

Artisanal and small-scale gold mining as a tool for development?: Addressing the twin challenges of environmental destruction and informality

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Artisanal and Small-scale Gold Mining (ASGM): Not Such a Small Scale Activity

- ASGM: Gold mines of 1-100 workers, informal and using rudimentary techniques.
- 10-30 million people directly employed*, 90% of gold mining workforce**, 20% of global gold production***.
- A tool for development?

*Veiga, Marcello M., and R. F. Barker. 2004. Protocols for environmental and health assessment of mercury released by artisanal and small-scale gold miners. Vienna, Austria: UNIDO Global Mercury Project.

** UNEP. 2012. Reducing mercury use in artisanal and small-scale gold mining: A practical guide. United Nations Environmental Programme.

***Seccatore, Jacopo, Marcello Veiga, Chiara Origliasso, Tatiane Marin, and Giorgio De Tomi. 2014. "An estimation of the artisanal small-scale production of gold in the world." *The Science of the Total Environment* 496:662-667. doi: 10.1016/j.scitotenv.2014.05.003.

The challenges

- Major anthropogenic source of mercury pollution*, among other environmental challenges
- Largely informal, as most ASGM operations lack mining titles
 - Formal/informal economic duality (de Soto)
 - Links to organised crime, conflict
 - Denies tax revenues to the state
 - Difficult to regulate

*UNEP. 2013. Global mercury assessment 2013: Sources, emissions, releases and environmental transport. Geneva, Switzerland: United Nations Environmental Programme.

Framing the discourse

- Change in discourse from ASGM as a criminal activity to a poverty driven one

Mercury use

- Miners use mercury because of ‘tradition and ignorance’
- Mercury is not a technical problem: One must pay attention to the ‘social dynamics of mercury use’

*Hilson, G. (2006). Abatement of mercury pollution in the small-scale gold mining industry: Restructuring the policy and research agendas. *Science of the Total Environment*, 362(1-3), 1-14.

Clifford, M. J. (2014). Future strategies for tackling mercury pollution in the artisanal gold mining sector: Making the Minamata Convention work. *Futures*, 62(A), 106-112.

Spiegel, S., Keane, S., Metcalf, S. M., Veiga, M. M., & Yassi, A. (2014). The Minamata Convention on mercury: Time to seek solutions with artisanal mining communities. *Environmental Health Perspectives*, 122(8), A203-A204.

Methods

- 3 months fieldwork in Antioquia, Colombia in 2015
- Focus on mining towns and processing centres
- Interviews
- Hanging out
- Purposive observation
- Reference to secondary sources for technical details

Antioquia, Colombia

- 30,000+ miners in Antioquia*.
- 200,000+ miners in Colombia**.
- 85% of Colombian gold from mines without titles***.
- 97% of mines lack environmental licenses***.
- Worst mercury polluter per capita in 2011**.
- Recent improvements****!

*Giraldo-Ramírez, J., & Muñoz-Mora, J. C. (2012). *Informalidad e ilegalidad en la explotación del oro y la madera en Antioquia. Medellín, Colombia: Universidad Eafit, Proantioquia.*

**Cordy, P., Veiga, M. M., Salih, I., Al-Saadi, S., Console, S., Garcia, O., . . . Roeser, M. (2011). Mercury contamination from artisanal gold mining in Antioquia, Colombia: The world's highest per capita mercury pollution. *Science of the Total Environment*, 410, 154-160.

***Güiza, L., & Aristizábal, J. D. (2013). Mercury and gold mining in Colombia: A failed state. *Universitas Scientiarum*, 18(1), 33-49.

****García, O., Veiga, M. M., Cordy, P., Suescún, O. E., Molina, J. M., & Roeser, M. (2015). Artisanal gold mining in Antioquia, Colombia: A successful case of mercury reduction. *Journal of Cleaner Production*, 90, 244-252.

Antioquian miners

- Male dominated workforce (regional particularity*)
- Largely 'non-ethnic' or mixed ethnicity
- Self identify as traditional miners
- Pre-Columbian mining operations
- Discourse of mining and nation building
- Nomadic mining operations
- Positionality: foreigner with an externally driven research agenda

*Hinton, J. J., Veiga, M. M., & Beinhoff, C. (2003). Women and artisanal mining: Gender roles and the road ahead. In G. Hilson (Ed.), *The socio-economic impacts of artisanal and small-scale mining in developing countries*. Netherlands: A. A. Balkema, Swets Publishers.

The backbone of the nation or criminals?



Credit: El Colombiano 2013

Ball Mills (Cocos)



Cyanide Leaching



Cyanide Contamination



Formalisations by Subcontracting

- ASGM signs a contract with LSM
- ASGM works in larger title
- ASGM uses LSM cyanide plant
- ASGM complies with legislation
- LSM collects profit

- Framed as mercury reduction

Operating like a business

- Increase in scale
- Engagement with bureaucracy
- NOT a transition to cash economy
- Formality as a performance of citizenship

- “Developing Training Materials to Promote the Reduction of Mercury Use in ASGM” by developing a *“Business planning [module] to increase capacity of the ASGM sector to engage with the private sector and facilitate investment”**

APEC Secretariat (2016). Request for proposal (RFP) – Developing training materials to promote the reduction of mercury use in artisanal and small scale gold mining, MTF 01 2016A.

Spot the state

The State	LSM
Grants the right to mine	Grants the right to mine
Requires regulatory compliance	Requires regulatory compliance
Requires payment for granting mining right	Requires payment for granting mining right
Right to use violence to ensure compliance	Effective ability to use violence on their behalf to ensure compliance

A new mode of mining?

- GCG-78% of gold extracted in Segovia is from ASGM*-is GCG a mining company?
- LSM-ASGM relationships set to increase?
- Noticeable in Peru, Colombia, Philippines, Indonesia
- Small to medium scale mining
- Transition from capital intensive mining to flexible labour intensive mining

*GCG. 2015. Management's discussion and analysis for the year ended December 31, 2014. Gran Colombia Gold Corporation.

The future of ASGM and interventions

- ASGM seems to be growing in the Pacific, South East Asia and Latin America
- Indonesian Centre for Artisanal Mining (INCAM)
- APEC Secretariat training programme
- Artisanal Gold Council
- Canadian International Resources Development Institute (CIRDI)
- Meech Working Group

Ways forward for ASGM

- Increased attention towards and transparency of ASGM-LSM relationships
- Mineral supply chain transparency
- Fairmined minerals
- Less assessment, more delivery
- Formalisation campaigns tailored towards miners
- Frame mining as a profession, not a criminal activity
- Miner agency

Comments and suggestions appreciated!

