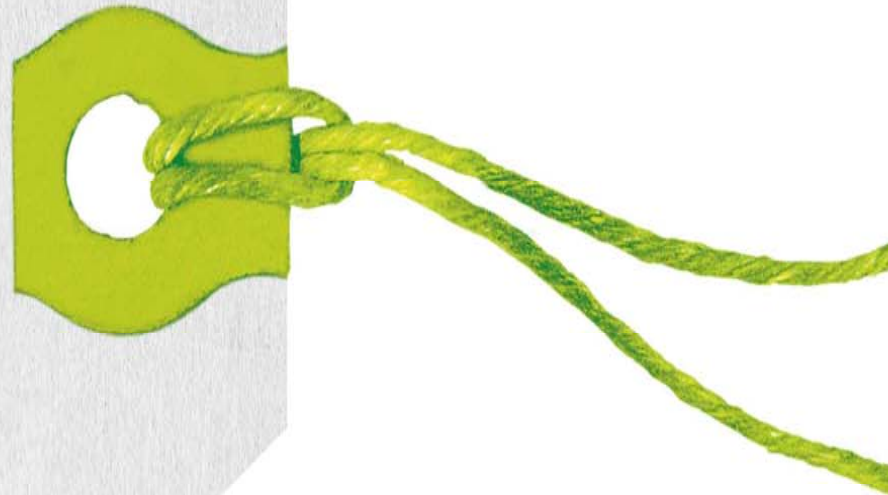


**TOGETHER WE
MAKE TOMORROW
MORE BEAUTIFUL**



Sustainable management of bio-waste

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Content

- Waste management in Flanders
 - assignment of OVAM
- Landfill directive
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 - objective for biodegradable waste
- History of waste management in Flanders with focus on biodegradable waste
- Policy and instruments
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Waste management in Flanders: assignment of OVAM

- Flanders: one of the three Belgian regions
- Waste management = regional competence
- OVAM is the regional authority responsible for **making policy** on waste in Flanders
- Municipalities are responsible for the **collection and treatment** of household waste



Landfill Directive

- Council Directive 99/31/EC of 26 April 1999
 - entered into force on 16.07.1999.
 - deadline for implementation 16.07.2001
- Objective:
 - to prevent or reduce as far as possible negative effects on the environment from the landfilling of waste, by introducing stringent technical requirements for waste and landfills.
- The Directive is intended to prevent or reduce the adverse effects of the landfill of waste on the environment, in particular on surface water, groundwater, soil, air and human health.

Landfill Directive: objectives for biodegradable waste

■ Clear objective for biodegradable waste:

- MS must reduce the amount of biodegradable municipal waste going to landfill, compared to the total amount of biodegradable municipal waste that was produced in 1995:
 - ▶ to 75% by 2006
 - ▶ to 50 % by 2009
 - ▶ to 35 % by 2016

■ Why?

- Biodegradable waste landfilled: creates landfill gas
- Biodegradable waste can be used sustainably and can serve different objectives: achieving a recycling society; soil protection; climate protection.

History of waste management in Flanders with focus on biodegradable waste

- 1960s and 1970s
- First Waste Plan (period 1986-1990):
 - 'to produce order out of chaos'
 - close or improve many of the local landfills
 - clean up of incineration
- Waste Management Plan (Household waste) 1991-1995
 - priority on waste prevention and recycling of waste
 - ▶ subsidies for composting bins and composting installations
 - start of the 'Environmental agreements' between the Flemish authorities and the municipalities

Waste Management (continued)

- Masterplan for vfg and green waste 1991-1995
 - foundation of Vlaco npo
 - separate collection of greenwaste and vfg-waste
- Implementation plan for vfg-waste and green waste 1995-1997
 - proceeding on the three pillar policy
 - ▶ separate collection of vfg-waste and green waste
 - ▶ start of home composting scheme
- Implementation plan for household waste 1997-2002
 - proceeding on the three pillar policy with focus on home composting
 - reduction of residual waste: goal: no new incineration capacity

Waste Management (continued)

- Implementation plan for organic-biological waste 2000-...
 - proceeding on the three pillar policy: focus on qualitative goals
 - sensibilisation: home composting; stimulation of cycling gardening
 - goals for organic-biological waste of enterprises are added
- Implementation plan for household waste 2003-2007
 - integrated prevention: cycling gardening
 - compost masters: structural embedded

Waste Management (continued)

- Implementation plan for environmentally responsible household waste management 2008-2015
 - recycling versus energy recovery: a challenge, but the two could go hand in hand
 - objectives for prevention, home composting, compost masters
 - ...

Policy and instruments

■ Our policy:

Sustainable management of waste and materials, soil remediation and the prevention of soil pollution.

- to protect the public health and the environment from the harmful impact of waste;
- to prevent raw materials becoming waste materials;
- to regulate waste management policy in accordance with the *waste hierarchy*.

■ The instruments we are using:

- WMP's, separate collection, Vlaco npo, levies, sensibilisation, information, landfill ban, regulation for secondary raw materials, certificates, environmental agreements, collective composting, compost masters ...

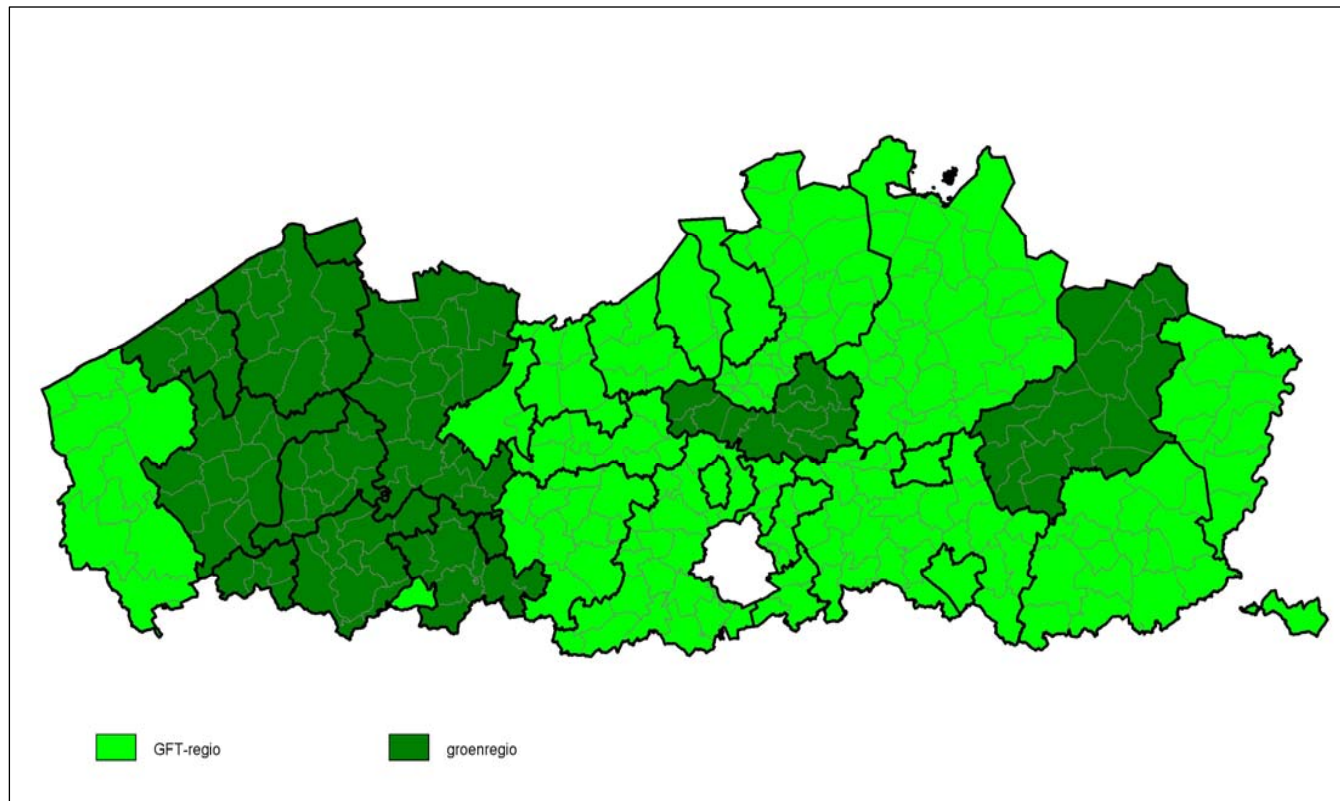
Cooperation with and between municipalities

- Environmental agreements between municipalities and the Flemish authorities to stimulate home composting and separate collection
- Subsidies for composting bins, composting installations
- Brochures about separate collection of vfg waste and green waste

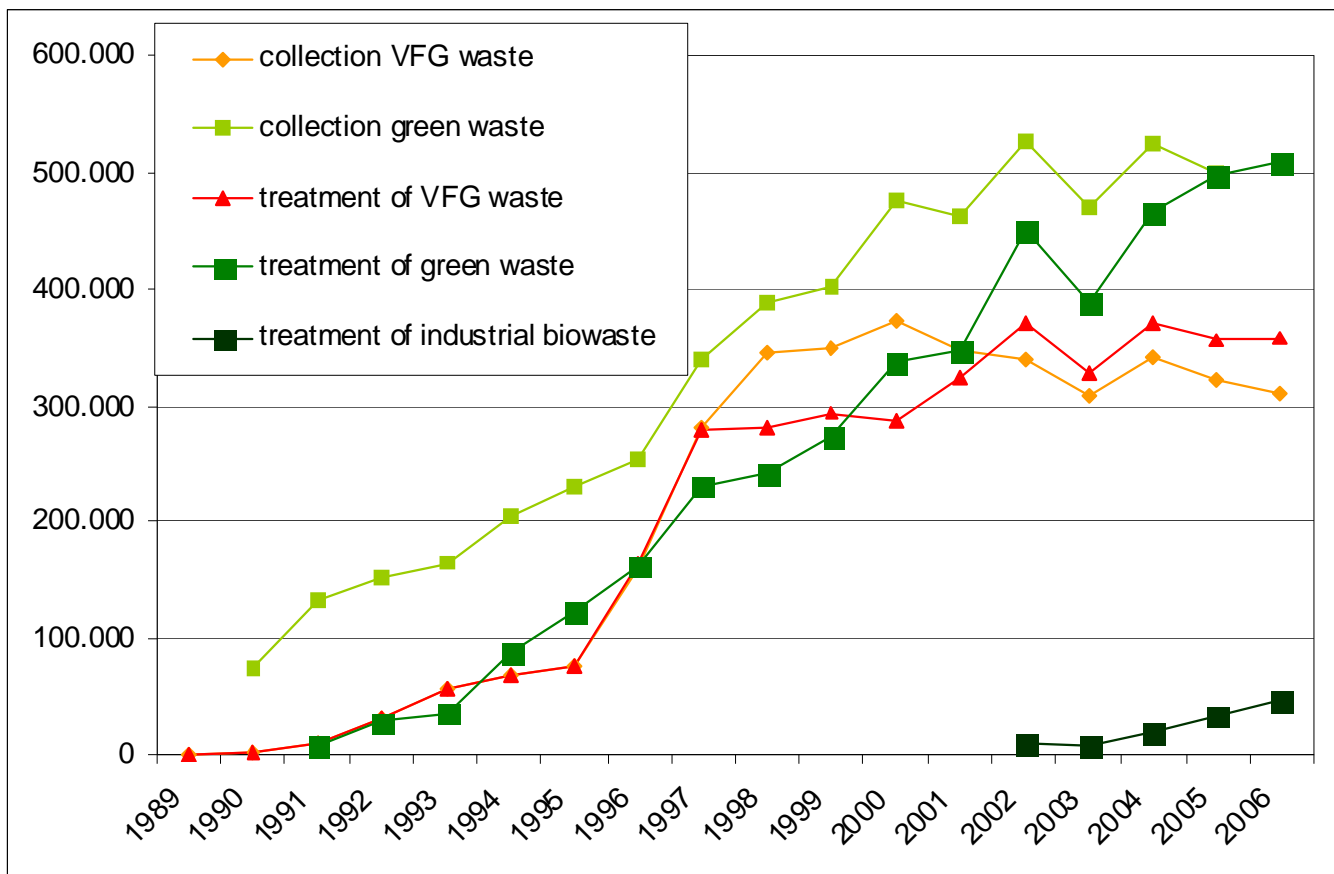
Separate collection of bio-waste

- Started in 1989 (Diepenbeek); 1992...
- Three pillar policy:
 - separate collection of green waste
 - separate collection of vfg-waste
 - home composting
- Vfg/green-regions:
 - inter municipalities can choose
 - taking into account local conditions: rural or urban areas
- Establishment of Vlaco npo: organisation to promote the production and use of quality compost in Flanders

Green regions and vfg-regions in Flanders





Amounts of vfg-waste green waste and industrial biowaste separately collected




Biologische verwerking van organisch-biologisch afval in Vlaanderen (juni 2009)


Legende

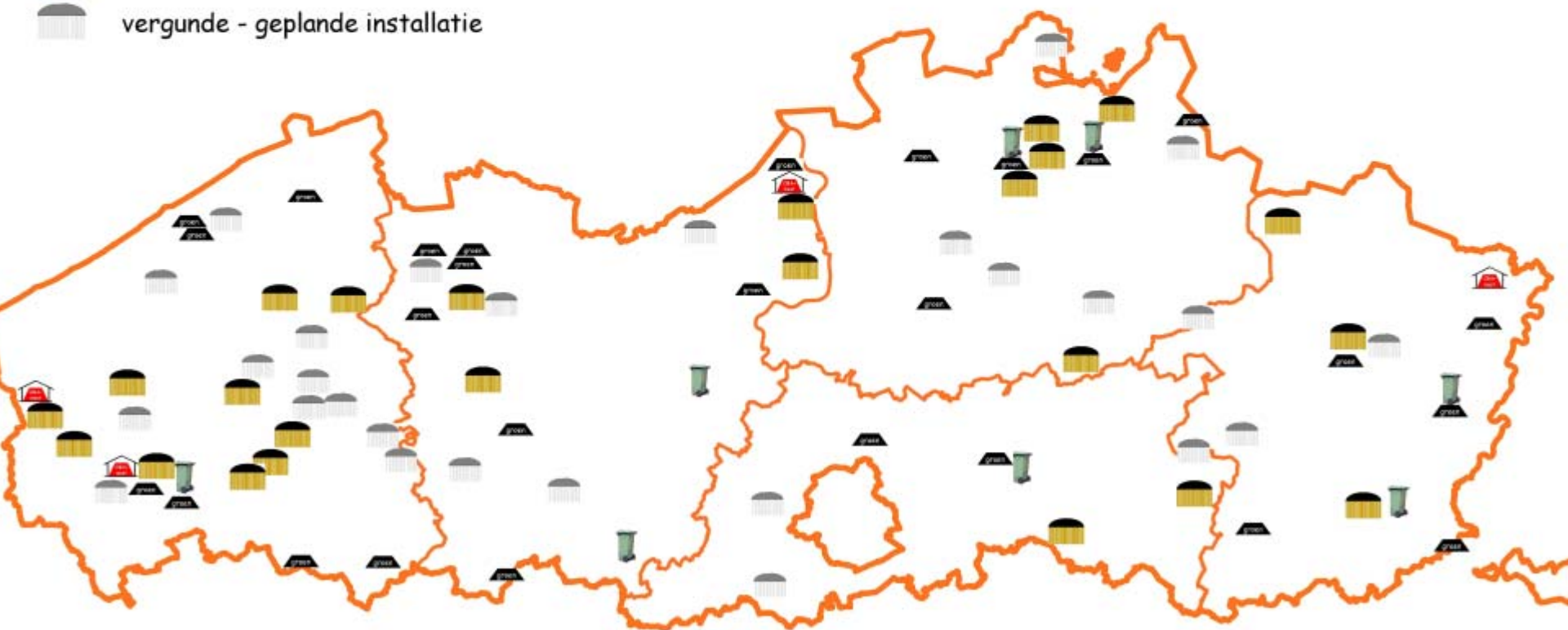
 gft-compostering of -vergisting met nacompostering

 groencompostering

 biothermisch drogen van mest en OBA

 vergistingsinstallatie in opvolging

 vergunde - geplande installatie



ORGANIC WASTE CYCLES



Quality Assurance System

■ Vlarea:

- 1998: secondary raw material: user certificate
- 2004: obligation for integral chain management; testing certificate
- 2009: introducing certification commission

■ Total Quality Control => Traceability

■ Integral chain management aiming to produce **high quality products!**

- separate collection
- control of input streams
- a high-quality processing method
- a sound quality follow-up system
- standards for the output streams



Benefits of compost

■ Benefits of compost for different applications

- Substitution of peat as a substrate
- Substitution of peat as a soil improver
- Carbon storage in soil
- Water holding capacity
- Soil erosion
- Disease suppression
- Greater yield
- Nutrients

■ Ecologic and economic value of composting

Ecological and economical value of composting

■ Ecological value composting (of vfg waste and green waste collected in 2007)

- 500 000 ton CO₂ saved

- ▶ = 240 000 cars driving for 1 year (15 000 km/ year)

- ▶ = 200 000 households electricity use for 1 year (3 500 kWh/year)

- ▶ Vfg-digestion with post composting: electricity for 5 500 households + 15% sieve overflow for biomass: electricity for 12 000 households

- 100 000 m³ water saving a year

- ▶ = water use of 2 400 persons (45m³/person.year)

- 3 200 to 3 800 t less soil erosion

■ Economic value

- 55 €/t composted greenwaste

- 65 €/ t composted vfg-waste

Prevention: Home Composting and Cycling gardening

■ Home composting

- 34% of the population is home composting (mainly in rural areas)
- communication campaigns, training and household waste charging, are crucial
- compost masters
 - ▶ started by Comité Jean Pain in 1994
 - ▶ 1998: Vlaco npo takes over
 - ▶ 2008: ± 2500 compost masters in Flanders: 5 per 10 000 inhabitants

■ Cycling gardening



Information and sensibilisation

■ Websites:

- www.ovam.be
- www.vlaco.be; www.compost.be; www.tuingrond.be;
www.compostmeester.be; www.thuiscomposter.be

■ Brochures on:

- composting in vessels, chickens, cycling gardening, compost use,...

■ Information by intermunicipalities

Incineration ban

- It is prohibited to incinerate:
 - **selectively collected wastes that can be recycled**
 - ▶ with the exception of some high calorific wastes for renewable energy purposes
 - **unsorted household waste**
 - **(unsorted industrial waste)**
- **Motivated derogation possible**



Landfill ban

- It is prohibited to landfill:
 - unsorted household (and industrial) waste
 - wastes that were selectively collected for the purpose of recovery
 - combustible residues from the sorting of household waste (or comparable industrial waste)
 - waste pharmaceuticals
- Motivated derogation possible



Steering of landfill and incineration costs

■ 'Smart' taxes

- make landfilling more expensive than incineration
- make (co)incineration more expensive than recycling
- steer the market towards the treatment option with the lowest environmental impact

■ Restrictive permitting policy for landfills increases landfilling costs

Examples of landfilling and incineration costs

	Tariff	Tax	Total
Landfilling municipal waste	60	79	139
Incineration of municipal waste	70 - 130	7	77 - 137

Where are we standing today?

■ Current situation landfill

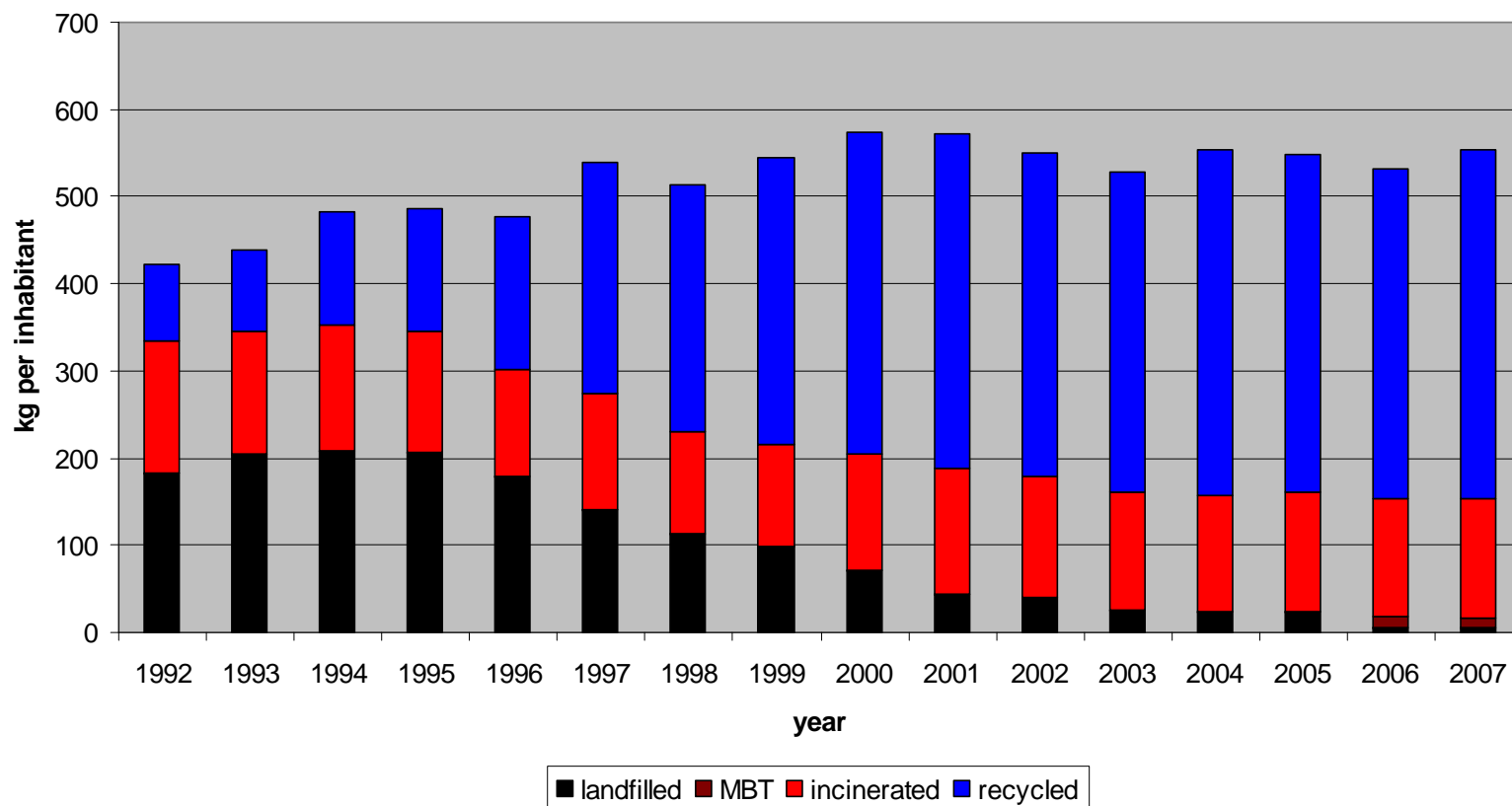
- Cat. 1 hazardous waste: 4
- Cat. 2 household waste: 5
- Cat. 2 anorganic non-hazardous waste: 5
- Cat. 3 inert waste: 6

■ Household waste treatment in Flanders:

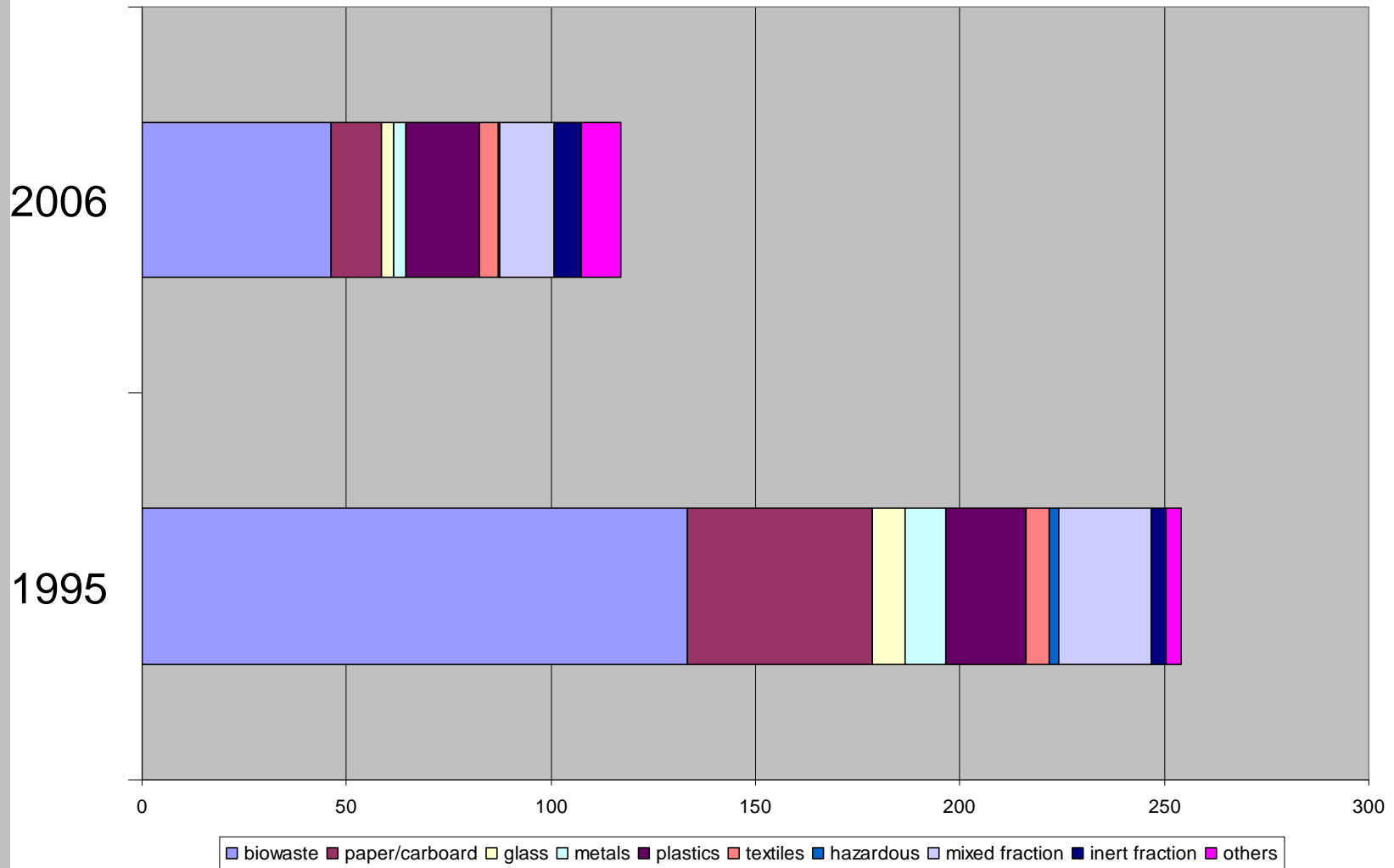
- evolution between 1995-2007

■ Composition of mixed waste bag

Household waste treatment in Flanders 1995-2007



Composition of mixed waste bag



Objectives landfill directive

■ Objective for biodegradable waste

- reduce the amount of biodegradable municipal waste going to landfill, compared to the total amount of biodegradable municipal waste that was produced in 1995
 - ▶ ...
 - ▶ to **35 % in 2016**

■ ... was achieved in 2002!

Landfill of biodegradable waste

- Total amount of biodegradable municipal waste
 - 1995: 3 397 080 t
- Total amount of biodegradable municipal waste going to landfills
 - 2003: 584 115 t
 - 2004: 39 576 t
 - 2005: 27 024 t
 - 2006: 7 202 t
 - **2007: 0 t!!**
 - ▶ total ban landfill household waste
 - ▶ no exceptions granted

Challenges for the future

■ Prevention!

- waste that isn't generated, must not be treated
- sensibilisation is crucial!
- prevention of food waste; home composting; cycling gardening

■ Recycling versus Energy Recovery!

- a challenge, but the two can go hand in hand!

■ Spreading our experience to other member states!

Conclusion

Introducing all the different instruments has got the aim throughout to strengthen our policy **‘sustainable and sound management of bio-waste’**, step by step.

Resulting in where we are standing today: a system that helped us obtaining the goal of the landfill directive and serves different purposes: climate, soil, the recycling society.

It is the proof that it works, not only for us...
...it's what we also need on European level!

Information

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