Artisanal and Small Scale Gold Mining and Mercury Pollution





GMP: Pilot project for the reduction of mercury contamination resulting from artisanal gold mining fields in the Manica district of Mozambique (Photo) http://www.globalmercuryproject.org/countries/mozambique/docs/Moz_Final_Report_Aug_2005.pdf

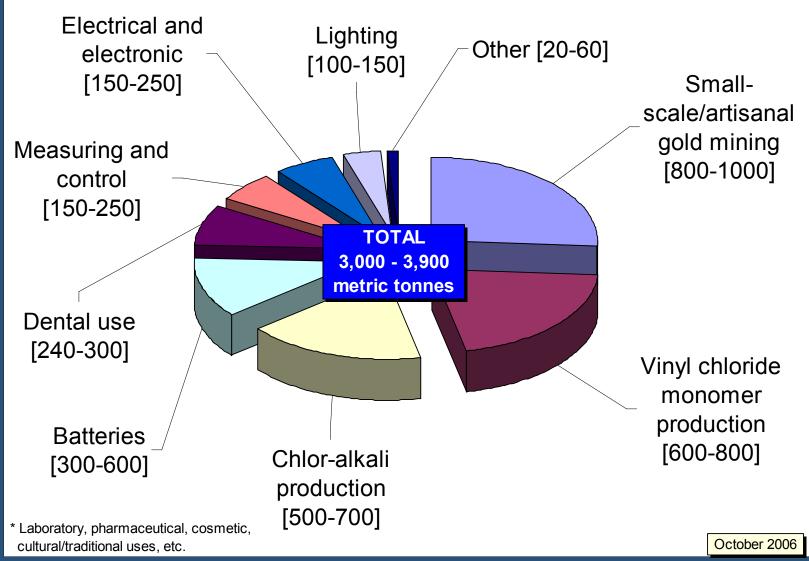
Mercury Pollution: A Global Problem Warranting International Solutions



- Mercury (Hg) cycling threatens global fish supply
- Primarily risk for pregnant women, children & sub-populations dependent on fish & marine mammals
- Artisanal & Small-Scale Gold Miners especially experience acute health impacts
- W.H.O. (2005): regardless of the error. a safe threshold of exposure

Major Global Mercury Uses (2005)





Source: Maxson, "Mercury flows and safe storage of surplus mercury" for the Environment Directorate, European Commission, August 2006 (with data ranges). See: http://ec.europa.eu/environment/chemicals/mercury/pdf/hg_flows_safe_storage.pdf

ASGM and Mercury

- Source of livelihood for 10-20 million people
- ASGM represents about 1/3 of the total worldwide mercury consumption
- Why use mercury:
 - Cheap
 - Easily accessible
 - Quick
 - Easy to Use
 - Independent
- Up to 1350 ton/yr:40% to atmosphere,60% to aquatic systems



Blue Reef Small Scale Gold Mine (Tanzania)

High Risk Practices







Open-air burning of gold-mercury amalgamate. Hg is emitted directly to the atmosphere and human exposure is extremely high

Contaminated amalgam tailings are left on-site where they can leach mercury into the soil and water and emit to air

Communities and Small Scale Mining (Photo): http://www.iied.org/mmsd/mmsd_pdfs/asm_ghana.pdf
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http://www.globalmercuryproject.org/countries/mozambique/docs/Moz Final Report Aug 2005.pdf

Measures to Reduce Emissions







A locally fabricated retort

Miner re-activating mercury using a radio battery; the process takes about 10 - 20 minutes

Global Merucry Project. Final Country Report for Tanzania. November 2007 (Photo)

http://www.globalmercuryproject.org/countries/tanzania/tanzania.htm

GMP - Manual for Training Artisanal and Small-Scale Gold Miners (Photo)

http://www.globalmercuryproject.org/documents/non_country%20specific/training%20manual%20for%20miners%20Marcello%2015.pdf



International Response to Mercury Use in Artisanal and Small Scale Gold Mining

Global Mercury Project



- GEF/UNDP/UNIDO project begun in August 2002
- Goal: demonstrate and promote adoption of best practices to limit the mercury contamination from ASGM
- Six countries: Brazil, Lao PDR, Indonesia,
 Sudan, Tanzania and Zimbabwe

UNEP Mercury Programme:Partnerships



 UNEP voluntary partnerships with goal to reduce mercury use and emissions in key sectors (coal, Artisanal & Small Scale Gold Mining (ASGM), chlor-alkali, products, waste management, supply and storage)

 ASGM Partnership goal: to reduce mercury use in ASGM 50% by 2017

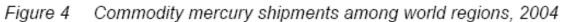
Mercury: A New Beginning

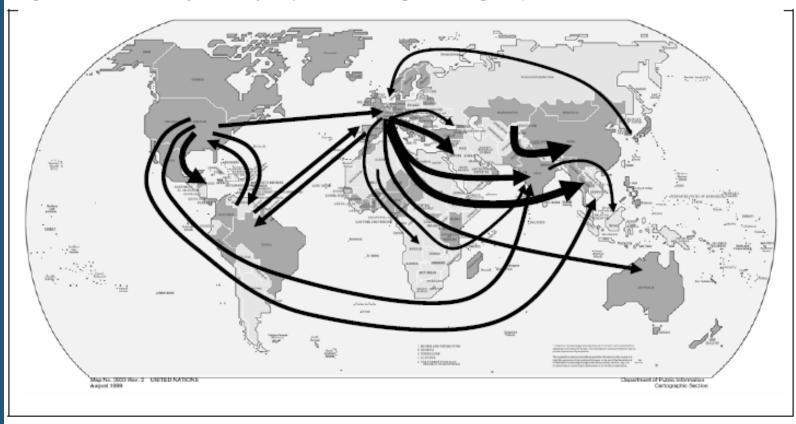


- 25th UNEP Governing Council meeting, February 2009: decision to begin negotiations on an international treaty to control mercury pollution (Decision 25/5)
- Mandate to Intergovernmental Negotiating Committee (INC) to consider supply, demand, and trade measures
- Negotiations expected to conclude by 2013









From: UNEP Chemicals. Summary of Supply, Trade and Demand Information on Mercury. Nov 2006

What are the Implications for ASGM?



- Mercury trade restrictions will almost certainly increase the price of mercury
- ASGM an "industrial process" subject to possible control measures
- Financial mechanism envisioned to help developing countries comply with requirements under the treaty
 likely including ASGM
- Decision specifically calls for governments to provide assistance for pilot projects on ASGM while treaty negotiations are underway (through Partnership or other means)

ASGM Realities

- Extremely decentralized
- •Limited effectiveness of regulatory approaches, especially due to widespread illegal mercury markets and mining activities
- •An important mode of employment where alternatives not easily found, and social or cultural mores can influence business practices

What Measures are Needed?



- International trade policy re: mercury
- National chemical policies
- Legal issues re: miners
- Financial mechanisms
- Technical assistance and training for miners

What is the Path Forward?



- What are the highest priority countries/areas (what are the criteria for setting priorities?
- What is the proper balance between activities to develop policy frameworks for ASGM and practical work with miners in the field?
- What types of actions are needed to facilitate information exchange and communication among the global community working on AGSM and mercury?

What is the Path Forward? (con't)



- Is the ASGM sector already being integrated/ mainstreamed into mining sector projects now? If so, how?
- What models exist for designing ASGM/mercury projects, particularly in terms of:
 - innovative financing mechanisms to support miners
 - scaling up successful pilot projects to reach more miners
- Is there value in creating a structured program for funding and assistance on mercury and ASGM, which could facilitate adoption of similar standards and objectives across ASGM/mercury projects around the world?