

Artisanal and Small Scale Gold Mining: Background on the Sector

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A highly variable sector

From panning...



UNIDO, Madagascar, 2008

To high volume ore processing...



UNIDO, Ecuador, 2010

And everything in between...

ASGM is not new

- 19th century gold rushes (from 1849-1929): U.S., Canada, Australia, New Zealand, and South Africa
- Gradual shift into larger, organized groups of miners and eventual industrialization: a response to organizational and technological necessity and government policies



Canada, 19th century.



Brazil, 1990s

Photos courtesy of the Artisanal Gold Council. See: <http://artisanalgold.blogspot.com/2013/04/historical-and-modern-government.html>

Complex social dimensions of ASGM

ASGM is:

- A source of employment to 10-20 million miners in over 70 countries worldwide, especially in rural areas;
- A direct benefit to local economies
- A means of transferring wealth to people in poverty

ASGM can also be :

- Informal, extralegal, or illegal
- A source of social problems:
 - Child labor and other labor issues
 - Land tenure issues
 - Migration and other social instability
 - Conflict

Health effects (1)

(session 5)

- **Mercury releases** directly affect mining communities and down-stream population
- Children at mining site (working or not) vulnerable to mercury exposures



Health effects (2)

(session 5)

- **Accidents** due to poor safety conditions at mining and processing stages
- **Poor sanitation, STDs**



Sarah Pante-Avidao, Panganiban, Philippines, 2013



UNIDO, Burkina Faso, 2012

Environmental Effects (1)

- Water siltation
- Landscape degradation
- Destruction of habitats and encroachment on protected areas



UNIDO, Ghana, 2003



UNIDO, Madagascar, 2008

Environmental Effects (2)

- Loss of organic soil
- Deforestation
- Mercury pollution; increasingly, cyanide pollution



UNIDO, Burkina Faso, 2012

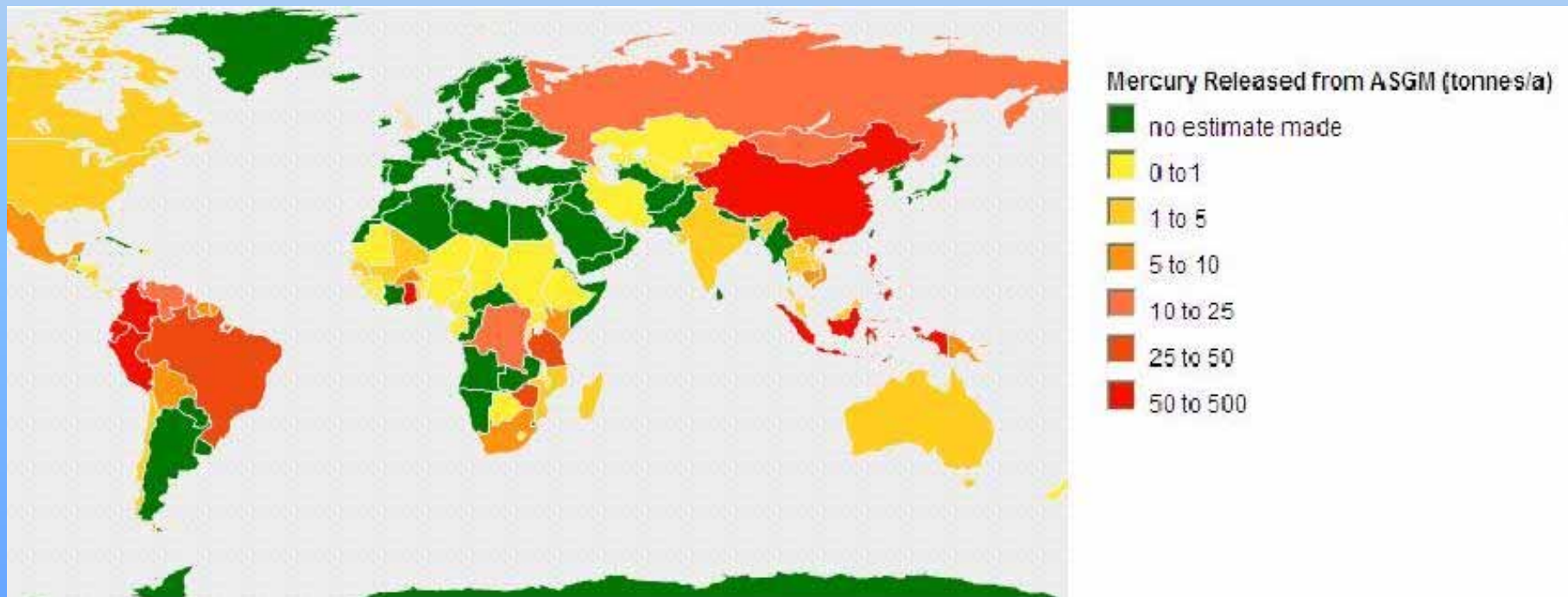


UNIDO, Mozambique, 2001

Mercury Use in ASGM

Use of Mercury in Artisanal and Small-scale Gold Mining: The Basics

- Around 1600 tons per year of mercury used (MercuryWatch est.)
- In the most recent Global Mercury Assessment, ASGM is now identified as the **single largest emission source** in the world, surpassing fossil fuel combustion



Map from www.mercurywatch.org

Why Use Mercury?

- Cheap
- Easily accessible
- Quick
- Easy to Use
- Independent
- Enables division of profits



Blue Reef Small Scale Gold Mine (Tanzania)

UNIDO, Global Mercury Project, 2007

Miners Are Not Aware of the Dangers of Hg

- Water is also used for fish farming, drinking, bathing.
- Mercury is freely available, can be used in the miners' backyard



UNIDO, Galangan, Kalimantan, Indonesia, 2002



UNIDO, Zimbabwe, 2005

Challenges of Reducing Mercury Use

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

Root Causes of Poor Practices

- Disorganization & transience
- No technical assistance
- Lack of education
- Inadequate regulations
- Financial barriers
- Lack of support from mainstream society
- **POVERTY**

What are the solutions?

Technical Solutions

(session 3 tomorrow)

*Reduction of Hg
Use and
Emissions*

Avoid bad practices
(e.g. whole ore
amalgamation),
and Hg exposure
(no open burning)

Immediate/ Short-term

*Replacement for
Amalgamation*

Use other
process (e.g.
enhanced gravity,
cyanidation)

Longer term



Legal, Financial Issues and Government Interventions



Supply chain measures affecting ASGM

OECD Due Diligence Gold Supplement

- Asks stakeholders to :
 - support formalization and legalization
 - Help miners create verifiable supply chains

Dodd Frank Act

- Requires US companies to affirm they do not receive gold from named conflict areas

“Ethical” gold supply chains

- Fair-mined Standard
- Better Gold Initiative

Artisanal and Small-Scale Gold Mining Partnership Area

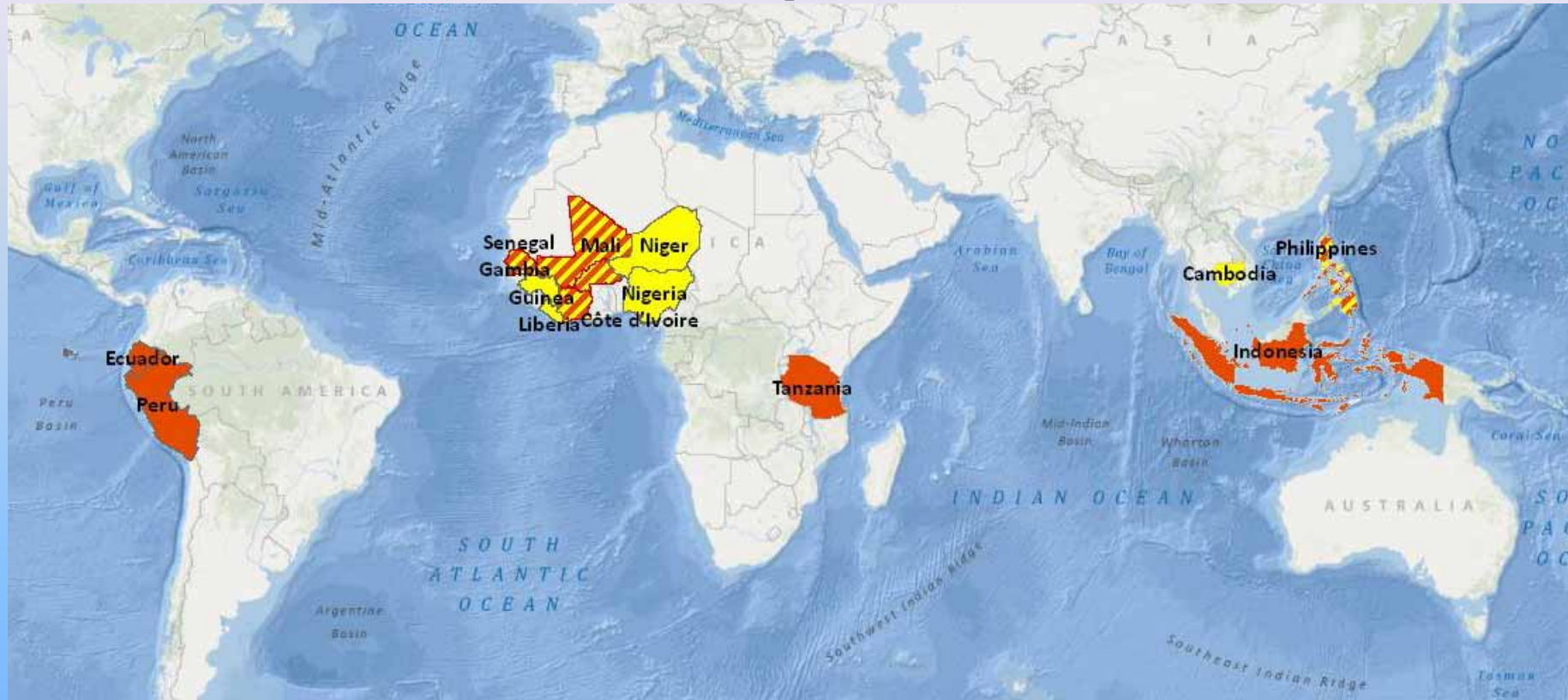


ASGM Partnership

Goals and Activities

- ASGM Partnership Area Goal: reduce mercury use in ASGM by 50% by 2017
- Main activities:
 - Help Countries with Setting Goals and Targets
 - Reduce High Risk Practices and Promote Cleaner Technologies
 - Explore Innovative Market-based Approaches

Partnership Activities



Strategic planning

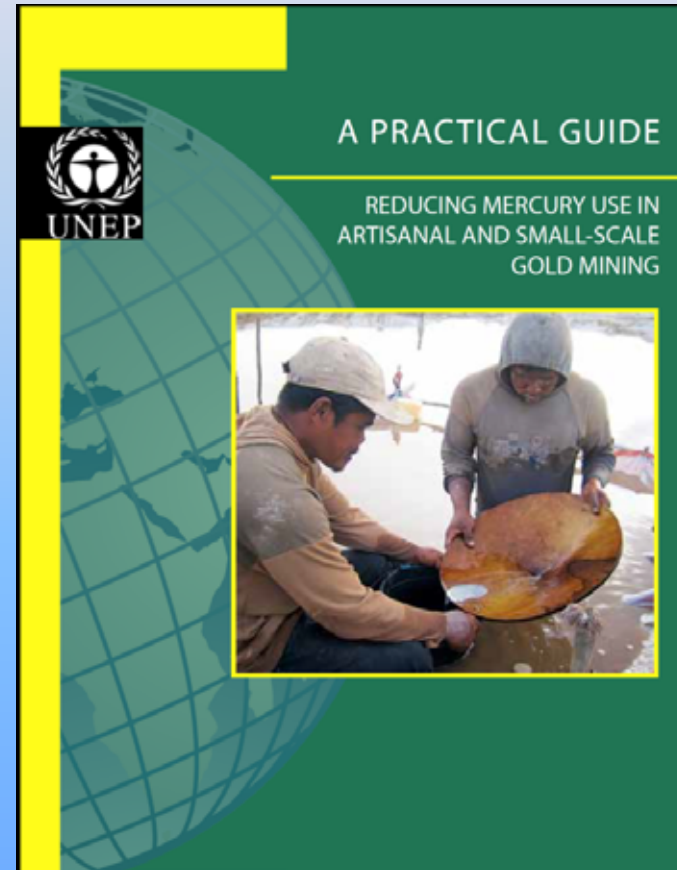
- Philippines, Cambodia, Burkina Faso, Mali, Niger, Cote d'Ivoire, Guinea, Senegal, Gambia, Nigeria

Field level work

- Peru, Ecuador, Tanzania, Burkina Faso, Mali, Cote d'Ivoire, Senegal, Indonesia, Philippines

Priority Publications

- Technical document
- Legalization/ formalization
 - overview
 - five case studies
- Guidance on National Action Plans
- **Links available on Second Global Forum webpage**



UNEP Global Mercury Partnership ASGM Area

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Or visit the UNEP website:

<http://www.unep.org/hazardoussubstances/Mercury/PrioritiesforAction/ArtisanalandSmallScaleGoldMining/tabid/3526/Default.aspx>