

# 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)

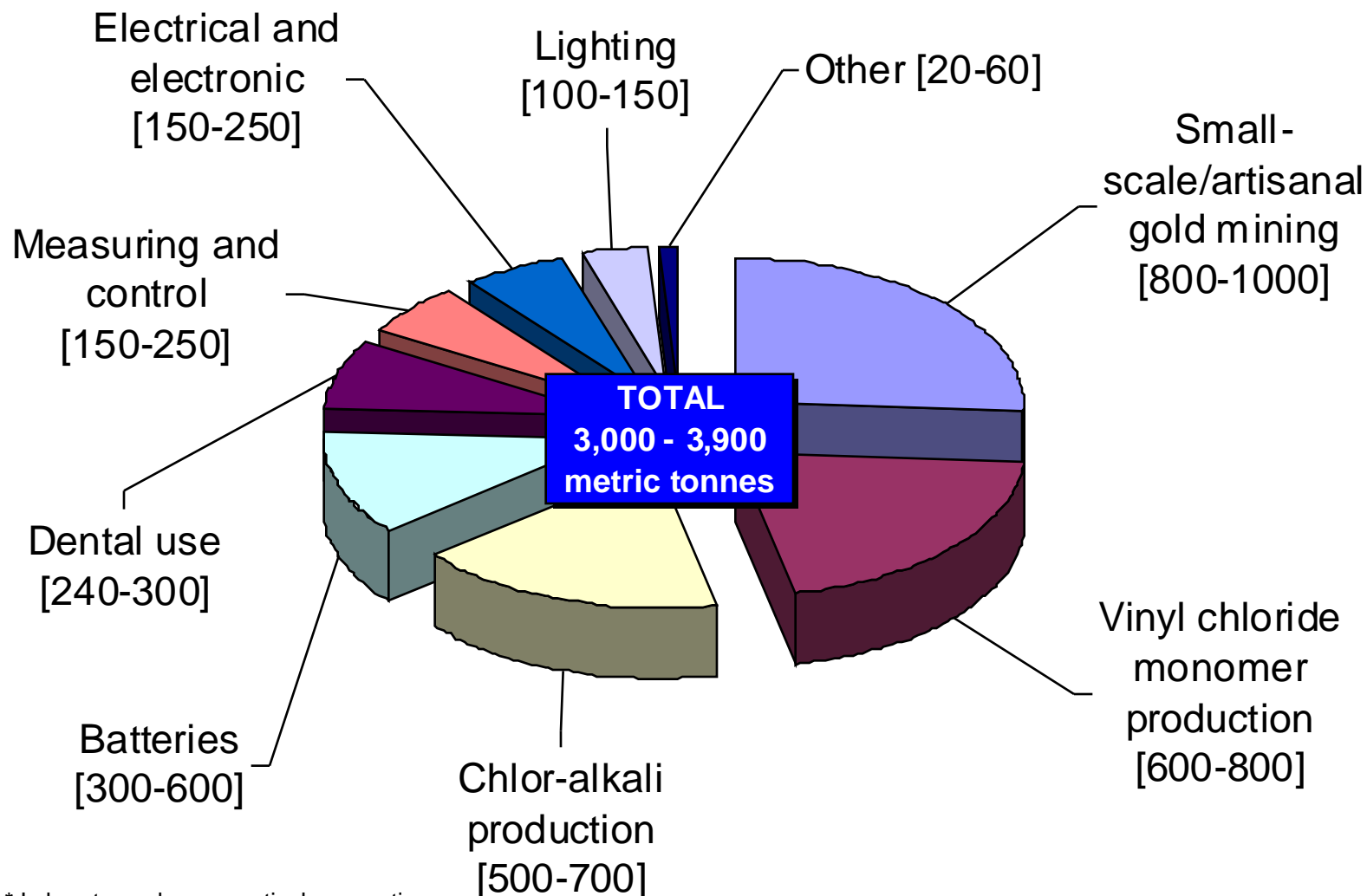
[http://www.globalmercuryproject.org/countries/mozambique/docs/Moz\\_Final\\_Report\\_Aug\\_2005.pdf](http://www.globalmercuryproject.org/countries/mozambique/docs/Moz_Final_Report_Aug_2005.pdf)

# 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): **mercury may have not have 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](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

Communities and Small Scale Mining (Photo): [http://www.iied.org/mmsd/mmsd\\_pdfs/asm\\_ghana.pdf](http://www.iied.org/mmsd/mmsd_pdfs/asm_ghana.pdf)

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# **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

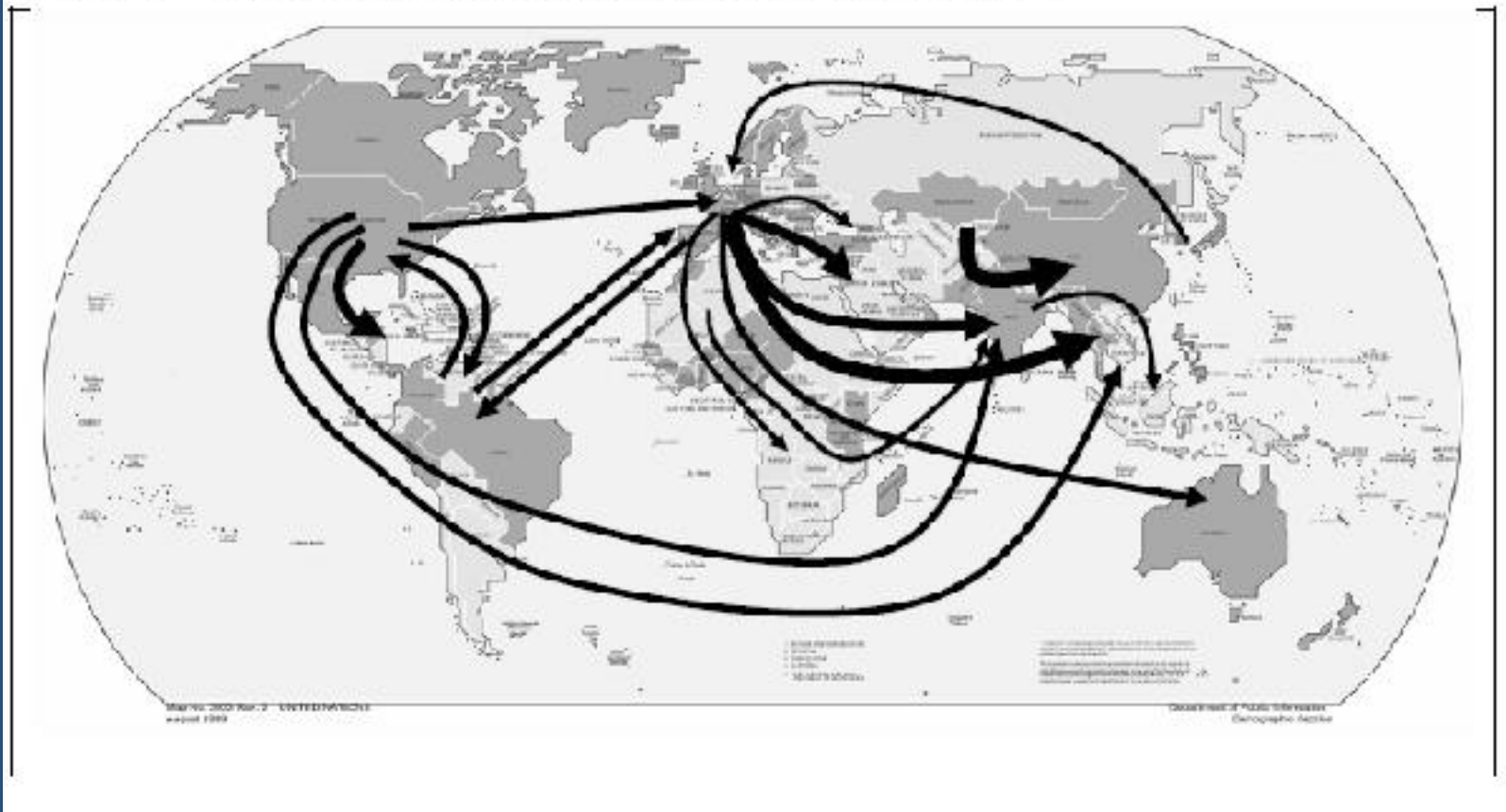


- | 25<sup>th</sup> UNEP Governing Council meeting, February 2009: decision to begin negotiations on an international treaty to control mercury pollution (Decision 25/5)
- | Mandate to Intergovernmental Negotiating Committee (INC) to consider supply, demand, and trade measures
- | Negotiations expected 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 is needed to reduce Hg in ASGM?

- | Restrict supply and availability of Hg
  - | Provide a price signal to miners to conserve
- | Formalize/ integrate miners
  - | Enables programs to legally reach miners with information/ technologies
  - | Gives miners access to means to increase productivity and profitability while decreasing mercury use and releases
- | Develop successful models of transition to low / non-mercury techniques
- | Financial and technical support for scaling up

# Next Steps



- | Reduce availability and increase price of mercury as soon as possible
- | Provide information and training on alternative methods for miners
- | Expand awareness-raising and pilot projects in key countries, as directed by UNEP GC Decision 25/5
  - | Projects must be started soon in order for results to inform negotiations
- | UNEP Global Mercury Partnership is one vehicle for carrying out projects

**Thank you for listening!**  
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