



Artisanal Gold Mining Mercury in Amazon



ACPO – POPs Combate Association

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Artisanal Gold Mining Production

Production

400 ton of Gold (Au) per year (Metcalf -UNIDO, 2005)

115 ton year Latin America

30 to 50 ton year Brazil – 80% from Amazon region

Releases of Hg

600 to 1000 ton of mercury released

China – 200 to 250 ton

Indonesia – 100 to 150 ton

Brasil - 30 to 200 ton

Artisanal Gold Mining Production

Miners— variable numbers

- ◆ 6 millions (UNIDO, 2005) to
- ◆ 12 millions (ILO, 1999)
- ◆ Women 3 to 4.5 million
- ◆ Child

1999- 250.000

2005- 2 million

(Metcalf, UNIDO 2005)

Ways of mining

- ◆ Manual
- ◆ Equipments on land
- ◆ Equipments on river

Artisanal Gold Mining Production

In Amazon

Releases of 100 to 200 ton Hg per year

50% water and 50% atmosphere (Mascarenhas, 2004)

New data

90 ton Hg per year from land use changes – mainly deforestation

Highly toxic methyl mercury (Veiga, 1994)

Artisanal Gold Mining Production

Amazon reality

80% of Brazilian Production

Q total released in 20 years

2000 tons Hg (Wasserman, 2001)

Colonial period in Brazil - total

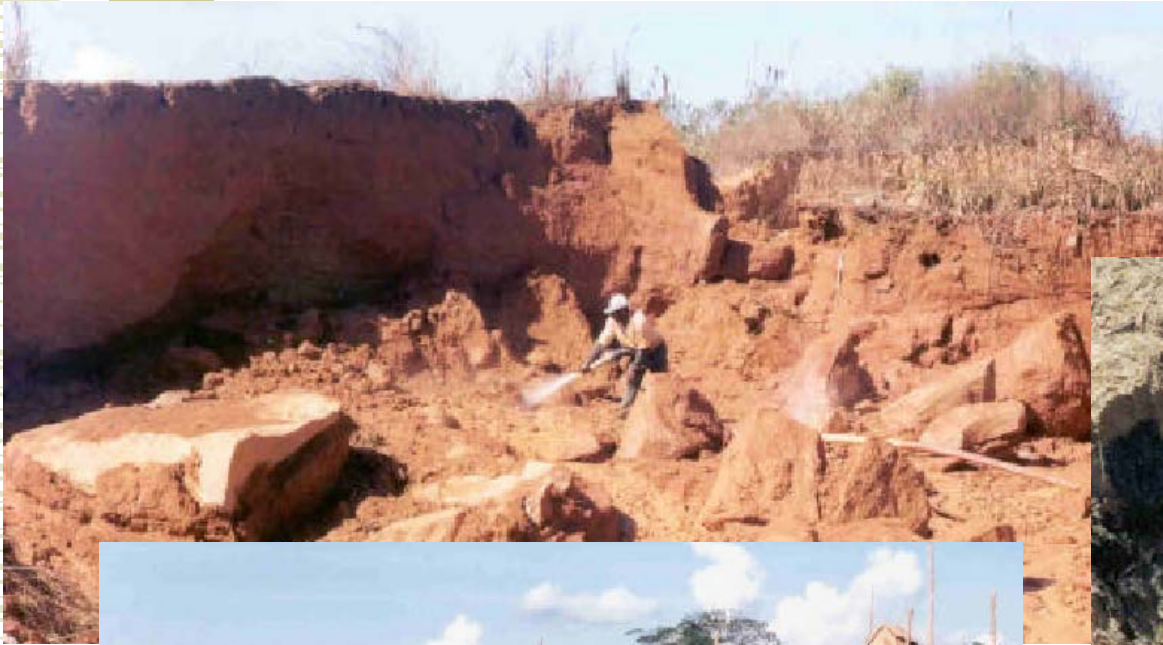
200.000 tons of Hg (Nriagu, 1993)

Estimated Miners 300.000 (Veiga, 1997)

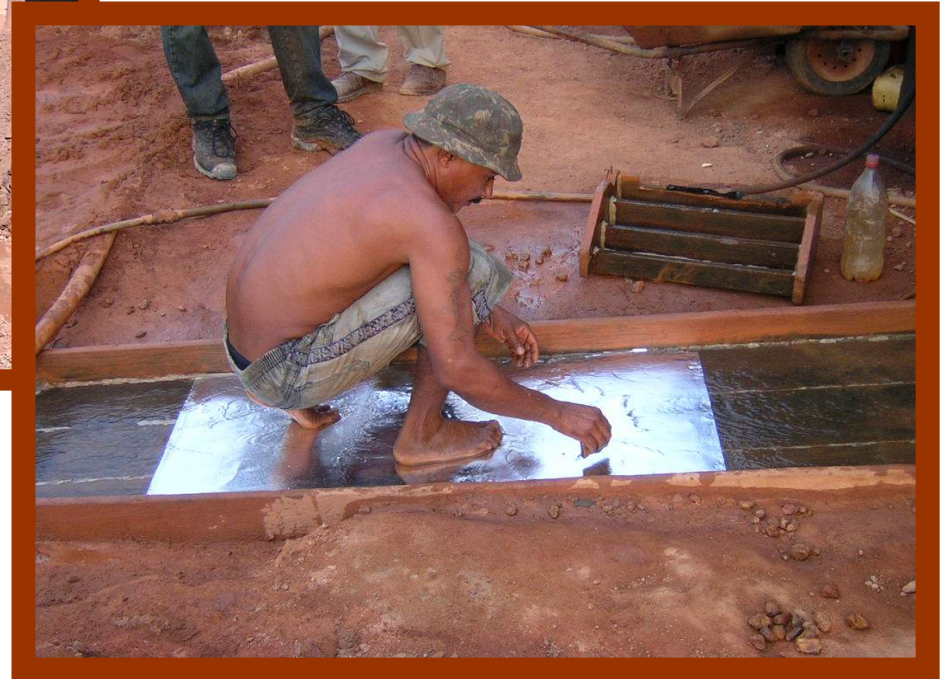
Manual extraction, Ghana 2003



Land Extraction Equipments – Brasil, 2002



Land Extraction Equipments – Brazil, 2002



Amalgamation – Brazil, 2002



Gold Shop, Brazil 2002



River Extraction - Brazil



Socio-Economical data

Study Case Garimpo Seu Chico Pará (Mathis, 2004)

- ◆ 70% immigrants – other states
- ◆ Average 10 years working at mining
- ◆ 50% never went to school
- ◆ 25% have no identity documents
- ◆ Monthly income USD 125 (5g of Au per week –USD 150 monthly)
- ◆ 75% knows that Hg is bad to the health, but few knows that is the fumes (smoke)
- ◆ 51% knows mercury is bad to the environment but associated with the deforestation

Trade Information

Imports ton Hg
(2000)

Brasil – 98

China – 778

Singapore - 74

Hong Kong – 51

Brazilian Imports
(SECEX, 2001)

62 ton of Hg

69 ton total with others
included

(P. Maxson, 2004)

Trade Information

Brazilian Imports Origin

SECEX, 2001

- ◆ Spain – 41 ton
- ◆ Finland -10.2 ton
- ◆ Netherlands – 3.5ton
- ◆ Russia – 3 ton

P. Maxson, 2001

- ◆ Spain – 42 ton
- ◆ Finland -----
- ◆ Netherlands – 14 ton
- ◆ Russia – 3 ton

2000

- ◆ Spain – 11 ton
- ◆ Finland -----
- ◆ Netherlands – 62 ton
- ◆ Russia – 18 ton

International Trade

- ◆ Exports in 2000 from Netherlands 245 tons mainly to Latin America
- ◆ Official numbers shows 49% of Brazilian imports to gold mining
- ◆ 2 bigger recyclers Germany (100 ton) and Netherlands (100 ton) recovered from Hg bearing waste
- ◆ ... So CHEAPER and economically attractive towards export

International Trade

- ◆ European Products and Chlor Alkali phase out – environmentally friendly consumer and law
- ◆ Gold Mining in developing countries – poor law, regulations and huge areas
- ◆ People in poorest conditions

Transfer of Problem...
Environmental Justice...

Conclusions, thoughts...

- ◆ Urgently better trade control – before EU Ban 2010
- ◆ Hg is going from educated consumers to poor families
- ◆ Adoption of simple measures at Gold Mining level like retorts, education
- ◆ Investigation and combat on deforestation – highly toxic methyl mercury
- ◆ Social responsibility on gold market, is it possible...

Demonstration Unit – Ghana, 2003



Communication Materials, Brazil 2005

