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advisers on urban environment and development



Composting: Centralised and Decentralised Approaches



Overview Presentation

- Centralised and Decentralised Systems
- Decentralised Approaches in Composting
 - Generation, Processing & Reuse
 - Important aspects
 - Advantages & Disadvantages
- Centralised Approaches in Composting
 - Generation, Processing & Reuse
 - Important aspects
 - Advantages & Disadvantages
- Conclusions, What does it mean for Bulgaria?



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Centralised and Decentralised Composting Systems



What do we mean with “centralised” and “decentralised” systems?

Centralised system: system in which most functions and activities are routed through one or more major central nucleus.

Decentralised systems: lacks a nuclear body or center of control, and is commonly composed of many components which work in unison, and together form a stable structure.

Source: Wikipedia

The background of the slide is a collage of three images. In the top left, there is a photograph of three young children looking towards the camera. In the top right, there is a photograph of a person in a plaid shirt and khaki pants, possibly a worker, standing in an outdoor setting. In the bottom right, there is a photograph of a person wearing a blue cap, a blue face mask, and orange protective gear, working with waste materials. The word "WASTE" is written in a bold, black, sans-serif font in the upper left quadrant. A horizontal line with a dark blue dot at its left end extends from the word "WASTE" across the top of the slide. A large, light blue diamond shape is positioned in the center of the slide, overlapping the horizontal line and the text. The main text is in a dark green, serif font. A second horizontal line with a dark blue dot at its left end is located near the bottom of the slide, above the logo.

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What do we mean by “systems” in waste management

What is “composting”?

Composting is a waste management option which uses the natural process of biological decomposition to stabilise and reduce the volume of organic materials, including leaves, garden waste, manures, paper, and wood materials.



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Composting, why should we do it?

< 1986



Collection

Landfill

'80s
Shortage of capacity





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> 2002



Collection

Bring

Home Composting

Integrated prevention

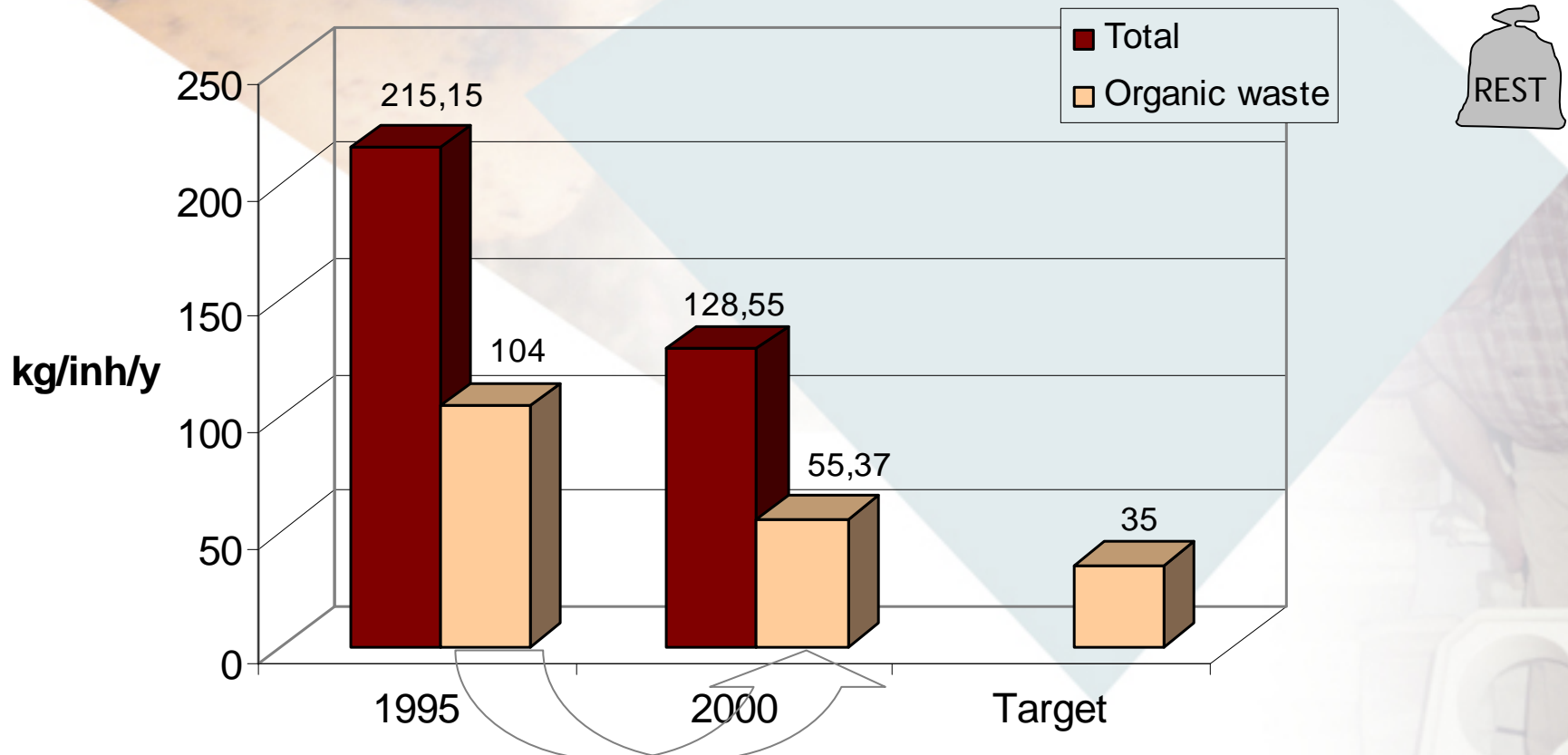




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TARGETS in Belgium

Organic fraction as part of waste for final removal



Decrease through prevention (Home composting) & selective collection





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Decentralised Composting Approaches



Characteristics Centralised composting approaches

- Small scale
- Simple technology
- No collection system
- No distribution system
- No needs for a market
- No quality control
- No regulation



Decentralised composting

- Home-Composting
- Neighborhood composting



Generation

- Organic waste
 - Kitchen waste
 - Garden waste
- Netherlands appr. 50% organic waste
- 56% is collected

Source Cyclus, The Netherlands



Process in home composting

- Should I add about the process???





what do you need for decentralised composting?


- Knowledge & information
- time
- space
- some money

Equipments

- Composting Bins
 - Shredders
 - Compost tumbler

 - Larger systems:
Decentralized
waste water
treatment
- 
- 

Reuse Applications

- Gardens
 - Kitchen gardens
 - Ecological gardening
- 

Some important aspects:

Legislation (need further elaboration)

- EU regulation
- Dutch regulation
- Belgium regulation
- Bulgarian regulation

Some important aspects:

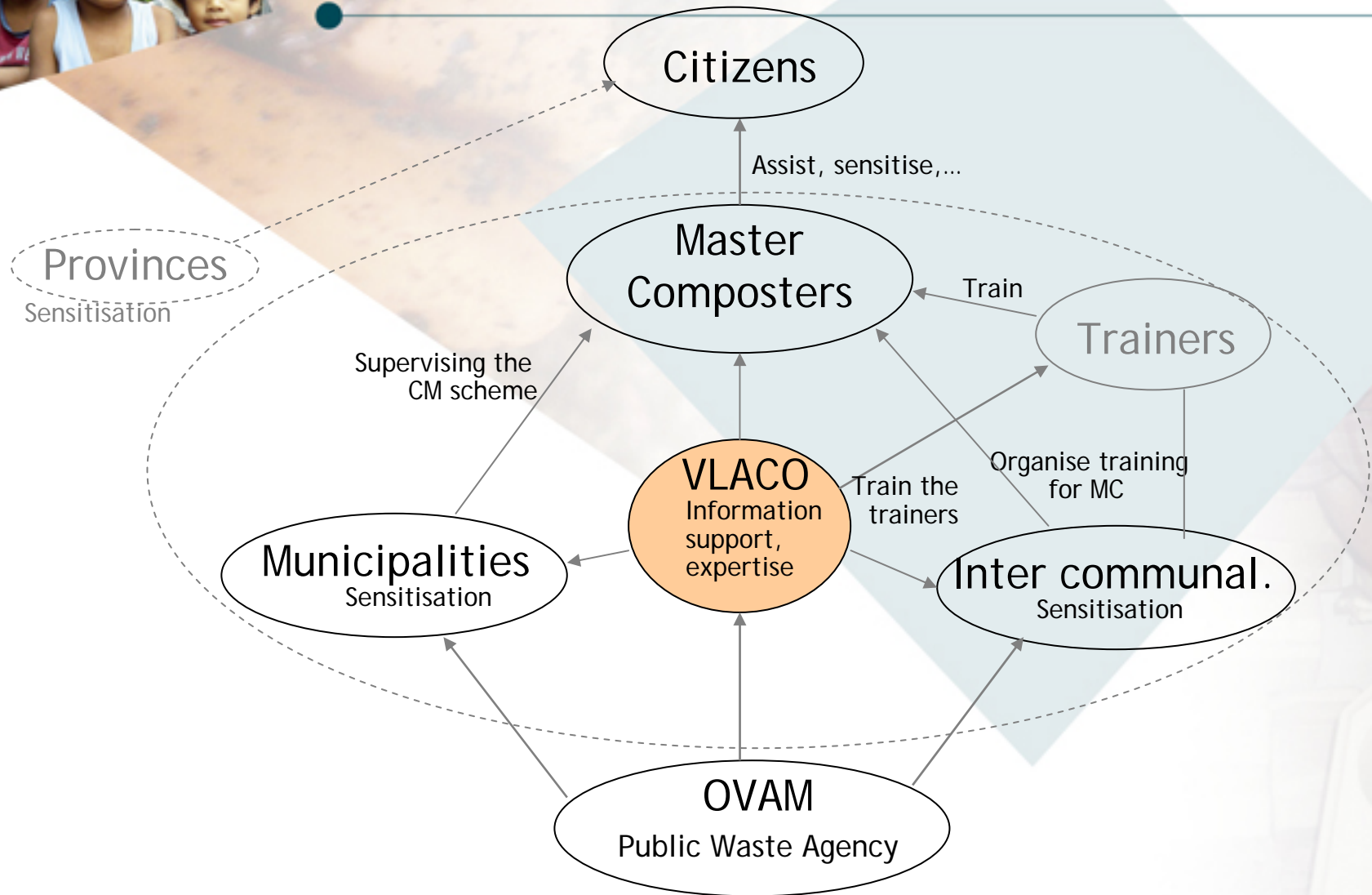
Actors involved

- Citizens
- Municipalities
- Others

- Information & knowledge Center

ACTORS & STAKEHOLDERS

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Policy development, research & development, subsidies,...

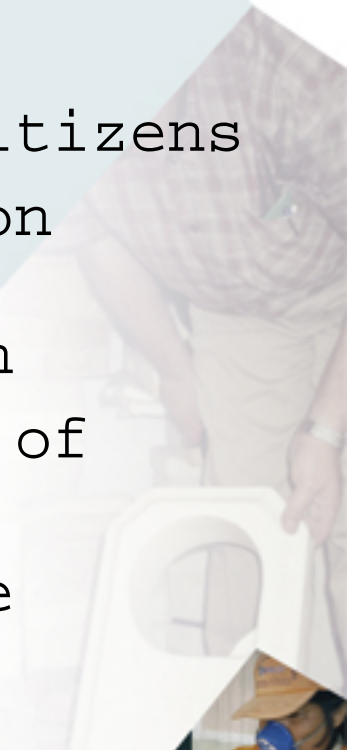



Advantages decentralised composting

- Decrease of expenditures on transport
- Increase life span of landfills
- Reuse as soil improver
- Increase awareness about waste
- Is just **Fun** to do it!!



Disadvantages decentralised composting

- Reliance on cooperation citizens
 - Less control on quality, implementation
 - Increase risk of failure
 - Not everywhere applicable
- 
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Centralised Approaches



Characteristics Centralised composting approaches

- Large scale
- Advanced technology
- Collection system
- Distribution system
- Financial inputs
- Needs a market:
cost efficient
- Quality regulation
- Effluent regulation



Facility needed

- Loading dock
- Composting
(depending on the technology)
- Shredders
- Air filters (smell reduction)
- Water treatment facility

Generation


- Organic waste
 - Kitchen waste
 - Garden waste
- Separated
- Non-separated





Examples of technologies in centralised composting

- Active Windrows
 - Static Aerated Piles
 - In-Vessel with air treatment
-
- Effluent treatment: smell and waste water

what do you need for Centralised composting?

- Knowledge & information
 - A Market
 - Collection system
 - Distribution system
 - Investment and O&M
- 

Equipments

- Generation: Bins
 - Collection: trucks
 - Process: Shredders, Compost tumblers,
 - Larger systems: Decentralised waste water treatment
 - Distribution: packing machines, trucks,
- 
- 

Some important aspect:

Legislation (needs further
deliberation)

- EU regulation
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- Belgium
regulation
- Bulgarian
regulation

Advantages centralised composting

- Concentration of functions
- Easy maintenance of quality
- Weaknesses in the system are concentrated
- More control and less risks
- Increase life span of landfills
- Reuse as soil improver

Disadvantages centralised composting

- More expensive
- Less control on quality, implementation
- Increase risk of failure
- Not everywhere applicable



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Conclusions

