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**Global Mercury Partnership  
Partnership Advisory Group, Sixth meeting**  
Bangkok, Thailand, 31 October – 1 November 2014

### **Updated Business Plans of the UNEP Global Mercury Partnership**

#### **Note by the Secretariat**

The Overarching Framework of the UNEP Global Mercury Partnership sets out a business plan template to provide guidance to the partnership areas in developing the business plans.

The business plans are in the following order

- A. Artisanal and Small Scale Gold Mining (ASGM) Partnership Area;
- B. Coal Combustion Partnership Area;
- C. Mercury Supply and Storage Partnership Area;
- D. Mercury Air Transport and Fate Research Partnership Area;
- E. Mercury-Containing Products Partnership Area;
- F. Mercury Waste Management Partnership Area;
- G. Mercury cell chlor alkali production partnership area.

Note that the business plan for the mercury releases from Cement Partnership is being revised.

The Partnership business plans are usually updated for each Advisory Group meeting. For this meeting it was suggested that they may be revised according to discussions at the meeting and especially keeping in mind the potential role of the Partnership with regard to supporting the implementation of the Minamata Convention on Mercury. The Secretariat has compiled the Partnership area's business plans in this document based on previous or updated versions.

## A. **Artisanal and Small Scale Gold Mining (ASGM) Partnership Area,** August 2013

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This Business Plan describes the goals and some of the activities of the Artisanal and Small Scale Gold Mining (ASGM) partnership area of the United Nations Environmental Programme (UNEP) Global Mercury Partnership. It serves as a planning and communication vehicle both for Partners and others.

The purpose of the business plan is to provide a framework for articulating common goals, and to facilitate the development and implementation of projects by Partners whom are aligned with these goals. The business plan serves as a resource for providing a common, cohesive structure for implementing the UNEP Global Mercury Partnership.

The Partnership is open for participation from governments and other stakeholders. In UNEP Governing Council Decision 24/3 part IV paragraph 27, UNEP is tasked with working in consultation with Governments and stakeholders to strengthen the UNEP Global Mercury Partnerships. New activities and partners are encouraged within the UNEP Global Mercury Partnership.

### **I. SUMMARY OF THE ISSUE**

- The artisanal and small-scale gold mining (ASGM) sector remains the largest global demand sector for mercury (estimates put ASGM mercury use in the range of 877-1940 tonne/year in 2011; see <http://www.mercurywatch.org/default.aspx?panename=globalDatabase>). Under typical practices, virtually all of the mercury used is released to the environment.
- This sector produces about 12-15% of the world's gold and involves at least an estimated 10-15 million miners, including 4-5 million women and 1 million children. ASGM is the largest employer in the gold extractive sector (estimated at 90% of employment in the sector). Further, another 50 to 60 million people are indirectly dependent on ASGM. With the price of gold rising to over \$1800 per oz as of August 2011, a gold rush involving additional poverty-driven miners is currently underway in many countries and the number of miners using mercury is likely increasing.
- Serious long-term environmental health hazards exist for populations associated with or downstream/downwind from mining and gold processing operations, often including indigenous peoples.
- ASGM sites are usually remote and scattered. The practice is typically informal and in some countries illegal. Reaching out to individual miners is challenging. Encouraging sustained behaviour change of miners and the gold supply chain infrastructure requires understanding and overcoming social and cultural barriers as well as political commitment.
- Mercury amalgamation is currently the most commonly used method to extract gold in artisanal and small-scale gold mining due to its ease of use, low cost, and abundant supply. Whole ore amalgamation dramatically increases the potential for the mercury that is used to be released to the environment. In some cases, this excess mercury approaches 90% of the total in use. Alternative techniques include many options for concentrating the ore prior to amalgamation, greatly reducing the amounts of mercury used and thus released to the environment.
- Alternatives to mercury use in artisanal gold mining exist, but at present most are not widely known in artisanal and small scale mining communities, and alternatives are generally ore-specific in their applicability. Cyanide chemical extraction, the only other widely-practiced method, also presents risks to human health and the environment, and its use can create

additional problems. When cyanide is used with or after mercury the production of methylmercury can be enhanced. Widespread adoption of alternatives to mercury-based artisanal and small scale gold mining requires capacity building, which is currently lacking.

- Higher mercury prices (mercury rose ⅓ in the first 7 months of 2011 to \$1900 per flask) can act as an economic incentive for miners to reduce mercury releases and can create demand for alternative technologies.
- A market for fair trade artisanally mined gold is emerging. Associated with this market is the opportunity to generally raise awareness on this issue and promote cleaner ASGM practices. Supply of fair trade gold to the market is currently limited. However, there is now a Fair trade and Fair-mined standard for gold from artisanal and small scale gold mining, established by ARM/FLO. Having these kinds of clear standards may encourage the supply chain infrastructure and more artisanal/small-scale miners to produce gold for this market.

## II. OBJECTIVE OF THE PARTNERSHIP

The objective of this partnership is continued minimization and elimination, where feasible, of mercury uses and releases in artisanal and small scale gold mining. The Partnership aims to complement and supplement existing programmes in strategically selected ways to ensure that mercury reductions on the ground are globally significant. Consistent with the United Nations Declaration on the Rights of Indigenous Peoples, the partnership area will meet its objectives by supporting activities that:

- Provide assistance to developing countries and countries with economies in transition to formalize / regulate the ASGM sector, and work with governments, NGOs and other stakeholders to develop financial, policy and regulatory options that improve the ability of mining communities to achieve significant reduction of mercury use and emissions.
- Provide economic, technical, and educational information / guidance and capacity building to miners and mining communities.
- Work within supply chains and use other market approaches to promote socially and environmentally sound gold products.

Where feasible, the Partnership will identify sources of, and facilitate access to, financial resources, and facilitate the leveraging of existing resources already available to Partners.

**Target:** As an aspirational goal, the Partnership promotes a target of a 50 percent reduction in mercury demand in ASGM (based on an estimated 2007 baseline of approximately 1000 tons) by the year 2017. As a key means to achieve this target, the Partnership seeks to eliminate three worst practices in ASGM: whole ore amalgamation; open burning of amalgam; and the use of mercury with cyanide. The Partnership will work to promote alternative practices, including changes in ASGM mining and processing techniques that enhance gold recovery and reduce the need to use mercury, thus achieving measurable reductions in mercury releases. This work will require promoting the formalization/legalization of the sector, which is a necessary condition to any sustainable mercury reduction program.

## III. PRIORITY ACTIONS

The Partnership will focus on three priority action areas:

1. Support government efforts in setting national objectives/reduction targets for ASGM, which may include:
  - Facilitate the development of ‘Strategic Country Plans’ using a multi-stakeholder process, including NGOs and miners.

- Provide tools to assist in understanding and addressing policy aspects of the ASGM issue, including establishing good communication with and formalizing the ASGM sector.
- Help with methods to characterize the extent of mercury consumption and emissions, building on existing information where possible.

Any government of a country where ASGM is practiced, and who are members of the Partnership, can request assistance of the Partnership in the form of tools and examples (generally available from the Partnership website) and in the form of identifying potential sources of funding for these activities.

2. Eliminate the worst practices in ASGM (whole-ore mercury amalgamation; open burning without mercury capture; and use of cyanide with mercury or after mercury use) and promote awareness and adoption of clean ASGM practices and technologies among governments, NGOs, miners, cyanide manufacturers, gold shops owners and workers, gold financier and gold processing service providers/suppliers and other stakeholders.
  - Eliminating worst practices could include activities that encourage and implement use of Best Available Technology (BAT) and Best Environmental Practices (BEP), to reduce or eliminate mercury consumption and releases into the environment. This would include stewardship on cyanide use and its incompatibility with amalgamation. When possible, the BAT/BET also should cover the proper mining planning, operation, mining closure and post-mining activities. Ideally, the proven BAT/BET should be disseminated and replicated in member countries.
  - Promoting alternatives could also include supporting projects that:
    - Create opportunities to locally manufactured, affordable ore concentrating equipment.
    - Expand the use of mercury vapour control technologies and retorting in small-scale gold processing, and establish chain of custody throughout amalgam processing from gold miner to end-user.
    - Document and make available, in a way that is helpful and convincing to miners, ways to increase gold yield from alternative practices compared to existing mercury-based practices.
    - Increase the availability and the dissemination of user-friendly information to communities and community-based groups regarding mercury risks and ways to reduce occupational/ environmental exposures and environmental contamination.
    - Increase cadres of trained local specialists to work in communities on a long-term basis to foster behaviour change among miners, through, for example, regional training centres.
  - Where possible, all general awareness-raising and other materials should be available in English, Spanish and French, and Partners should also translate materials from specific country activities into local languages to encourage wide understanding and acceptance.

Capacity building is considered of essence to achieving the previous objectives. NGOs, which often work on the ground in close collaboration with communities, should be included in capacity building and other activities where possible.

3. Explore innovative market-based approaches, including:
  - Support the development and implementation of fair trade/fair-mined standards while also clearly articulating the advantages and disadvantages of such programs.
  - Build capacity among miners to meet mercury management components of fair trade programs.
  - Promote environmentally sound gold products locally, regionally and globally through, for example, raising awareness of gold buyers and consumers.

#### IV. EVALUATION

The ASGM Partnership Area will report periodically to all Partners regarding ongoing efforts (at least twice per year, but more often as warranted by Partners' news and activities) and will report biennially to the UNEP Governing Council through UNEP on progress under the Partnership<sup>1</sup>. Partners should also provide periodic reports to UNEP upon completion of priority activities. To the extent possible, results will be reported in terms of measurable results related to the Partnership objectives, consistent with the targets and milestones identified in the Partnership efforts. The particular metrics used for reporting will differ depending on the type of activity undertaken.

- On a field project level, the Partnership will encourage implementing Partners to report measurable field project results, such as:
  - Number of miners (or other target recipients) trained.
  - Production of awareness raising materials/ training materials.
  - Successful completion of demonstration of alternative technology.
  - Where possible, typical number of kilograms of gold produced by ASM for one kilogram of mercury used and/or typical emissions reductions achieved.
  - Typical amount of mercury purchased, used and traded by ASG miners before and after intervention.
  - Availability of environmental quality data in relevant areas.
- For broader policy-level activities, results indicators could include updates on:
  - Number of partners or member countries involved in the Partnership.
  - Numbers of projects/studies conducted by the individual partnership members, with clear indications of how the Partnership supported or facilitated the work, or if the work is independent activity that aligns with Partnership goals.
  - Number of developing countries involved/assisted.
  - Status of data gathering in assisted countries.
  - Delivery of tools and models on national strategies, formalization, technologies and other products that will assist governments and others to promote mercury reductions in ASGM.
  - Successful use of these tools by the intended audience.
  - New opportunities or initiatives that could benefit from Partnership support.

Measurement of the overall global reduction of mercury that results from Partnership activities will be difficult to track and measure, given the lack of reliable global trade and use data for this sector. Where data are available to support the evaluation, the Partnership should reflect on how the Partnership activities are contributing to the overall mercury reduction goal of the Partnership. For example, when tracking potential global reductions, the field level estimates of mercury used by ASGM in the target countries before and after interventions could be considered in light of the country-specific mercury inventory data for that target country (baseline is the 2005 data from the 2006 UNEP Trade Report).

In 2011, UNEP engaged David Murphy, an independent consultant with significant experience in partnership development and implementation, to undertake an independent strategic review of the work to date of the artisanal and small-scale gold mining (ASGM) partnership area of the Global Mercury Partnership (GMP). This review will be made available to the Global Mercury Partnership Advisory Group at its meeting in November 2011. The scope of the review is limited due to limited financing. The review will focus on the following key elements with an aim to improve the partnership area effectiveness over time:

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<sup>1</sup> UNEP will develop a systematic reporting format and timeline for the partnership areas to follow.

- Identification of the main achievements, challenges and lessons learned to date (including both partnership outcomes and the partnering process with a particular emphasis on communications and participation).
- Guidance on improving communication between partners, and enhancing the participation and engagement of current and prospective partners (in particular the private sector).
- Scoping of the most promising opportunities for financing, other forms of resource mobilization and the scaling up of ASGM partnership activity.

## V. RECENT/CURRENT/ONGOING EFFORTS OF THE PARTNERS

Below is a description of various projects and activities of a number of Partners. These projects are not directly funded by the Partnership, as the Partnership is not a funding entity. However, many of these have been facilitated through provision of information, references, models and advice from the Partnership. Others are examples of projects carried out independently by Partners that align with Partnership objectives and provide examples/models of successful interventions that can be built on by other Partners. Information, reports and results from many of these projects are available on the Partnership webpage, where such information is made available to the Partnership. More information on the recent and future activities of the partnership can be found in Annex 1 of this document.

### **Priority Action 1: Support governments in setting national objectives/ targets**

***Strategic Action Planning:*** Several Partner governments have begun the process of developing national strategic action plans that describe a specific timeline of activities for achieving specified mercury reductions in their countries. The Partnership has played a role in providing advice on the structure of these projects and in mobilizing resources from donors:

**Regional Strategic Planning Project for Francophone West Africa.** This project kicked off in December 2009. The project was funded by UNIDO, US EPA (through UNEP) and Finland. Six countries participated: Burkina Faso, Mali, Senegal, Guinea, Cote d'Ivoire and Niger. The objective of the kick-off meeting was to collect data and raise awareness among stakeholders about the problems related ASGM in their countries. Countries were then provided funds to initiate national strategic action plans. Burkina Faso, Mali, Senegal, and Cote d'Ivoire have already provided draft plans. Due to local issues, Guinea and Niger are still in the process of producing drafts. As follow-on to these activities, Mali received funds from the SAICM Quick Start Program to create a more comprehensive national action plan. Also, a new regional project for this region will be implemented as part of a new GEF program on mercury.

**ASGM Asia Regional Strategic Planning Project.** With the SAICM Quick Start Program funding, and with the assistance and advice of Partnership members, the governments of the Philippines and Cambodia participated in a regional strategic action planning project. Both countries prepared national plans as part of this process. The Philippines prepared an ASGM National Strategic Action Plan that commits specific agencies to specific actions. The Department of Environment played a key role in bringing the various government agencies and stakeholders to the table; importantly the plan is also based on substantial consultation with miners and mining communities. Cambodia created a National Strategic Action Plan, but is still in the process of updating this plan with additional consultations. These plans were presented at the project conclusion workshop in March 2011, where several other countries from the Asia region were in attendance: China, Indonesia, Malaysia, Mongolia, Viet Nam, and Laos. The presence of these countries allowed the participants to identify additional opportunities for regional cooperation among the countries on ASGM.

**Latin American Regional Strategic Planning Project.** With the SAICM Quick Start Program funding, the governments of Peru and Bolivia are participating in a regional strategic

action planning project. Both countries are preparing national plans as part of this process, which should be discussed at the project conclusion workshop scheduled to be taken place in Peru during the last week of September or first week of October 2011. Colombia and Ecuador will be joining complementary efforts to this project. An eight-month project entitled “Contribution to the development of a strategic regional plan for the reduction of the use of mercury in the ASGM sector” started on 1 August 2011, an activity between UNEP and Ministry of Environment, Housing and Territorial Development in Colombia.

In a related development, Peru’s Multisectorial Technical Commission has prepared a technical proposal document for the National Plan for the formalization of artisanal mining activity. This plan calls for the implementation of a management tool capable of linking organizational, technical, legal and environmental issues surrounding the value chain of artisanal mining and its stakeholders, as well as makes recommendations for facilitating this process.

([http://www.minam.gob.pe/index.php?option=com\\_content&view=article&id=1258:propuesta-plan-nacional-para-la-formalizacion-de-la-mineria-artesanal&catid=124:populares&Itemid=145](http://www.minam.gob.pe/index.php?option=com_content&view=article&id=1258:propuesta-plan-nacional-para-la-formalizacion-de-la-mineria-artesanal&catid=124:populares&Itemid=145))

**Anglophone West Africa Regional Meeting on Mercury Use in ASGM.** US EPA, with advisory support from the Partnership, supported a regional multi-stakeholder workshop for Anglophone West Africa sub-regional action planning on mercury use in artisanal and small scale gold mining. The meeting was held from 8-10 June 2011 in Lagos, Nigeria. The meeting provided an opportunity for very lively and important discussions and sharing of experiences among countries in the region, and also enhanced communication among the various stakeholder agencies and ministries (Environment, Mines, Health) who must work together on this issue. UNEP/USEPA will also support a limited number of follow-up planning activities in these countries. As an additional follow-up to this meeting, Nigeria and Liberia have requested UNEP to support them in the development of a SAICM Quick Start Regional Strategic Planning project, similar to and building upon the project funded in Asia. A project proposal was submitted to the SAICM Quick Start Fund for the August 2011 project submission.

**Indonesia Training and Technology Transfer on Mercury Use in Artisanal and Small Scale Gold Mining.** The project, funded by US EPA, will build on the success of the previous and existing project work of some partners in Indonesia. The project will support two national workshops to raise awareness among policymakers of the problems of ASGM and encourage the development of a national action plan, as well as conduct field work in selected regions to promote better ASGM practices (mercury-free methods, retorts, etc.) and educate mining communities about health risks.

**Review of National Strategic Action Plan Guidance Document.** UNEP, in collaboration with the Partnership, has prepared a guidance document on the formulation of national strategic action plans for the ASGM sector. This guidance was prepared particularly for countries participating in the regional strategic action plan projects in South East Asia and Latin America but is broadly applicable to any country that wishes to create such a plan. The Guidance was updated in July 2011 based on the experience in applying it in Asia to date (this updated version is available in English only on the UNEP web-site). As needed, it will also be updated based on the experiences in the Latin American countries. The original draft document (in English, French and Spanish) can be found on the link below, under “Draft Guidance Document”:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/ArtisanalandSmallScaleGoldMining/Reports/tabid/4489/language/en-US/Default.aspx>

**Formalization/ Legalization Document.** UNEP is developing an ASGM Formalization Guidance Document to examine the economic and social factors underpinning mercury use in ASGM, and to provide case studies of formalization and legalization in this sector. The creation of the guidance was

first recommended at the Partnership Advisory Group (PAG) meeting in 2009. The creation of this guidance acknowledges that if progress is to be made on reducing harm from mercury use in this sector, social/ legal factors must be understood and considered when designing policies to reduce mercury use. UNEP engaged the Alliance for Responsible Mining (ARM) to act as the lead drafter and coordinator of the document. The document will include case studies on Mongolia, Peru, Ecuador, Tanzania and Uganda. There will also be a main document summarizing important issues and lessons from formalization, which will draw on experiences throughout the world. The draft document will be completed and circulated for comment in the second half of 2011, with aim for completion by the end of 2011.

**Mercury Watch.** The Mercury Watch Database is a project of the Artisanal Gold Council (AGC), with support from UNEP. The project ([www.mercurywatch.org](http://www.mercurywatch.org)) is dedicated to collecting, analyzing, and publicly serving information needs about mercury use and emissions around the world, with a focus on artisanal and small scale gold mining (ASGM). This information is needed by governments and other stakeholders in order to prioritize actions on ASGM.

**Economic Perspectives Document** ASGM provides an important employment opportunity where alternative livelihoods are often not easily found or developed. ASGM is recognized as the largest job provider of the gold extraction sector. Yet, ASGM currently cannot reach its full potential to contribute to economic development, in part due to improper use and management of mercury in artisanal gold production. What is more, mercury-intensive ASGM operations, as well as the other segments (MSM, LSM) of the sector, also have negative external impacts on other economic sectors. To examine these issues, UNEP DTIE Chemicals Branch is conducting a desktop study, entitled “Environment for Development Perspectives: Mercury Use in Artisanal and Small Scale Gold mining”, to explore the potential environmental and development co-benefits from elimination, reduction and safer use of mercury. UNEP DTIE Chemicals Branch is working in close collaboration with members of the Global Mercury Partnership and other stakeholders. A draft version of the study was circulated to the Partnership for comment in August 2011, the final draft is expected by the end of 2011.

**Options Document on Financing the Transition away from Mercury.** One of the panels of the Global Forum (described in the “Completed Efforts” section) focused on measures for financing ASGM operations, in particular mechanisms for financial assistance to help miners in the transition away from the use of mercury. UNEP has initiated the development of an options document that explores different approaches for financing the mercury transition in artisanal and small scale gold mining based on existing models. A draft version of the work will be made available for public comment during the second half of 2011.

## **Priority Action 2: Eliminate worst practices and promote alternatives**

**Mercury Use in Colombia.** UNIDO, with the University of British Columbia, is implementing a

预览已结束，完整报告链接和二维码如下：

[https://www.yunbaogao.cn/report/index/report?reportId=5\\_15673](https://www.yunbaogao.cn/report/index/report?reportId=5_15673)

