

Global Mercury Project



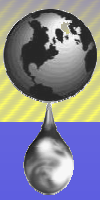
Removal of Barriers to the Introduction of Cleaner Artisanal Gold Mining and Extraction Technologies: The GEF/UNDP/UNIDO Global Mercury Project (GMP)

**“Global Partnership for Mercury Management in Artisanal
and Small-Scale Gold Mining”**

Washington DC, 15 June 2005

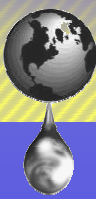
Pablo Huidobro





UN Millennium Development Goals

- Eradicate extreme poverty and hunger
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/Aids, malaria and other diseases
- Ensure environmental sustainability
- Achieve universal primary education
- Global partnership for development



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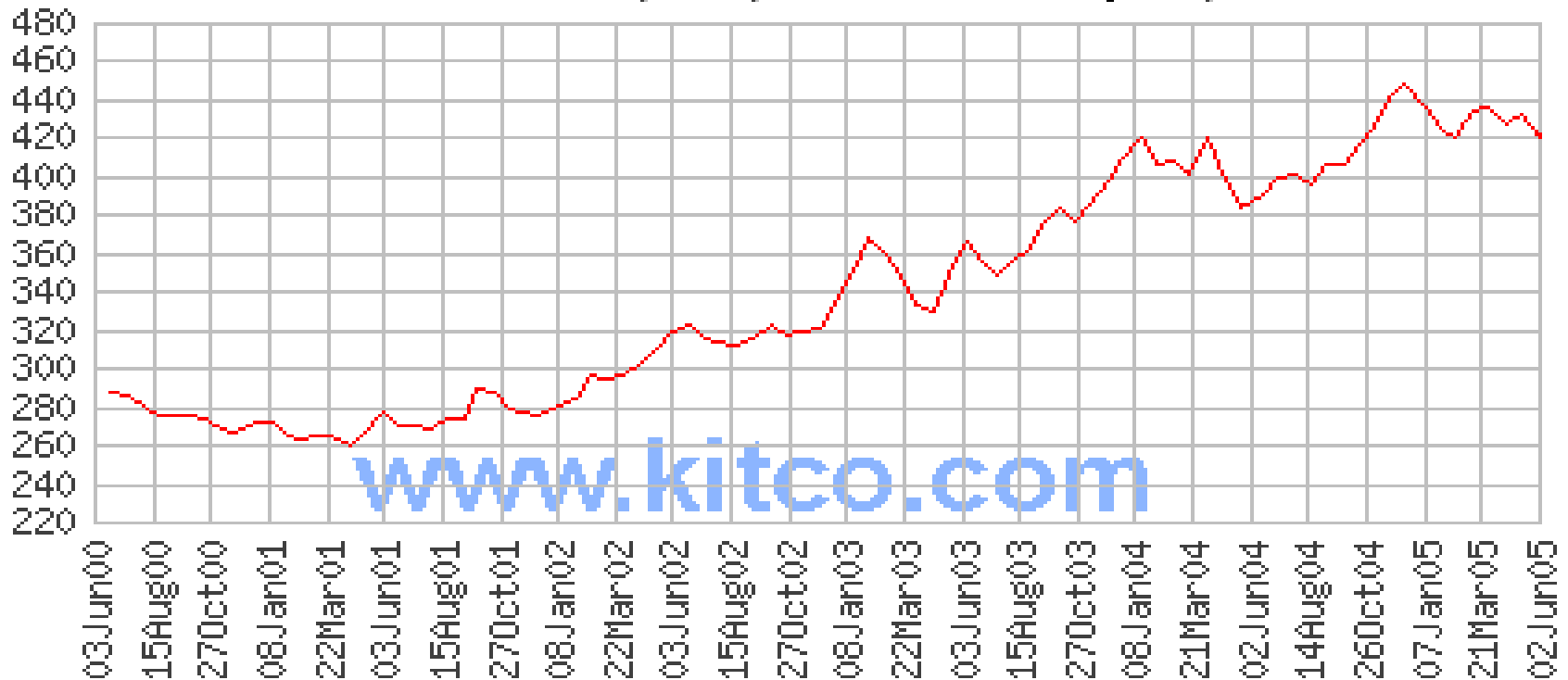


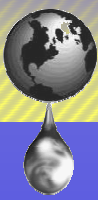
Gold price increasing = More people involved

5 Year Gold (\$USD)

June 03, 2000 to June 02, 2005

MAX \$454.20 on Dec 02, 2004 , MIN \$255.95 on Apr 02, 2001

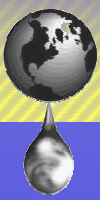




Artisanal and Small-Scale Mining (ASM)

- The term artisanal miners encompasses all small, medium, large, informal and illegal miners who use rudimentary processes to extract gold from secondary and primary ores.

<i>Conventional</i>	<i>Artisanal</i>
geology, drilling	feeling, testing
reserves	subsistence
engineering	curiosity, pay bills
sophisticated equipment	homemade devices

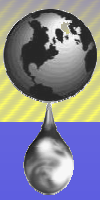


Gold ASM

- **Number of ASM have increased in Asia and Africa and reduced a bit in Latin America**
- **In China: 3 to 15 million miners ...depending on how ASM is defined (*Gunson & Veiga, 2002*)**
- **Best guess: 20 to 30 Million ASM (50% involved in gold) in more than 55 countries**
- **More than 1000 tonnes/a Hg released by ASM worldwide**
- **This represents 1/3 of the anthropogenic Hg emissions**

**42% of the people in Sub-Saharan Africa makes
US\$ 1/day**





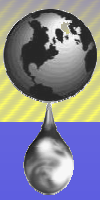
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“More and more women and kids are getting involved in ASM”



Ghana, 2000

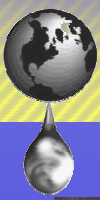


More women are getting directly involved in ASM

***“Especially
doing the (dirty)
amalgamation
work”***

Indonesia, 2003





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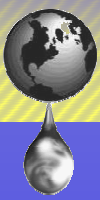


Venezuela, 1995



Colombia, 1994
Photo: M. Prister

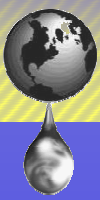
In the world this can represent as much as 9 million women directly employed



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Sudan, 2004



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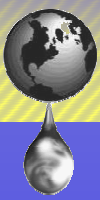


Mining & Child Labor

Currently this can be >2 million children (ILO, 2004)



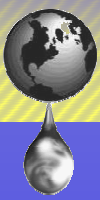
Laos, 2003



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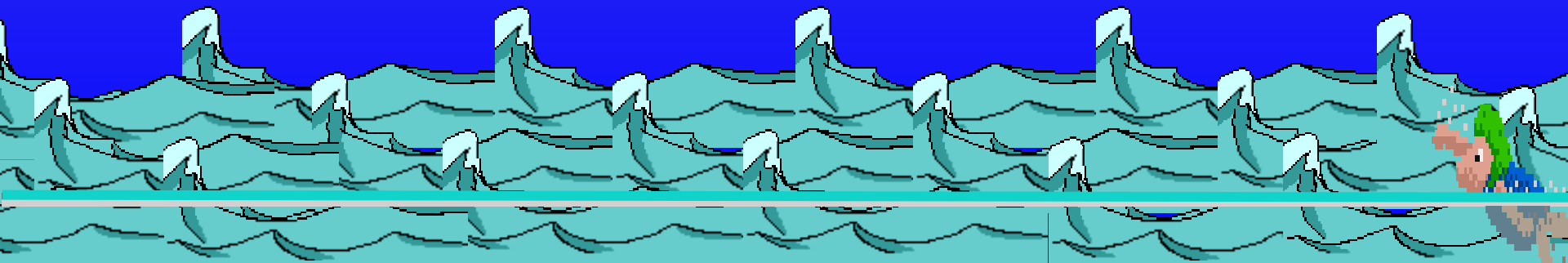


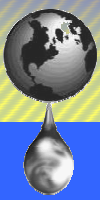
Laos, 2001



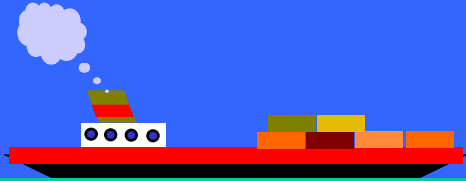
Facts

- **ASM is the main environmental and social problem related to mining activities in developing countries**
- **Most people in developing countries become miners to escape complete social marginalization**
- **Governments are generally not prepared to deal with issues related to artisanal mining**
- **In many rural regions, artisanal mining is an island of “prosperity” in a sea of poverty**

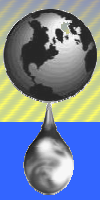




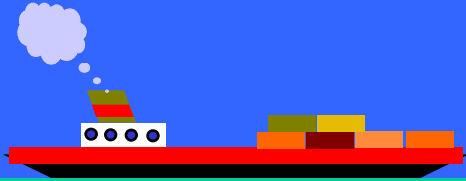
Mercury is just the Tip of the Iceberg



- **Mercury Pollution**
- **Environmental Impacts**
- **Degradation of Socio-Economic Conditions**
- **Health Impacts**
- **Lack of Economic Alternatives**



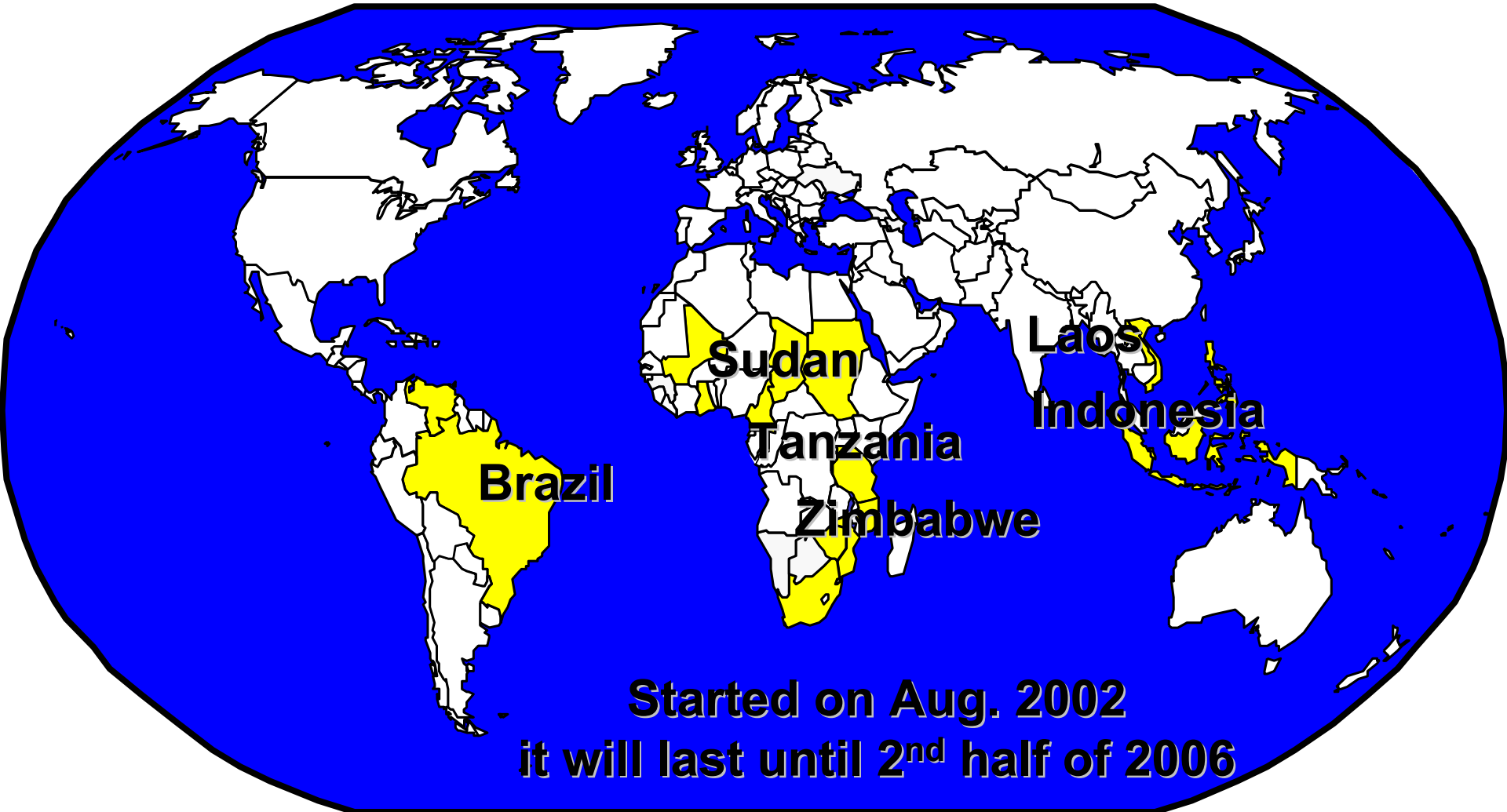
Mercury is just the Tip of the Iceberg

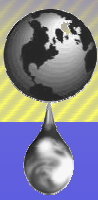


- **Disrespect for cultures (conflicts)**
- **Degradation of moral values**
- **Drinking and drug problems**
- **Tax evasion**
- **Money laundering & smuggling**
- **High cost of living in mining villages**



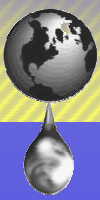
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What does the GMP hope to accomplish?

- **Improvements in community health**
 - **Reduce mercury exposure**
 - Miners and processors (both men and women)
 - Families and Vulnerable populations
 - **Promote health seeking behaviors**
- **Improvements in community quality of life**
 - **Income**
 - More gold; possible economic diversity
 - **Security (family and community)**
 - Greater participation in formal economy



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Objective 1: organize

Objective 2: awareness

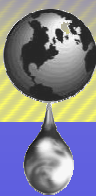
Objective 3: monitoring

Objective 4: databank

Objective 5: demonstrate

Objective 6: policy

Objective 7: dissemination



Project sites

Brazil

- **Creporizinho/Para in Tapajós area**

Accessible by air-taxi from Itaituba (around 500 km)

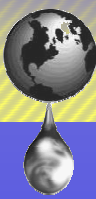
From landing strip one hour drive by four-wheel drive car

- **São Chico/Para, Tapajós area**

Accessible by air-taxi from Itaituba (around 500 km)

From landing strip 10 min drive by car





Project sites

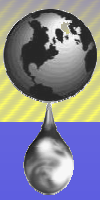
Indonesia

- **Galangan mine site, draining to Katingan River (Central Kalimantan), draining to Java Sea**
Accessible by road from Palangkaraya
2,000 people
- **Talawan/Manado, river draining to Celebes Sea (24 km to shore)**
Accessible from Manado by road
Hard rock gold mining

Lao PDR

- **Luang Prabang, along Mekong at confluence with Nam Ou**
Accessible by boat
Mining community of some 1,000 people in different villages 22





Project sites

Sudan

- **Gugub, 50 km from Al Damazin draining to Blue Nile**

Accessible by road

Hard rock and alluvial mining

Tanzania

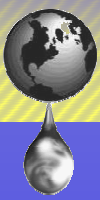
- **Rwamagaza, draining to Lake Tanganyika**

Accessible from Geita on dirt road

Zimbabwe

- **Chakari, draining to a tributary of the Zambezi**
120 km away from Harare, close to main road

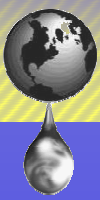




Training



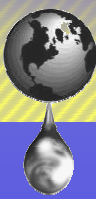
- Training courses designed to address specific local needs and the develop national (or in-country) capacity which is technically and financially sustainable
- Training packages take into account local technologies but meet international educational standards
- Training package is replicable and easily adoptable to suit specific country situations



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- ✓ **environmental and health assessment;**
- ✓ **build capacity in local laboratories to assess impact of mercury pollution;**
- **create awareness to reduce mercury pollution caused by artisanal miners on international waters;**
- **introduce cleaner technologies for gold extraction and train miners (demonstration sites);**
- **develop capacity and regulatory mechanisms within Government that will enable the sector to minimize mercury pollution.**

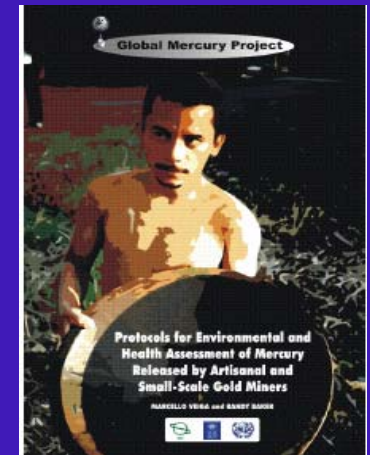


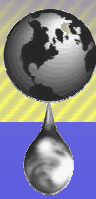
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Protocols and Questionnaires for the Environmental and Health Assessments

- Protocols applied for all environmental and health surveys in the 6 countries advising on standardized, reproducible and simple procedures for assessing countries
 - mercury losses;
 - biota selection;
 - sampling;
 - sample preparation & preservation;
 - analysis, questionnaires for health the survey, etc...
- Review of Protocols by scientists from University of Montpellier, Munich, CETEM
- Review of Protocols by US Environmental Protection Agency

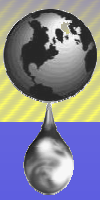




Assessment of Environment in Hot Spot Areas

- 500-700 analyses of sediments, soil, dust, water, bio-indicators
- Analyses from samples of the habitat/agricultural sites in the vicinity of the selected small-scale mining activities
- Evaluation of the nature and extent of mercury pollution in produce, especially in those which are part of the main diet
- Evaluation of the nature and extent of mercury pollution in the river system adjacent to the hot spot area

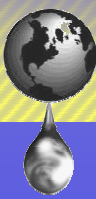




Assessment of Health

- Analyses of human specimens from a pre-determined cohort of approx. 200 people in each hotspot area and 50 persons from a non-exposed group
- Conduct clinical/neurological/toxicological tests according to the state of the art
- Check neurological disturbances, behavioral disorders, motor neurological functions, cognitive capabilities, balance, gait, reflexes, etc..
- Information on communicable disease prevention practices

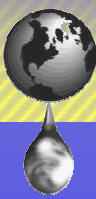




Sociological Surveys

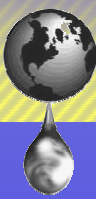
- Providing the insight into the sociological patterns of gold mining communities
- Describing different processes of gold production in the six countries
- Describing the use of mercury, possible pathways and environmental as well as health implications deriving from these working practices





Legal Advice includes

- Reviewing relevant legislation, policies and literature on the subject based on US EPA's study
- Assessing the stakeholders' legal needs
- Discussing present mining and environmental legislation and policies in the national and global context at governmental level
- Recommending possible legal and administrative framework to address the various environmental challenges of small-scale gold mining



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Objective 7: Promote the dissemination of the project results and identify opportunities that will allow the project to continue beyond the three-year time frame through self-financing and to initiate and conduct Donor Conferences to solicit financing

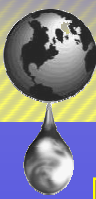


Close cooperation of PCU in effect with

- UNEP Chemicals in establishing/refining the Global Mercury Assessment
- WHO in preparing a cooperation project in Indonesia
- US EPA in using their mercury-related expertise

Donor Seminars

- Organized in 2003 in Jakarta and co-chaired by WHO Jakarta, UNIDO Jakarta and PCU
- Under preparation with Government of the Philippines, UNIDO Manila and PCU

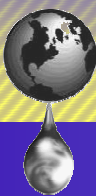


Global Mercury Project



Origin of funds for projects:	US\$	%
Regular UNIDO Budget	130,000	2
UNDP	280,000	3
UNDP/GEF	350,000	4
Donor funding:		
Government of Austria	70,000	1
Government of France	250,000	3
Government of Japan	350,000	4
GEF Global Mercury Project	6,806,800	83
Total Budget since 1995:	8,236,800	100





Global Mercury Project



Thank you for your attention

For additional information please contact the Project Coordination Unit:

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