THE ECOLOGICAL FOOTPRINT OF WASTE MANAGEMENT *Case Study*

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The Interpretation of LCT in the Waste Management Hierarchy

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PRESENTATION'S OUTLINE

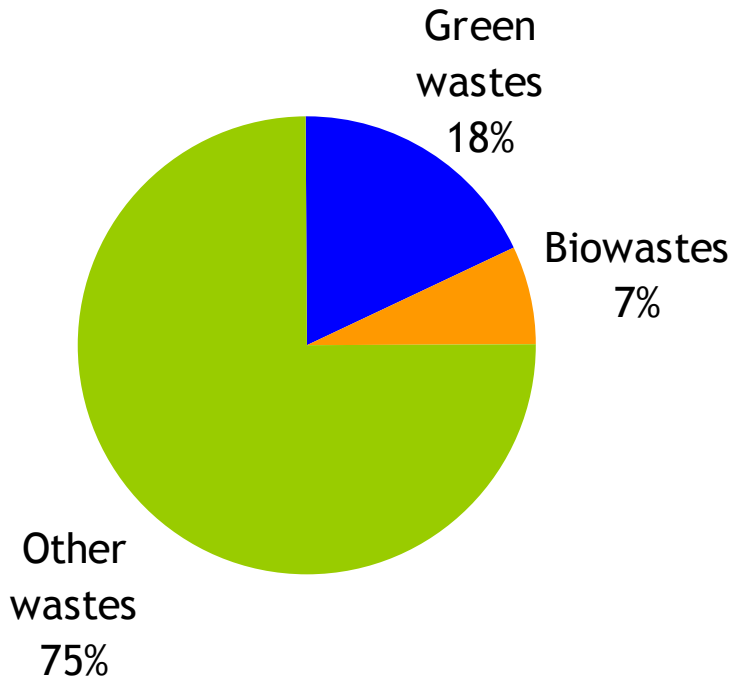
- Context of the study
- Methodology
- Ecological Footprint calculations
- Conclusions

CONTEXT OF THE STUDY

- A French territory of 300 000 inhabitants

- An annual production of 99 356 tons of residual MSW

How the existing management of these waste can be improved ? Using existing or new facilities?



METHODOLOGY (1/4)

1. **Detailed description** of the existing waste management of the territory

2. **Elaboration of 3 alternative scenarios**

3. **Assessment** of the existing situation and the 3 alternative scenarios according to 3 criteria : regulation, economy & environment

4. **Conclusions**

METHODOLOGY (2/4)

1. Detailed description of the territory's existing waste management :

- Quantity and composition of waste
- Number, localisation and capacity of transfer, sorting, treatment and recovery facilities
- Existing local and national waste management policy and regulation
- …

METHODOLOGY (3/4)

2. Elaboration of 3 alternative scenarios

	Characteristics	Scenario 1 Current situation	Scénario 2	Scénario 3	Scénario 4
Separate collection and composting of green waste	Compost production	X	X	X	X
Landfilling of remaining residual waste	Biogas recovery and electricity production	X		X	
Separate collection and composting of biowaste	Compost production			X	
Incineration of remaining residual waste	Electricity and heat production		X		
Mecanial-biological treatment of remaining residual waste	Compost and RDF production				X

METHODOLOGY (4/4)

3. Assessment of the current situation and the 3 alternative scenarios according to 3 criteria : regulation, economy & environment

- Regulation :

  > Grenelle 2 Law : recycling objectives, reducing waste production objectives, …

- Economic :

  > Treatment cost

  > Tax

- Environment : Ecological Footprint calculations

ECOLOGICAL FOOTPRINT (1/4)

What is the Ecological Footprint?

- Born in the 90's
- Mean of assessing the human pressure on the biosphere

- Unit: global hectare a year (gha.an)

Bioproductive area : land and water area that supports significant photosynthetic activity and accumulation of biomass (cropland, grazing land, forest for timber and fuel wood, fishing ground, built-up and forest for carbon sequestration)

Why the Ecological Footprint ?

- Scientific frame ensured by the *Global Footprint Network*
- Awareness of limited natural resources
- Integration of the greenhouse effect
- Synthetic indicator understandable and appropriable by all stakeholders
- “Open Footprint” : principle of transparency

Hierarchy of the scenarios

	Regulation	Economy	Environment
Existing situation (with landfilling)	++	++++	+
Scenario 2 (with incineration)	++	+	+++
Scenario 3 with composting)	++++	+++	++
Scenario 4 (with MBT)	++++	++	++++

CONCLUSIONS

Conclusions of the study

- According to the criteria considered, scenario hierarchy differs > Priority criterion to define
- Use of data & assumptions specific to this case study > Results not transposable to another region

Conclusions on the methodology

- Relevant at a local scale
- A first step towards the integration of the LCT in decision making
- Essential to define criteria that every stakeholders can understand and make theirs