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Learning from successes and failures: Lessons for the developing world

*XV International Congress on Waste Disposal and Environmental Perspectives
Bucaramanga 22 -24 April 2015*




1. No more success stories...

- ❖ Some of the best success stories started with a failure
- ❖ Successful systems in SWM are gradually and step by step developed, so knowing just their current picture offers no real understanding

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Let's learn from failures



Many ways to fail

- Technical incompetence
- Economic issues
- Environmental failures
- Fraud

Systemic Failure

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2. Systemic failures to be discussed

- ❖ Tripoli
- ❖ New Delhi
- ❖ Cairo
- ❖ Mexico
- ❖ Netherlands
- ❖ Napoli

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New Delhi, 1984

- ❖ In 1984, the Municipal Corporation of Delhi, India, built an incinerator to process 300 ton per day of solid waste and produce 3MW of power, with **technical assistance** from Denmark, at a cost of around US\$3.5 million.
- ❖ The plant was designed for segregated waste as input, which **was not practiced** by the households or promoted by the municipality.
- ❖ The plant had to be closed down within a week of its opening as the waste had a **very low heating value** and a high percentage of inert materials.



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New Delhi, 2003

- ❖ In 2003, Lucknow Municipal Corporation built an anaerobic digestion plant, as a 5MW waste-to-energy project, to process 500 to 600 tons of municipal waste per day at a cost of US \$18 million.
- ❖ Private companies from **Austria and Singapore** provided the **technical inputs**, while Indian firms supplied the human resources for execution on a build–own–operate (BOO) basis.
- ❖ The plant was not able to operate even **for a single day** to its full capacity due to the high level of **inert materials** in the waste and was closed down.



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Cairo, 2008-9

- ❖ Government **privatized** waste management collection, recycling and disposal with a single global contract
- ❖ **Zabaleens, the informal sector that made door to door collection and lived from recycling of organic fraction and packaging materials, were completely ignored**
- ❖ The contractor put high tariff (almost triple than Zabaleens) and households served by Zabaleens **never paid** – instead they asked Zabaleens to continue their services although they were characterized as illegal
- ❖ **The contractor gave up the contract and asked for a huge compensation**




Mexico City, 1997


- ❖ A whole fleet of Collection Vehicles were **donor-provided**.
- ❖ **The vehicles were fitted with tires of an uncommon size, which were not available locally.**
- ❖ So when the tires needed replacing, the vehicles could **no longer** be used without import of tires.



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Summary 1

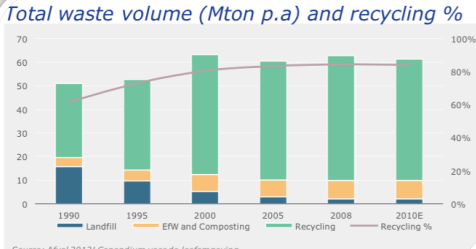
New Delhi	Cairo	Mexico
<ul style="list-style-type: none"> Local composition was <i>ignored</i>. Local culture and practices were <i>not taken into consideration</i>. Technology export <i>instead of technical assistance</i>. 	<ul style="list-style-type: none"> Strong informal sector was <i>ignored</i>. Privatization was <i>copy-paste</i> not adapted <i>to local conditions</i>. No feasibility resulted to <i>no viability</i>. 	<ul style="list-style-type: none"> Donations <i>do not include operational requirements</i>. <i>Local resources</i> are the key for sustainable operations.


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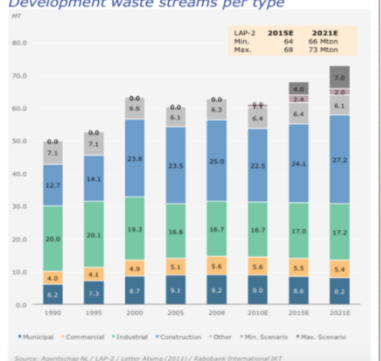
Netherlands: W2E Overcapacity

Total waste volume (Mton p.a) and recycling %



Source: Afval 2012/1 Copenium voor de leefomgeving


Development waste streams per type

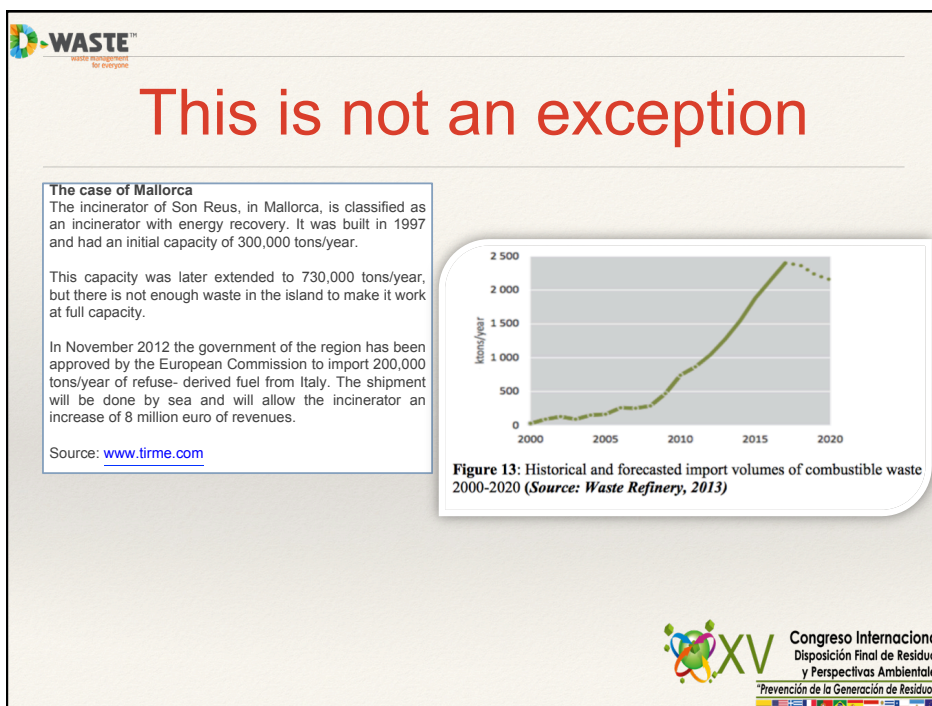
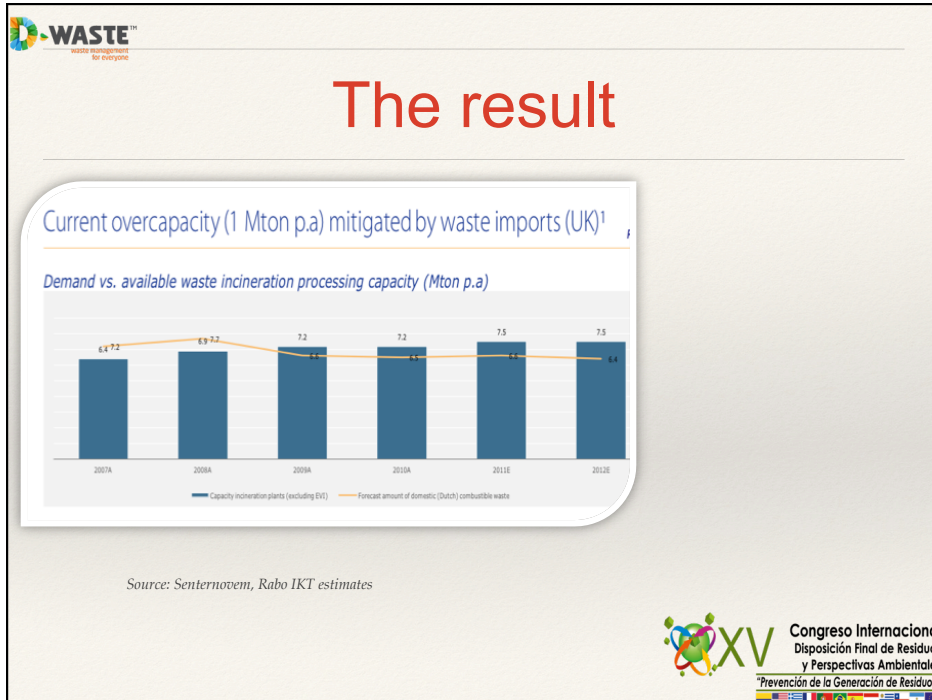


Source: Agentschap NL, LAP-2, Letter Afval (2011), Rabobank International (2011)

Recycling doubled in 20 years

Economic crisis reduced volumes

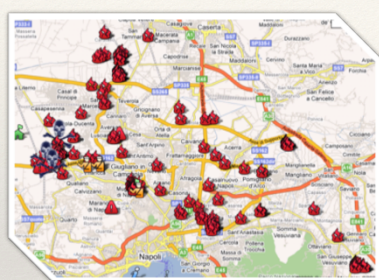

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Key-points

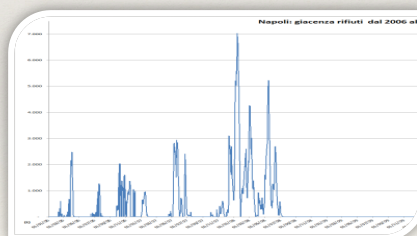
- ❖ European network or proximity principle?
- ❖ Costs and benefits or market development?
- ❖ Crisis reduced waste
- ❖ Forecast and uncertainties
- ❖ The less efficient plants will close
- ❖ **Society overcame expectations**

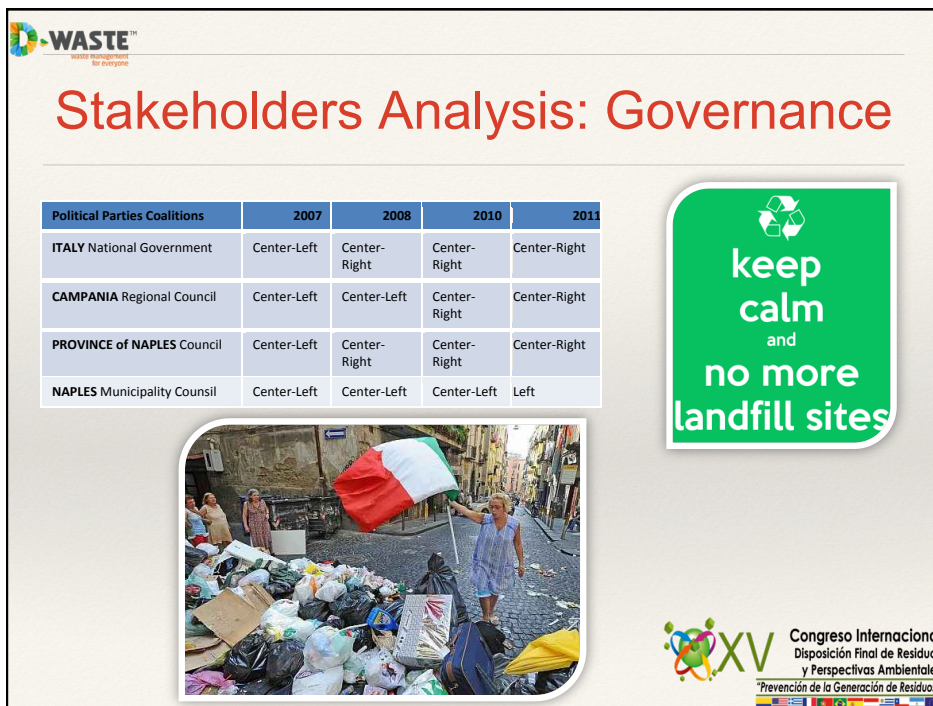
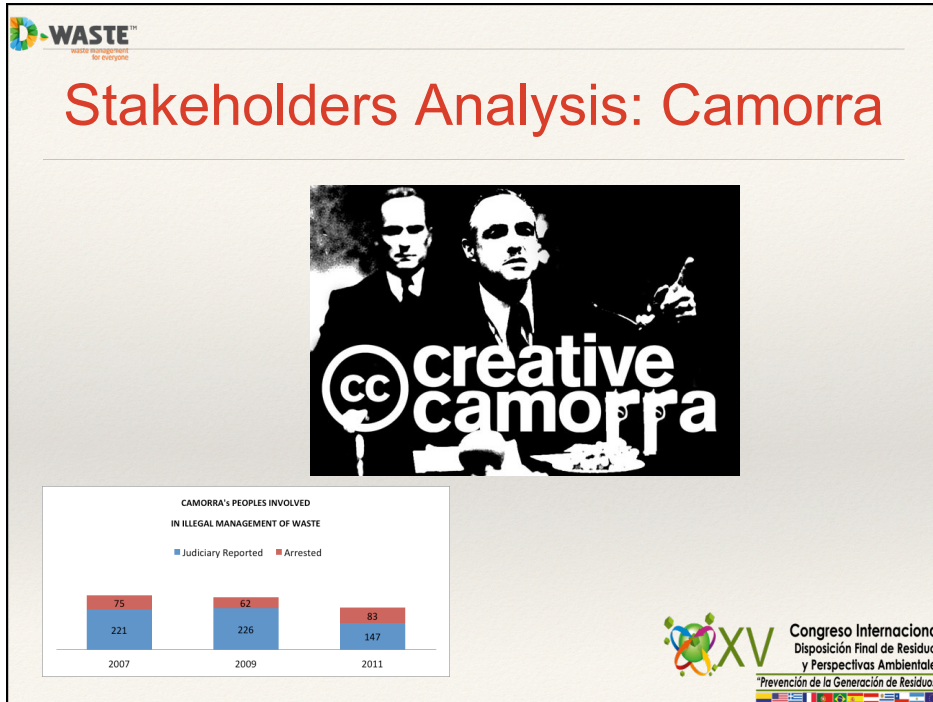
Napoli, the mother of failures



Best SWM plan 2000

No landfills – no WtE
 50% recycling in 3 years
 7 RDF plants
 No intermediate solutions





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The results

THE INDEPENDENT
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Key-points

- ❖ Inertia of policy makers
- ❖ **Political “correctness”** about recycling and landfills
- ❖ High recycling → concrete planning, money and **time**
- ❖ Decentralization sounds good but...
 - ❖ It is not easy and cheap
 - ❖ It means also many **local reactions**
- ❖ There is no system without a **landfill**

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Summary 2

Netherlands

The social context of waste management was *underestimated or ignored*. Recycling grew faster and diverted much more quantities from W2E plants. Economic crisis resulted in lower consumption and less waste generation.


Napoli

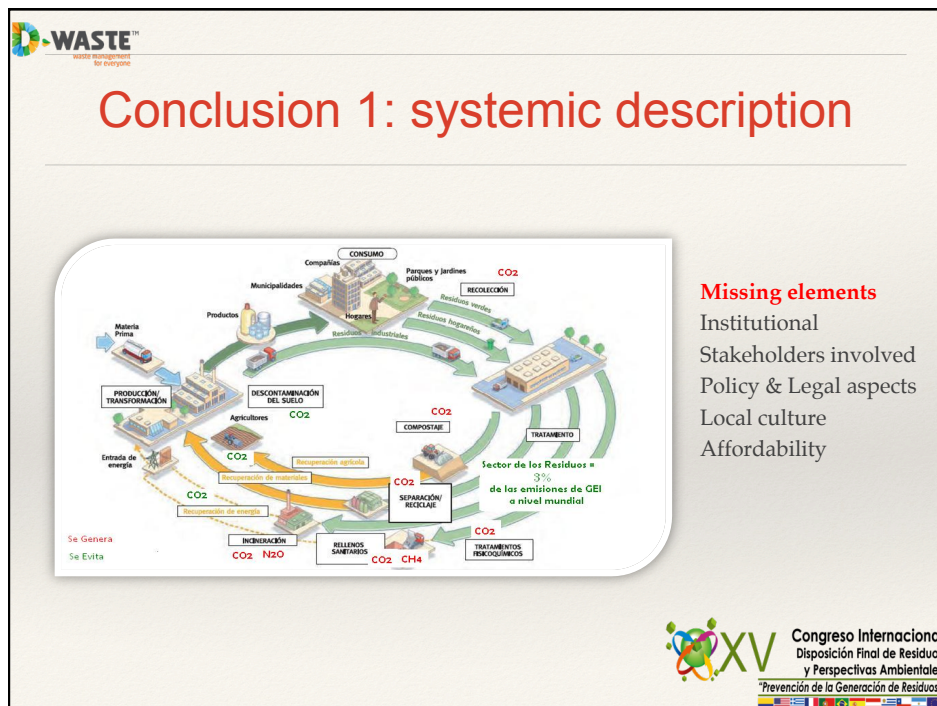
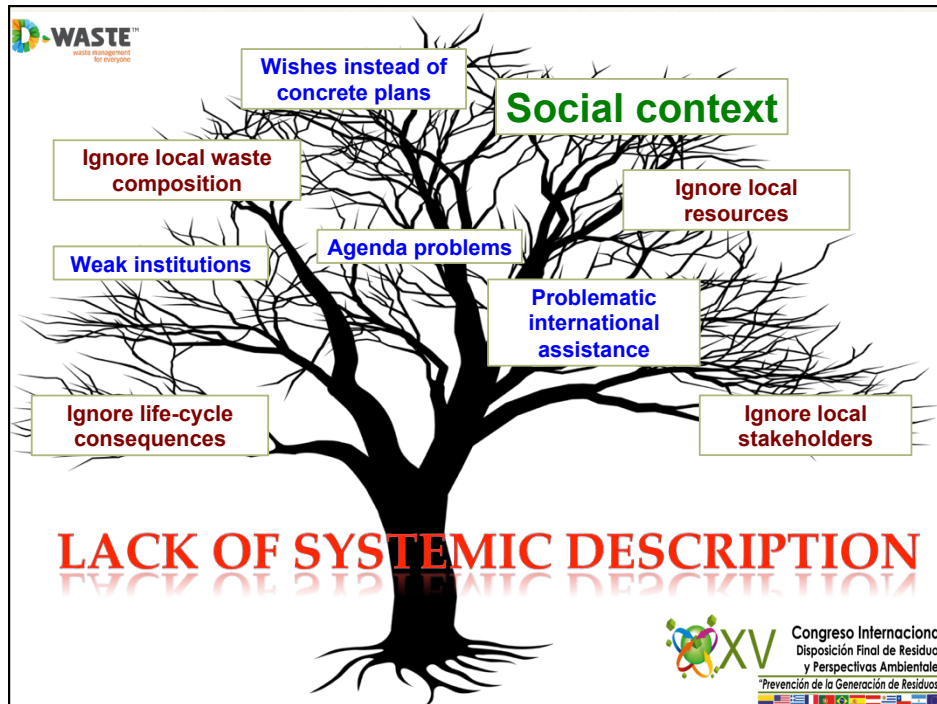
The social context of waste management was used as *an excuse for doing nothing* for many years. Mafia business kept dumpsites open and supported reactions against landfills. High recycling rates are wishes without planning, money and time

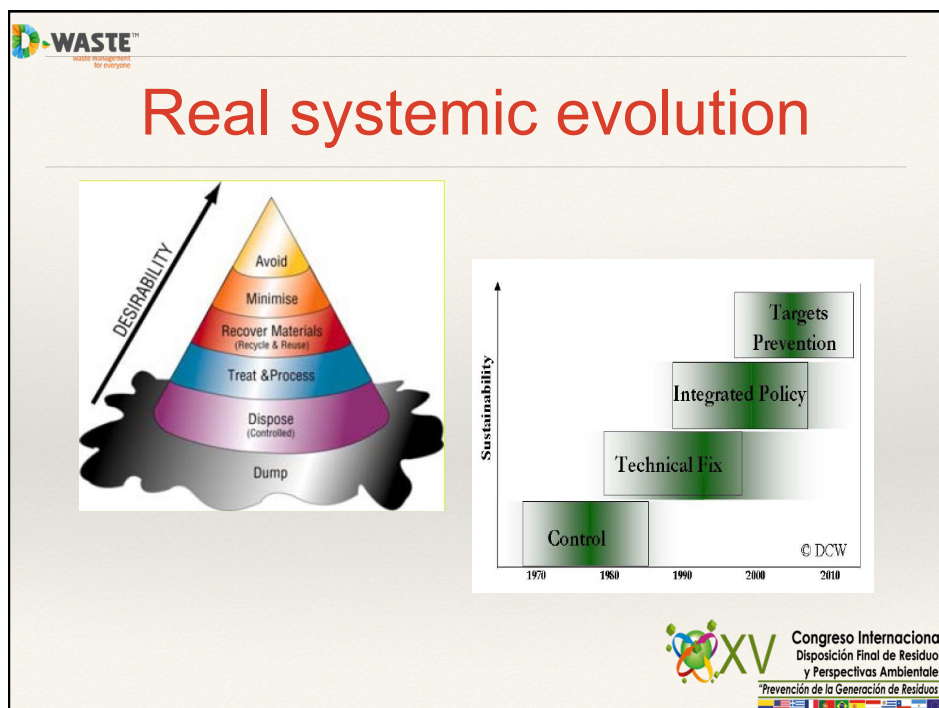
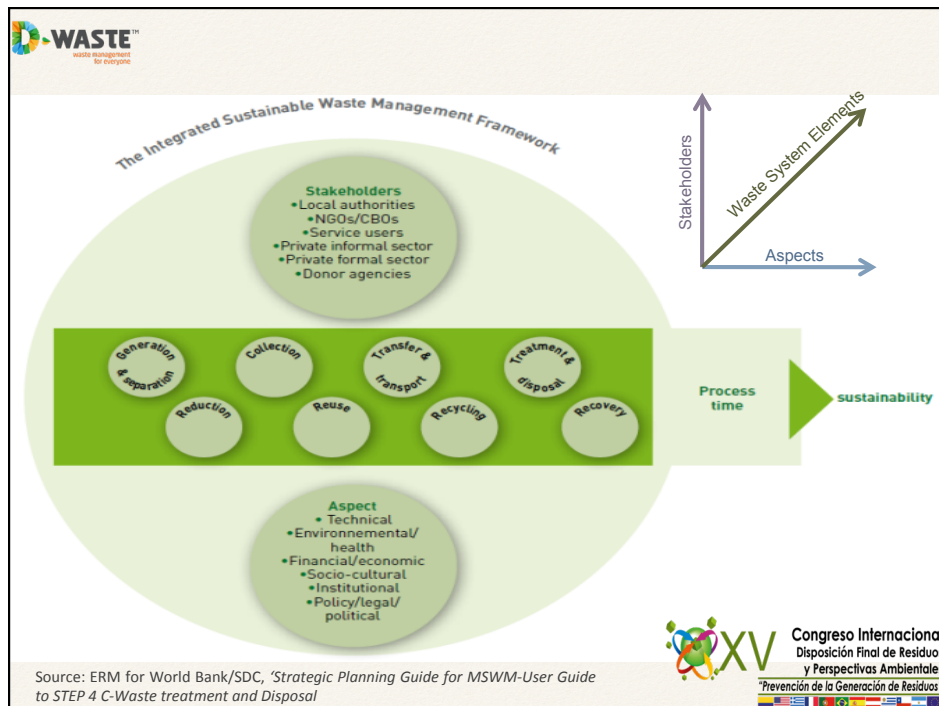



What were the results?

	NEW DELHI	CAIRO	MEXICO	NETHERLANDS	NAPOLI
ENVIRONMENT		X			X
HEALTH		X			X
COST	X	X	X	X	X
SOCIAL		X		X	X
HISTORY	X	X	X	X	X





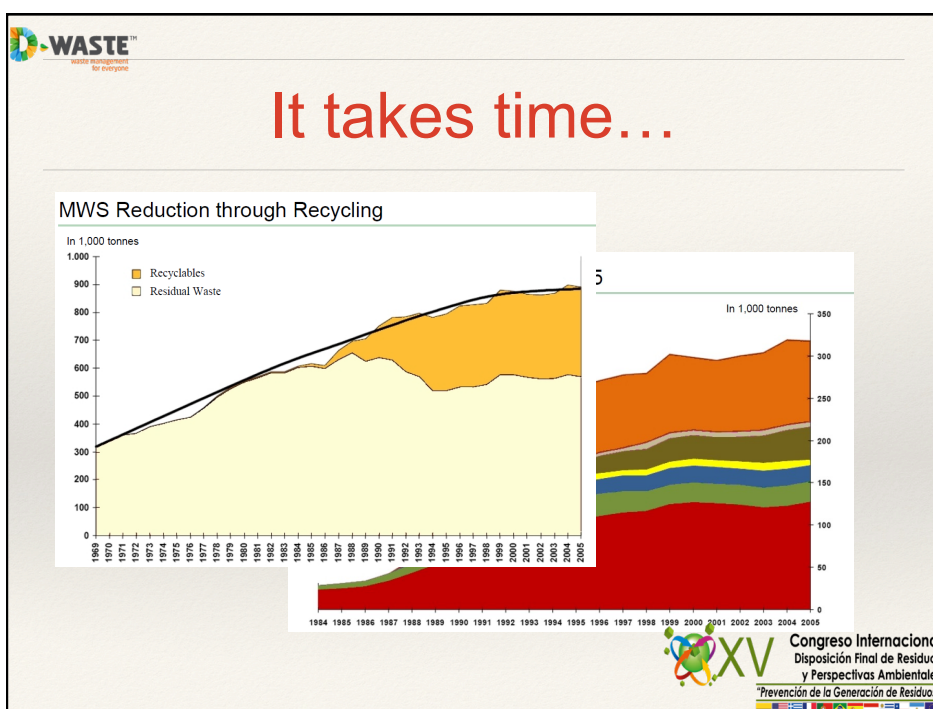


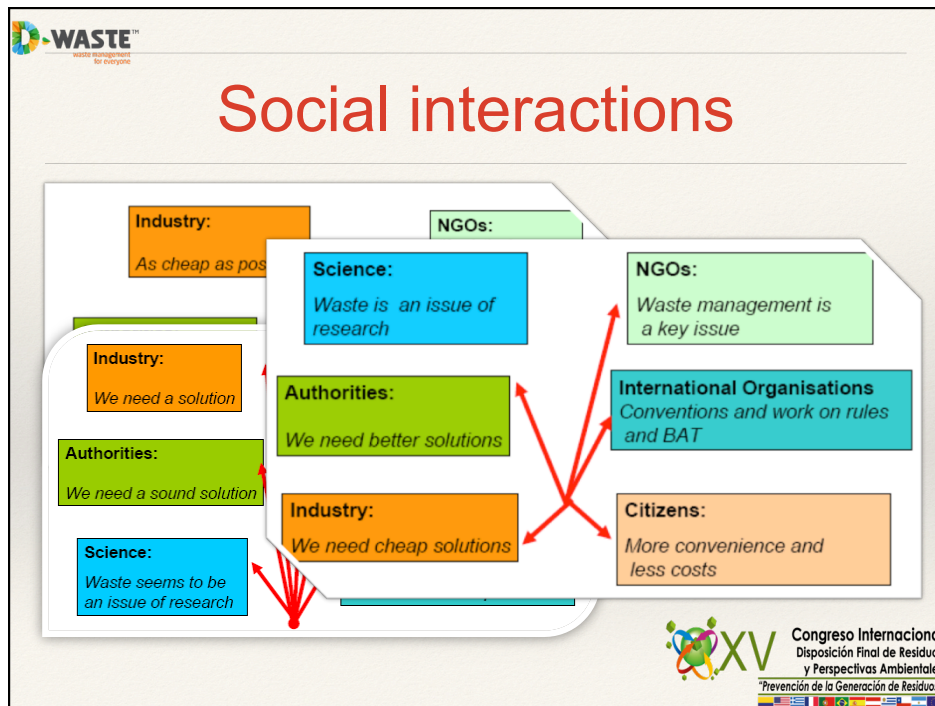
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Conclusion 2: a social output

- ❖ All waste management technologies as well as recycling are not religions
- ❖ They are business & technologies that can provide solutions to environmental problems.
- ❖ Technologies may be imported but they are going to work with local waste
- ❖ Technologies may be donor – funded but they will be operated, maintained, paid and supported by local resources, markets and citizens

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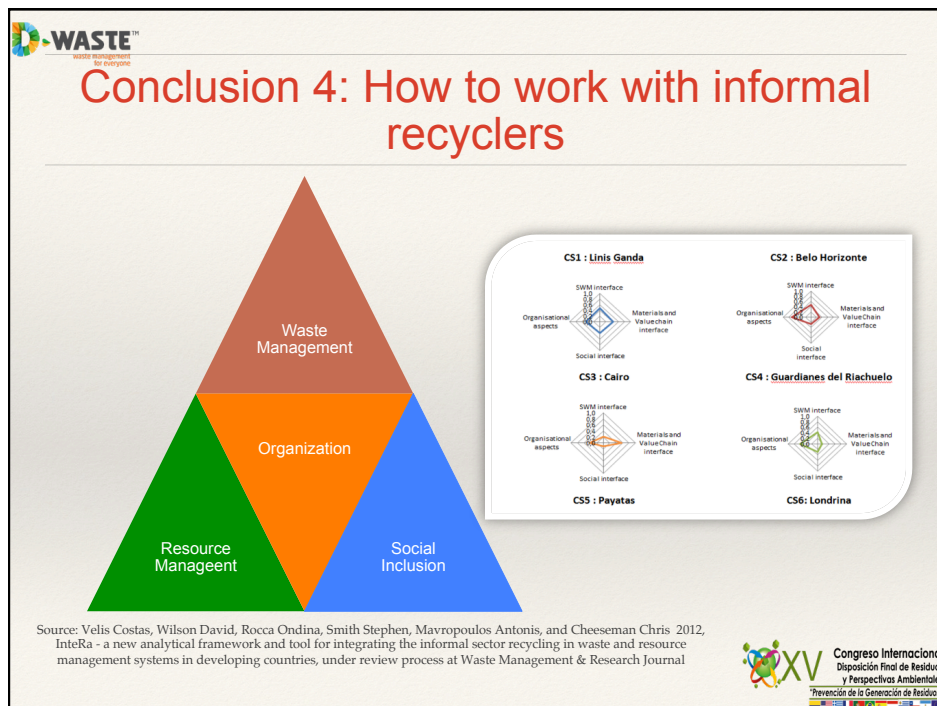
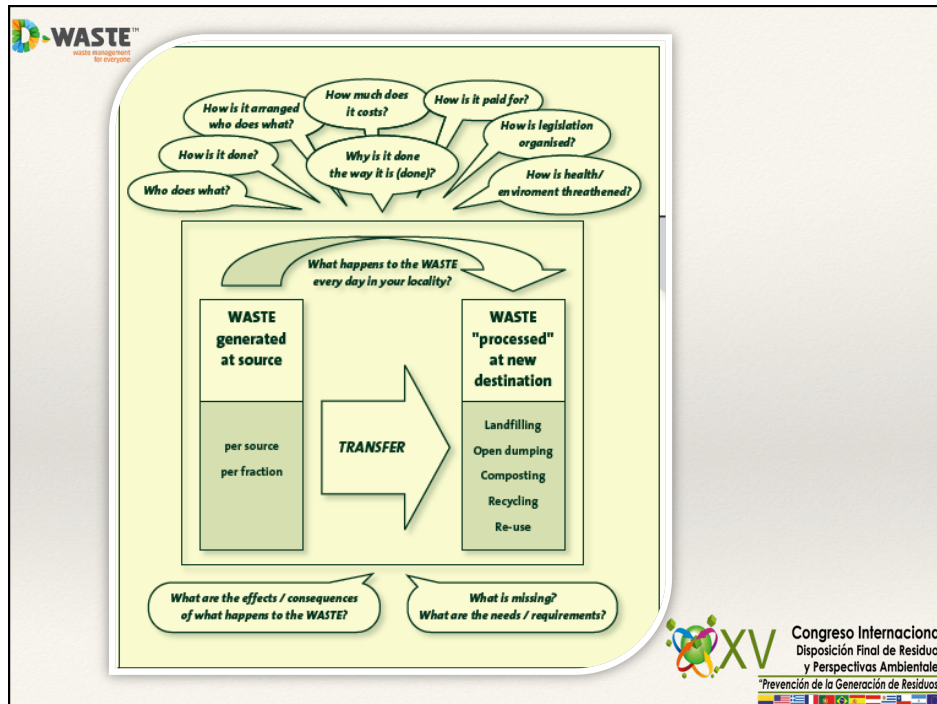



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Conclusion 3: study, study, study

KEEP CALM AND STUDY THE


baseline






Conclusion 5: build a team

- ❖ Understand your system's strengths and weaknesses
- ❖ **Built a mind model regarding your success and failures, especially about the last**
- ❖ Create your own appropriate mixture of recycling initiatives, treatment solutions and disposal options
- ❖ **Adopt and adapt them in your local conditions and financial resources**
- ❖ Create effective management and realistic vision and make the social and political alliance to push forward
- ❖ **Create a team that will take the responsibility to implement**



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Thanks for your attention

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