

Global Forum on Artisanal and Small-scale Gold Mining
7–9 December 2010
Manila

Final report: 20 January 2011

(Advanced version)

Background and Overview

1. At its twenty-fifth session, by section III of its decision 25/5 of 20 February 2009, the Governing Council of the United Nations Environment Programme (UNEP) agreed to the elaboration of a legally binding instrument on mercury and asked the Executive Director of UNEP to convene an intergovernmental negotiating committee with the mandate to prepare that instrument, commencing its work in 2010. In the same decision, the Governing Council also requested UNEP to continue and enhance, as part of the international action on mercury, the existing work, in a number of areas, including awareness-raising and pilot projects in key countries to reduce mercury use in artisanal and small-scale gold mining.
2. To inform overall global actions, UNEP and its partners in the Global Mercury Partnership convened a global forum on artisanal and small-scale gold mining from 7 to 9 December 2010 in Manila.
3. The forum was attended by some 100 participants, representing 17 Governments and a number of intergovernmental and non-governmental organizations. The languages of the forum were English, French and Spanish.
4. The forum provided an opportunity for stakeholders to consider how to tackle mercury-related issues in artisanal and small-scale gold mining and to initiate a dialogue on the broader range of issues associated with such mining. The specific objectives of the forum included: to review the challenges and opportunities surrounding the topic; to discuss policies and other instruments that could play a role in tackling artisanal and small-scale gold mining issues; to discuss success stories; and to strengthen the Global Mercury Partnership area on artisanal and small-scale gold mining.
5. It was emphasized that participants had an important role to play in reporting on the issue and the global forum to their respective Governments and delegates to the intergovernmental negotiating committee to prepare a global legally binding instrument on mercury. It was also suggested that participants might wish to work together within their regions in an effort to speak with one voice during the negotiations.
6. In closing, some miners present at the forum made an ‘Artisanal and Small-Scale Gold Mining Mercury Reduction Declaration’ in which they recognized mercury as a dangerous substance, embracing a commitment to reduce and, where feasible, eliminate its use and adopt mercury-free techniques for extracting gold over time. They also noted that there was a need for policies and programmes that focused on building local capacities in mining communities.

Key messages from the Global Forum

7. The following key messages emerged from the Forum:
 - (a) Artisanal and small-scale gold mining is a complex global development issue that presents challenges and opportunities in many countries.
 - (b) Mercury is a key entry point into the issue of artisanal and small-scale gold mining, but such mining is linked to a number of broader social and environmental issues that have external costs to society. Baseline information supports ability to take action.
 - (c) The artisanal and small-scale gold mining community can take steps to reduce the demand for mercury in the short and long terms. Participants agreed upon a set of technical options for reducing mercury use and releases, including some promising non-mercury technologies.

(d) Formalization is important, and specific requirements for it will vary from situation to situation. Formalization requires stakeholder engagement, financial and technical support, access to markets, capacity-building and training.

(e) There is an important and complex relationship between artisanal and small-scale gold mining and large-scale mining.

(f) Lack of access to formal credit markets as a result of the informal nature of the sector is a barrier for miners to implement change. Model financing schemes (funded through the World Bank, the Global Environment Facility, the Strategic Approach to International Chemicals Management and bilateral means) exist that support the sector and can play a role in a transition to low-mercury and non-mercury techniques. Developing such programmes further in the future is important.

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I. Opening of the meeting

1. The Forum was opened on Tuesday, 7 December 2010.
2. In his opening remarks Mr. Demetrio Ignacio, Under-Secretary, Department of Environment and Natural Resources of the Philippines, welcomed the participants. He highlighted the importance of the artisanal and small-scale gold mining sector and emphasized the need to protect miners, their families, their communities and the environment from mercury contamination. He commended the United Nations Environment Programme (UNEP) and its partners in the Global Mercury Partnership for their efforts in organizing the Forum.
3. Mr. Juan Miguel Zubiri, Senator, the Philippines, welcomed the participants. He noted that artisanal and small-scale gold mining was a source of livelihood for many people, including in the Philippines. He drew attention to the wide use of mercury in the sector and the irreparable damage that it caused to the health of miners and the environment. He expressed the hope that the Forum would bring out the important issues, challenges and solutions related to the sector.
4. Mr. Alistair MacDonald, ambassador of the European Union to the Philippines, praised the efforts of UNEP and the Department of Environment and Natural Resources for taking the initiative to organize and host the Forum. Although the European Union had little experience of artisanal and small-scale gold mining, it had taken strong action on many other aspects of mercury pollution. The Forum would provide an excellent and timely opportunity to consider the way forward and the discussions would provide valuable inputs to the intergovernmental negotiating committee at its sessions.
5. Mr. David Piper, Deputy Head, Chemicals Branch of the UNEP Division of Technology, Industry and Economics (UNEP Chemicals), welcomed the participants. He said that the use of mercury in artisanal and small-scale gold mining would be a major consideration in the mercury negotiations, as that sector accounted for the greatest demand for mercury globally. Artisanal and small-scale gold mining provided an important employment opportunity where alternative livelihoods were often not easily found. The future convention on mercury was likely to restrict the supply and trade of mercury but would not overcome all the challenges linked to artisanal and small-scale gold mining.
6. In opening the meeting, it was agreed that UNEP would act as the overall. Ms. Brenda Koekkoek, Programme Officer, UNEP Chemicals, undertook this role on the behalf of UNEP. The participants also consented on a process to develop a report of the Forum by nominating a rapporteur from each region who was responsible for reporting back to plenary (from the regional and break-out sessions) and assisting with finalization the meeting report.

II. Introduction to artisanal and small-scale gold mining

7. Dr. Kevin Telmer, Executive Director, Artisanal Gold Council, gave an introduction to the issue of artisanal and small-scale gold mining. On the scale of the sector, he said that there were some 10 million small-scale gold miners from 70 countries worldwide, producing about 330 tonnes of gold annually. He discussed the role of gold in the development agenda and poverty relief in addition to the extent and impact of mercury emissions in the sector. He noted that the use of mercury could be reduced in the sector through incentive-driven initiatives and implementable measures at the local level.
8. Ms. Brenda Koekkoek gave an update on the mercury negotiations and the Global Mercury Partnership. She noted that those processes provided an opportunity to work on issues related to artisanal and small-scale gold mining and paved the way for future actions. She encouraged all participants to join the Partnership.
9. Mr. Juan Miguel T. Cuna, Environment Management Bureau, Department of Environment and Natural Resources of the Philippines, gave an introduction to the artisanal and small-scale gold mining sector in the country. He gave the Government's perspective on the issue, describing the challenges faced at the national level. Artisanal and small-scale gold mining was taking place in more than 30 provinces, with the sector providing employment to over 300,000 miners, including 18,000 women and children, and supporting the livelihood of some 1 million people. Gold was produced in the Philippines by rodmilling, both with and without mercury, sluicing, panning and amalgamation, among other means. Some of the social concerns stemming from such mining included uncontrolled migration into mining areas; land

tenure and resource-use conflicts; the exploitation of workers, especially minors; and the absence of social security benefits for miners. To understand and resolve issues in the sector the Government was developing a national strategic plan on artisanal and small-scale gold mining that had been financed by the Quick Start Programme of the Strategic Approach to International Chemicals Management. There was a need to approach the issue from a development perspective and to focus on policymakers, ensuring that they understood the sector's importance. Changes would require difficult social issues to be discussed and long-term action would depend on the availability of funding. In conclusion, he noted that the strategic plan was a promising work in progress and that there was no single solution to the problem.

III. Panel session one: Mercury use in artisanal and small-scale gold mining

10. The first panel session focused on mercury use in artisanal and small-scale gold mining. It was facilitated by Dr. Telmer.
11. Dr. Telmer described a UNEP-funded initiative to produce a technical document describing low-mercury and non-mercury gold recovery techniques. There would be opportunities for participants to provide input to and comments on that document.
12. The panel then provided an overview of techniques used to reduce mercury use in mining and strategies to move away from some of the most dangerous and polluting techniques. The following presentations were given and are available on the UNEP website:¹

<i>Presenter</i>	<i>Organization/Country</i>	<i>Topic</i>
Kevin Telmer	Artisanal Gold Council	Introduction to the draft technical guidance document under development
Budi Susilorini	Blacksmith Institute	Simple technology for mercury reduction solutions, case study: Reducing open burning in central Kalimantan (use of fume hoods at gold shops)
Rickford Vieira	WWF Guianas	Use of mercury retorts in small-scale mining and gold-mining
Manuel Reinoso Rivas	Peru	Proposal for the reduction of the use of mercury in artisanal mining
Sumali Agrawal	Blacksmith Institute	Reactivation of mercury using electrolysis
Leonicio M. Na-Oy	Benguet Federation of Small-Scale Miners	Effects of cyanide leaching of amalgamated tailings
Prof.J. S. Kuma	University of Tarkwa	Mercury pollution abatement project (use of direct smelting for gold recovery)

13. In the ensuing discussion, one participant said that, although the technologies were available, there was a need to scale up efforts. Another said that every site was different and that the same methods could not be used in every area (e.g., sluice boxes might be effective in one area but not in another).
14. The participants were divided into three break-out sessions to facilitate follow-up discussion on the topic, and verbal reports on those sessions were later made during the plenary meeting. The outcomes of the break-out sessions have been summarized in annex I to the present report.
15. Reporting back to the plenary, participants concluded that the artisanal and small-scale gold mining community could take steps to reduce the demand for mercury in the short and long terms. They agreed upon a set of technical options for reducing mercury use and releases, including some promising non-mercury technologies.
16. Whole-ore amalgamation, open-air burning, the use of cyanide after mercury and leaching of amalgamated tailings were identified by participants as the most polluting techniques used in gold extraction.

¹ www.unep.org/hazardoussubstances/GlobalForumonASGM/tabid/6005/Default.aspx

17. Participants also said that techniques should be adapted to local conditions, locally manufactured and easily available, among other things, in particular because their acceptability and accessibility were considered to be major barriers to their implementation. The education of miners, the establishment of pilot projects, the provision of technical assistance by Governments and the development of policy-support frameworks were recognized as important mechanisms for complementing the scaling up of efforts.

IV. Regional meetings

18. On Wednesday morning, participants were requested to join one of three regional meetings (for Africa, Asia and South America). Each participating Government was given a series of questions to which to respond, intended to facilitate dialogue between the meeting participants. Although the regional groups did not report back during the plenary meeting, an informal summary of their discussions is available in annex II to the present report.

V. Trade, gold and the economics of artisanal and small-scale gold mining

19. Mr. Patrick Schein, executive board member, Alliance for Responsible Mining, gave a presentation on trade, gold and the economics of artisanal and small-scale gold mining. He highlighted the structure of the gold market and the economic impact of the artisanal and small-scale gold mining sector. He explained the monetary role of gold and how the market determined the price of that commodity, also emphasizing the significant local economic benefits derived from the artisanal and small-scale gold mining industry and the industry's value as a job provider. He identified the extended supply chain involved in the sector as one of the major barriers that hindered the traceability of gold, stressing that responsible mining initiative, such as the Alliance for Responsible Mining's Fairtrade and Fairmined standard, could play an important role in the market. Mercury was a financial tool for miners as it was inexpensive, easy to obtain and effective. Alternatives to mercury should therefore have the same (or better) characteristics, so that miners could use them without significant problems.

VI. Panel session two: Legal and regulatory issues

20. The session focused on legal and regulatory issues. It was facilitated by Mr. Samuel Spiegel, Resource Policy Analyst, University of Cambridge.
21. The session provided an introduction to formalization of the artisanal and small-scale gold mining sector, including a presentation on tools available to support policy development. Consideration of government experiences in land ownership and concessions were reviewed, as were access to licensing systems and requirements (such as environmental impact assessments) and decentralized regulation. The following presentations were given and are available on the UNEP website:

<i>Presenter</i>	<i>Organization/Country</i>	<i>Topic</i>
Samuel Spiegel	University of Cambridge	Policy and regulation in artisanal mining communities
Olinda Orozco Zevallos	Red Social (Social Network), Peru	Artisanal mining policies in Peru
Maria Laura Barreto	Association for Responsible Mining	Reflections on artisanal and small-scale mining legalization

22. The value of formalization was acknowledged by all the presenters, who highlighted how the specific requirements of formalization would vary from situation to situation. The use of participatory approaches, simplified regulatory requirements and community-based approaches for decision-making, management and monitoring were explored.
23. Lessons learned from experiences with formalization in Peru highlighted the role of miners as the main stakeholders in the process of formalizing artisanal and small-scale mining and in the adoption of efficient and environmentally responsible technologies. It was also stressed that it was important to enter into a consultative process with key stakeholders regarding the formulation of legal provisions.

24. In the ensuing discussion, it was said that there was a need to define the artisanal and small-scale gold mining sector and to educate miners on their rights and responsibilities. Facilitating trade and distributing land titles could also play an important role in supporting sustainable change in the sector.

VII. Panel session three: Social issues

25. The third session covered issues related to health, labour, gender and small-scale and large-scale mining interactions. Mr. Richard Gutierrez, Executive Director, BAN Toxics, facilitated the session.
26. The panel discussion aimed at helping participants to understand the environmental, social and health costs involved in gold production. The panel was designed to allow decision makers to consider the issues and some of the external costs in decision-making and to encourage them to internalize such costs in the policies developed. The following presentations were given and are available on the UNEP website:

<i>Presenter</i>	<i>Organization/Country</i>	<i>Topic</i>
Richard Gutierrez	BAN Toxics, Philippines	Social and health issues in artisanal and small-scale gold mining
Mr. Jesus Macasil Jr.	International Labour Organization	Child labour in artisanal and small-scale gold mining
Mrs. Eunice Negele	Tanzania Women Miners Association	TOWAMA: Supporting the disadvantaged in the mining community in the United Republic of Tanzania
Salvador Mondlane Jr.	Eduardo Mondlane University, Mozambique	ASM Relationship between Artisanal and small-scale mining and large-scale mining
Ana Trinidad Francisco Rivera	Department of Health, Philippines	Health and the environmental impact of mercury in small-scale gold mining in the Philippines

27. The social issues identified during the presentations included exposure of miners to health and occupational hazards; outbreaks of disease in mining communities owing to a lack of, or lack of access to, basic health services; exposure of mining communities and adjacent regions to health and environmental hazards; gender issues; child labour; land and resource conflicts in mining areas; and unregulated migration in gold rush areas.
28. Mr. Jesus Macasil Jr., discussing child labour, indicated that because artisanal and small-scale gold mining was poverty-driven education alone would be insufficient. His organization therefore recommended a combination of strategies, such as skills training and improved productivity, to alleviate child labour. Similarly, gender issues and the particular needs of women miners should be given due consideration.
29. In response to discussion on large-scale and small-scale mining interactions, one participant indicated that the International Council on Mining Minerals had developed a guidance document on how large-scale mining could engage with artisanal and small-scale miners. A link to the document is made available on the UNEP website. Collaboration between the sectors was seen by participants as a good opportunity to introduce social accountability.

VIII. Panel session four: Financing a transition away from mercury

30. The session on financing a transition away from mercury was facilitated by Ms. Susan Egan Keane of the Natural Resources Defense Council.
31. The session focused on possible mechanisms by which miners could gain access to financing to make a transition away from mercury. Representatives of three miners' associations discussed the barriers that they faced in financing their operations (especially a lack of access to credit as a result of their informal nature) and potential solutions such as community revolving funds. Following those discussions, examples were provided of how the international donor community, including international financial institutions (such as the World Bank, the African Development Bank and the Global Environment Facility) and

bilateral donors, could support the transition to low-mercury and non-mercury techniques through pilot technical, legalization and formalization projects. The following presentations were given and are available on the UNEP website:

<i>Presenter</i>	<i>Organization/Country</i>	<i>Topic/ Theme</i>
Manuel Reinoso Rivas	Sociedad nacional de minería en pequeña escala del Perú (Peruvian National Society of Small-Scale Mining)	Sources of funding in artisanal mining
Golden N. Hainga	Mwanza Region Miners Association, United Republic of Tanzania	Overview of artisanal and small-scale gold mining in the Mwanza region of the United Republic of Tanzania
Tsengol Damindandorj	Mongolia	Mercury-free gold processing plant in Mongolia
Getty P. Massawe	Sustainable Management of mineral resources project, United Republic of Tanzania	Approaches to reducing the use of mercury in artisanal and small-scale gold mining
Budi Susilorini	Blacksmith Institute	International assistance and collaboration to tackle artisanal and small-scale gold mining issues case study: artisanal and small-scale gold mining project in Central Kalimantan, Indonesia
Jane Dennison	Department of State, United States of America	Bilateral funding by donor Governments
Ludovic Bernaudat	United Nations Industrial Development Organization	Overview of the global mercury project funded by the United Nations Industrial Development Organization and the Global Environment Facility

32. During the session participants suggested that best practices and experiences should be shared among miners. They said that because of their informal status miners were forced to borrow from loan sharks rather than banks; as a result they faced higher interest rates and often unreasonable terms, and most of their money went to their creditors. Similarly, miners often faced unfair treatment when they sold their gold, as they sold at the black-market rate. Participants recognized the need to educate miners in how to use the loans that they received effectively.
33. Formalizing the sector, facilitating the process of acquiring credit (keeping in mind that most miners were uneducated), setting up registration offices in artisanal and small-scale mining areas, launching public-private partnerships and providing microfinance to miners were some important issues discussed during the session.
34. Some projects funded by the World Bank were highlighted by participants, the most recent being a \$50 million project (of which \$10 million–15 million was dedicated to artisanal and small-scale gold mining) on the sustainable management of mineral resources in the United Republic of Tanzania.
35. Ms. Dennison commented on the successful launch of a two-year project in Peru funded by the United States Department of State that targeted the elimination of worst practices in artisanal and small-scale gold mining and sought to reduce mercury use in the sector.
36. Participants also discussed the successes of a \$6.8 million global mercury project undertaken by the United Nations Industrial Development Organization and financed by the Global Environment Facility, which was being carried out in six countries.
37. The representative of UNIDO, Mr. Bernaudat, also mentioned that the Quick Start Programme of the Strategic Approach had recently funded a number of enabling activities with regard to artisanal and small-scale gold mining in such countries as Bolivia (Plurinational State of), Cambodia, Mali, Peru and the Philippines.

IX. Session on the intergovernmental negotiating committee

38. A session was dedicated to discussing the intergovernmental negotiating committee and the implications of a future legally binding instrument on mercury for the artisanal and small-scale gold mining sector. The session was facilitated by Mr. Piper and Mr. Glen Wiser, a UNEP consultant. The session gave the participants an opportunity better to understand the progress of the committee and the overall process. The facilitators reviewed the note by the Secretariat on draft elements of a comprehensive and suitable approach to a global legally binding instrument on mercury (UNEP (DTIE)/Hg/INC.2/3), which was to form the basis for discussion at the committee's second session. They explained the mandate accorded by the Governing Council and that the Committee was a negotiation between Governments in which every country was given an opportunity to participate.
39. Participants said that Governments should identify the limitations of a future legally binding instrument and consider which problems the treaty could resolve. Efforts to reduce the use of mercury should be prioritized. Mr. Wiser explained that the treaty was likely to include provisions on monitoring, noting that the term "compliance" should be considered positive, where Governments and related parties would work together to assist one another in achieving their common objectives.
40. It was emphasized that participants had an important role in reporting about the issue and the Global Forum to their respective Governments and delegates to the committee. It was also suggested that participants might wish to work together in their regions on the issue in an effort to speak with one voice during the negotiations.

X. Artisanal and small-scale gold mining mercury reduction declaration

41. Some miners present signed a statement in which they committed themselves to minimizing and, where feasible, eliminating mercury emissions from artisanal and small-scale gold mining activities. The development of the statement was coordinated by Mr. Manuel Reinoso Rivas, President of the Sociedad Nacional de Minería en Pequeña Escala del Perú, and is set out in annex III to the present report, without formal editing.

XI. Concluding remarks

42. Mr. Miguel Cuna thanked participants for their active involvement in the Forum, expressing his appreciation to his staff and to UNEP for the organization of the Forum. He reiterated the importance of the artisanal and small-scale gold mining sector and stressed the need to minimize the social, health and environmental costs. He pointed out that mining gold was possible by using mercury in a safer manner or in some cases with mercury-free techniques. He highlighted the importance of the formalization of the sector and the support that that process demanded from all the stakeholders. He urged participants to share information from the Forum and to work together in the lead-up to the intergovernmental negotiating committee's second session, to be held in Chiba, Japan, from 24 to 28 January 2011. He stressed that there was no single solution to the problems faced in the artisanal and small-scale gold mining sector but that the outcomes of the Forum would enhance understanding of the issues and help to tackle them in the long term.
43. The Forum was declared closed at 6 p.m. on Thursday, 9 December 2010.

Annex I

Summary of results from break-out session 1: technical solutions

1. *What are the most promising means of reducing mercury use and releases today? What are the estimated direct costs of alternatives and what are the barriers to their implementation?*

<i>Alternatives *</i>	<i>Mercury use</i>	<i>Dollar Cost in United States dollars **</i>	<i>Obstacles/Barriers</i>
Centrifuge	No mercury used	\$1,000–10,000. Average 4,000 for a good artisanal and small-scale mining centrifuge	Cost, energy, water, technical know-how, legal status
Sluice		\$50–1,000	Water (although can also be dry), high cost, high energy use
Retort (various types)	80 to 99% reduced	\$3–50	Time, transparency, volume
Mercury vapour capture system	70 to 90% reduced	\$50	Legal status, technical know-how
Reactivation (salt water and 12-volt battery)	30 to 70% reduced	\$3	None
Direct smelting kit	No mercury used	\$1,000	Cost, energy, technical know-how, quantity of material that can be processed

* Applicability of the techniques depends on the type of ore deposits.

** Costs do not include environmental costs.

2. *How can the solutions be made more accessible?*

Information, education and communication were described as important in making solutions more accessible to miners. Furthermore, it was suggested that a combination of methods would support release reductions in the sector, including local manufacturing of the equipment and improving access to microfinance and credit.

A number of other suggestions included developing a simple instruction manual with pictures, setting up pilot projects, providing technical assistance from Governments and other organizations and developing a policy framework that provides incentives and disincentives to miners to reduce mercury use and releases.

3. *What current techniques are the most polluting?*

The three most polluting techniques used in gold extraction were identified as whole-ore amalgamation, open-air burning and cyanide use after mercury.

4. *Are you aware of other techniques that show promise for the future?*

Microflotation, microleaching, ammonia leaching and enhanced gravity were noted as some further promising techniques for the future.

Annex 2: Summary of the regional sessions²

Latin America

Country	Estimated numbers of miners	Concentrated or spread throughout the country	How much gold do they produce? What prices	What is the legal status of miners?	How do they access the market?	Approximate Percentage of formalized miners
Brazil	300,000 - 500,000	Northern states (Para and Amapa states)	ASGM is decreasing in its relationship with total gold production. About 3t/a	Lots of illegal and immigrants. Most miners do not belong to associations but there are big corporations.	Gold shops buy the gold from the miners.	50%
Ecuador	About 10,000	Mostly in the south of the country. In the past, there was some illegal activity in the north (Esmeraldas)	Production: 10-12 tAu/a	New legislation involved to seek a better management of the sector while preserving the environment (right to live in a clean environment)		10%
Peru	81,000 for AGM and 4,000 for SGM	Most of the country. In the past it was concentrated in a few regions but now it's everywhere	29tAu/a for AGM and 5tAu/a for SGM. The price is close to the international prices. The average earning is \$2 per day	The informality is a source of conflicts with illegal miners operating in concessions of legal miners.		2%
Guyana	13,000 miners	All over the country	10-15 ton/year	Many migrant miners come from the coast and immigrants from Brazil	Gold mostly sold to Guyana Gold Board	90%
Bolivia	About 50,000	All over the country	25 US\$/g. Production 10-12tAu/a	There is a legal framework. There are some organizations of the miners in associations.		2%

² Note: The data in the annex is provided by the representative of the countries present at the forum and is presented without formal editing

Current progress:

1. Bolivia:

Bolivia has just started working in this very important area including the SAICM regional project with Peru. There are good expectations for the SAICM national strategic planning project because all of the stakeholders are engaged.

2. Brazil:

In Brazil, ASGM miners use mercury without any license. Cyanide is not forbidden, but they need to obtain licenses for that. More 'best practices' have to be explored. The mining titles specify what can be used. The "gold washers" cannot use cyanide. The reason is that most deposits are alluvial and mercury is generally more effective.

The Ministry of Mining and Energy has formalization programmes, including for other minerals (not only gold). For gold, in the Amazon region, the Tapajos (Para State) and Amapa state, they have a programme to regulate the activities of the miners. They provide a title PLG (permission licence Garimpeiros). The second step is field work with training and awareness campaigns (including retort demonstration). Overall, there are more than 50,000 PLG concessions. They promote creation of associations and cooperation of miners. In Sierra Pelada, more than 45,000 miners are in a cooperative.

3. Ecuador:

In Ecuador, a combination of amalgamation and cyanidation is used to produce gold. There is a new regulation that aims at assisting the miners to improve practices. There is a project addressing the artisanal mining sector which will start next year and UNIDO is assisting the country to refine the programme and hopefully raise more funds. The national programme will concentrate in the 3 regions where ASGM is active. A group of national stakeholders has been established including the MoE. The aim is to assist miners to improve gold processing methods while reducing mercury use. For Ecuador, there is a need to gather socio-economic information on the sector as it is the largest mineral income earner for the state.

4. Guyana:

According to the representative of Guyana, their ASGM sector is well regulated. They have been able to develop best practices over the years including technical assistance and training initiative. Through a project by WWF, the use of retorts has been widely disseminated in the country. They also promoted stakeholder interaction.

5. Peru:

In Peru, for each 2kg of mercury used, 100g is lost. There are communal retorts or individual retorts available according to the region. There are also regions where cyanide is used the majority of the time. On the legal aspect, there is a move to decentralization and this will assist the interaction with the ASGM. There is collaboration between the Ministry of Mines and the Ministry of Environment. The utilization of cyanide or mercury depends on the geology (alluvial or primary ores). Use of mercury capture mechanisms such as the fume hoods in collaboration with USEPA has been introduced as a pilot. For illegal miners, the major barrier to the introduction of better techniques is the cost.

Swiss Develop Corporation (finished in 2009) promoted the dissemination of communal retorts. The project worked in 3 areas of Peru and helped the creation of miners' association as well as the development of the mining law. Some national institutions have been working to replicate this project, especially the utilization of retorts for the recycling of mercury. The most important point for the success was the organisation of miners in associations, the acceptance of the utilization of retorts by the miners, and the fact that the project activities were developed and implemented in a very participative manner.

Discussions:

In addressing ASGM, other aspects than mercury pollution have to be taken into account in projects such as deforestation, landscape disruption, increased turbidity, local economic impact and gender issues. Ecuador mentioned that in comparison with Large scale miners (LSM), ASGM provides local jobs and income for the country. There is a need to show a good image of the ASGM sector. To be able to make progress, governments needed to work with the local people who have had experience that can be replicated. It is a serious problem and Governments have to ensure that all of the stakeholders are part of the solution.

Asia

Country	Estimated number of miners?	Concentrated or spread throughout the country?	How much gold do they produce? What price?	What is the estimated price of mercury?	What is the legal status of miners?	How do they access the market? What price do they get?
Philippines	300,000	Spread throughout 30 provinces.	Independent gold buyer : US\$ 45/gram (for gold more than 200 grams) and US\$ 36 (for gold less than 200 grams)	US\$ 69/kg	Mostly operate without license	Mostly sell their gold to independent buyer as the Central Bank applies strict quality control.
Cambodia	5,000 – 6,000	Spread throughout the country	N/A		Mostly operate without license	Mostly sell their gold to independent buyer who comes to the field
China	ASGM is abanned in China since 2002	-	US\$ 54/gram	US\$ 28/kg	ASGM is illegal	-
Mongolia	68,000 – 100,000		5,000 kg/year	US\$ 90/kg		Mostly goes to black market and is exported to Cambodia
Indonesia	300,000 – 500,000	Spread throughout the country		US\$ 70 – 90/kg	Mostly operate without license	Mostly sell their gold to independent buyers

Common problems

1. The gold mostly goes to independent buyers and less to Government controlled agencies.
2. Status: mostly illegal miners, without license, and inside existing concession of work of LSM.
3. No clear legal framework or policy for ASGM from the Government
4. Lack of data on ASGM, particularly gold production, number of miners, etc.; except Philippines with comprehensive data on ASGM
5. Armed militia involvement and middle-man as mercury supplier.

(1) What are the success stories in implementing progressive ASM policies affecting the social issues and formalization of ASGM miners? What are the key lessons?

1. Cambodia

Some mining law and mercury inventory is currently under way with support from the USEPA and UNEP; drafting a national strategic plan including social issues/elements related to the ASGM.

2. Indonesia

Kalimantan: During a project in Kalimantan retorts were distributed to contribute to the environment benefit (to reduce the mercury emission), economic benefit, and health benefit but there is a need to be promoted while it is simple, but need to be field tested. One of the key lessons learned is that the miners in the field do not have access to simple technology.

3. Mongolia

Developed provisions to provide health care to the miners. For instance miners when applying for a license have to incorporate health and social insurance. They also have to be older than 18 years to apply.

4. Philippines

Legalization and providing security tenure to the mining communities; mercury management; association formation – e.g. Mindanao Federation – 11 municipalities – 3 local association supervised by Federation – in the process to establish the National ASGM Association.

Mining has transformed the communities and helped in the development of rural area. As miners live in rural areas, there are problems in providing them with proper health care.

Overall observations

1. Countries have shown progress on different levels.
2. There is a need and effort for formalization
3. It would be helpful to connect simple technology and the overall benefit to social and health issues.

(2) What are the main barriers to having progressive policies on the social issues and formalization of miners?

1. Cambodia

The need for basic knowledge including the educating about the harmful effects of mercury and cyanide, asset management. There is a lack of information from the government officials, including monitoring and evaluation.

2. China

A new policy in 2005 changed the dynamic of the extractive industry resulting in phase out and restriction on artisanal mining. This prompted Small Scale Mining using mercury free techniques with a license and pass Environmental Impact Assessment (EIA).

3. Indonesia:

ASGM is illegal. The result is that the government cannot currently implement policies to improve conditions.

4. Mongolia

Miners are not interested to formalize because they do not want to pay for it.

5. Philippines

One main barrier is the lack of political intervention which should be supported and drive a sustainable ASGM sector. The rules and regulation are there, but absence is in enforcement and feedback. There are no regulations

for medium scale mining. There is a need to bring the illegal issue into the regulation. Government should have a definition of artisanal, small, medium and large mining.

Overall observations

1. The legal situation varies with a lack of definition, inconsistent law, social benefits
2. Lack of knowledge, capacity, political support, and feedback mechanism are barriers.
3. Land harmonization is important.
4. Mind set with the miners themselves is important to support change.

(3) What are the obstacles faced in improving relations between Large Scale Mining and Small Scale Mining and what are the steps/tools to overcome these obstacles?

1. Cambodia

Large Scale Mining is easier to control than Artisanal mining because they need an Environmental Impact Assessment when they apply for a license.

With ASGM, there is a lack of information, financial issues (lack of knowledge, illegal status)

2. Indonesia

Large Scale miners already gave money to the indigenous people who own the land, but cannot give more to the miners. The land owners rent to the ASGM miners which is often a source of conflict. Large Scale Miners want to explore due to large amount of investment and operation, but there is room for ASGM to also build constructive relationships rather than creating a conflict. Large scale miners should take more responsibility and ASGM should be embraced in community development.

3. Mongolia

There is a provision in the regulation to mediate Large Scale Mining and ASGM.

4. Philippines

ASGM depends on the Large Scale Mining but conflict will emerge if the interests overlap. Philippines has some co-existence between Large Scale Mining and ASGM and they do profit share. In an area in Mindanao there is a voluntary act in resource sharing and profit, where the equipment was provided by Large Scale Miners and financed from ASM.

Overall observations

1. Competing interests regarding the relationships between large scale mining and ASGM.
2. Different responsibilities.
3. Resources and distribution issues
4. Unprepared institution and legality issues
5. Some suggestions to help improve relations include:
Creating constructive dialogue, time frame of exploration properly understood, technical assistance from large scale mining, possibility of ASGM assay for ores, transparency, cooperative agreement, and production sharing contract.

Africa

Country	Estimated number of ASGM miners?	Concentrated or spread throughout the country?	How much gold do they produce? What price?	How much mercury they use? What price?	What is the legal status of miners?	How do they access the market? What price do they get?
Mali	200,000		2000-4000 Kg by ASM	Black market for mercury	Miners come from Mali and from other African countries	The gold buyers are from Mali, Guinea and Senegal
Ghana		Widely spread	14 tonnes by ASGM		Transition stage	
Democratic Republic of Congo	300000			Banned in the sector but is used informally		
Nigeria		Not well organized, few are licensed				
Tanzania	400,000					
Mozambique	100000	Most of them are informal	Approximately 600 Kg, All of it is produced by ASGM			

Common issues

- Lack of baseline data.
- Child labor is prevalent in many regions.
- Lack of formalization in most countries is a barrier to miners improving their practices

Additional information

1. Democratic Republic of Congo

Mining is considered an important sector in the economy of the country. The mining sector contributes to 71% of the GDP and 86% of exports. ASGM is mainly informal, using rudimentary instruments and methods, such as pick and shovels. ASGM contribution to national economy is around 5%. There is a project for establishment of a Mining Fund that would assist mining communities in the establishment of social infrastructures.

According to the gold miners, the alternative methods to amalgamation do not produce good results. The alternative methods to amalgamation include gravity concentration, grinding, sluicing, pre-concentration, drying and blowing.

2. Ghana

In Ghana, ASGM is widely spread in Greenstone belt areas and in river basins and catchments. The ASGM operations in Ghana are classified by size and by tonnage handled per year. In Ghana only 5% of ASGM miners comply with law. The government has created the Precious Minerals Marketing Corporation (PMMC), an entity responsible in channeling the gold from informal and formal operation into the official channels. The ASGM sector in Ghana faces various challenges, including the conflicts due to encroachment of ASGM into Large Scale Mining claims, poor organization, lack of finance and technologies, lack of reclamation of mined sites and conflicts on mineral rights. Government intervention involves designation of ASGM areas, provision of financial assistance to ASGM, mercury abatement programmes, decentralization of the licensing and cadaster departments.

3. Mali

The gold miners use crushers, sluices and produce a concentrate that is amalgamated with mercury and the amalgam is burned in open air or kitchens. The source of mercury is not clear, however reports indicate that the traders (buyers) bring mercury and, there is black market circuit on mercury. The Government of Mali is reviewing the mining law and in the new draft ASGM has been given a special attention. The Government is quite supportive to ASGM and understands its importance in the rural development. In Mali there are no studies of the environmental problems caused by mercury used by ASGM. Mali has a project for mercury abatement together with UNIDO through the Quick Start Programme of the Strategic Approach to International Chemicals Management.

4. Mozambique

ASGM miners are mainly men, 30% are women and children which tend to perform activities such as transport, wash and panning of ore. In most cases ASGM activities are practised during the dry season while in the wet season most of the people resume agricultural activities. The sector is informal with precarious bookkeeping, lack of basic economic knowledge of the activity and market problems. In Mozambique there is a Mining Fund (Fundo de Fomento Mineiro), which buys the gold product from ASGM at the market price, but it is competing with other buyers. The Government is conducting projects that aim at organization and formalization of ASGM. Environmental education is a tool that can be used to educate the miners for implementation of best mining practices.

5. Nigeria

There was a baseline survey in 2005 and it was revealed that ASGM miners use a combination of mercury and cyanide extraction. There is specific ASGM department in the Ministry of Minerals and Energy and its mandate is to assist the ASGM sector countrywide. There was a World Bank project that assisted ASGM in formalization, formation of ASM cooperatives, financial and technical assistance.

6. Tanzania

The main method for extracting gold is the use of mercury which is readily available in the market. Child labor is quite common in ASM sites in Tanzania. The Government assists ASGM by training them on mining methods and processing techniques. In 2007 the Government published a new act in which there is a full section on ASGM. The licensing has been decentralized to regional level and it takes about a month to issue a license.

Annex III ³

Text of the statement made by miners present at the Forum

We, miners, as the most exposed to mercury releases, recognize that mercury is a dangerous substance. Mercury releases need to be reduced, as well as its health and environmental impact minimized.

However, its use is important for gold recovery process.

We consider that our mining activity generates high employment, livelihood opportunities and that extraction of mineral is contribution to local, regional and national economic development.

We embrace the commitment to:

- Minimize and where feasible, eliminate the mercury releases of our activity
- Adopt over time mercury-free techniques

This commitment can only be honored if:

- Our activity is legalized and recognized as part of the mining sector.
- This formalization has to be facilitated and promoted by our governments
- Capacity building and technology transfer programs are made accessible with our participation
- Basic public services and infrastructure are put in place.

Our commitment needs government reciprocity to become a reality.

UNEP Global Forum on Artisanal and Small-scale gold mining
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Signatories

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³ The text is presented without formal editing