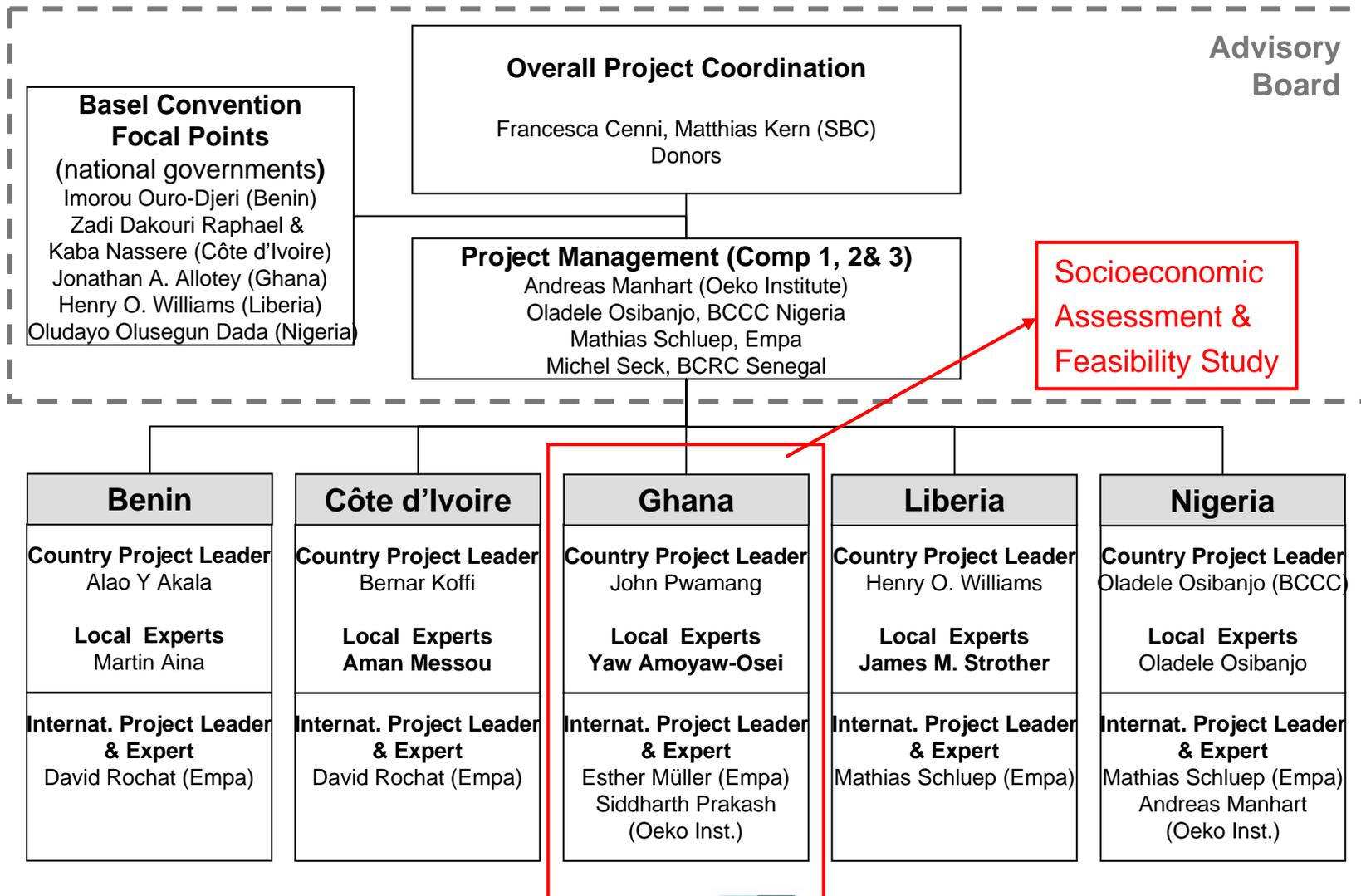


# Informal e-waste recycling in Ghana: a socioeconomic assessment and feasibility study on international recycling cooperation for sustainable resource efficiency

Stakeholder meeting within the framework of the E-Waste Africa Project  
Geneva, Switzerland, Monday 18-May 2010

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# Why a socioeconomic assessment?

## Basic assumptions

- A large number of people in Ghana relies on e-waste recycling
- People employed/ working in e-waste recycling are not truly aware of the hazardous nature of the business
- Nevertheless, people employed/ working in e-waste recycling business in Ghana have a legitimate reason to do the business
- Few minor changes in e-waste recycling practices would result in substantial improvements in human health and environment
- Benefits of sustainable business opportunities involving international players can only be estimated after knowing the true potential of e-waste recycling in Ghana

# Methodology

## UNEP/ SETAC Guidelines for Social Life Cycle Assessment of Products

Official launch:

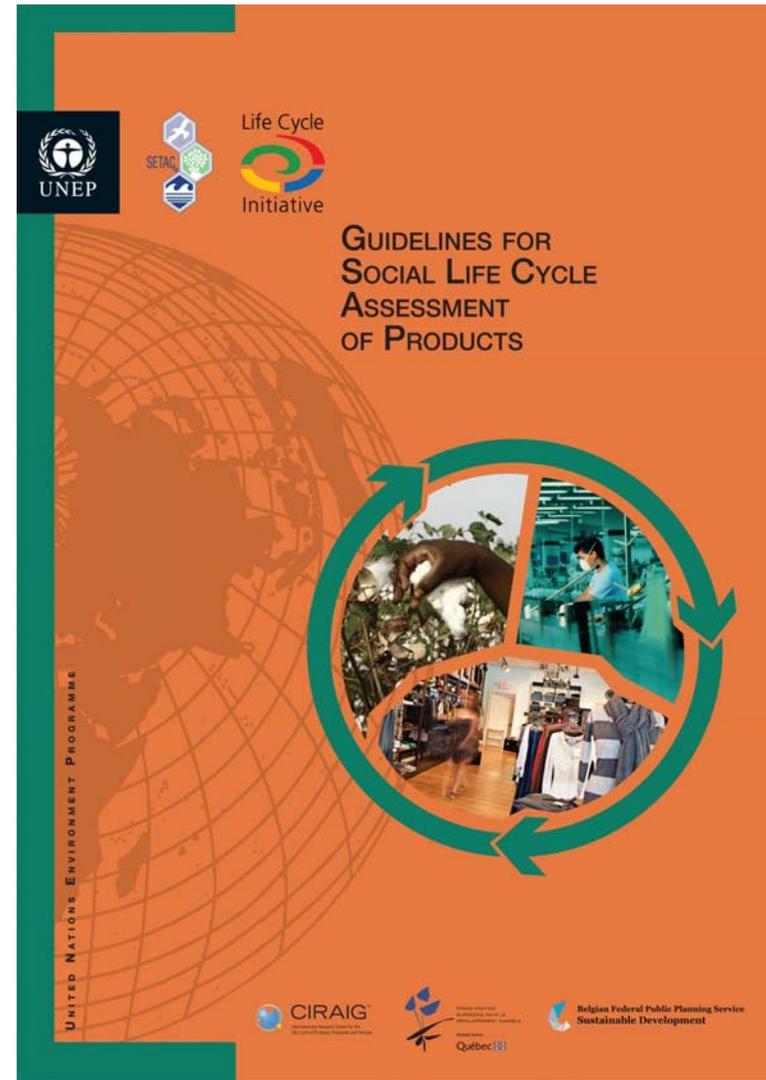
18<sup>th</sup> May 2009

at the ISO 26 000 conference  
in Québec, Canada

Download documents:

<http://lcinitiative.unep.fr/>

➔ Provides a toolbox to conduct socioeconomic assessments of individual sectors



# Methodology

## Product Sustainability Assessment



➔ Provides a comprehensive list of socioeconomic indicators

## Socioeconomic indicators

### **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

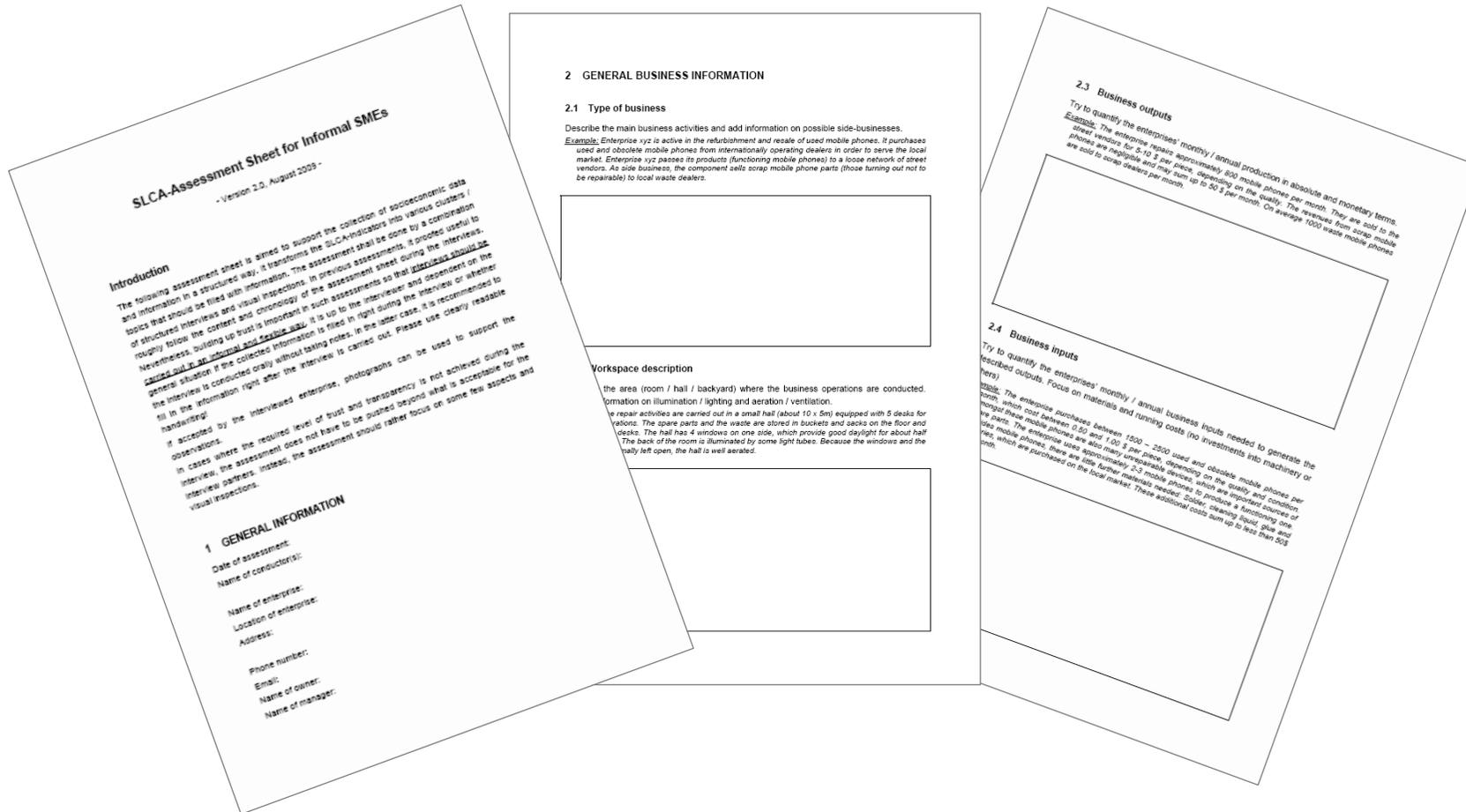
### **B: Impacts on the local community**

- 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 Unjustifiable risks
- C 2 Employment creation
- C 3 Contribution to national economy
- C 4 Contribution to national budget
- C 5 Corruption
- C 6 Impact on conflicts, including interference with sensitive political issues

# Methodology



**SLCA-Assessment Sheet for Informal SMEs**  
 - Version 2.0, August 2009 -

**Introduction**  
 The following assessment sheet is aimed to support the collection of socioeconomic data and information in a structured way. It transforms the SLCA-indicators into various clusters / topics that should be filled with information. The assessment sheet will be done by a combination of structured interviews and visual inspections. In previous assessments, it proved useful to roughly follow the content and chronology of the assessment sheet during the interviews. Nevertheless, building up trust is important in such assessments so that interviewees should be encouraged to fill in an informal and feasible way. It is up to the interviewer and dependent on the general situation if the collected information is filled in right during the interview or whether the interview is conducted orally without taking notes. In the latter case, it is recommended to fill in the information right after the interview is carried out. Please use clearly readable handwriting.

if accesses by the interviewed enterprise, photographs can be used to support the observations.  
 in cases where the required level of trust and transparency is not achieved during the interview, the assessment does not have to be pushed beyond what is acceptable for the interview partners. Instead, the assessment should rather focus on some few aspects and visual inspections.

**1 GENERAL INFORMATION**  
 Date of assessment:  
 Name of conductor(s):  
 Name of enterprise:  
 Location of enterprise:  
 Address:  
 Phone number:  
 Email:  
 Name of owner:  
 Name of manager:

**2 GENERAL BUSINESS INFORMATION**

**2.1 Type of business**  
 Describe the main business activities and add information on possible side-businesses.  
*Example: Enterprise xyz is active in the refurbishment and resale of used mobile phones. It purchases used and obsolete mobile phones from internationally operating dealers in order to serve the local market. Enterprise xyz pieces its products (functioning mobile phones) to a loose network of street vendors. As side business, the component sells scrap mobile phone parts (those turning out not to be repairable) to local waste dealers.*

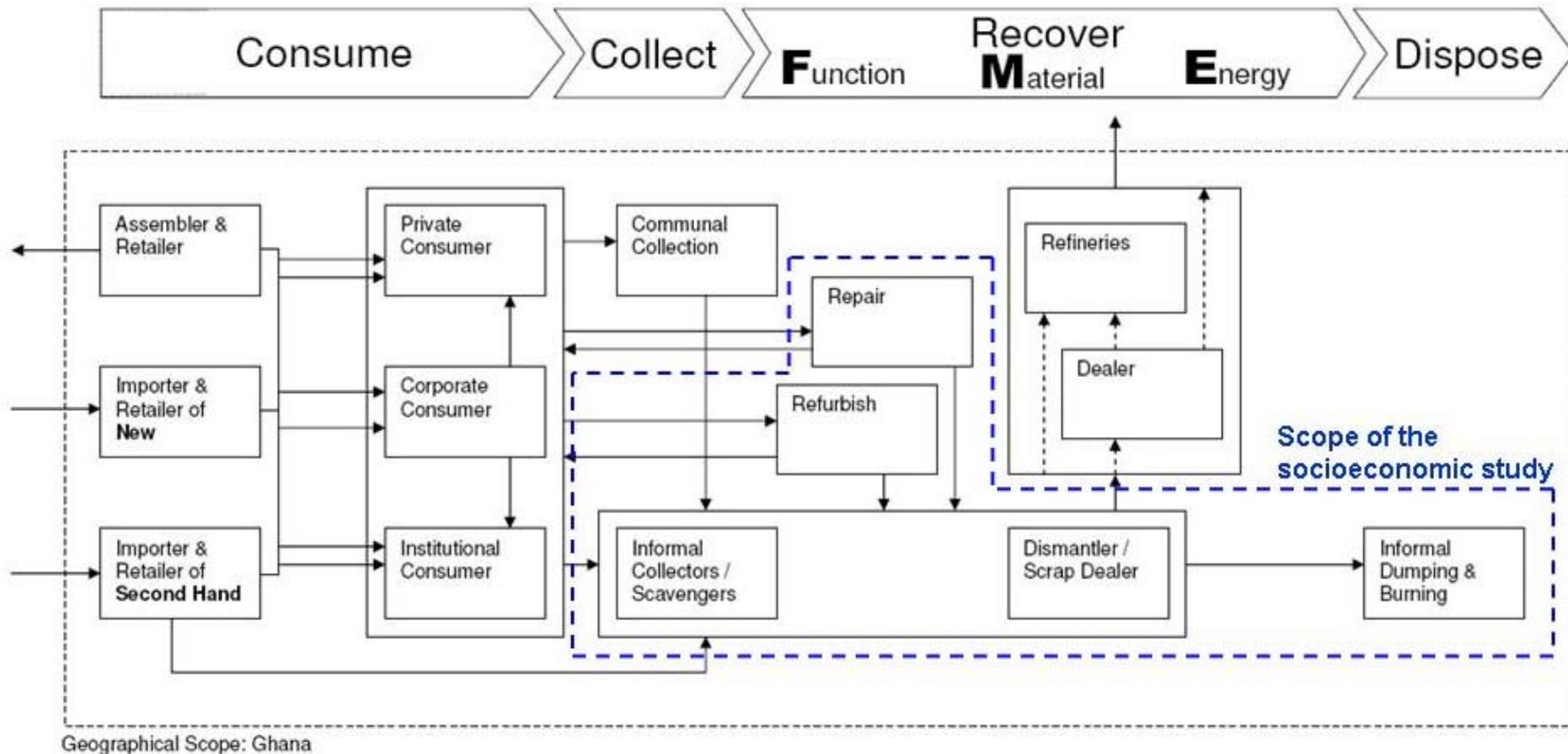
**Workspace description**  
 the area (room / hall / backyard) where the business operations are conducted.  
 formation on illumination / lighting and aeration / ventilation:  
 In repair activities are carried out in a small hall (about 10 x 5m) equipped with 5 desks for workers. The spare parts and the waste are stored in buckets and sacks on the floor and desks. The hall has 4 windows on one side, which provide good daylight for about half the back of the room is illuminated by some light tubes. Because the windows and the partly left open, the hall is well aerated.

**2.3 Business outputs**  
 Try to quantify the enterprises' monthly / annual production in absolute and monetary terms.  
*Example: The enterprise repairs approximately 600 mobile phones per month. They are sold to the street vendors for 5-10 \$ per piece, depending on the quality. The revenue from scrap mobile phones are negligible and may sum up to 50 \$ per month. On average 1000 waste mobile phones are sold to scrap dealers per month.*

**2.4 Business inputs**  
 Try to quantify the enterprises' monthly / annual business inputs needed to generate the described outputs. Focus on materials and running costs (no investments into machinery or tools).  
*Example: The enterprise purchases between 1500 - 2000 used and obsolete mobile phones per month, which cost between 0.50 and 1.00 \$ per piece, depending on the quality and condition of the parts. The enterprises' uses approximately 0.5 mobile phones to produce a functioning one. For mobile phones, there are also many unusable devices which are important sources of parts, which are purchased on the local market. These additional costs sum up to less than 50\$.*

➔ Adapting the methodology to the context-specific requirements

# Scope of socioeconomic assessment



# Data collection

## Field Interviews

- Refurbishers/ repairers → 33
- Scavengers/ collectors → 24
- Dismantlers → 23
- Total → 70 interviews

## Expert judgements

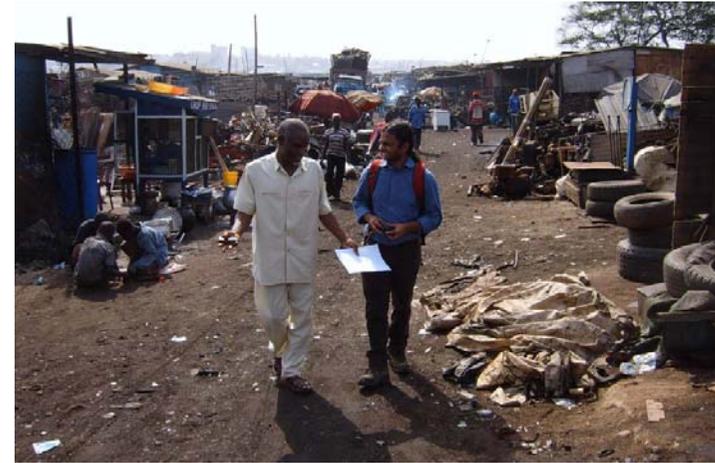
- Ghana EPA
- Agbogbloshie Scrap Dealers Association
- Accra Metropolitan Authority (AMA)
- The Repairers Association (GESTA)
- .....

## Time period

- December 2009 to April 2010

## Geographical scope

- The Greater Accra region



# Preliminary Results – Impact on workers

## Safe & healthy working conditions

(Brigden et al. 2008)

- Deposition of exorbitantly high concentrations of toxic metals & halogenated chem. in soil, dust & sediments
- Exposure to lead and cadmium fumes or dust
- High levels of PBDEs in blood
- Rigorous working conditions related to the collection of WEEE → spinal injuries etc.
- Electrical shocks, poor illumination & ventilation, electrical soldering operations

→ No use of any kind of protective or safety gear



## Preliminary Results – Impact on workers

- **Freedom of association & right to collective bargaining**
- Largely informal sector, however presence of scrap dealers association, refurbishers association, repairers association etc.
- **Employment & social security**
- Absent, no written agreements → high employment turnover; however, some family-based arrangements do exist
- **Equality of opportunity & treatment**
- Almost exclusively men's business; young males preferred, av. age early 20s
- **Child labour & forced labour**
- Child labour mostly in incineration activities, but also in dismantling
- Young boys of about 5 yrs. involved; mostly between 11 to 14 years



## Preliminary Results – Impact on workers

### Remuneration

- Scavengers → US\$ 70 to 140/ month;  
i.e. US \$ 2 to 5/ day
- Scrap yard workers/  
Dismantlers → US \$ 170 to 280/ month;  
i.e. US\$ 5.8 to 9.3/ day
- Refurbishers/  
repairers → US\$ 190 to 245/ month;  
i.e US\$ 6.3 to 8.1/ day

### Remuneration – WEEE China

- Average daily salary → US\$ 3.63  
(Öko-Institut 2007)

### Economic indicators - Ghana

- GDP US\$ 713 in 2008
- 30% of total population in Ghana  
lived with less than US\$ 1.25/ day
- 54% with less than US\$ 2/ day
- 29% below national poverty line

- It is still difficult to sustain a family solely with informal WEEE business
- However, WEEE-workers have access to rapid cash flow, an aspect which is absent in agricultural-led households in North Ghana
- **Income data related directly to productive economic activity**
- **Excessive working hours**
- **Low Human Development Index (152)**

## Preliminary Results – Impact on workers

### Working hours

- Scavengers → 10 – 12/ day;  
i.e. 300 -360/ month
- Scrap yard workers/  
Dismantlers → 10 – 12/ day;  
i.e 300-360/ month
- Refurbishers/  
repairers → 8 -10/ day;  
i.e 210 to 260/ month

### Job satisfaction

- Very subjective, but...
- Apart from meeting basic needs, regular remittances to families & relatives
- Set up own business only after few years of work
- Cash flow, as opposed to traditional modes of livelihoods, such as agriculture

### Working hours – WEEE China

- 10 – 12/ day;  
80 – 200 hours overtime/ month  
(SACOM 2008)

### International conventions

- Not in excess of 48 hours per week
- At least 1 day/ week off
- Voluntary 12 hours/ week overtime

## Safe & healthy living conditions

(Brigden et al. 2008)

- Concentration of copper, lead, zinc & tin was more than 100 times of typical background levels
- E.g. conc. of lead at Agbogbloshie 5510 mg/ kg dry weight
  - lead limits in France 400 mg/ kg for residential & 2000 mg/ g for industrial areas
- High levels of dioxins & furans (PCDD/F)
  - 988 pg/ g TEQ
  - generally below 1 pg/ g TEQ or rarely above 10 pg/g TEQ for unpolluted & lightly polluted urban soils
- Children represent the most vulnerable group due to hand-to-mouth behaviour



### Employment creation

- Till date no statistical information available

→ The Labour Market Information System of the Ministry of Employment & Social Welfare, the Ministry of Trade & Industry, the World Bank Group, CIA – the World Factbook.....

- Therefore, certain assumptions, based on expert judgements, were necessary to estimate the size of the WEEE sector in Ghana

→ Basis of calculation: 3000 registered members of the Agbogbloshie Scrap Dealers Association

→ 500 registered members of the Repairers Association (GESTA)

→ Primary data collection on number of employees per business

## Employment creation

- 9,000 to 12,000 people are (partially or fully) engaged in WEEE collection, dismantling & metal recovery in Accra
- 10,000 to 15,000 people are (partially or fully) employed in EEE refurbishing & repair activities in Accra
- Total 19,000 to 27,000 people (partially or fully) employed in Accra in WEEE & EEE sector
- In whole Ghana, the number goes to 26,000 to 44,000 → 0.26 to 0.44% of the total labour force in Ghana

→ This implies that about 156,000 to 264,000 people are partially or fully dependent on WEEE & EEE practices in whole Ghana (using a TFR of 4.0) → 1.4 to 2.4% of total urban population in Ghana

### Time plan

- **May 2010 - First draft circulated**
- **14th June 2010 - Final draft**
- **22nd June 2010 - 3rd Steering committee meeting in Accra**
- **24th June 2010 - Final presentation in Accra**
- **July 2010 – Final presentation in the Netherlands**

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