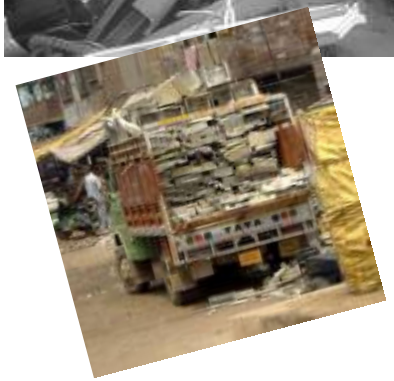

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Experiences from e-waste initiatives in Africa

E-Waste Management Forum, Cairo, 9-10 February 2009
Mathias Schluep
Swiss Federal Laboratories for Materials Testing & Research (Empa)

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Economic Affairs FDEA
State Secretariat for Economic Affairs SECO

EMPA

Empa

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- Swiss Federal Institute for Materials Testing and Research
- affiliated to the ETH Zürich
- founded in 1880
- Annual budget CHF 120 Mio
- 820 Employees
- Nanotechnology, Materials for Energy Systems, Construction materials, Materials for the Well-Being of the Human Body

Technology & Society Lab

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- Methods: LCA, Technology Assessments, Sustainability Assessments

- Specialized group for international technology cooperation (**sustec**):
  e-waste, biofuels, e-mobility, Cleaner Production

- E-waste activities
  - Auditing of Swiss e-waste recycling system on behalf of PROs SWICO and SENS
  - Knowledge partnerships in e-waste Recycling; programs in Asia, Africa and Latin-America

Informal e-waste recyclers in Nairobi could earn 3 US$ per day.

"This means that those engaged in electronic recycling are US$ 3 richer than 49% of the population in Kenya …"

"There is an opportunity for some business activity on the ground. The challenge is ***how we make the US$ 3 a day sustainable****."*

(Muriuki Mureithi, Nairobi)

Empa's global involvement in e-waste initiatives

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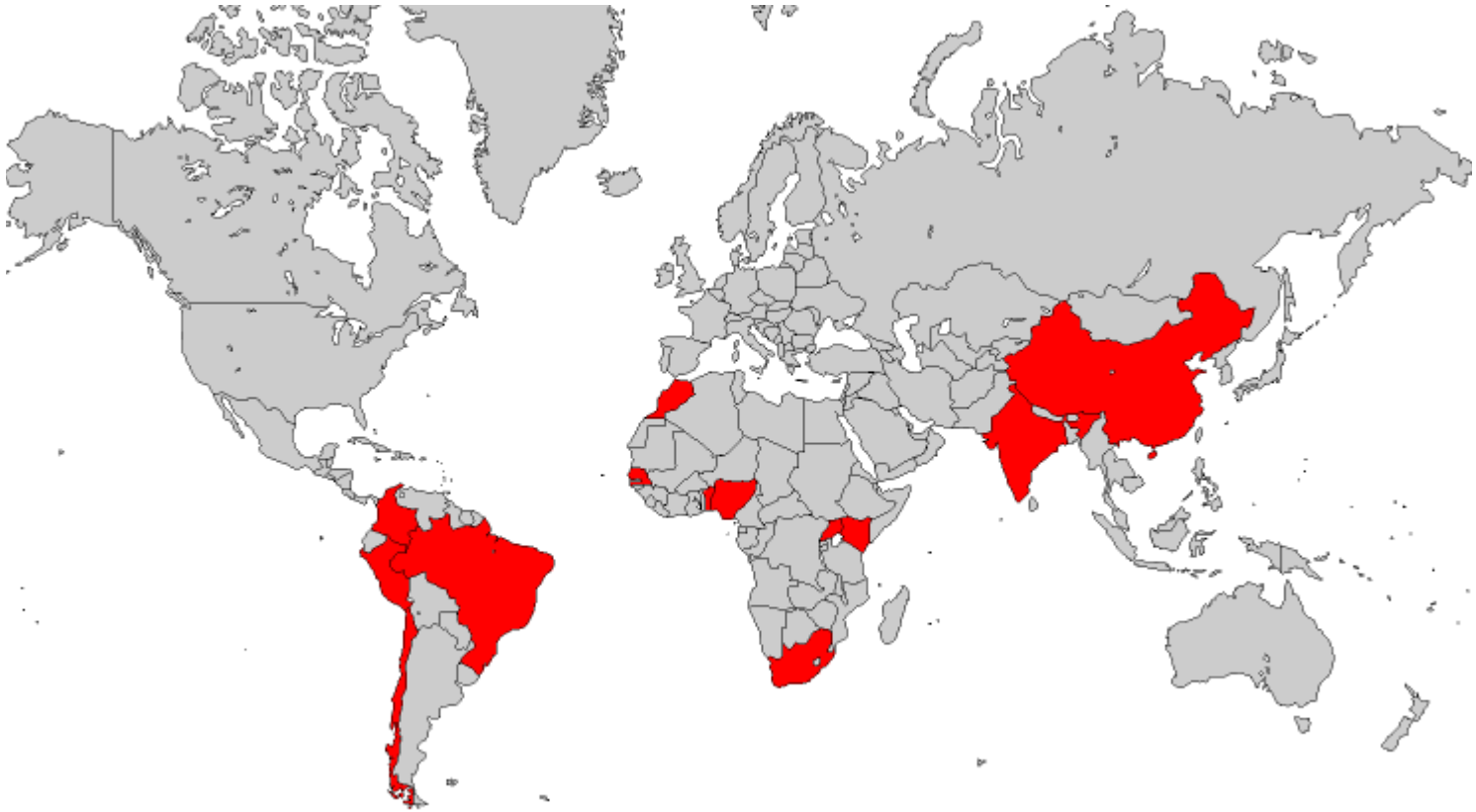

Swiss Knowledge Partnerships in e-Waste Recycling (SECO, 2003 – 2011)
E-Waste Recycling in Africa (HP / DSF, 2007 - 2008)
E-Waste Recycling in Uganda (UNIDO / Microsoft, 2007 – 2008)
E-Waste West Africa (SBC, 2009 – 2011)

Swiss Knowledge Partnerships in e-Waste Recycling

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A global programme resting on 2 pillars

- **Capacity Building:**
  cooperate with five countries: China, India, South Africa, Colombia and Peru to facilitate the development of sustainable e-waste management systems

- **Knowledge Management:**
  connect national stakeholders internationally to stimulate knowledge and knowhow exchange on e-waste management (e.g. StEP Initiative)

Structure and Elements of the Programme

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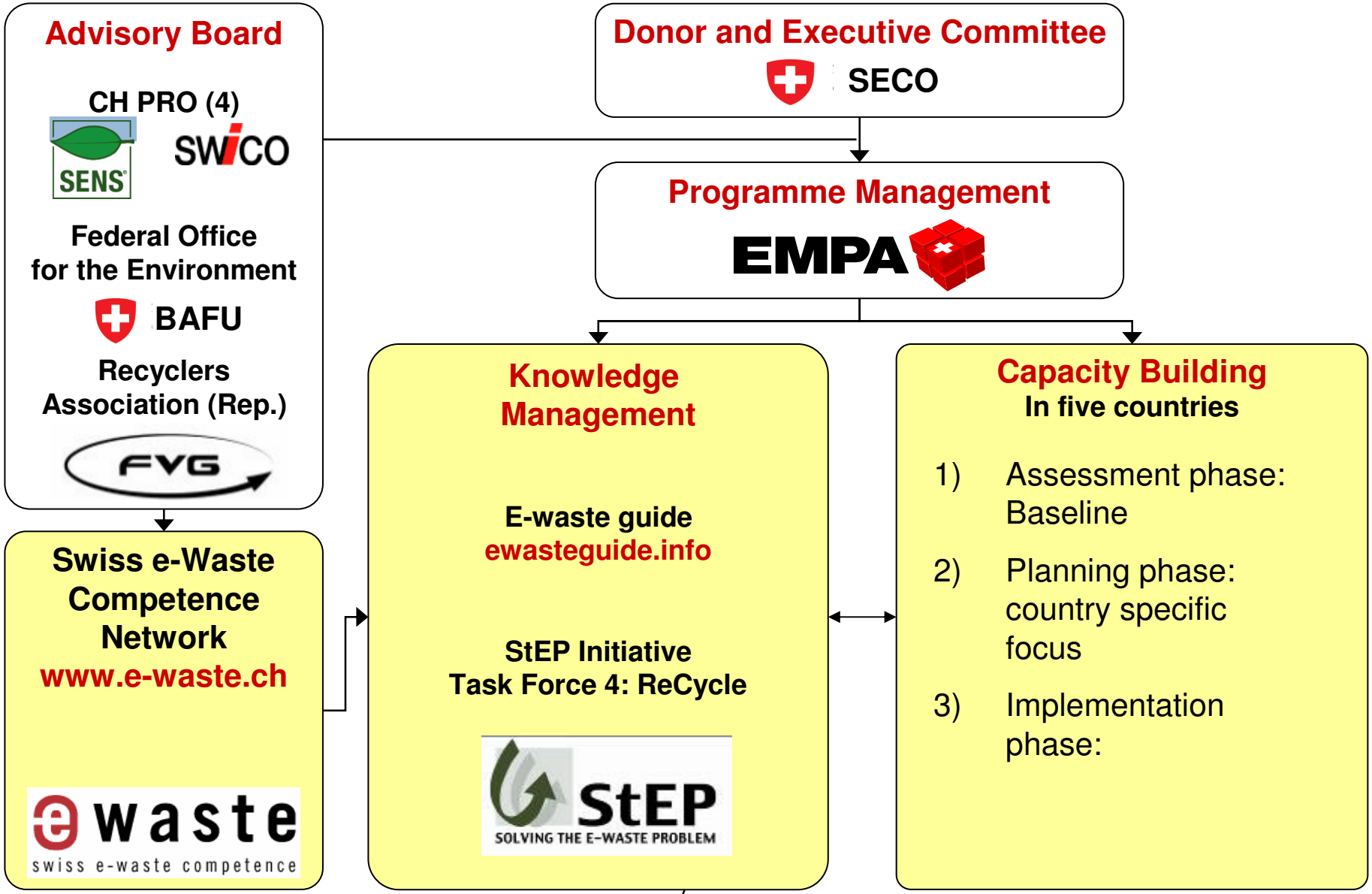
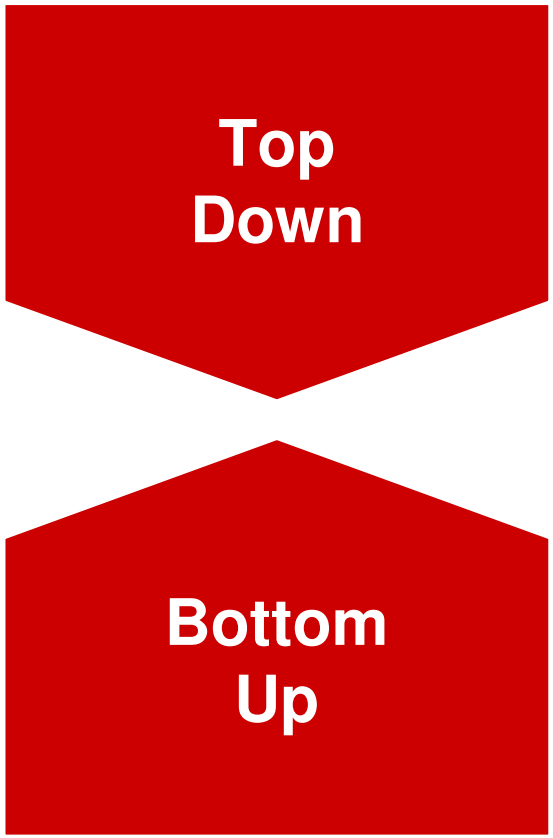


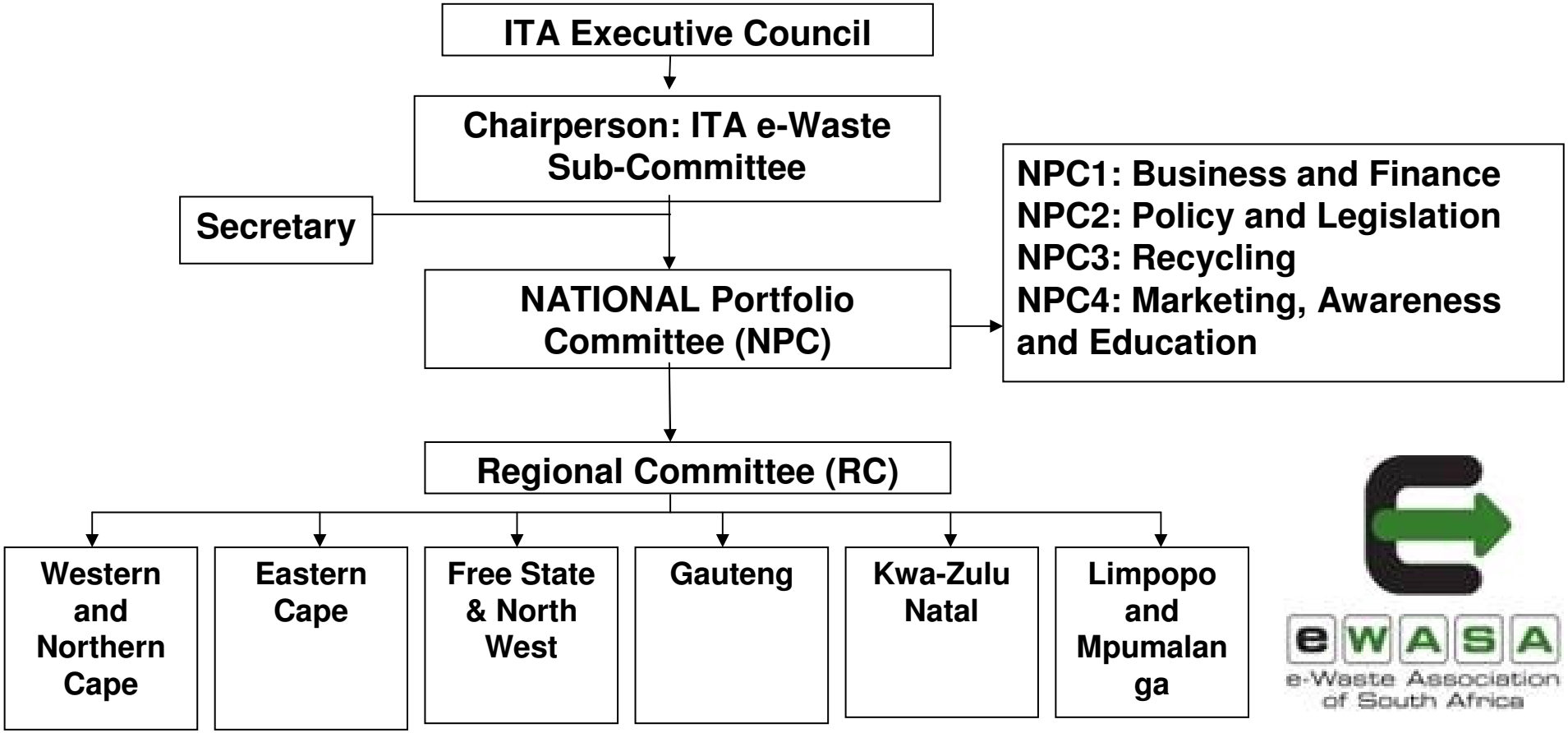
Capacity Building – Implementation Phase



- **National:**
  - Multi-stakeholder approach
  - Support industry initiatives
  - Facilitate policy dialogue
- **Local:**
  - Pilot projects
  - Collection infrastructure
  - Social businesses / new business models

South Africa: National Strategy

- As a result of a 4 year multi-stakeholder process, the IT Association of South Africa founded the e-Waste Association of South Africa (eWASA – ewasa.org) in 2008.



South Africa: National Strategy

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- Structured approach to develop a national recycling scheme

DBC® Socrates
Decision-Base-Center

Purpose: Develop an extendable e-waste business model South Africa. Also include experience from other countries.

eWASA
e-Waste Association of South Africa

Date:23.06.08

Goal: Steer and coordinate the activities of NPC's in a way to build a succesful and pioneering ITA Recycling Guarantee which covers different product categories.

white = unknown	green = o.k.	disturbances	crisis (negative acceptance)	catastrophe (implementation in danger)	not relevant for the time beeing	

Executive Council

Business and Financing	1	financing method to apply	financing needs (cost or income)	possible determinators of ARF (Adv. Recycl. fee)	calculation of ARF by product	competitive price for services	financial set-up	implementation	
Policy and Legislation	2	national legislation	international framework	evaluation existing approaches	dialogues with key players	guidance for ITA business model implementation	policy measures		
Recycling, re-use, technologies, certification&auditing, research&development	3	e-waste situation in SA	recycling chain	re-use practices, principals and standards	re-use categories, recovery of equipmant	current-use practices	certification process	auditing recycling activities	auditing other activities
	3	regular project evaluation	implementation support	best practice "eco design"	best practice "cradle to cradle"				
Marketing, Awareness and Education, other Industries	4	awareness increase for e-waste	campaigns (awareness increase)	brand ITA recycling guarantee (why guarantee?)	benefit for industry and association	SA environment	focused support to other committees	other categories (industries)	affected associations
	4	existing/planned solutions	product list	solution coordination					
Regional Committees (RC)		Western and Northern Cape	Eastern Cape	Free State & North West	Gauteng	Kwa-Zulu, Natal	Limpopo and Mpumalanga		

South Africa: Local Pilot (HP funded)

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- The pilot project developed a business model capable of being tested in a “Live” environment.
- Gained experiences which already serve for third parties as a replicable model to develop their own facility (e.g. in Durban, South Africa)
- Social aspects: opportunity created for 19 individuals to become active in the workplace as part of a business alliance headed by Recover-e Alliance.
  - 5 jobs for dismantling 4 jobs refurbishment for resale
  - 4 jobs W2A development 2 jobs in managing and marketing
  - A further 4 individuals gained exposure to the IT field and moved on into permanent employment elsewhere.
- Production results from February to November 2008 (start-up phase receiving funding through the HP project):
  - Total quantity of material processed > 58 tonnes
  - Income generated > R140000,00 or US$ 14,000
  - Value of products recovered as stock for resale> R50000,00 or US$ 5,000
  - Value of stock products manufactured for resale> R30000,00 or US$ 3,000
- Project continues into 2009 as a Live environment, with increased focus on corporate refurbishment and W2A streamlining in new premises.

South Africa: Local Pilot (HP funded)

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W2A = waste 2 art

Teaching, refurbishing, dismantling

photos by Derek Main 2008/09

Lessons learnt in South Africa

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Areas

- Stakeholder involvement
- e-Waste streams
- National e-waste management strategy
- Local pilots

Lessons learnt – stakeholder involvement

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- Multi-stakeholder approach is the only way
- Local government is easier to engage than national
- Industry involvment is crucial, but who are the decision makers?
- Consumer acceptance is a big question
- Refurbishers need to be part of the process
- Recyclers engage when they see the business opportunity
- NGOs can play a crucial role in bottom-up pressure and awareness raising
- Media!

Lessons learnt – e-waste streams

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- In developing countries most e-waste is generated by at corporate level (often >80% -> should be the focus when starting up a system)
- … but awareness creation also has to be done at consumer level
- SMEs behave similar as private consumers
- Start small – usually it is obvious to start with IT equipment
- … but always keep in mind other categories
- Other e-waste categories should be added once a successful start of a system can be anticipated

Lessons learnt – national e-waste management strategy

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- The industry can manage the system more efficiently and effectively than the government
- Although the industry might have lots of money they usually need seed funding to get from the ground
- It is possible to start an industry driven system without legal framework
- … but make sure to understand the current environmental and general legislation governing e-waste
- … and engage in the development of e-waste specific legislation
- Local governmental policies can boost a national strategy
- Awareness creation and education is absolutely crucial – but can cause unwanted effects, like more informal activities

Lessons learnt – local pilots

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- Hands-on experiences are crucial for the national strategy and need an appropriate communication strategy to be fed from local to national level and vice-versa
- Taking the e-waste out of the basement creates pressure for a solution and awareness in the public
- Security and crime is the biggest challenge on collection and dismantling sites
- Cherry picking happens, which **limits** the potential for structured business development
- Informal processing happens (burning of wires; smashing of CRT screens on site)
- A state-of-the-art solution for the downstream process of non-viable parts is not achievable without a national strategy

Thank you

Desperate for a job and worried about how she would support her children, Nadia was thrilled to start working at the HP-sponsored Cape Town Material Dismantling and Recovery Facility.

"It's a great project and really exciting too. I had no idea you could make money from electronic waste! It's opened my eyes and it's helping other people learn about e-waste as well."

(Nadia, Cape Town)