strategies on the exposure of artisanal and small-scale gold miners and their communities to mercury. Such strategies are expected to include, among other things, the gathering of health data, training of health-care workers and awareness raising through health facilities.

While it is understood that the public health strategy component of a NAP will be developed and implemented under the authority and direction of the relevant national health authority,<sup>2</sup> other components of the NAP will likely be developed under the leadership of national authorities responsible for environment (e.g. authorities responsible for the implementation of the international chemicals conventions, including the Minamata Convention) and/or mining. Good intersectoral engagement and coordination will thus be necessary for ensuring alignment and coherence between these different NAP elements. Indeed, each component will also need to be internally coordinated.

The present document has been developed as part of a WHO technical series on artisanal and small-scale gold mining (ASGM) and health, and specifically addresses how and where health aspects should be considered during the process of developing a NAP. A WHO document is available that provides an overview of health issues in ASGM, with particular focus on environmental and occupational issues, as well as draft protocol for conducting a rapid health assessment of health issues in the ASGM context. More work is underway to provide key training materials for health-care providers.

Primary audiences include government officials in health ministries as well as in ministries from other sectors (e.g. environment, mining, labour) that would be involved in the process of developing and implementing the NAP. Other audiences include development partners (e.g. United Nations [UN] agencies and international organizations), researchers, nongovernmental organizations and other actors that would also be engaged in this process.

The document addresses coverage of health in the wider NAP development process; for example, when establishing national coordination mechanisms, conducting stakeholder engagement activities and developing a national overview of the ASGM sector. It also provides a suggested orientation to aid in the development of the public health strategy component of the NAP. The latter is specifically focused on addressing content required under item (h) of Annex C of the Minamata Convention. However, as it also addresses awareness raising activities – including in the context of engagement and identification of vulnerable groups – the document may also aid in the development of content required under items (i) and (j) of Annex C of the Convention.

Where relevant, specific references are made to the guidance “Developing a national action plan to reduce, and where feasible, eliminate mercury use in artisanal and small-scale gold mining” developed by the UN Environment Programme (UNEP) Global Mercury Partnership ASGM Partnership Area, as this is understood to be the primary reference guide being used and promoted for this purpose. Additional references – for example, to other WHO materials addressing/describing health issues related to ASGM – are also provided throughout the text as relevant.

The NAP process is understood to be a “national” process, to be undertaken with a cross-government approach. Therefore, the document has been developed from this perspective. It has also been developed with the understanding that countries will include health aspects in their NAPs in ways that are most suited to their particular needs, priorities and contexts.

In addition, while the Minamata Convention (and therefore also the NAP process) has a specific focus on mercury exposure, there are a number of other hazards associated with ASGM that can be detrimental to health.<sup>3</sup> The public health orientation provided in this document addresses mercury exposure but also allows for a wider approach and framing of ASGM-related health issues.

Finally, while primarily intended to facilitate coverage of health in the NAP process, this document may also be of interest to other countries that are seeking to develop public health responses to ASGM but are not subject to the NAP requirement.

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<sup>2</sup> This was recognized by health ministries in World Health Assembly Resolution WHA 67.11.

<sup>3</sup> See: WHO (2016). Environmental and occupational health hazards associated with artisanal and small-scale gold mining. Geneva: World Health Organization (<http://www.who.int/iris/handle/10665/247195>).

# 1. Addressing health during the wider process of developing a NAP

This section provides an overview of how and where health considerations should be taken into account as part of the wider process of developing or articulating a NAP. Suggested content for the public health component of the NAP is addressed in Part 2.

The UNEP Global Mercury Partnership ASGM Partnership Area guidance (2015)<sup>4</sup> suggests that NAPs be developed through a process involving six steps as shown in Fig. 1. The first step involves the establishment of a coordination mechanism to ensure appropriate organization of the NAP and to facilitate engagement with relevant stakeholders throughout the process. In the second step, a national overview and profile of the ASGM sector is

developed. In steps 3 and 4, NAP goals and objectives are set and schedule for implementation defined. An evaluation process is established in step 5, and in 6 – the final step – the NAP is endorsed and submitted to the Minamata Convention Secretariat.

From a health perspective, it will be important to ensure that health actors are appropriately engaged in planning and coordination efforts, health information is duly considered as part of the review of the ASGM sector, and that roles and responsibilities of the health sector in achieving targets, aims and objectives set in the NAP are clear. Key areas where health aspects should be considered in the NAP development process are shown in Fig. 1 and addressed in the sections that follow.

**Fig. 1. Coverage of health aspects in relation to the process recommended for developing a NAP**

Recommended steps for developing a NAP	Relevant health considerations
1. Establishing a coordinating mechanism and organizing process	Engaging health actors in the NAP coordinating/organizing process, and related stakeholder consultations throughout the project
2. Developing a national overview of the ASGM sector	Addressing health issues as part of the development of the national overview
3. Setting goals, national objectives and mercury reduction targets	Ensuring health and health targets are considered more broadly during the formulation of the NAP (in addition to the public health strategy component of the NAP)
4. Formulating an implementation strategy	
5. Developing an evaluation process for the NAP	Clarifying the health sector's role in supporting the implementation (and evaluation) of the NAP
6. Endorsing and submitting the NAP	

Source: UNEP (2015)

## 1.1 Engaging health actors in the coordination and development of the NAP

Due to the multifaceted nature of ASGM, a multisectoral and multidisciplinary approach will be needed to support the development of the NAP.

A NAP coordination mechanism may be established to facilitate coordination and engagement between different sector ministries providing input to the NAP. In this regard, a representative of the national health authority (e.g. health ministry or other official health agency) would participate formally in this coordination mechanism so as to ensure overall health representation at this level.

In addition to the above, other stakeholder engagement consultation activities may be conducted to inform the development of the NAP; for example, to solicit information about ASGM practices and/or associated environment and health concerns.

The level (or degree) to which health actors will be engaged in this process, particularly outside of the formal coordination process, may vary depending on the context and need for health inputs. An overview of potential categories (or types) of health actors and their potential contribution to the NAP development process is provided in Table 1.

<sup>4</sup> UNEP, Global Mercury Partnership, ASGM Partnership Area (2015). Developing a national action plan to reduce, and where feasible, eliminate mercury use in artisanal and small-scale gold mining. Working draft. Geneva: United Nations Environment Programme ([https://wedocs.unep.org/bitstream/handle/20.500.11822/11371/National\\_Action\\_Plan\\_draft\\_guidance\\_v12.pdf](https://wedocs.unep.org/bitstream/handle/20.500.11822/11371/National_Action_Plan_draft_guidance_v12.pdf)).



**Table 1.** Health inputs that can inform the NAP development process

Type of health actor	Potential contribution(s)/inputs to the NAP process
Government official from the ministry of health or official health agency	<ul style="list-style-type: none"> <li>• Ensure appropriate health ministry representation in the NAP development and coordination process.</li> <li>• Lead development of the public health strategy component of the NAP.</li> <li>• Facilitate alignment of NAP-related health priorities with wider health and development priorities.</li> </ul>
Regional or district health officer	<ul style="list-style-type: none"> <li>• Information on ASGM-related health concerns, impacts or outcomes in a given regional context and on available capacities and structures in place to address them.</li> </ul>
Local health service providers (e.g. nurses, medical doctors, community health workers, including midwives)	<ul style="list-style-type: none"> <li>• Knowledge about health issues affecting ASGM miners and their communities (related to use of mercury in mining and other related health outcomes due to mining practices).</li> <li>• Insights about how to reach/engage with populations considered most vulnerable to ASGM-related exposures (e.g. women and children).</li> <li>• Information on ASGM-related health impacts in the ASGM community, and needs in terms of capacities and structures.</li> </ul>
Public health researcher/academic <sup>a</sup>	<ul style="list-style-type: none"> <li>• Information about ongoing or past research initiatives of relevance.</li> <li>• May be able to support the gathering of health data; for example, as part of the development of the national overview and baseline of the ASGM sector that is required under the NAP.</li> </ul>
Representative from a health development agency (e.g. UN agencies, international and bilateral organizations)	<ul style="list-style-type: none"> <li>• Information on relevant health programmes or activities and related opportunities for alignment of efforts.</li> </ul>
Representative from a health-focused nongovernmental organization working with ASGM communities	<ul style="list-style-type: none"> <li>• Insights and knowledge about health issues and work situations affecting ASGM miners and their communities.</li> </ul>
Other “health” figures in the ASGM community, such as traditional healers	<ul style="list-style-type: none"> <li>• Knowledge about health issues affecting ASGM miners and their communities.</li> <li>• Knowledge about health-seeking behaviour in ASGM communities.</li> <li>• Insights about how to reach/engage with populations considered most vulnerable to ASGM-related exposures (e.g. women and children).</li> </ul>
Health specialists <sup>b</sup> (e.g. in toxicology, occupational medicine, infectious diseases)	<ul style="list-style-type: none"> <li>• Specialist input and advice on specific ASGM-related health concerns to be addressed/reflected in the NAP as needed.</li> </ul>

<sup>a</sup> Ideally this input would be solicited from national researchers. Inputs and perspectives from international researchers may also be helpful, provided formal and informal links are made with national academics and other stakeholders.

<sup>b</sup> Ideally this specialist input would be solicited from national experts. Inputs and perspectives from international experts may also be helpful, but may lack understanding and insights relevant to the particular country context.

## Additional considerations vis-à-vis ensuring appropriate health sector engagement in the NAP development process

- Efforts to solicit health inputs to the NAP development process could be facilitated if a specific approach for stakeholder engagement approach (for health) is developed and agreed with the relevant national authority.
- Countries have different models and degrees of decentralization of authority over decision-making and planning for health. Stakeholder engagement and consultation activities may need to take this into account, particularly if the planning and resourcing of public health activities and health services delivery is determined at the regional or subregional levels. If ASGM activities are concentrated in a particular region/province, in such contexts, it may also be appropriate to include a representative from the regional or provincial health authority in the NAP coordination mechanism.
- There are likely to be many health actors working in the nongovernmental and private sectors. An example of the latter might include faith-based organizations that work outside, but in coordination with, government-managed health facilities. As the NAP is intended to be a government-led and -owned process, perspectives from health actors working in the public sector will need to be considered. However, it may also be beneficial to consider soliciting views and perspectives from the health actors working in the private sector as well.

## 1.2 Addressing health issues as part of the development of the national overview of the ASGM sector

Countries are expected to develop their NAPs on the basis of obligations in the Minamata Convention and based on an analysis of their ASGM sector, the product of which is referred to as the national overview. This analysis should include a socioeconomic analysis of ASGM, review of ASGM practices (which includes a baseline assessment of mercury use), and an assessment of relevant health and environmental concerns, including as well information about provision of basic amenities such as water and sanitation, and housing conditions.<sup>5</sup>

In addition to reviewing available literature and existing national policies and regulations applicable to ASGM, in many cases primary data on ASGM practices will need to be gathered; for example, through surveys and field visits to ASGM areas. This can provide a helpful opportunity to also gather information about the health status of ASGM communities and their use of health-care services, provided that such data collection and analysis is carried out in conformity with relevant national regulations and requirements (see below additional considerations related to the collection and use of health data).

In addition to the above, other information gathered as part of the development of the national overview – even if not specifically focused on health – can also be used to identify relevant health concerns. For example, information about the

socioeconomic characteristics of ASGM miners can provide information about other important environmental or social determinants of health – for instance, whether miners and their families have access to basic social services, can access training or new tools, and whether they reside in potentially precarious housing conditions. For more information about ways in which data gathered to inform the development of the national overview of the ASGM sector can be used for health purposes, see Annex 1 of this document.

The national overview can also be helpful in informing the development of the public health strategy. For example, information on mercury use in ASGM can be used to prioritize locations (or communities) where awareness raising and health promotion activities should be conducted or where further data collection and analysis of health impacts may be warranted.

Given the potential utility of information likely to be used for the national overview, opportunities to include health-relevant data should be considered as part of the planning and design of data collection protocols and tools. Consideration should also be given to modalities and means through which data can be shared for use in conducting analyses for other parts of the NAP, as appropriate.

<sup>5</sup> See Annex C of the Minamata Convention text for more details on the required contents of the ASGM NAPs: [http://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury\\_e.pdf](http://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury_e.pdf).

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## Additional considerations related to the gathering of health data as part of the development of the national overview of the ASGM sector

- Careful consideration should be given to the processes, methods and formats (e.g. large collective meetings, small focus group discussions) used to support information collection activities in ASGM communities and with potentially vulnerable populations, particularly if such information includes data on health.<sup>6</sup> Many countries have regulations and requirements regarding the collection and use of primary health data, including national ethical approval for research with human subjects. This will be particularly relevant if there is any intention to conduct human biomonitoring, for example, as part of the mercury baselining activities. Early engagement of health actors (e.g. with experience in conducting public health research) in the planning and design of primary data collection activities will help clarify whether such regulations apply.
- The inclusion of local health authorities – for example, municipal or equivalent health officers – in the primary data collection may facilitate engagement with primary health-care providers in ASGM areas and may help to ensure that the gathering (and handling) of health data from ASGM communities is carried out in accordance with relevant health regulations. It may also help to ensure that if health problems are identified (e.g. mercury intoxication is suspected) appropriate follow-up is provided through the health system.

### 1.3 Ensuring health is considered more broadly during the formulation of the NAP

Once the current ASGM situation (or context) has been assessed, goals, targets and objectives will be set, taking into account requirements set in Annex C and in the main text of the Convention, in particular Articles 7 and 16.<sup>7</sup>

Many measures that will be included in the NAP – for example, to reduce burning of amalgam in residential areas – facilitate the formalization or regulation of the ASGM sector and will have a positive effect on the health and well-being of ASGM (and nearby) communities. Measures to formalize ASGM, for instance, can facilitate miner access to health and other social services if, due to a change in the formality of their employment status, they may become eligible for health insurance, social security and disability insurance.

Applying a “health lens” to the selection of measures for the NAP may also help to identify potential unintended effects of NAP interventions that could negatively impact health. For example, if following a review of regulations applicable to ASGM, a decision

is taken to simplify the environmental licensing process – a commonly cited obstacle to the formalization of ASGM – it would be important to consider the impact of this modification from both an environmental and health perspective. While in some instances the environmental footprint of small-scale mining activities may not be considered significant (for example, as compared with medium- or large-scale mining), depending on how and where these activities are carried out, they may have important associated social and human health risks. Environmental and social due diligence conducted during the environmental licensing process is critically important for ensuring that mining activities do not adversely impact the health and well-being of miners and nearby communities. Similarly, awareness that mining activity is often the primary source of income of ASGM communities means that closing down mines purely on the basis of health or environmental risks may not be a long-term solution and requires the need to find a balance between facilitating formalization and maintaining a process that ensures that adequate environmental and social safeguards are put in place.

### 1.4 Clarifying the health sector’s role in supporting the implementation (and evaluation) of the NAP

Once the associated measures have been set for the NAP objectives, goals and targets, a schedule for implementation needs to be developed. This schedule must be submitted along with the final NAP. The UNEP Global Mercury Partnership ASGM Partnership Area guidance (2015) proposes that this schedule may also include a plan of work, timeline and budget.

When developing the overall NAP implementation schedule, it will be important to clarify inputs expected from the health sector, not only for the public health component, but also in

the context of other activities where health inputs may be relevant. Examples of the latter might include: engagement of health actors in the monitoring and evaluation of NAP implementation; and ensuring inclusion of appropriate health promotion messaging within wider information dissemination and communications activities supported through the NAP. Information on the human health impacts of mercury is important and can add significant value to such a NAP. Monitoring and evaluation against such indicators represent a clear opportunity to showcase progress in implementation.

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<sup>6</sup> Vulnerable populations in an ASGM context may include: children, women of childbearing age and pregnant women, as well as others considered to be vulnerable because of their age, gender, ethnicity, disability and/or illness, socioeconomic or legal status.

<sup>7</sup> See Annex C of the Convention text:

[http://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury\\_e.pdf](http://www.mercuryconvention.org/Portals/11/documents/conventionText/Minamata%20Convention%20on%20Mercury_e.pdf).

## 2. An orientation for the public health strategy

The first section of this document provided an overview of where and how health issues should be considered within the wider process of NAP development. This second section focuses on the development of the public health strategy that needs to be included as a specific component of the NAP.

This section begins with a discussion of how to frame the strategy from a public health perspective, and then addresses the need to clarify the scope of work to be supported by the health sector in coordination with efforts supported by others. Suggested areas of focus for the strategy are also provided, including in a model strategic framework provided as an annex to this document.

### 2.1 Aligning the strategy with a clear public health objective

While the NAP will have an overall objective (and focus) on reducing, and where feasible, eliminating mercury use in ASGM (as this is the requirement under the Convention), the overall objective of the public health strategy should be expressed as a health objective. This might be, for example: *reduced morbidity and mortality (adverse health outcomes) resulting from exposure to mercury and other health hazards associated with ASGM*. Not only will this provide a clear “health” focus for the strategy, it will facilitate alignment of the strategy with other national health objectives (which will be similarly focused on reducing morbidity and mortality).

Fig. 2 provides an example of how a results chain for a public health strategy aligned with the above objective might be constructed. Under this model, the underlying hypothesis is that fewer adverse health outcomes will arise if: (a) miners adopt safer and more environmentally friendly practices; and (b) ASGM-related health issues are taken into account by (and therefore addressed as part of) existing public health programmes and health service delivery packages as relevant.

### 2.2 Defining specific contributions from the health sector

Taking into account the overarching goal and strategic objectives set in the public health strategy, it may be helpful to define a specific set of outputs to be “delivered” by the health sector. Using the example provided in Fig. 2, these might be defined around specific interventions (such as in relation to outreach conducted with specific ASGM communities or populations) or as programmatic or service delivery objectives.

Some objectives may be reached only with inputs provided from the health sector, while others may need additional inputs from elsewhere. For example, in Fig. 2, changing ASGM practices will depend on a variety of factors (e.g. miner access to financing,

While the primary focus of this section is on developing public health strategies that take into account requirements set under item (h) of Annex C of the Minamata Convention, it may also aid in the development of other strategies that should also be included in the NAP; in particular, strategies to prevent exposure of vulnerable populations and strategies for providing information to ASGM and affected communities as called for under items (i) and (j), respectively, in Annex C of the Convention.

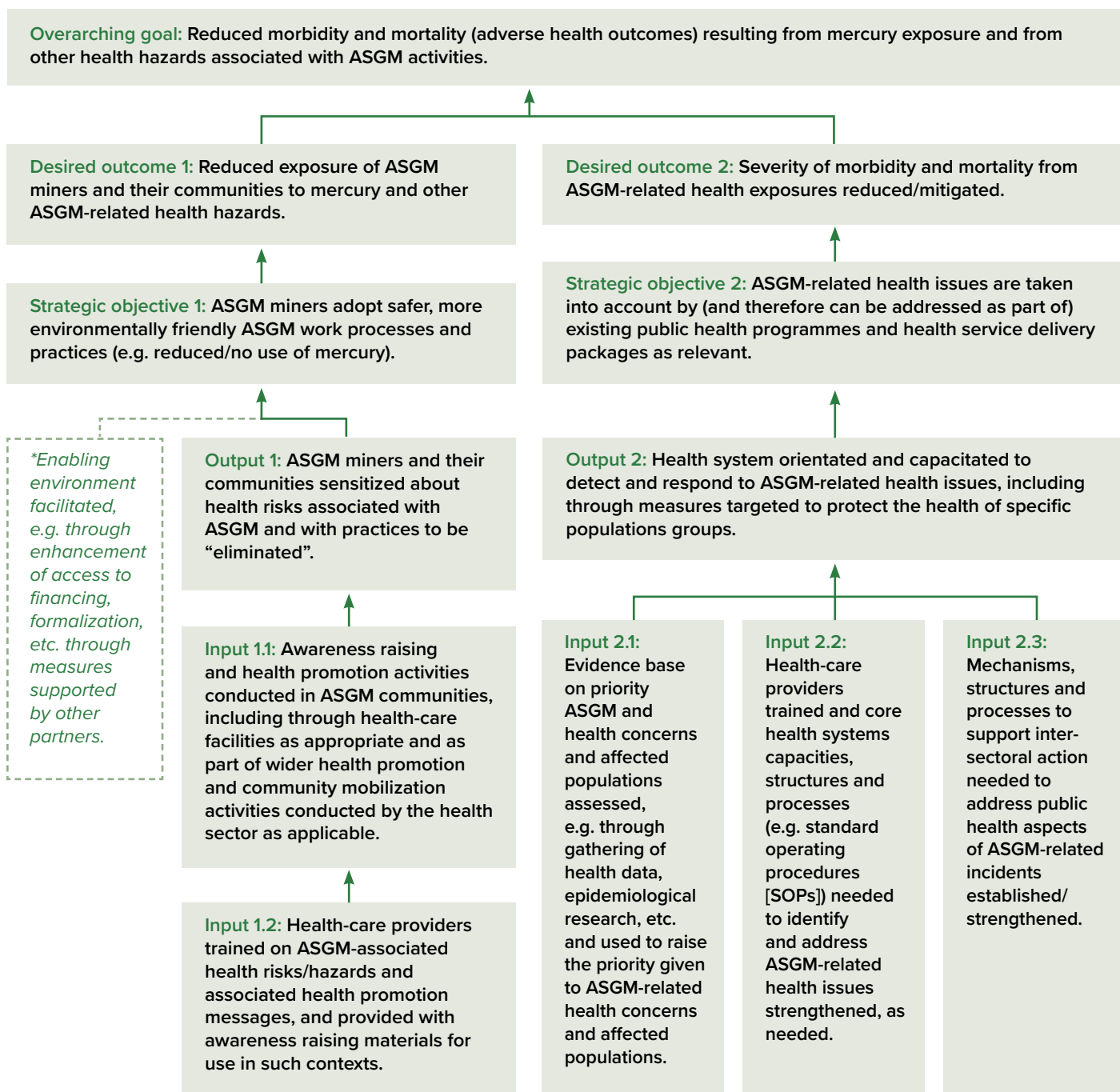
If safer and more environmentally friendly ASGM practices are adopted, miners and their nearby communities will be less exposed to mercury and other ASGM-related health hazards. Fewer adverse health effects will therefore result from ASGM.

If public health programmes and health services delivery packages include a specific orientation to ASGM-related health issues, they will be better able to mitigate the effects (or severity) of ASGM-related exposures, which in turn will also reduce morbidity and mortality.

In addition, measures taken to address ASGM-related health issues will be more sustainable if such measures are integrated (or absorbed) into wider and existing health programmes; for example, where ASGM-specific health promoting activities are conducted as part of other routine health promotion activities, such as vaccination campaigns and HIV campaigns.

technological know-how). The specific contribution of the health sector in this regard could be to sensitize miners and associated workers to the health risks of ASGM and regarding practices to be reduced or eliminated under the Convention. Opportunities to ensure health sector engagement in the wider NAP development process have been addressed in sections 1.1 and 1.3 of this document. Such opportunities may also be useful in informing the development of the public health strategy as doing so will further aid in clarifying roles and responsibilities under the NAP and help ensure alignment and coherence of efforts.

**Fig. 2.** A model results chain to inform the development of the public health strategy component of the NAP



\* This recognizes that additional measures to support ASGM miner adoption of safer, more environmentally friendly ASGM practices will be supported by other partners and actors and that health sector-supported sensitization and awareness raising activities need to be conducted within the context of (and in alignment with) these other activities.

## 2.3 Suggested areas of activity and focus

Annex C of the Minamata Convention stipulates that the public health strategy component of the NAP must include, among other aspects, gathering health data, training health providers and conducting awareness raising activities through health facilities.

The model shown in Fig. 2 provides an illustrative example of how these “mandatory” activities might be reflected as inputs to a broader strategy aimed at reducing adverse health outcomes from ASGM. For example, health-care providers will need to be trained and provided with awareness raising materials if they are to conduct health promotion activities on ASGM in their health clinics and/or as part of wider community engagement activities.<sup>8</sup> Health data will need to be gathered and analysed in order to provide evidence on the health impacts of ASGM and its resulting health burden. The latter will be key for informing the level of priority given to ASGM-related health issues, and correspondingly, the degree to which ASGM is taken on and addressed through (as part of) existing health programmes. The process of gathering and assessing health data will also reveal whether there are important data and/or knowledge gaps that need to be addressed; for example, with further research.

In addition to the collection (and assessment) of health data, training of health-care providers, and organizing of awareness raising activities, the public health strategy may also include measures that will ensure health systems are appropriately orientated towards this issue.

Key inputs or measures to aid in this “ASGM orientation” process might include:

- Assessing available epidemiological evidence on the health impacts of ASGM so as to facilitate the identification of priority ASGM-related health issues to be addressed and relevant population groups affected.

- Assessing existing health systems capacity to determine whether adequate structures, systems and processes are in place (e.g. to support mercury detection and case management, laboratory capacities) and identify what capacity-building and training are needed.
- Establishing a mechanism to facilitate health sector engagement and collaboration with other sector ministries and other relevant stakeholder groups around ASGM.

In many countries, ASGM will likely have been going on for some time. The health of miners, associated workers and their communities may in such cases already be adversely affected. A key objective of the institutional capacity assessment will thus be to assess the relative readiness of the health system to provide health services to these affected populations.

As described earlier in this document, stakeholder engagement activities will be needed to support the overall development and implementation of the NAP. There may, however, be a need for other forms of intersectoral engagement and communication on ASGM and health issues that extend beyond the scope of the NAP; for example, in the case of coordinating public health responses to ASGM-related emergencies or accidents, such as in the context of the International Health Regulations.

While it is understood that the specific orientation and content of the public health strategy will vary across countries depending on each country’s national context and priorities, an example strategic framework for a public health strategy is provided in Table 2. This example builds on the results chain presented earlier and includes additional details about potential supporting activities. Some of the activities described would need to be implemented at a system-wide level and some would need to be orientated to a specific audience or level of the health system. Comments to this effect are also provided.

## 2.4 Implementation of the public health strategy: key considerations and next steps

Once the NAP and public health component of the NAP are endorsed, the relevant national health authority (or regional health authorities, if applicable) will need to develop a detailed implementation plan to support the implementation of this strategy. This plan will need to outline what activities will be carried out, by whom and within what time frame. A budget for this plan will likely also need to be developed.

The implementation plan will likely also need to include indicators or measures that can be used to inform monitoring and reporting on the implementation of the NAP – something which must be done every three years following the initial submission for the

NAP to the Minamata Convention Secretariat. Similarly, they will likely be useful for reporting to the Convention as a whole. Such indicators could, for example, be used to measure level of mercury exposure in ASGM-affected communities, thus providing a potential indicator of the effectiveness of wider measures taken in the NAP to reduce mercury use.

A mechanism for review of the implementation plan and overall strategy should also be included as this will allow for refinement and updating of the public health strategy and supporting implementation approach if needed.

<sup>8</sup> Note: Prior to conducting training of health-care providers, their training and capacity needs will need to be assessed (at varying levels of the health system). Information gleaned from this capacity assessment should then be used to inform the design and delivery of training materials. Information should also be gathered on miner health-seeking behaviour (i.e. when and where they use health facilities) as this may influence where and how health promoting activities are conducted. For example, if the miners do not visit health clinics except in extreme emergencies, a different approach for engagement may be warranted.

**Table 2.** An example strategic framework for a public health strategy

Output (or health sector deliverable)	Strategic areas of focus	Supporting activities (or inputs)	Level of focus for activities (within the health system)
<p><b>1:</b> ASGM miners, associated workers and their communities are sensitized to health risks associated with ASGM and regarding practices to be reduced/ eliminated under the Minamata Convention.</p>	<p><b>1.1:</b> Awareness raising and health promotion activities conducted in ASGM communities, including through health facilities as appropriate.</p>	<p><b>1.1.1:</b> Health-care providers trained on ASGM-associated health risks/hazards and associated health promotion messages, and provided with awareness raising materials for use in such contexts.</p> <p><b>1.1.2:</b> Health promotion approach to ASGM developed, taking into account ASGM worker health-seeking behaviour and understanding about health risks associated with ASGM, and related opportunities to align/integrate such health promotion activities with other ongoing public health programmes.</p>	<p>It is likely that primary care providers working in ASGM communities will have an important role to play in conducting awareness raising activities. Training activities would therefore need to be designed with this focus and orientation in mind.</p> <p>The overall approach to be taken for awareness raising activities, however, should be developed at the system wide-level so as to ensure coherence and consistency in approach across efforts.</p>
<p><b>2:</b> Health system orientated and capacitated to detect and respond to ASGM-related health issues, including through measures targeted to protect the health of specific populations groups.</p>	<p><b>2.1:</b> Evidence base on priority ASGM and health concerns and affected populations assessed – for example, through gathering of health data and epidemiological research – and used to raise the priority given to ASGM-related health concerns and affected populations.</p>	<p><b>2.1.1:</b> Review of available literature and data on health impacts of ASGM in the particular context.</p> <p><b>2.1.2:</b> Taking into account the findings of the above review, identify priority areas (and populations) of public health concern.</p> <p><b>2.1.3:</b> Identify knowledge/evidence gaps with respect to the health impacts of ASGM, and catalyse further research into this issue as needed.</p>	<p>The assessment of ASGM-related health concerns should be carried out at the system-wide level, drawing on data/studies conducted in ASGM communities. The need to gather further health data (i.e. through biomonitoring or epidemiological studies and strengthening of human resources and laboratory capacities) should be determined on the basis of findings of the initial review of available data.</p>
<p><b>2:</b> Health system orientated and capacitated to detect and respond to ASGM-related health issues, including through measures targeted to protect the health of specific populations groups.</p>	<p><b>2.2:</b> Health-care providers trained and core health systems capacities, structures and processes (e.g. SOPs) needed to identify and address ASGM-related health issues strengthened, as needed.</p>	<p><b>2.2.1:</b> Assess available capacity within the health system (at primary, referral and tertiary levels) to identify and address ASGM-specific health issues, and develop a plan for addressing gaps in capacity if identified.</p> <p><b>2.2.2:</b> Develop SOPs and processes to support engagement and response to ASGM-related health issues as needed; for instance, on the clinical management of cases of mercury intoxication, or for the public health management of ASGM-related accidents, etc.</p>	<p>The institutional capacity assessment should be conducted at the systems level and informed by an understanding of needs and capacities available at the referral and primary care levels.</p> <p>SOPs and other processes would likely be developed at the national level by the relevant regulatory authority responsible for health.</p>
<p><b>2:</b> Health system orientated and capacitated to detect and respond to ASGM-related health issues, including through measures targeted to protect the health of specific populations groups.</p>	<p><b>2.3:</b> Mechanisms, structures and processes to support intersectoral action needed to address ASGM-related health issues established/ strengthened.</p>	<p><b>2.3.1:</b> Establish/strengthen coordination and communication activities with relevant line ministries (and other key stakeholders as appropriate) involved in the development and implementation of the NAP.</p>	<p>It may be necessary to establish or enhance intersectoral coordination at the local, regional and national levels.</p>

# Annex 1. Data types/sources and potential uses for informing the public health response to ASGM

Type of data/information	Relevance to the development of the public health strategy
<p><b>1. Demographic data</b></p> <p>Age and gender</p> <p>Income status (levels of poverty) in ASGM-affected areas</p> <p>Educational status</p> <p>Legal status, e.g. registered, migrant, etc.</p>	<ul style="list-style-type: none"> <li>• Gives an indication of the number/size of vulnerable population that potentially needs to be addressed in the strategy.</li> <li>• Gives an indication of the overall resilience/vulnerability of ASGM-affected populations.</li> <li>• Provides an indication of purchasing power; for example, for medicines or health care if needed, as well as for basic household expenses such as food and housing.</li> <li>• Provides an indication of levels of education and literacy – factors that would need to be taken into account as part of the design and conducting of awareness raising activities.</li> <li>• Provides insights about insurance status/coverage as relevant.</li> <li>• Provides information on inclusion/non-inclusion within national health system.</li> </ul>
<p><b>2. Geographical data</b></p>	<ul style="list-style-type: none"> <li>• Location of ASGM activities in relation to potentially affected communities can be used to identify priority locations where awareness raising activities and other further health assessment should be conducted/prioritized.</li> <li>• Provides information regarding distance to nearest health-care facilities.</li> </ul>
<p><b>3. ASGM practices</b></p> <p>Data on mercury use</p> <p>Information on working practices, e.g. working conditions, health and safety measures adopted, etc.</p>	<ul style="list-style-type: none"> <li>• Can be used to identify populations with potential mercury exposure for appropriate biomonitoring.</li> <li>• Can be used to identify priority locations where awareness raising activities and other further health assessment should be conducted/prioritized.</li> <li>• Provides insights on other potentially important occupational or environmental hazards affecting ASGM miners and potentially also their communities.</li> </ul>
<p><b>4. Information on health aspects<sup>a</sup></b></p> <p>Major health issues affecting ASGM communities (e.g. resulting from surveys and/or focus groups conducted with miners, their communities or health-care providers)</p> <p>Miner health-seeking behaviour (e.g. from surveys and/or focus groups conducted with miners and/or health-care providers working in the area)</p> <p>Health-care services availability</p>	<ul style="list-style-type: none"> <li>• Can be used to identify priority health concerns affecting ASGM communities, thus also informing planning and provision of appropriate health-care services.</li> <li>• Can be used to inform the design of awareness raising activities – in particular, those carried out through health-care facilities – and whether other forms of social mobilization (for health) may be needed to reach these ASGM communities.</li> <li>• Can be used to identify needs of capacity-building among health professionals.</li> </ul>

<sup>a</sup> Note: As indicated previously in this document, primary data collection activities that include gathering of health data (e.g. in interviews, surveys) may be subject to national regulations and requirements concerning the ethical and scientific use of this information. Further consultation with relevant national health authorities on this point may be needed if such circumstances arise.





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