

Domestic E-Waste in Africa Recycling for a Profit ?



Klaus Hieronymi
Chairman of the Environmental Board
Hewlett-Packard EMEA

Agenda

- What is e-waste?
- Situation in Developing Countries today
- HP / Umicore Project

What is e-waste?

E-Waste in the EU is
mainly a ,White' problem

According to the most recent data from the UK Env. Agency, approx. 3.5% of total e-Waste results from IT & Telecoms.

Domestic E-Waste in Africa recycling for a Profit ?

Net Value of Metals in Scrap IT Products

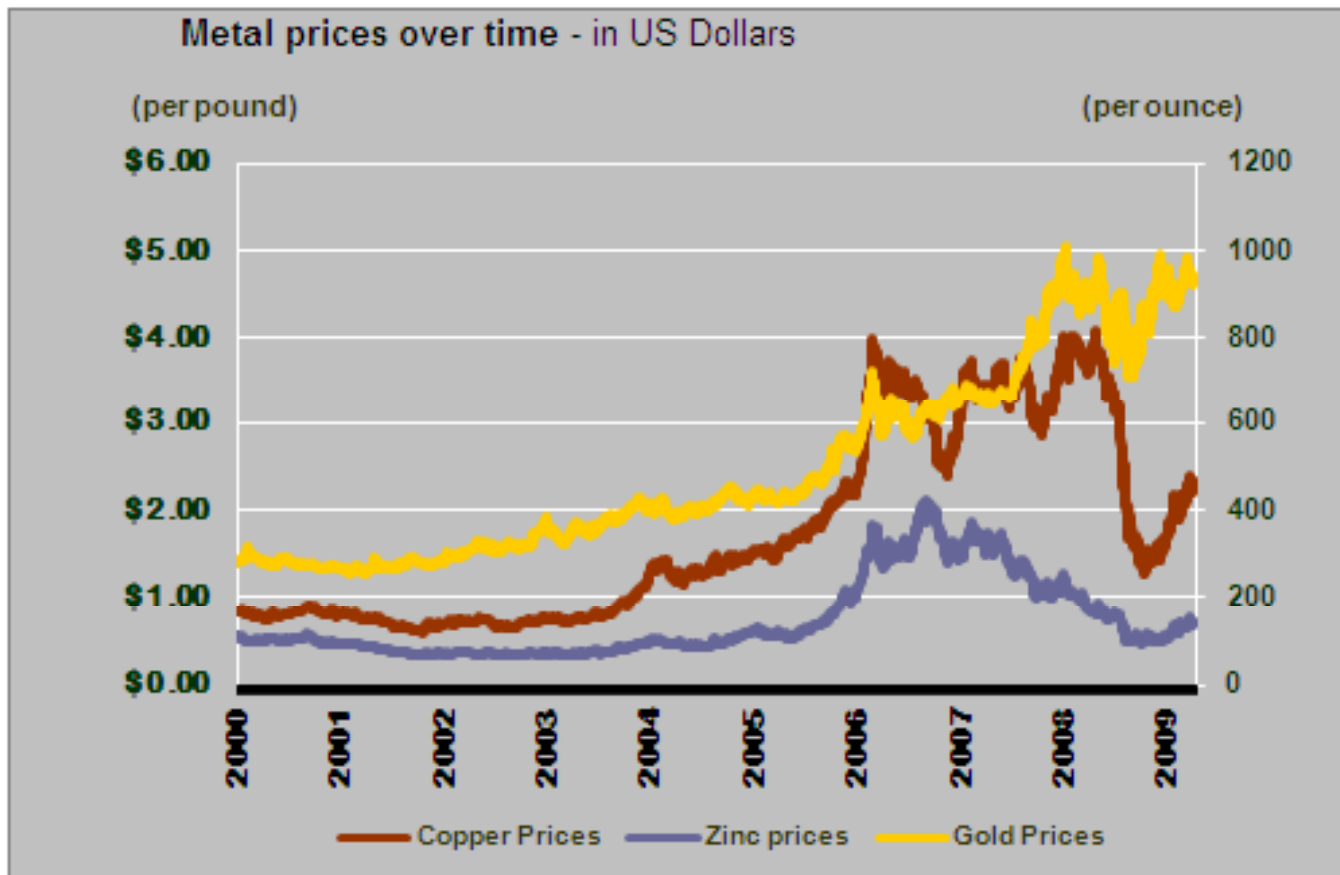
	EU	South
Africa*		
Printer:	- \$ 0.45	+ \$ 0.74
PC:	+\$ 2.75	+ \$ 2.60
CRT:	- \$ 2.95**	+ \$ 2.90***



- * EMPA estimation (2007 scrap metal prices)
- ** including proper CRT lead glass recycling
- *** CRT lead glass dumping

Domestic E-Waste in Africa recycling for a Profit ?

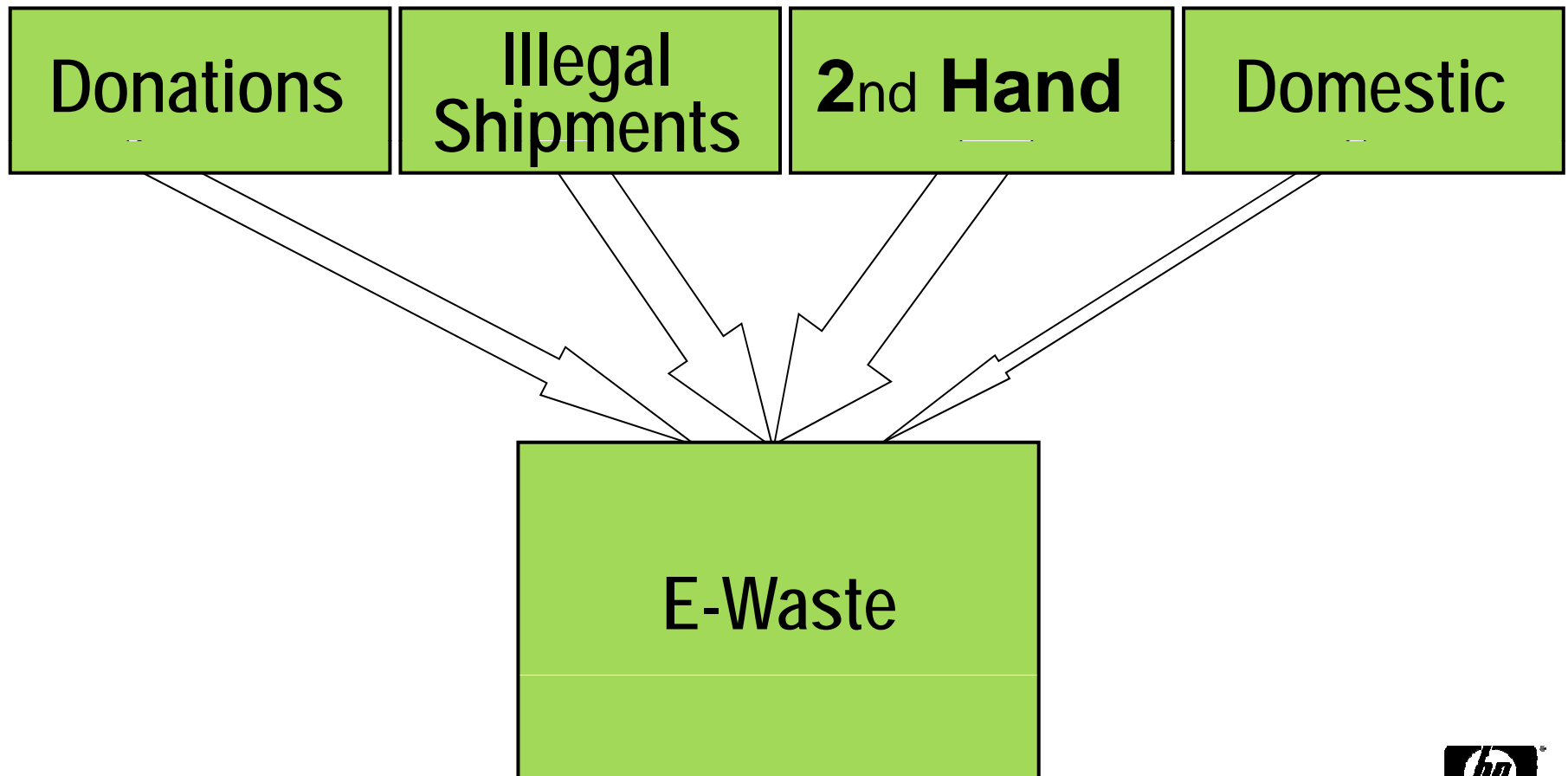
Development of Raw Metal Prices



Domestic E-Waste in Africa recycling for a Profit ?

Sources of E-Waste in Developing Countries

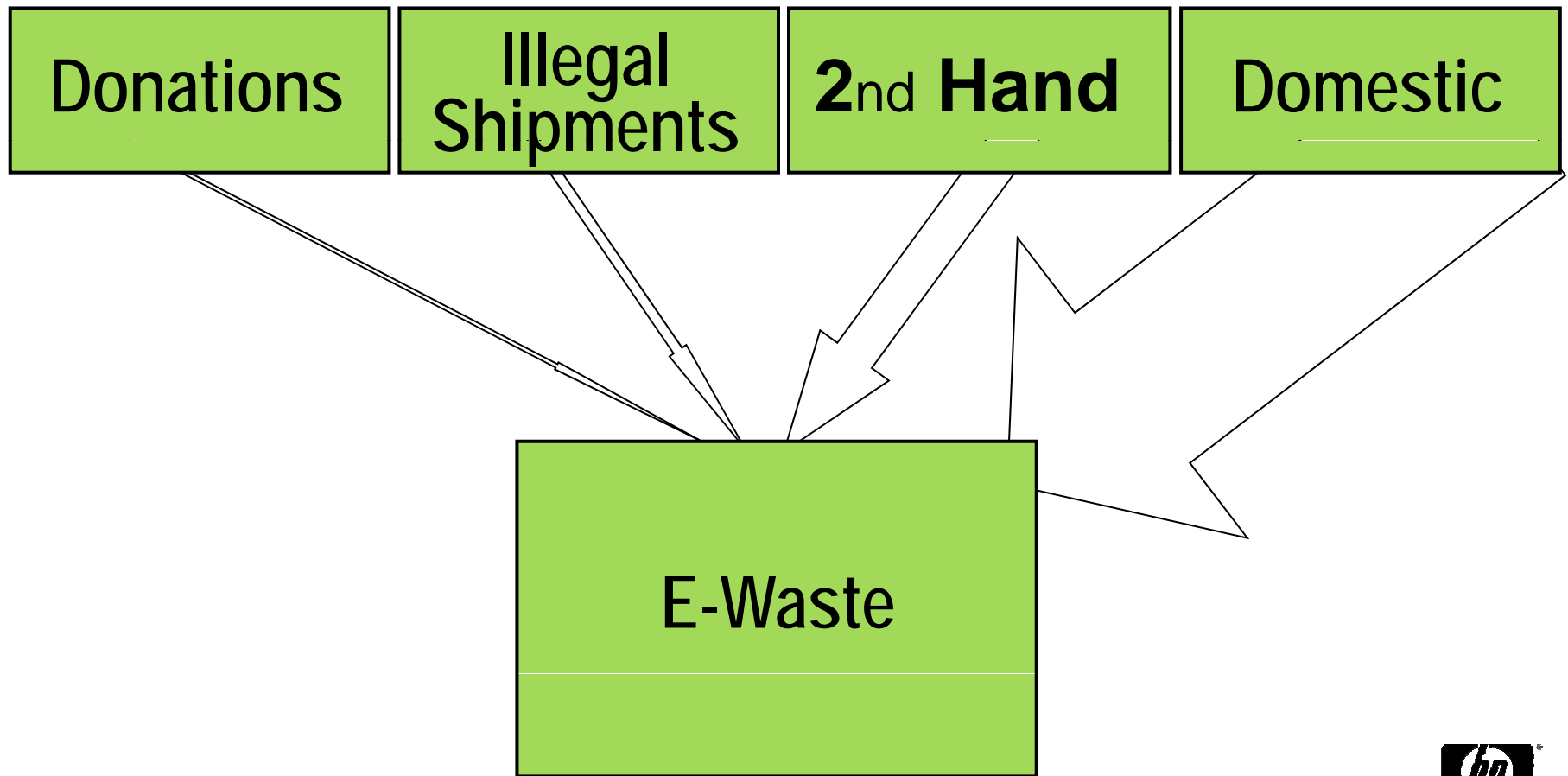
today



Domestic E-Waste in Africa recycling for a Profit ?

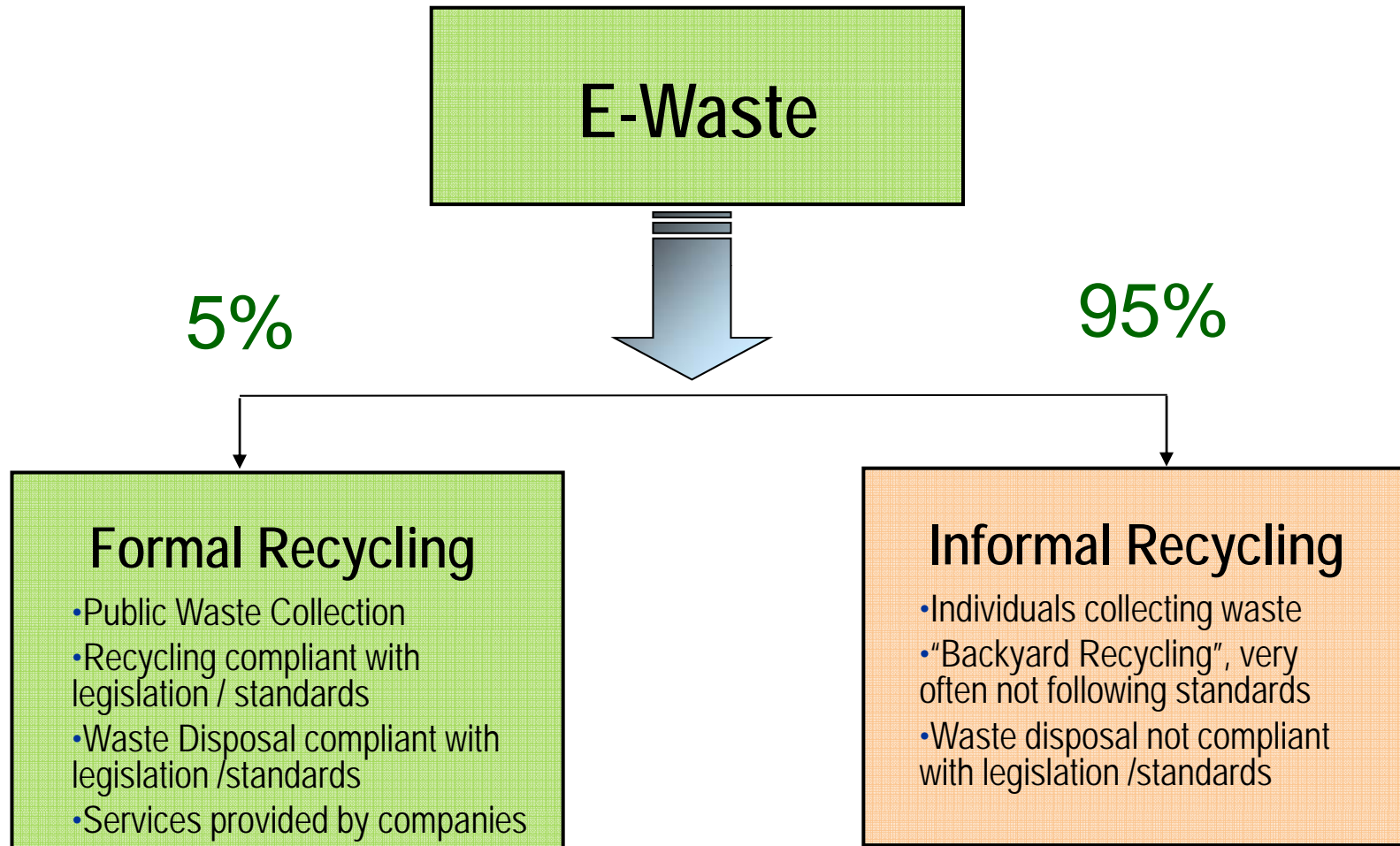
Sources of E-Waste in Developing Countries

tomorrow



Domestic E-Waste in Africa recycling for a Profit ?

Informal – Formal Sector



With metal prices (and plastic) prices soaring, the informal sector will be a major channel for E-waste treatment, not only in developing countries

HP activities (2008)

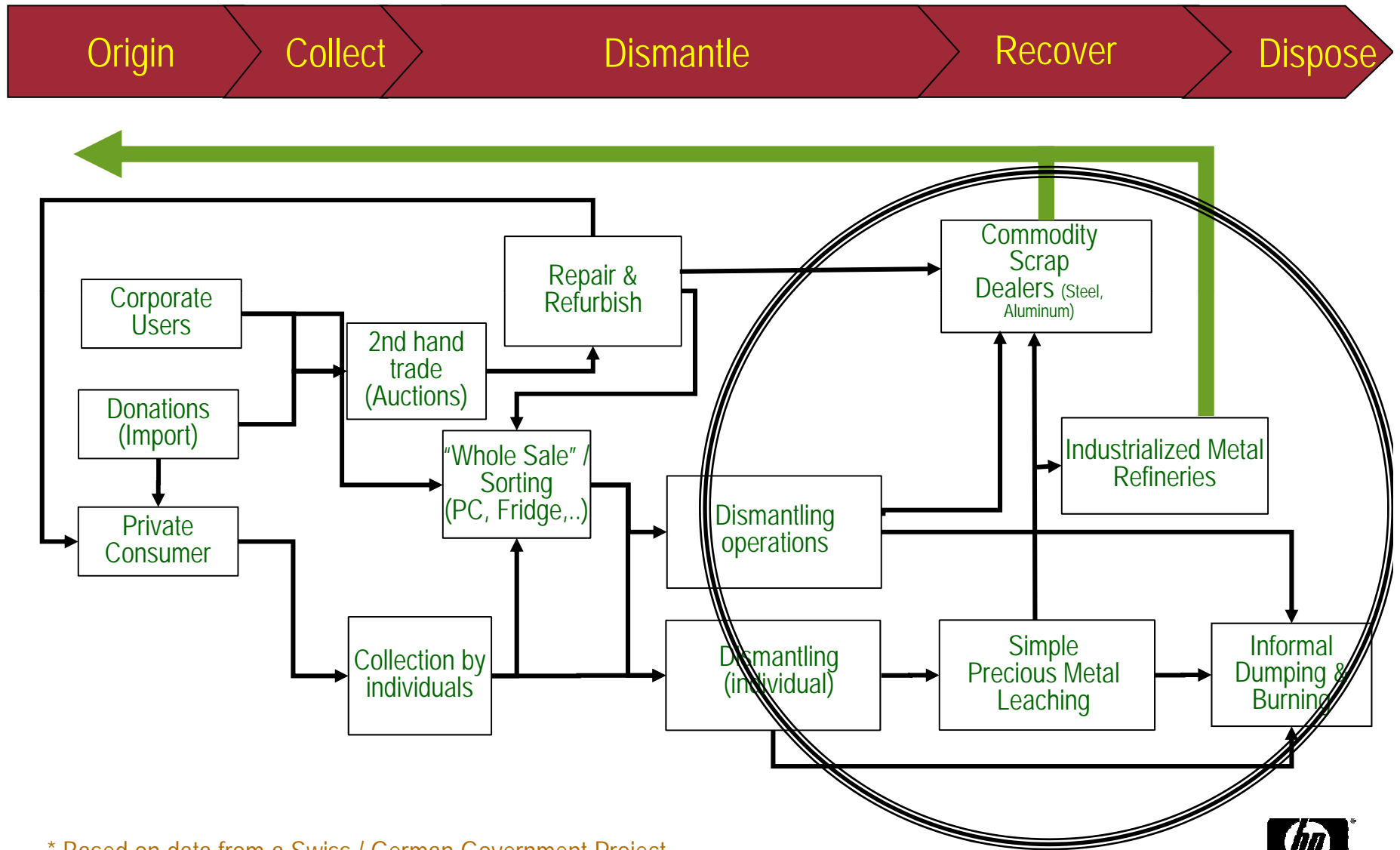
Investigate the informal sector in 3 African Countries:

Countries: South Africa, Kenya, Morocco

Goal: Understand local E-Waste structure

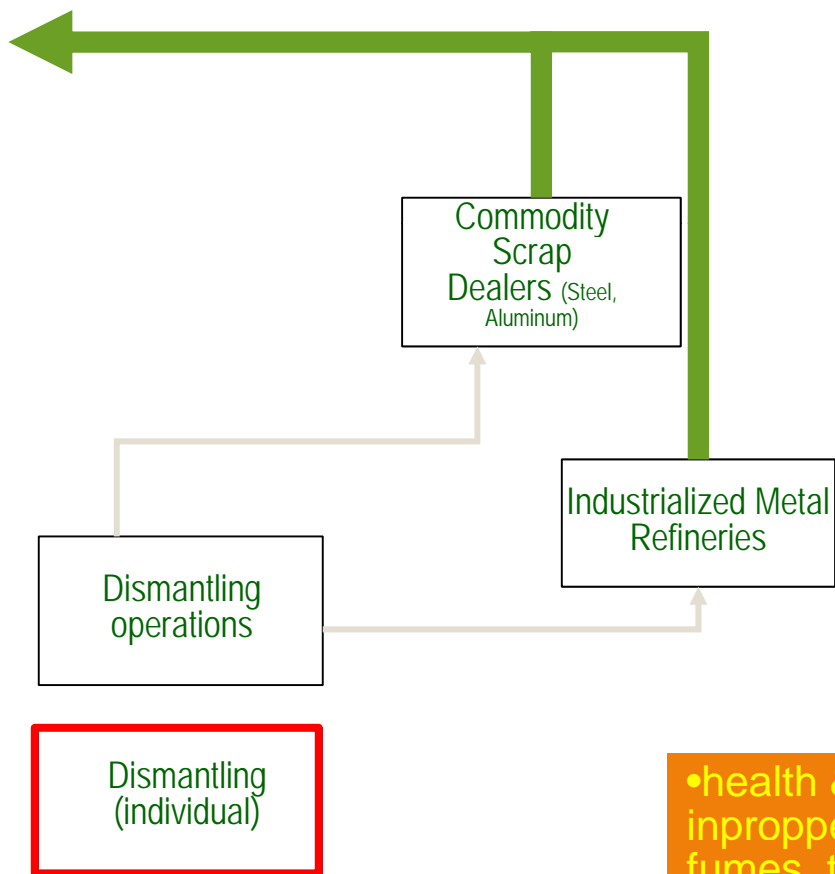
Partner: EMPA (Swiss Gov. Agency), Digital Solidarity Fund

India*: Informal Sector Flow Chart (simplified)



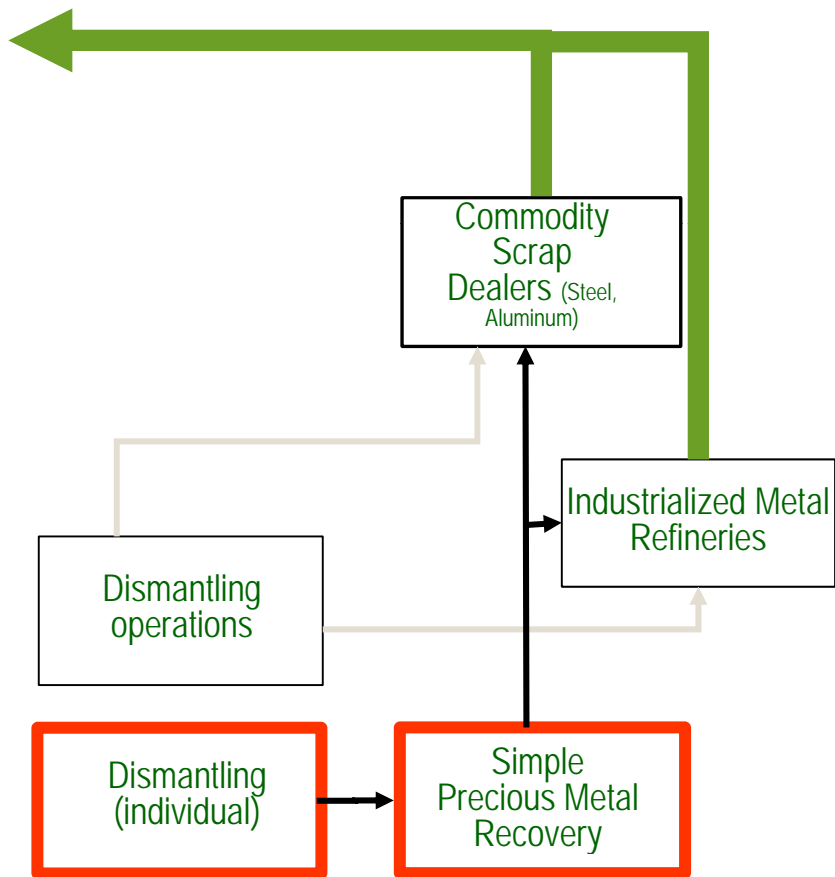
* Based on data from a Swiss / German Government Project (GEZ/EMPA)

India flow chart: Dismantling by individuals



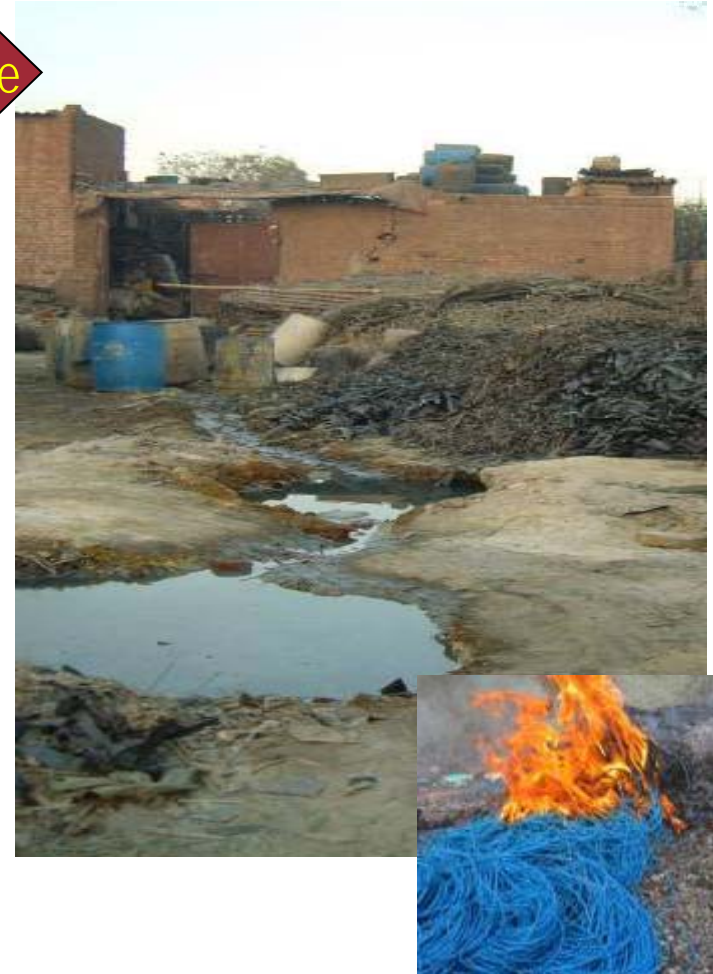
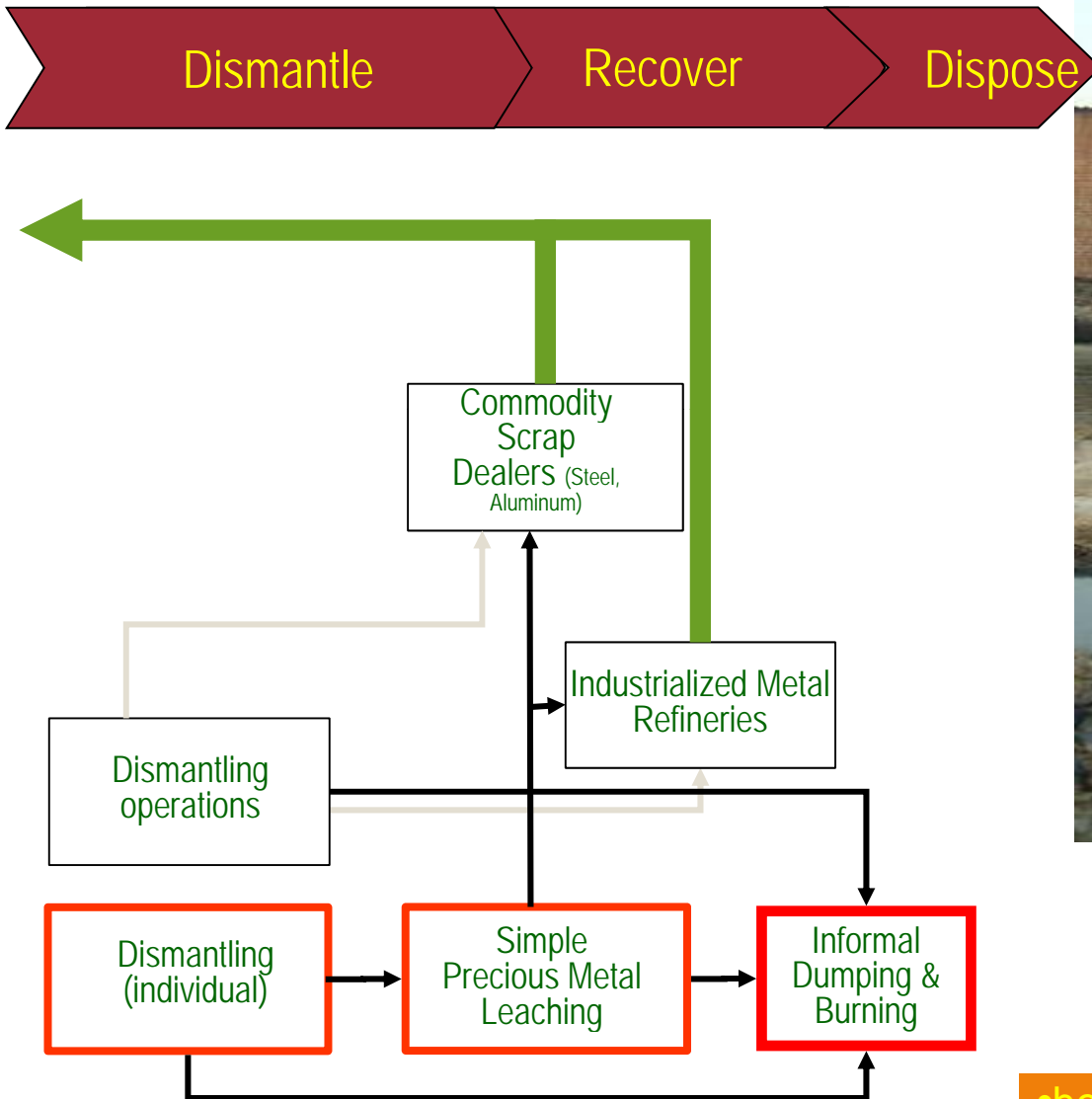
•health & environmental issues caused by improper process, workers protection, spilling, fumes, toxic emissions of improper processes (Cyanid Acids), low yield

India flow chart: Precious metal recovery by individuals



•health & environmental issues caused by inproper process, workers protection, spilling, fumes, toxic emissions of inproper processes (Cyanid Acids), low yield

India flow chart: Informal dumping and burning by individuals



•health & environmental issues caused by illegal dumping, incineration, air , water & soil

Informal metal recovery is the most problematic step

Each of the three stages has a health and environmental impact, but the metal recovery is the most problematic from a health and environment point of view

(Burning of entire units, cables, Cyanide leaching, Amalgamation, electrolytic Au stripping)

Emissions are very high:

- Dioxins
- Cyanide

Efficiencies are very low:

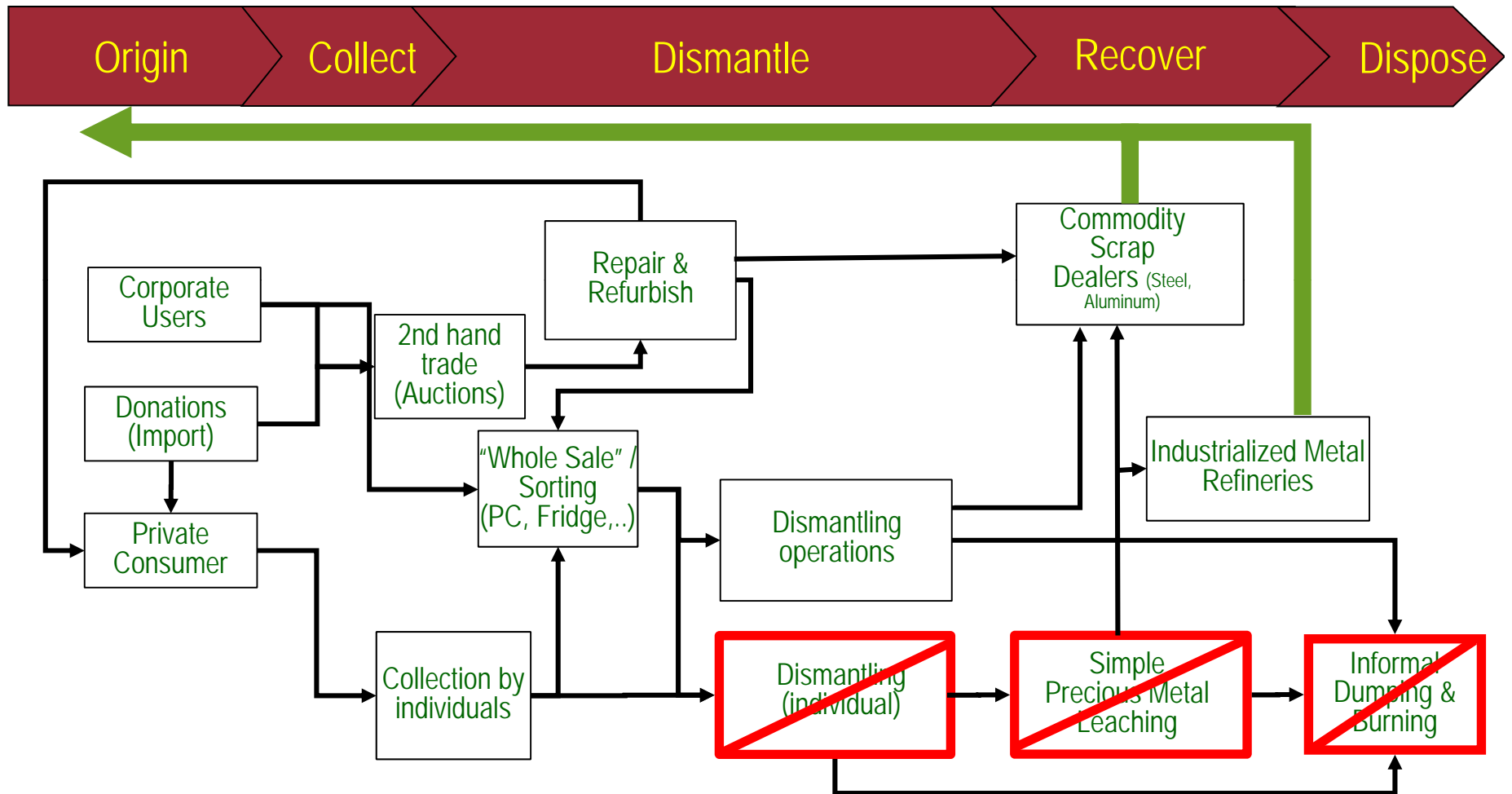
> 60% losses of precious metals during mechanical processing

> 50% losses during chemical processes

total precious metal yield < 30%

plastic yield 0%

India flow chart: Informal Sector Basic Improvement



The challenge

- How can we prevent individual dismantling, precious metal recovery, informal dumping and burning, and provide safe alternative jobs?

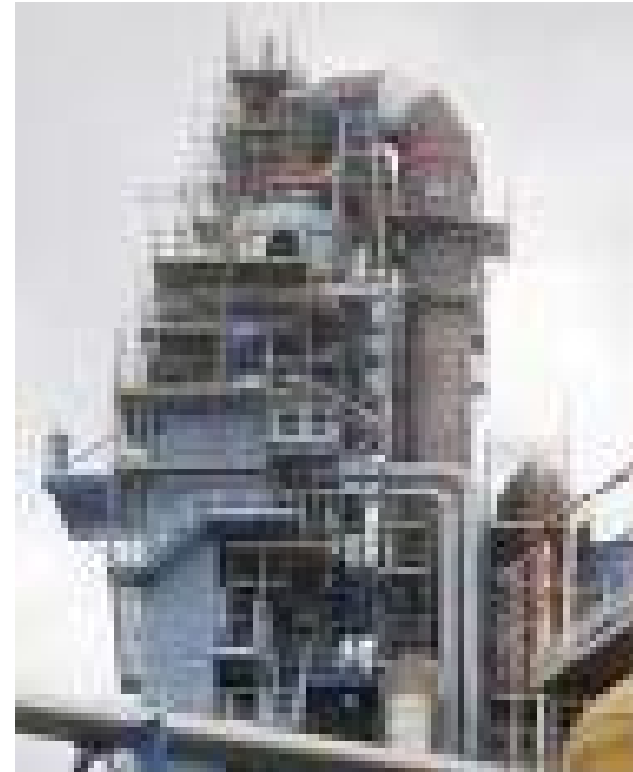
.. more questions

- How do we ensure that “scavengers / rag pickers” have more \$ from providing equipment to proper dismantlers than from **recovering metals by their own**?
- What is the right combination of local, manual and high-tech recycling ?

LOCAL commodity scrap... Many Jobs (e.g. sorting plastic)



Metal recovery – not to be handled LOCALLY – instead it is industrialised



Highly intensive industrialised process to
safely recover metals

.. the universal answer

Manufacturers establish a Take Back infrastructure
and pay.....

.. a fundamental question

- What is the business model / case behind ?
- What are potential income streams (re-furbishment, parts, materials, alternative use)?
- Can such a system survive without permanent subsidies?
- What is the role of the Government ?

.. and a try to answer it

Private Public Partnership:

Develop and Implement E-Waste Structure in Morocco which is not depending on permanent subsidies from OEM's or Administration

Phase I Objective: Develop Business case / Model.
Partners: GTZ (German Development Agency), HP, Umicore

Phase II Objective: Implementation Planning
Partners: GTZ, HP, Umicore,open to others

Phase III Objective: Establish Pilot Structure
Partners: GTZ, HP, Umicore,open to others



If you are interested, pls. contact

klaus.hieronymi@hp.com

Thank you for your attention !