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E-waste Africa Project

Methodology & Background of Component 3

Socioeconomic study & feasibility study

Project kick-off meeting, 16.-17.05.2009, Geneva

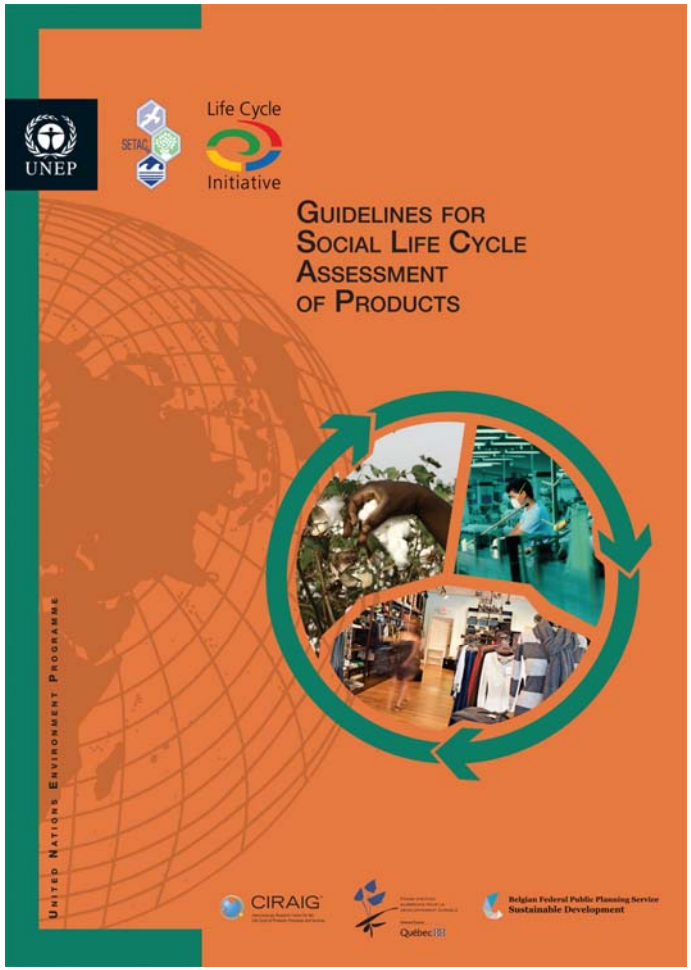
By Andreas Manhart

Focus on Lagos, Nigeria

Pictures: BAN 2005

Socioeconomic study

Methodology:



PRODUCT SUSTAINABILITY ASSESSMENT PROSA PRODUKT-NACHHALTIGKEITS-ANALYSE

Official launch of UNEP-SETAC Guidelines:

18th May 2009

at the ISO 26 000 conference

in Québec, Canada

The PROSA Indicators:

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A: Impacts on employees

A 1 Health & safety
A 2 Freedom of association, right to collective bargaining / workers' participation
A 3 Equality of opportunity and treatment / fair interaction
A 4 Forced labour
A 5 Child labour
A 6 Remuneration
A 7 Working hours
A 8 Employment security
A 9 Social security
A10 Professional development
A11 Job satisfaction

B: Impacts on the local community

B 1 Health & safety
B 2 Human rights
B 3 Indigenous rights
B 4 Community engagement
B 5 Social & economic opportunities

C: Impacts on society

C 1 Public commitments to sustainability issues
C 2 Unjustifiable risks
C 3 Employment creation
C 4 Vocational training
C 5 Corruption
C 6 Social & environmental minimum standards for suppliers and co-operation partners
C 7 Interference in sensitive political issues
C 8 Contribution to the national economic development
C 9 Armed conflicts
C10 Transparency
C11 Intellectual property rights

Feasibility for developing local niche markets for environmentally sound management

Basic assumptions:

- A large amount of people relies on the EEE-refurbishing sector
- E-waste is not managed in an environmentally sound manner
- Focus on refurbishing / recovery of materials is still in its infancy

Material content and value of an average desktop PC at 2003 and 2007 resource prices.

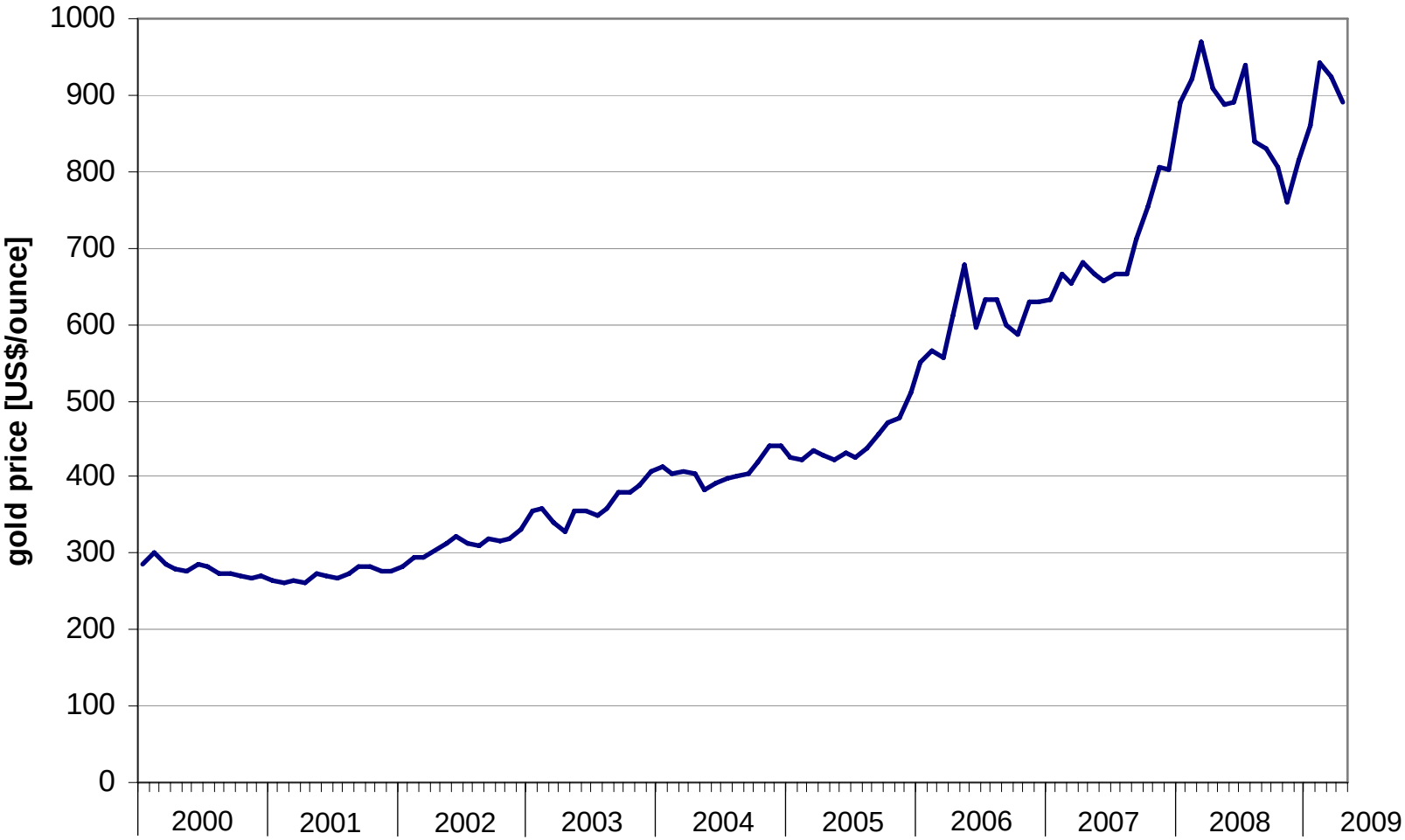
	Amount contained in desktop PC [g/unit]	Average material price 2003 [US$/t]	Average material price 2007 [US$/t]	Material value 2003 [US$/unit]	Material value 2007 [US$/unit]
Steel	6737.501	121*	253*	0.82	1.70
Plastics	1579.545	234**	310**	0.37	0.49
Aluminium	550.212	1,500	2,700	0.83	1.49
Copper	413.225	1,879	7,231	0.78	2.99
Zinc	25.940	896	3,400	0.02	0.09
Tin	19.573	7,490	19,800	0.15	0.39
Antimony	18.577	2,370	5,660	0.04	0.11
Nickel	12.700	9,630	37,200	0.12	0.47
Lead	6.585	965	2,730	0.01	0.02
Silver	1.702	157,000	550,000	0.27	0.94
Gold	0.260	11,700,000	22,400,000	3.04	5.82
Palladium	0.120	6,526,602	11,488,748	0.78	1.38
Chromium	0.015	922	2,010	0.00	0.00
Ceramics & others	371.909	-	-	-	-
Sum				**7.22**	**15.88**

** Prices for iron and steel scrap ** Prices for mixed plastics*

Source: Gmünder 2007, USGS 2009a, USGS 2009b, CSR 2009.

Development of the gold price between 01/2000 and 04/2009

(monthly averages)



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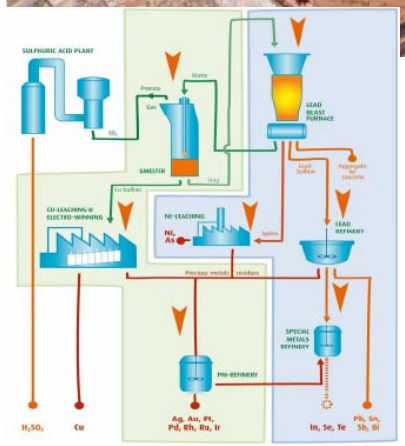
Recovery of precious metals:

Option 1: wet chemical leaching

Pictures: BAN 2002

yield: ~ 6 - 30% of gold

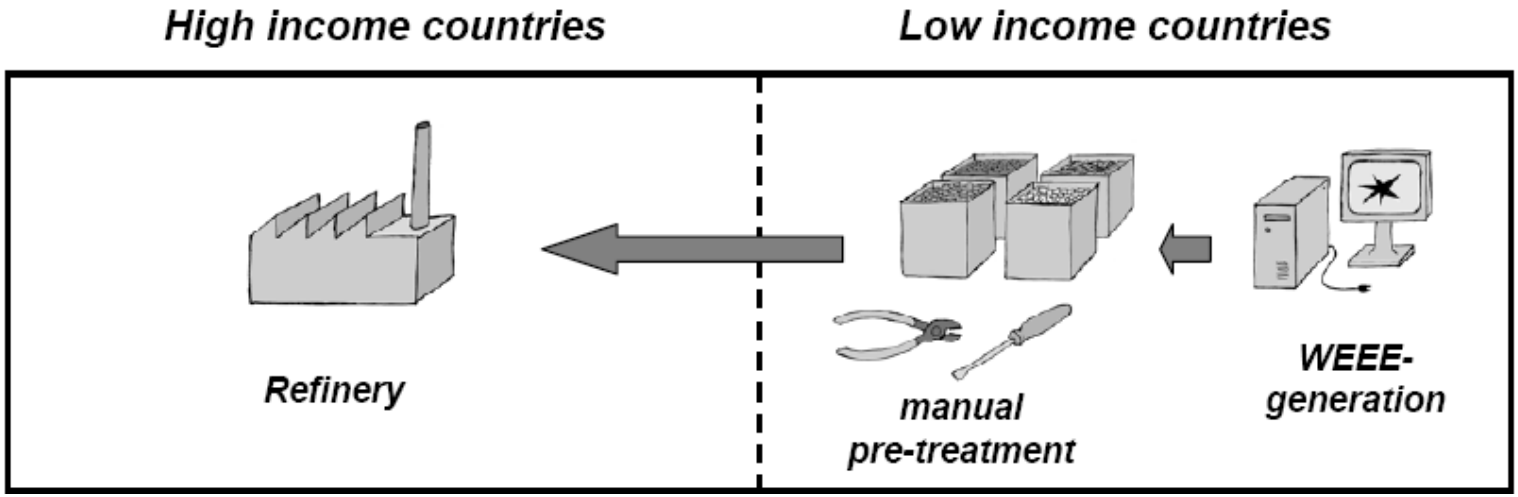
Option 2: metallurgic refinery



Pictures: UMICORE

yield: ~ 80 - 95% of precious metals

➡ “Best-of-two-worlds approach”



Opportunities:

- Improved management of hazardous substances
- Increased resource efficiency / closed material cycles
- Reduced GHG emissions
- Reduced pressure on mining
- Income generation in developing countries
- Possibility to invest in social & environmental standards

Some risks to be addressed:

- What about the principle of proximity?
- Does the model generate additional incentives for “grey” WEEE-imports?
- What are the challenges from changing material compositions?
- What about sustainability in times of fluctuating resource prices?
- …

➡ Framework for implementation:

- Issues to be considered
- Quality requirements
- Suitable business structures
- Health & safety aspects
- …

➡ Steps forward:

- 1 stakeholder workshop
- 3 training sessions
- Public presentation of outcomes

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Contact:

Andreas Manhart

Email: a.manhart@oeko.de
Phone: ++49 (0)89 12590077
Fax: ++49 (0)761 4529588
Web: www.oeko.de