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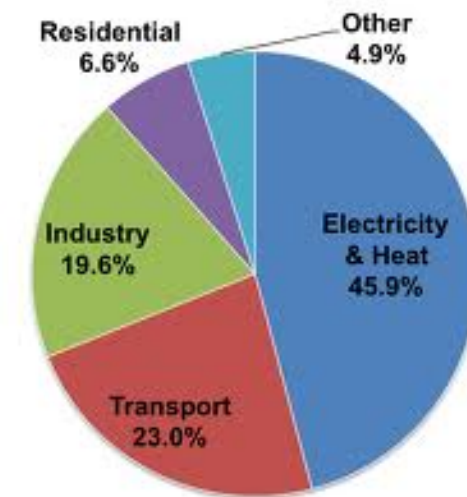
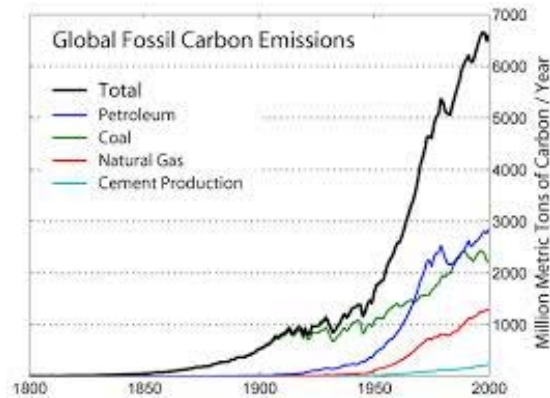
President of ISWA

Reflections on The Circular Economy

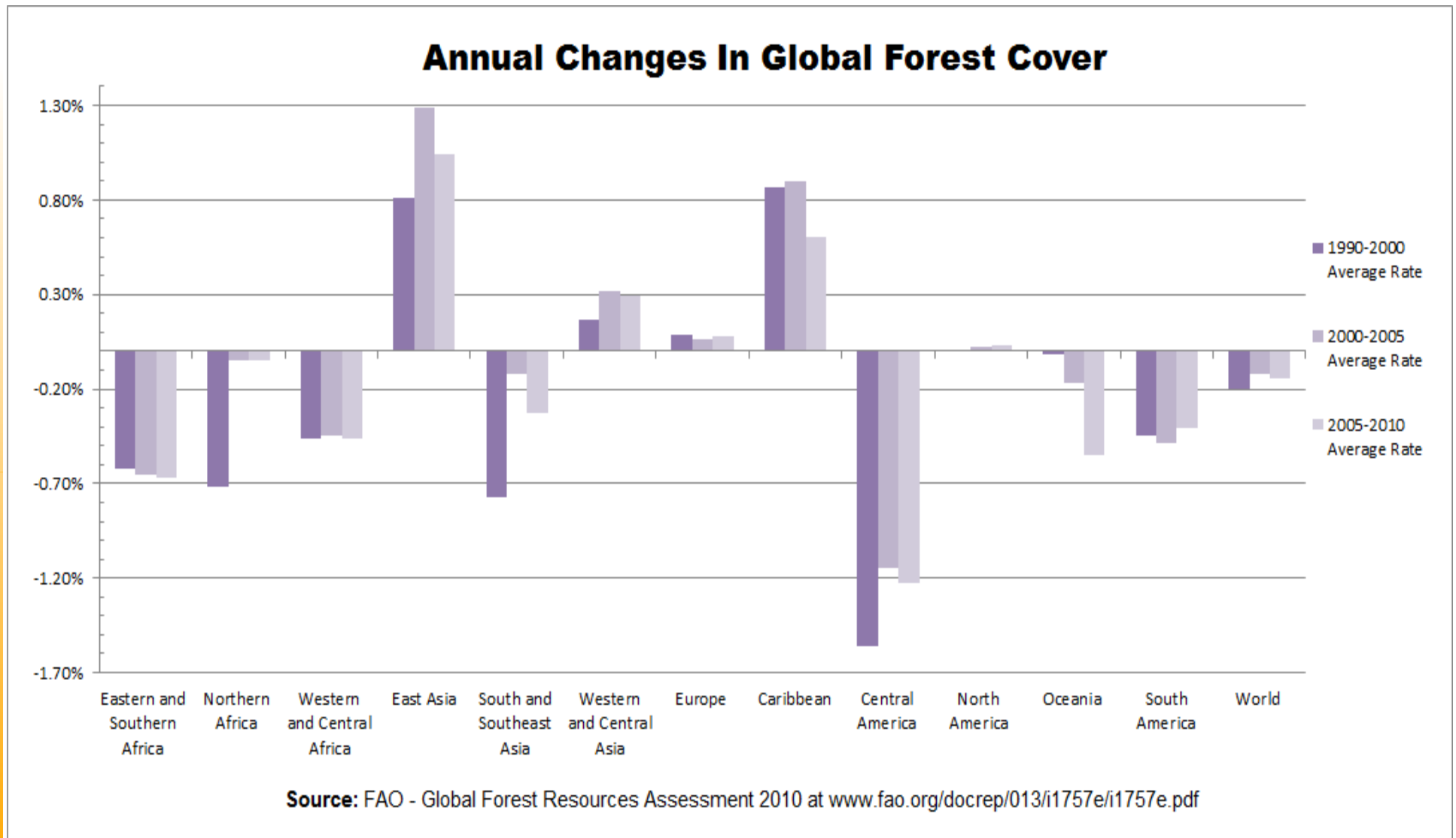
Energy, limited resources ?



It's about costs and emissions, not supplies

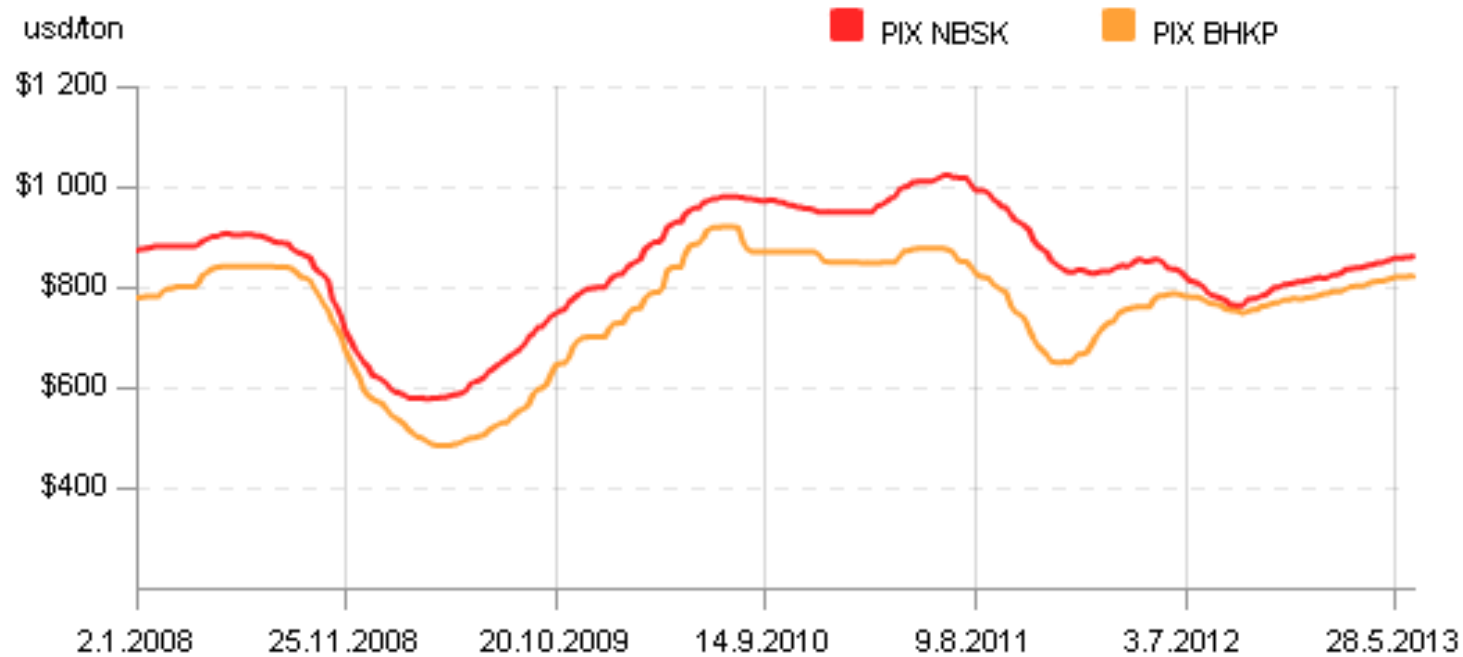


Limited primary resources ?



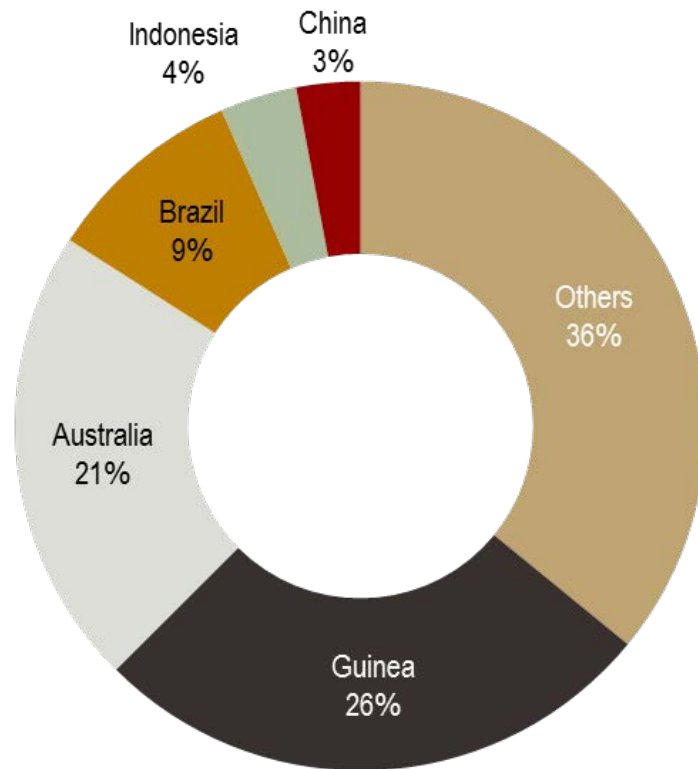
Pulp prices 2008 - 2013

PIX Pulp Indexes Europe



Unchanged, due to recycling ?

Global Bauxite Reserves (% , 2012)



Source: USGS; The Beijing Axis Analysis

Plastics



Glass



Organics



Where are the resource shortages here ?

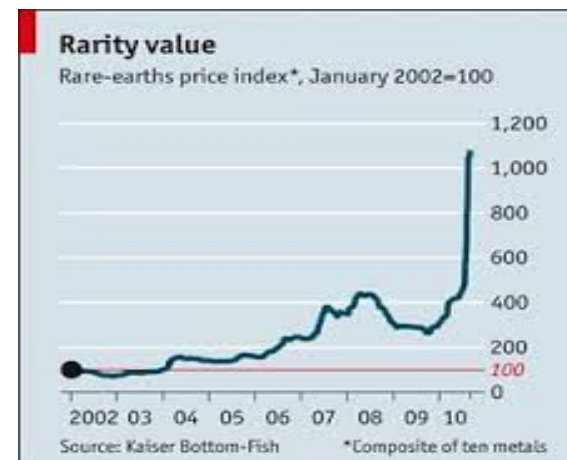
Copper



Phosphates



Rare Earths



Shortages or security ?

And if there are not shortages.....

Are lack of shortages due to recycling ? Is this why we recycle ?

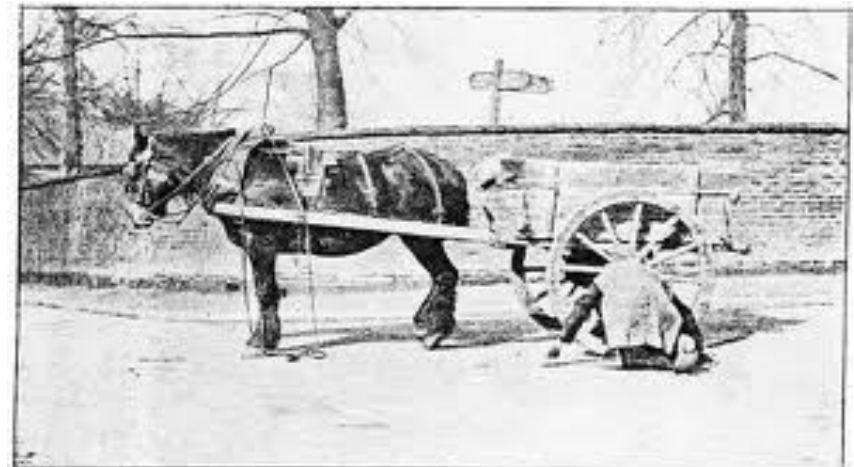
Why are we recovering energy if there is no energy shortage ?

This is why....



It's about health and the
environment

The origins.... keeping our cities clean from pestilence



So let's understand the basics again

Waste management is about :

- public health management
- air emissions management
- pollution control management
- worker's health management
- safe final sinks

**Waste management is policy driven
by health and environmental
concerns**

**Not driven by science or by finance or
principle resource values**

Treatment systems

Treatment systems are like public hospitals providing curative and preventative medicine



Treatment is about destroying pathogens, not just creating new products

Recycling is one of **THE** answers

Recycling is a **final sink** too and provides «preventative medicine»



- Avoids disposal
- Reduces energy consumption (usually)
- Reduces trade in raw materials
- Improves resource efficiency and autonomy
- Requires quality to be effective

Some recycling results

Global produced paper in 2012 = 400 million tons

Global recycled paper in 2012 = 44 million tons

Production v recycling = 11% globally



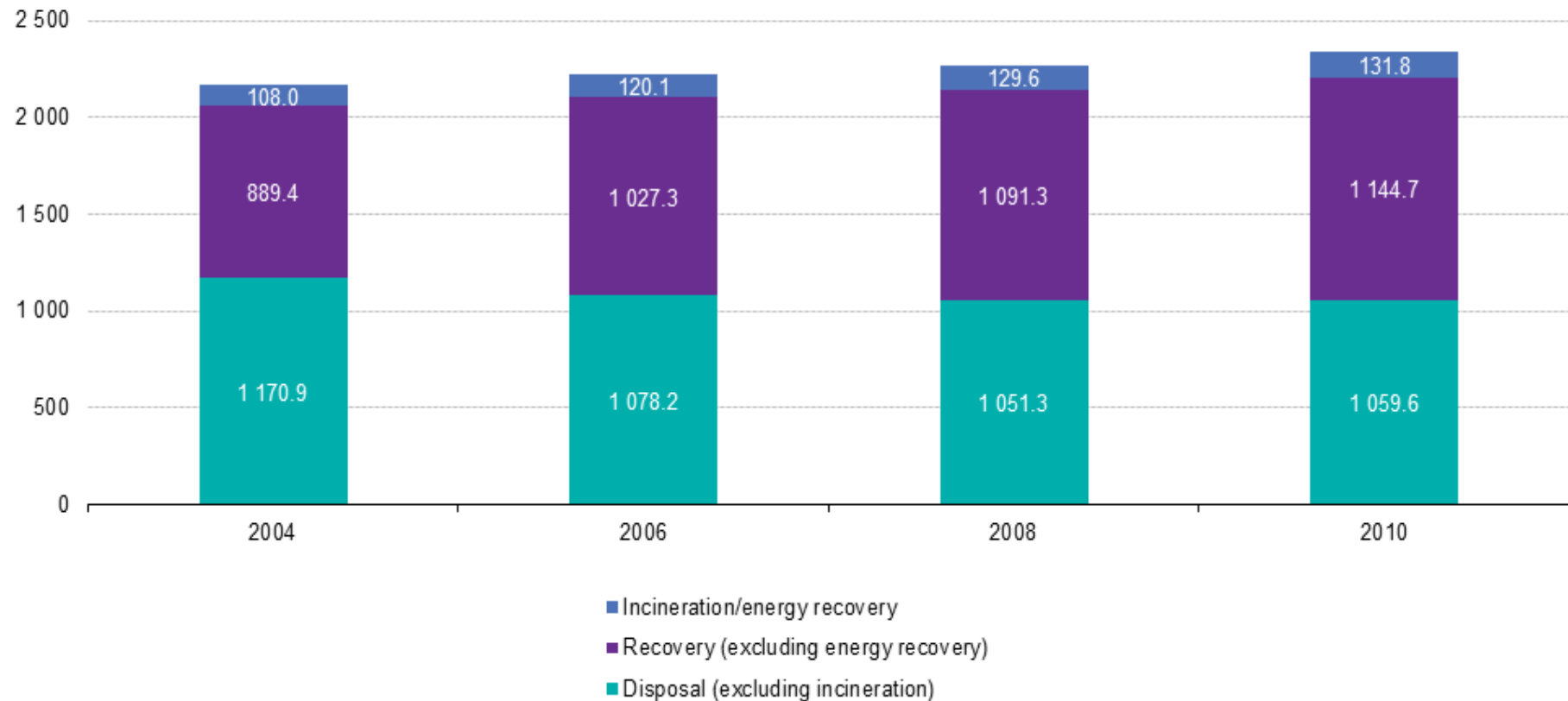
Italy aluminium packaging sold 2012 = 68.500 tons

Italy aluminium packaging recycled 2012 = 40.700 tons

Sales v recycling = 60%



BUT.....Recycling, disposal and energy recovery in the EU



(¹) Estimates.

Source: Eurostat (online data code: env_wastr)

This is the advanced EU

About 40% of all waste still goes to disposal now despite:

- **Our economic resources, ie taxes and incentives**
- **EU strategic policy planning and development since 1990's**
- **EPR schemes**
- **feed-in tariffs for renewable energy and district heating**
- **landfill taxes and bans**
- **EU penalties on non compliant nations**
- **incentives for recycling (GPP for example)**

(ps with a stable, educated and urbanised population)

Though.....

We think that by 2030 in the EU we will have

- eliminated landfills
- recovery of resources of 50%
- recovery of energy about 40-50%

...if we continue with current policies and enforce them

How much is recycling worth ?

- Gruppo Hera in Italy, a medium sized company (Italy's largest)
- Hera Ambiente (rifiuti) turnover €382 million/year
- Handles 3.3 million inhabitants with certified 52% recycling level
- 4.5 mln/t of MSW & 2.9 mln/t of industrial waste treated in 2012.
- Waste sales value € 21 million (5.5% of T/O)

Hera's sales of waste 2013

Of the €21 million of total recycled waste sales

- €4 million were on the open market (1%)
- €17 million (4.5%) were through the EPR National Packaging Consortium, ie collection is subsidised by environmental taxes.

Recycling costs :

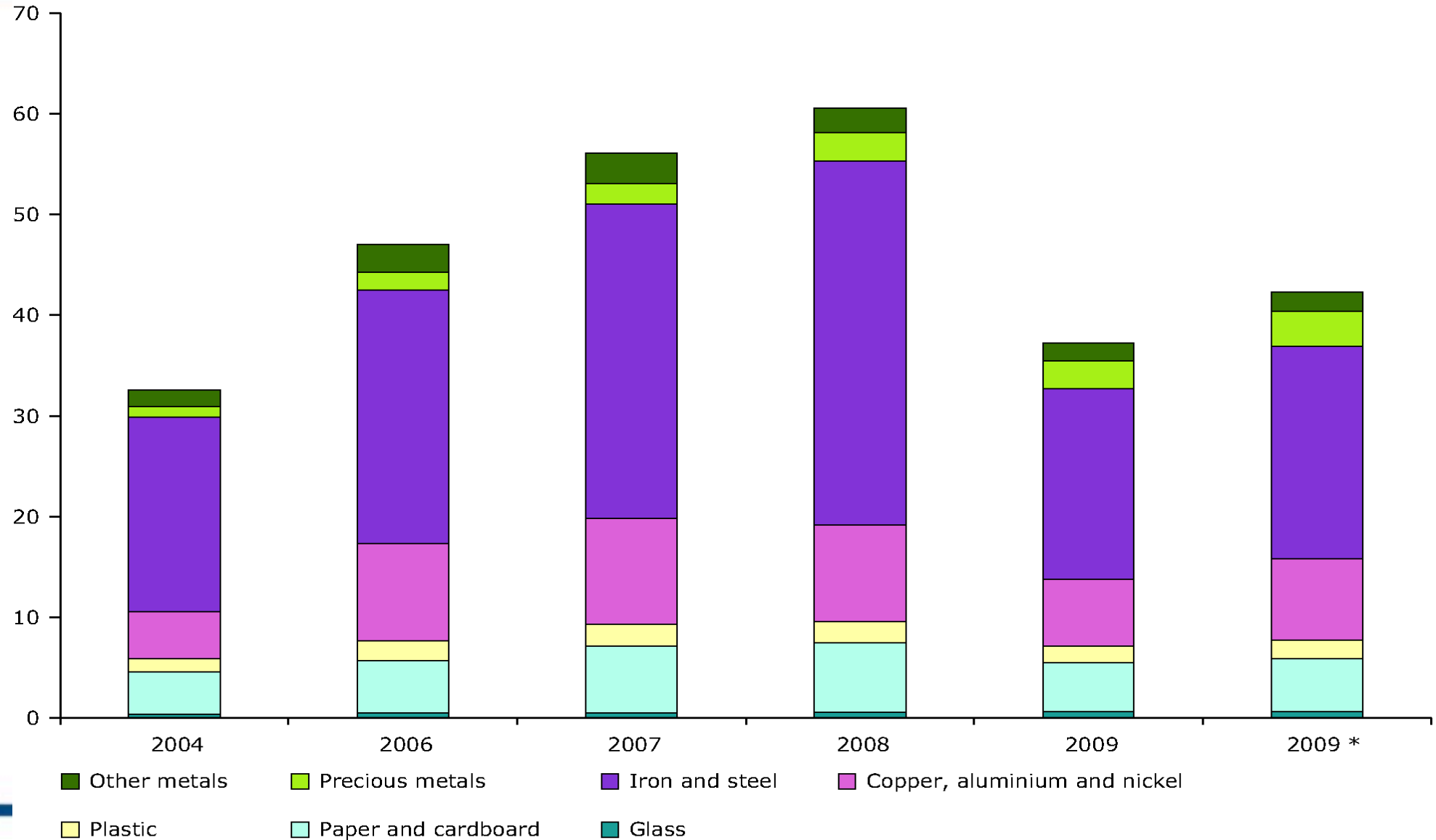
Press release of March 14, 2014

- Bologna, 14 mar. – Hera, la multiutility che si occupa dei rifiuti a Bologna, investirà nei prossimi 3 anni 10 milioni di euro per far crescere la raccolta differenziata. Il piano presentato dall'amministratore delegato Maurizio Chiarini e dal sindaco Virginio Merola ha un obiettivo ambizioso: far lievitare da qui al 2016 la raccolta differenziata dall'attuale 39 al 50%. Il tutto non avverrà a costo zero: "Il costo di tutto quello che viene fatto va scaricato in tariffa" ammette senza giri di parole Chiarini. La stima di Merola è di un aumento medio della bolletta di circa 40 centesimi al mese per famiglia. "Poco più dell'inflazione prevista" dice il sindaco.

Total turnover of recycling of seven key recyclables in the EU

2004 and 2006–2009

Billion EUR in current prices



Europe's waste industry is not economically driven by recycling, though it does a lot of it (mainly metals)

Resource values are not the issue for main waste streams, except metals.

Europe's waste industry is driven by :

1. public health and environmental protection
2. Taxes to pay for this
3. Energy from waste, often subsidized too

Recycling costs

Recycling and material recovery largely happens due to subsidies or taxes, €150/200 per capita per annum in Europe

(taxes, city council subsidies, EPR schemes, renewable energy subsidies)

Waste management costs !!

It's as simple as that

- And Europe's example is that these costs are not covered by recycling, nor are energy sales enough.
- Waste taxes are needed
- Everyone has to pay the cost of health protection, it is a PUBLIC service.

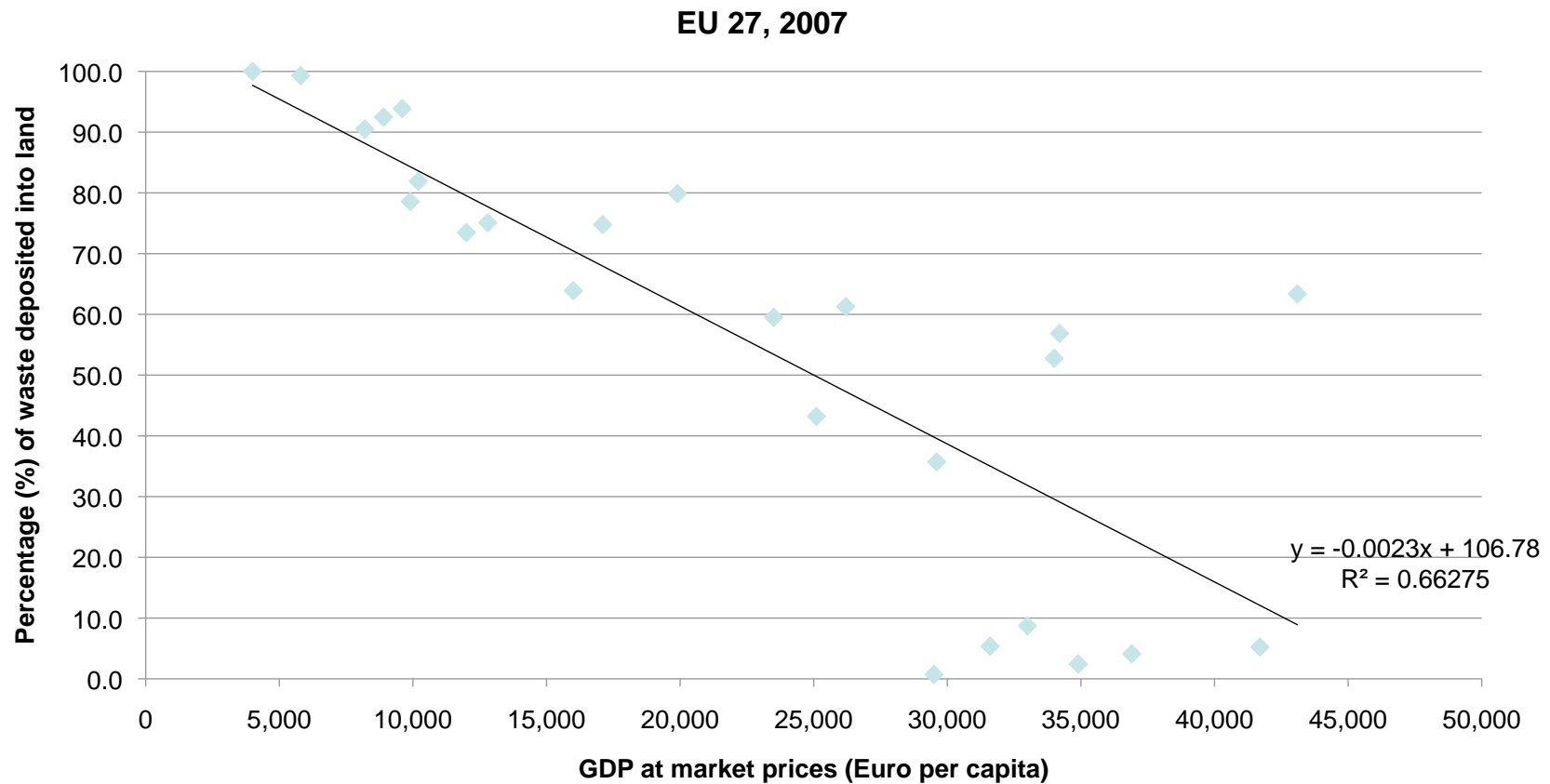
**Waste management costs
money and good systems
take 10-20 years to build**

IS THE MESSAGE CLEAR ?

How much in EU countries with similar targets ?

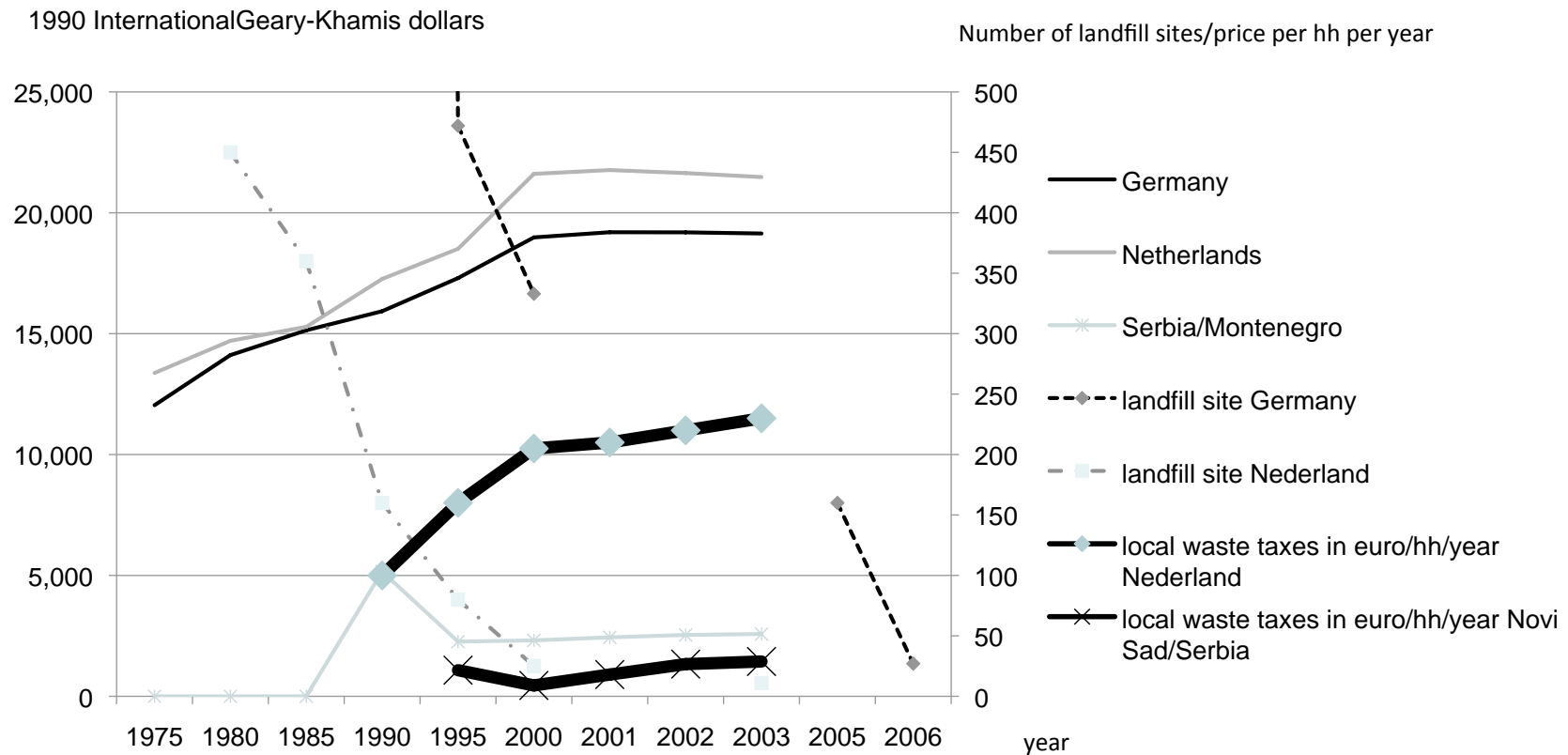
- Serbia €30/person/annum energy recovery 5% recycling rate, no
- Hungary €60/person/annum energy recovery 15% recycling rate +
- Portugal €100/family/annum energy recovery 21% recycling rate +
- Belgium €185/person/annum energy recovery 75% recycling rate +

Boundaries for Strong and Stable Improvements in Solid Waste Management



Thanks to Goran Vujic

Boundaries for Strong and Stable Improvements in Solid Waste Management



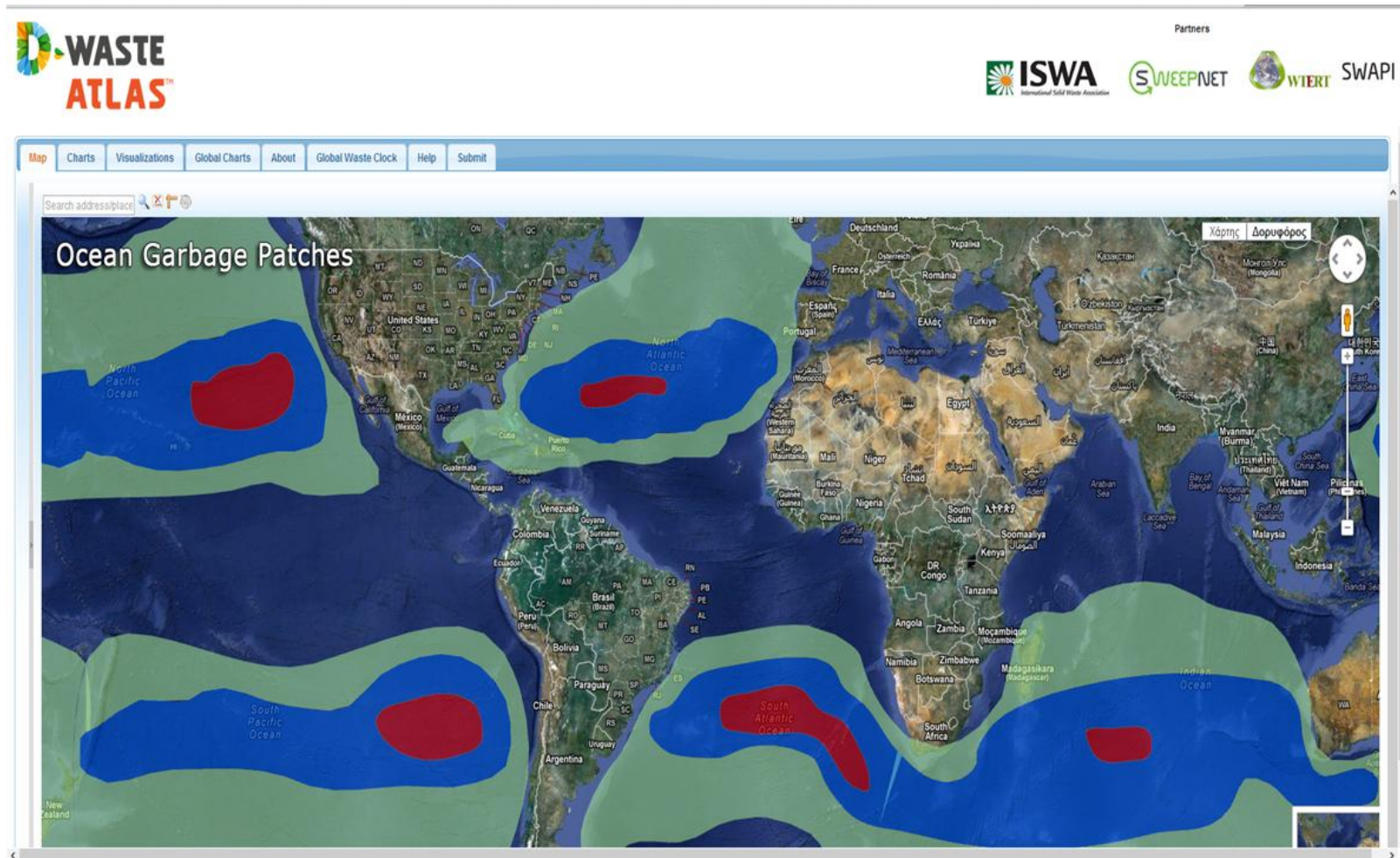
Thanks to Goran Vujic

So what about the Other World – developing countries?

- Little central strategic planning
- Few financial resources
- No EPR schemes
- No feed-in tariffs
- No landfill bans or taxes
- Few Government penalties and little enforcement
- No incentives to recycle

(ps with a chaotically growing uneducated urbanising population)

Consequences we now know







The world's poorest are waste scavengers

What are our «European» messages to developing/ emerging countries ?

1. Prevention programmes (are we joking ?)
2. Separate collection
3. Recycling
4. Close open dumps and build sanitary landfills
5. Compost organic waste
6. Collect and prevent hazardous waste like WEEE
7. Stop imports
8. Create laws and regulations

We rarely say:

To make waste management at a European level these countries need to collect taxes and spend large proportions of their national income.

Waste is not a resource question, it is a HEALTH emergency and needs healthcare budgets to start-up.

We show the result but we rarely show the costs of getting there (€150/200 per person per annum over 25 years).

We are giving out a false message often, illuding policy makers.

What are the costs of bad waste management ? Here are some.....

Health – epidemics, malaria, dengue fever, typhoid, cholera, respiratory diseases, black soot emissions, dioxin emissions, poisoning.

Environment - pollution of water tables, air quality, CO₂ emissions, HFC emissions, greater resource extraction

Economic – damages to tourism, urban quality (house prices), business investment

Social – waste scavengers, child labour, crime, urban degradation

Solutions ?

We have to drive the message home that waste management is a PUBLIC health priority

Establishing this priority leads to :

- Greater political weight for waste matters
- New political, social and economic alliances
- Investments in waste infrastructure
- Taxes on waste (landfill, EPR etc)
- Incentives to invest (feed-in tariffs etc)

Because

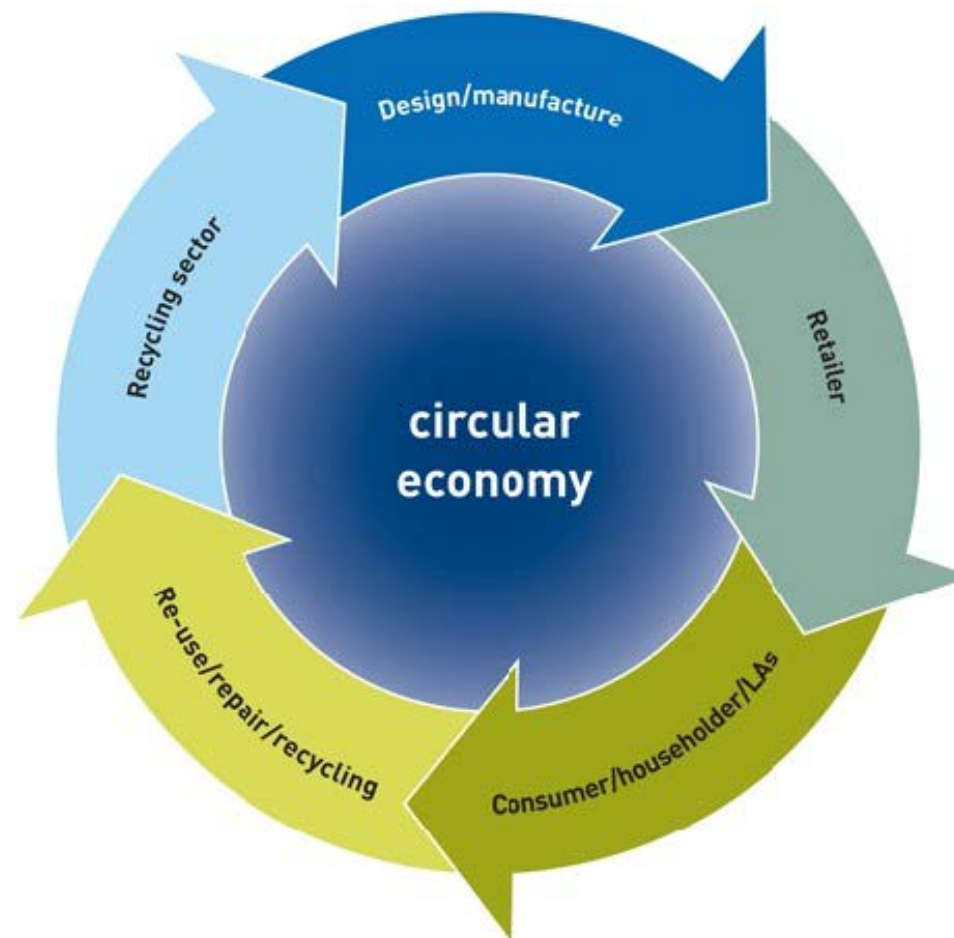
1. There is no resource emergency for most important waste streams, so resource recovery alone will not finance waste infrastructure.
2. We have to establish a collective responsibility for waste management- everyone has to contribute, even the poor.
3. The Polluter Pays Principle needs to be enforced on a national scale. We need EPR's on most waste streams everywhere ! Ethical as well as economic question

And as a result.....



Recycling, composting, energy recovery become competitive as disposal becomes more expensive. Waste prevention kicks in.

You get the circular economy



Virtuosity costs ! The Circular Economy is a luxury which the developing world cannot now afford. So we have to be content with simplified solutions in the medium term :-

- good collection, let's keep our cities clean
- good landfills, let's capture energy and stop air, water, soil pollution
- selected recycling with real value streams

- Look at the «virtuous EU», it takes time to implement policies: 30-40 years.
- Waste recycling is not going to drive waste systems without taxes and incentives like EPR or for renewable energy
- Keep focussed on the long term, don't obsess on tomorrow- you will achieve nothing.
- Beware of experts with a know-all solution.

What is ISWA doing on all this ?



- Campaigning for financial resources to go to waste management (UNFCCC, WB)
- Working to create frameworks for policy makers and operators: CCAC, IPLA, GPWM, UNEP
- Providing information: GWMO, Knowledge Base and Knowledge Platform
- Catalysing academics, industry, governments to work together
- Providing you all a network to learn from best experiences (60+ events in 2013)
- Funding research and studies through the ISWA Grant
- Providing education, formation, capacity building
- Updating on industry trends and finance through newsletter, website, journals.

Global Waste Management Outlook

Authoritative, analytical, evidence-based, concise and visual: To be published in early 2015



So....unite our forces, campaign with us

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