

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)

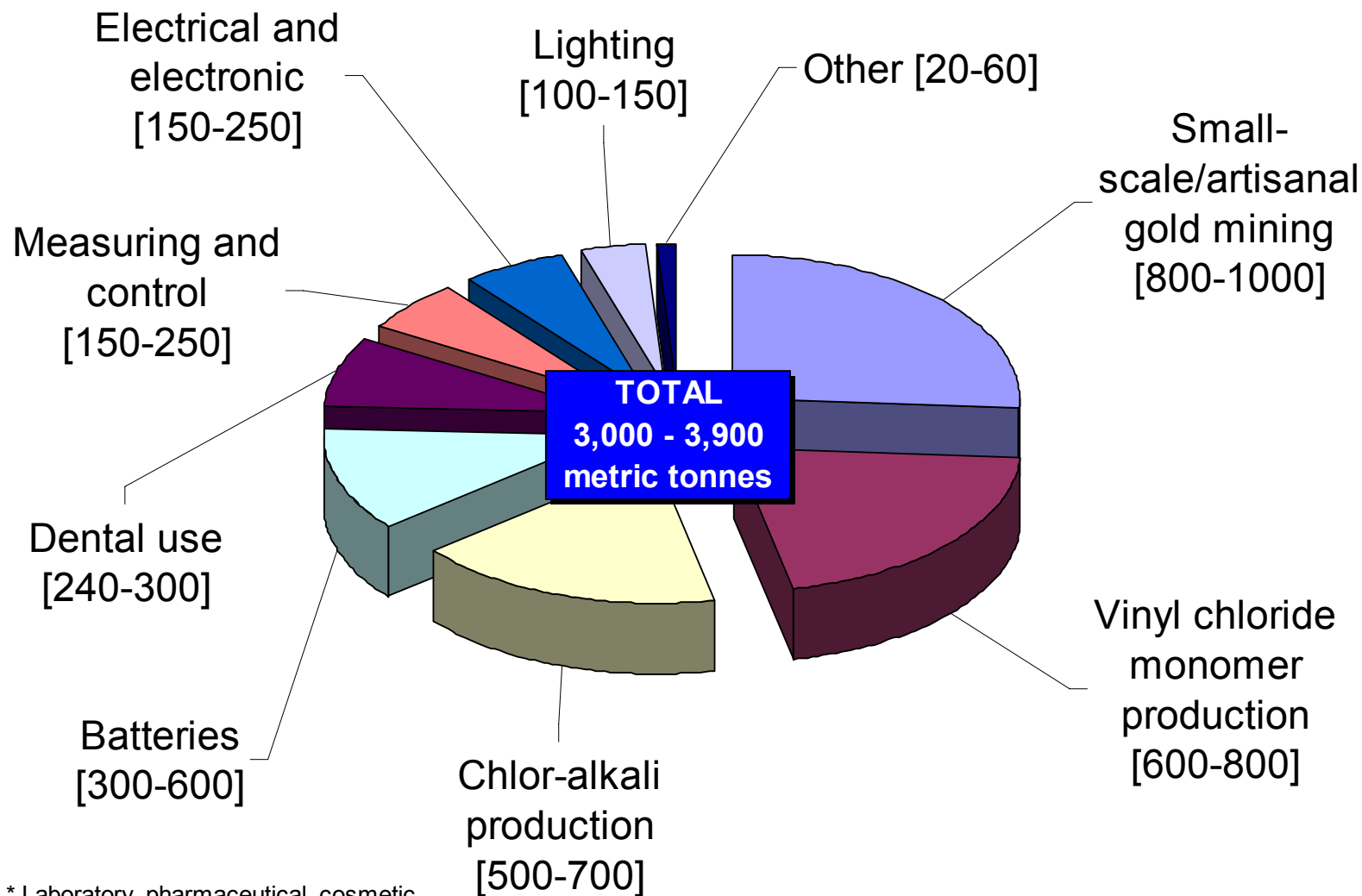
http://www.globalmercuryproject.org/countries/mozambique/docs/Moz_Final_Report_Aug_2005.pdf

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)



* Laboratory, pharmaceutical, cosmetic, cultural/traditional uses, etc.

October 2006

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)

Telmer, H. and Veiga, M. 2008. "World Emissions of mercury from artisanal and small scale gold mining and the knowledge gaps about them." In: Mercury Fate and Transport in the Global Atmosphere. UNEP Mercury Fate and Transport Partnership (in publication).

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

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

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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Measures to Reduce Emissions



A locally fabricated retort



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

Global Mercury 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

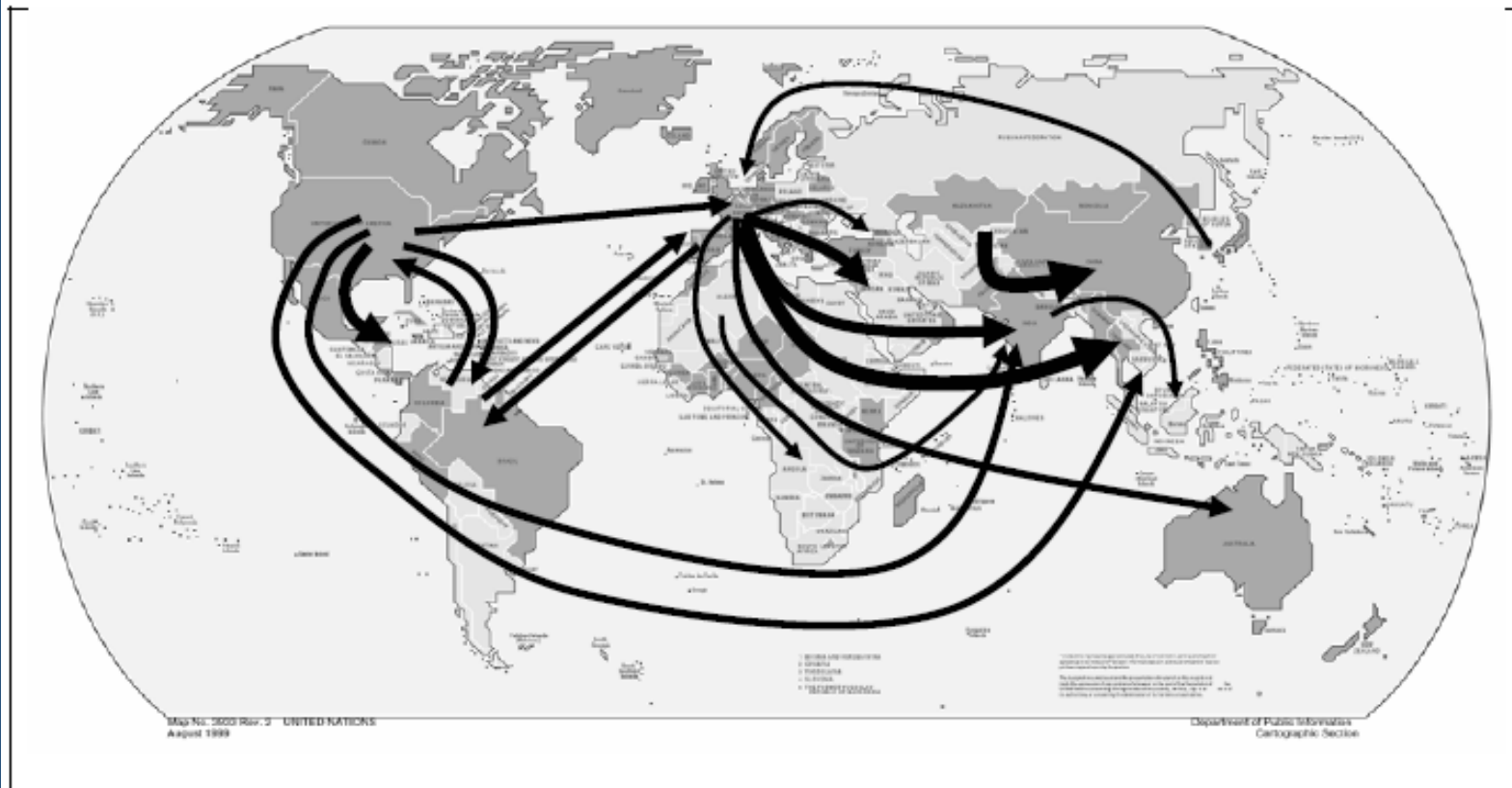


- 25th UNEP Governing Council meeting, February 2009: decision to begin negotiations on an international treaty to control mercury pollution (Decision 25/5)
- Mandate to Intergovernmental Negotiating Committee (INC) to consider supply, demand, and trade measures
- Negotiations expected to conclude by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

Trade Flows



Figure 4 Commodity mercury shipments among world regions, 2004



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?