



Waste Management in Serbia

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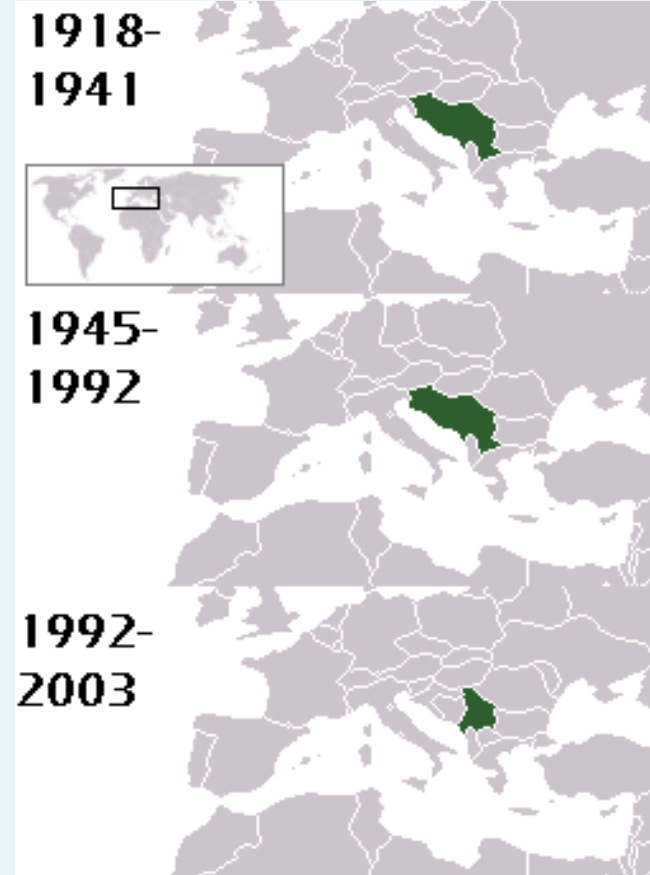


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- **3. Main EU demands**
- **4. Landfill**

1. introduction



1. introduction



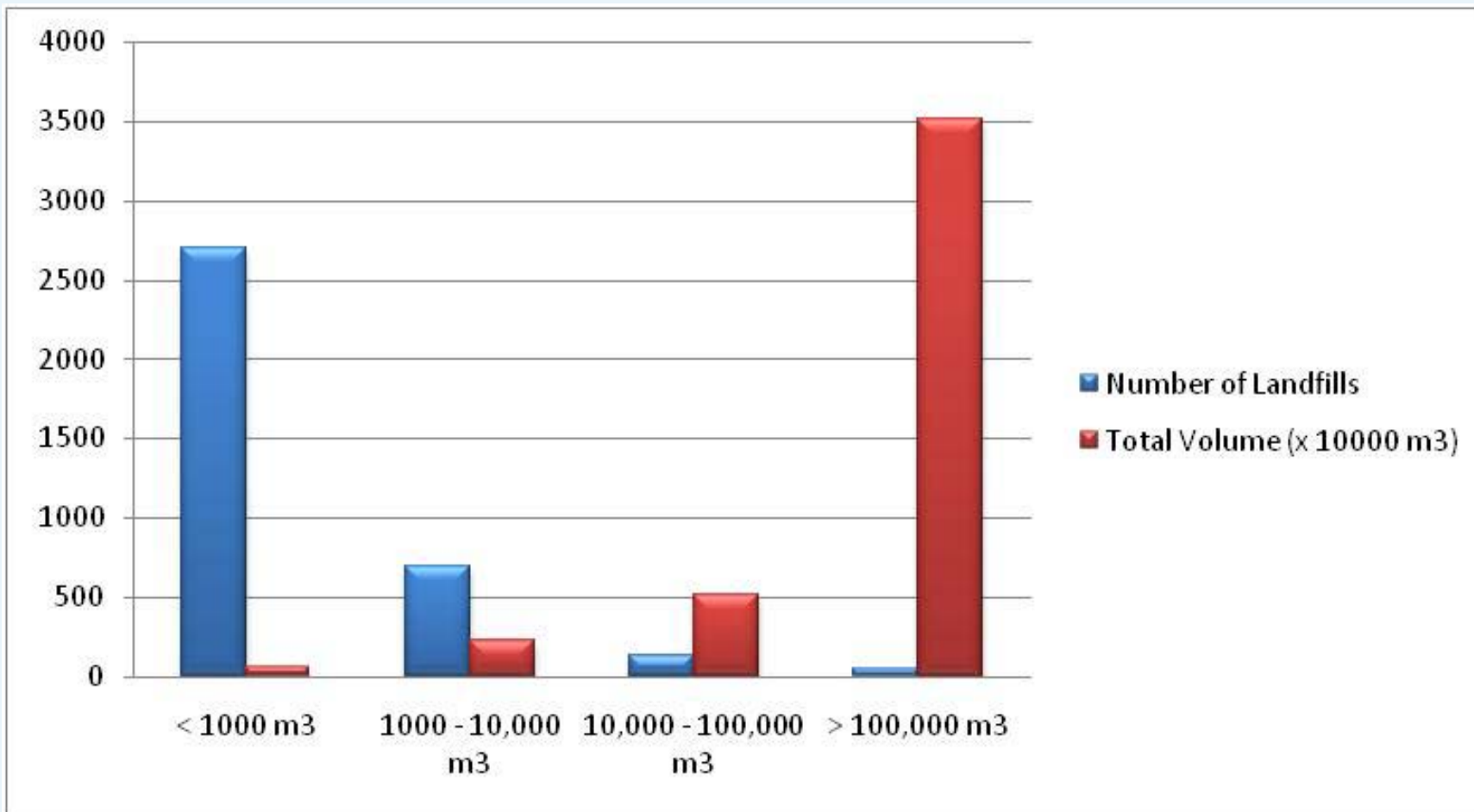
2. Current waste management in Serbia



- 3209 landfills site
- 195.402 citizens are cover by collecting company in Vojvodine + 168.167 no data 17,9% from 2.031.992
- Novi Sad 631 employed cover 400.000 citizen 11,6 miliona EUR tournouver
- Less than 3 euro per house about 30 euro per house per year



Volume	Number of Landfills	Total Volume (x 10000 m3)
< 1000 m3	2699	60,338178
1000 - 10,000 m3	697	223,954936
10,000 - 100,000 m3	137	518,08052
> 100,000 m3	49	3516,8341



2. Current waste management in Serbia

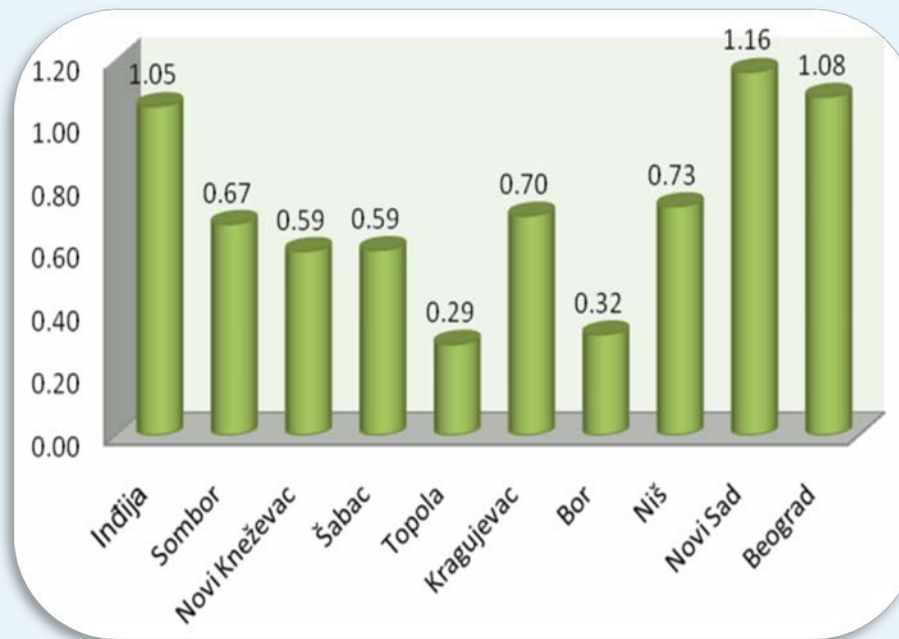


Municipality (Number of inhabitant)	Generated waste (t/week) <u>*result of project</u>	Generated waste (kg/inhabitant/daily)	Generated waste (kg/inhabitant/year)
Indija 49.258	363 t	1.05 kg	383 kg
Sombor 56.734	269 t	0.67 kg	246 kg
Novi Kneževac 9.648	40 t	0.59 kg	214 kg
Šabac 123.155	463 t	0.59 kg	209 kg
Topola 25.292	51 t	0.29 kg	105 kg
Kragujevac 185.000	897 t	0.70 kg	252 kg
Bor 55.817	125 t	0.32 kg	116 kg
Niš 239.596	1230 t	0.73 kg	266 kg
Novi Sad 314.192	2560 t	1.16 kg	424 kg
Beograd 1.392.691	10382 t	1.08 kg	394 kg

2. Current waste management in Serbia

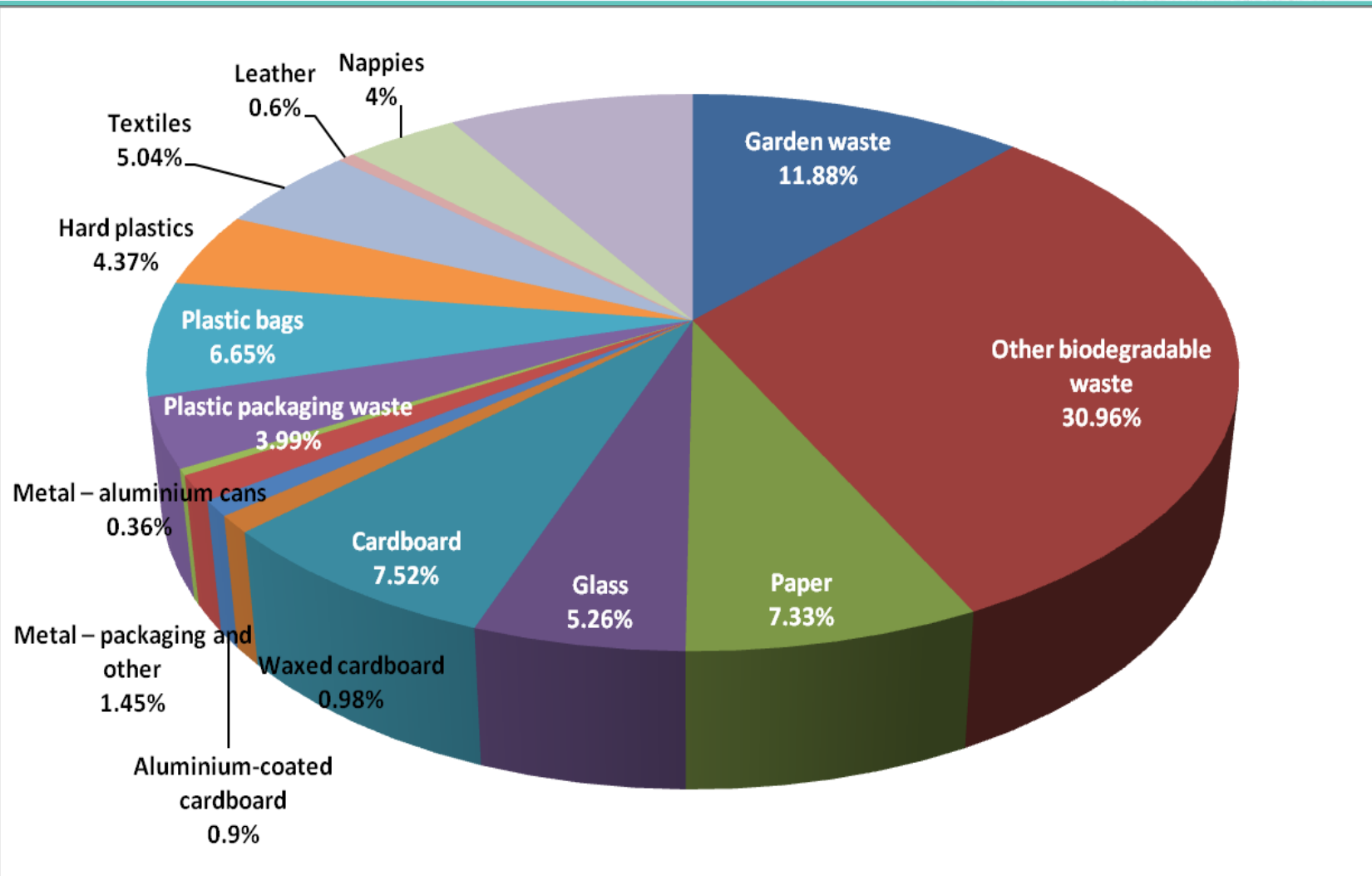


Republic of Serbia	Summer analysis	Winter analysis	Spring analysis	Average	Generated waste (kg/inhabitant/day)
	2.226.427 t/year	1.857.598 t/year	2.086.212 t/year	2.056.746 t/year	0.76 kg



Generated waste (kg/inhabitant/day)

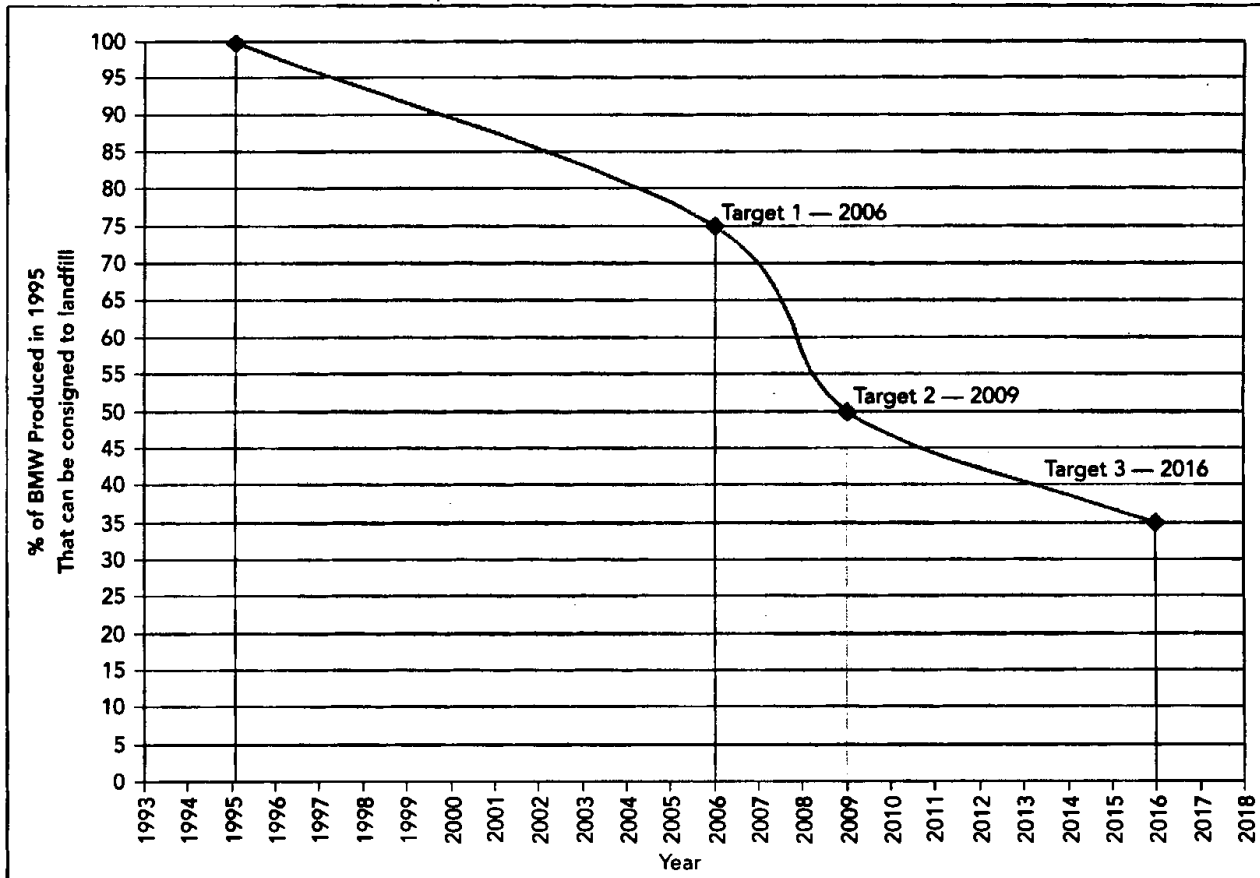
2. Current waste management in Serbia



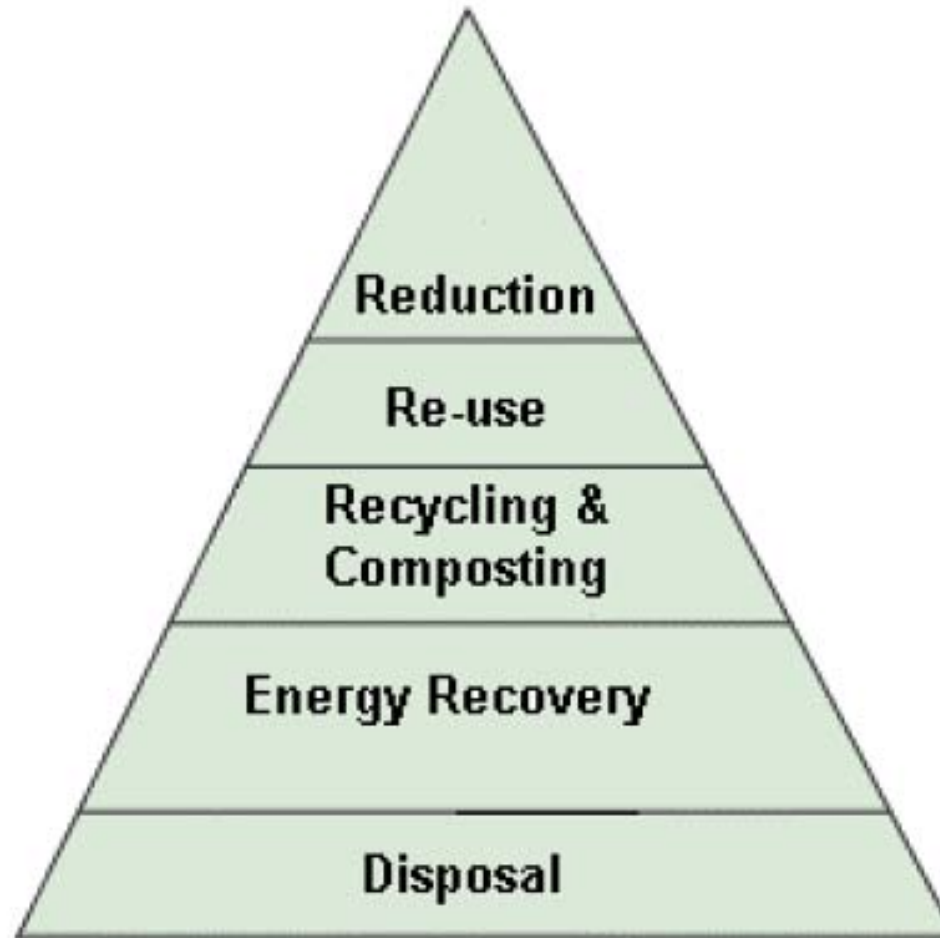
3. Main EU demands



Landfill directive targets



3. Main EU demands



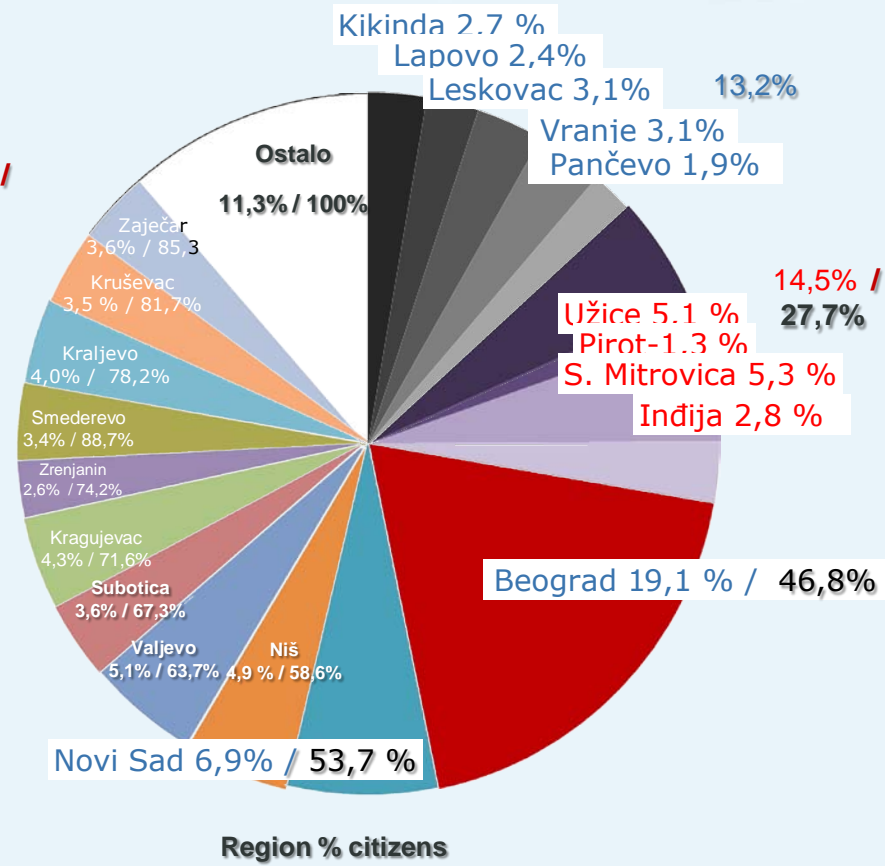
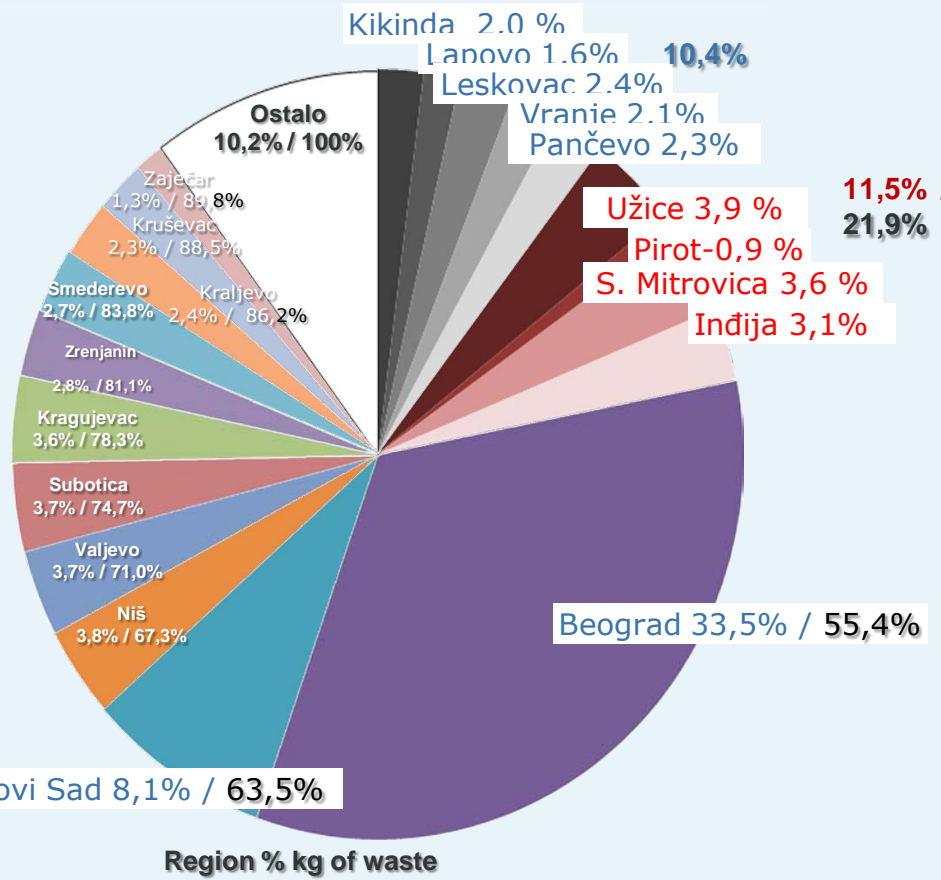
4. Solution



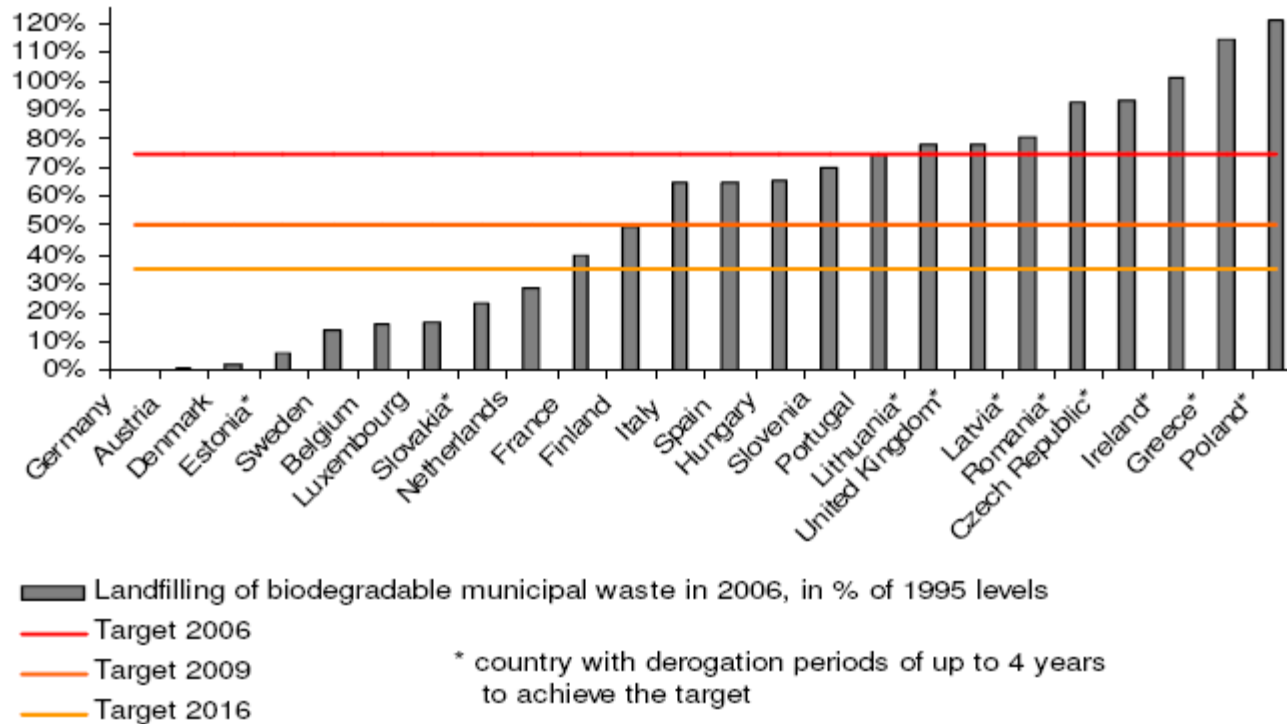
- 12 regional landfill with separation facility or MBT
- Improve system for medical waste collection and sterilization (autoclave)
- **Make system for special streams, Animal, waste oils ...**

- Between 2015 and 2019
- Build more 12 regional landfill
- Increase recycling to 25%
- Cover 100 %
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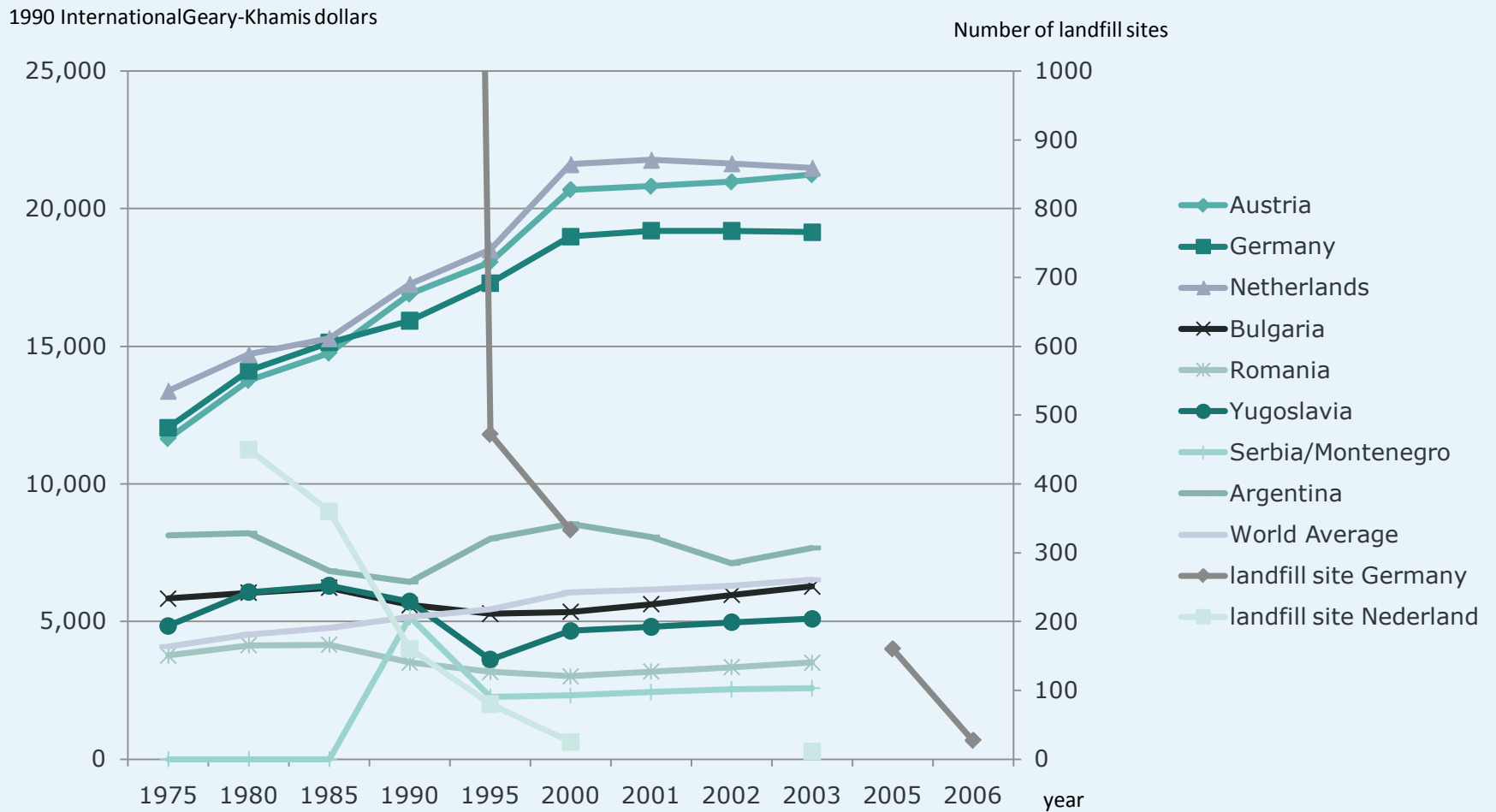
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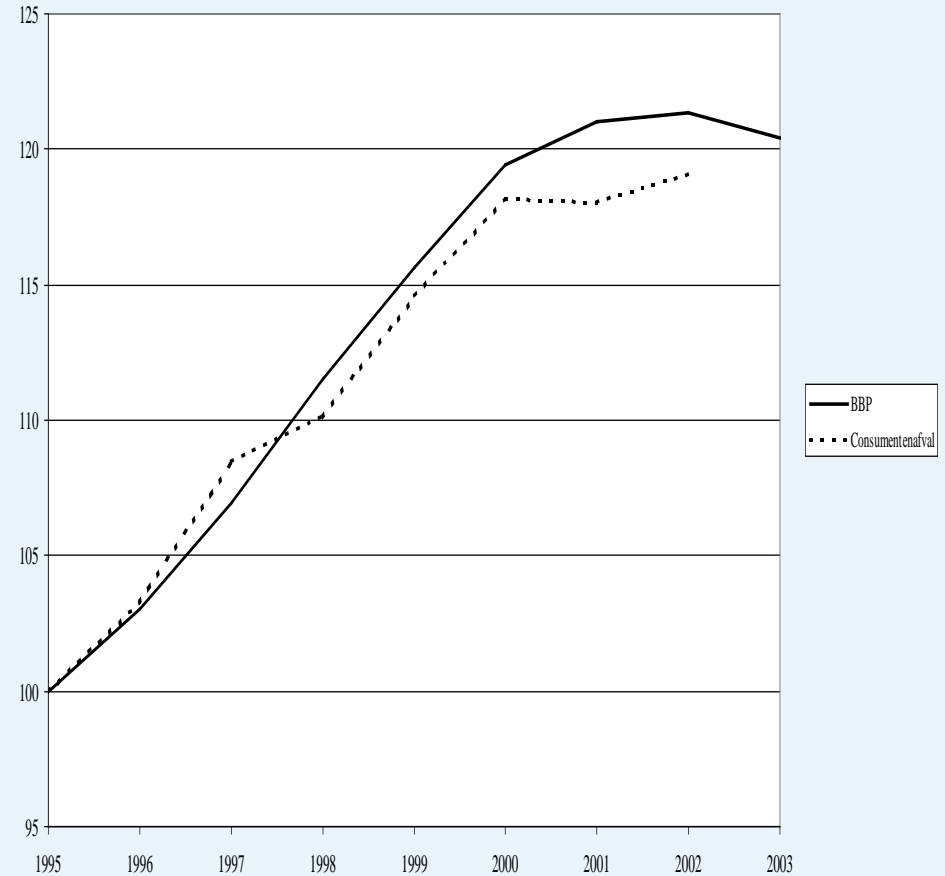
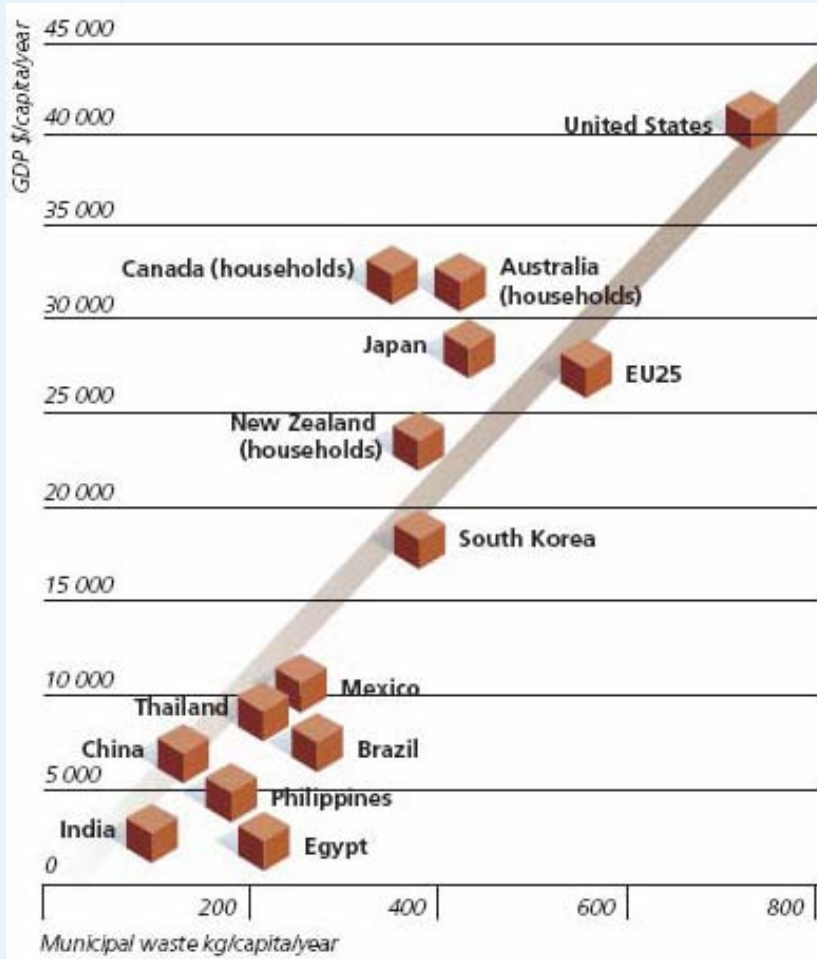
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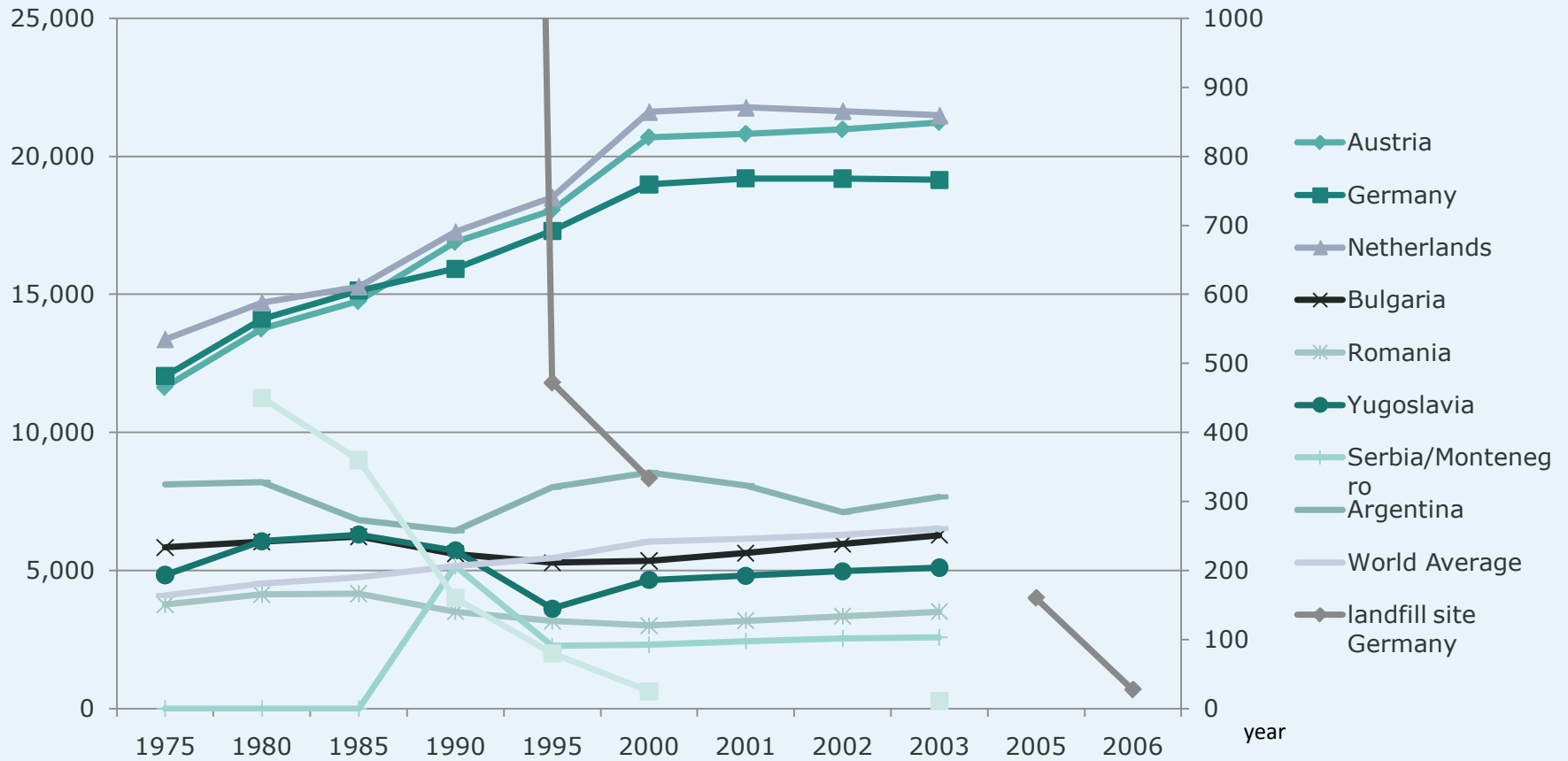
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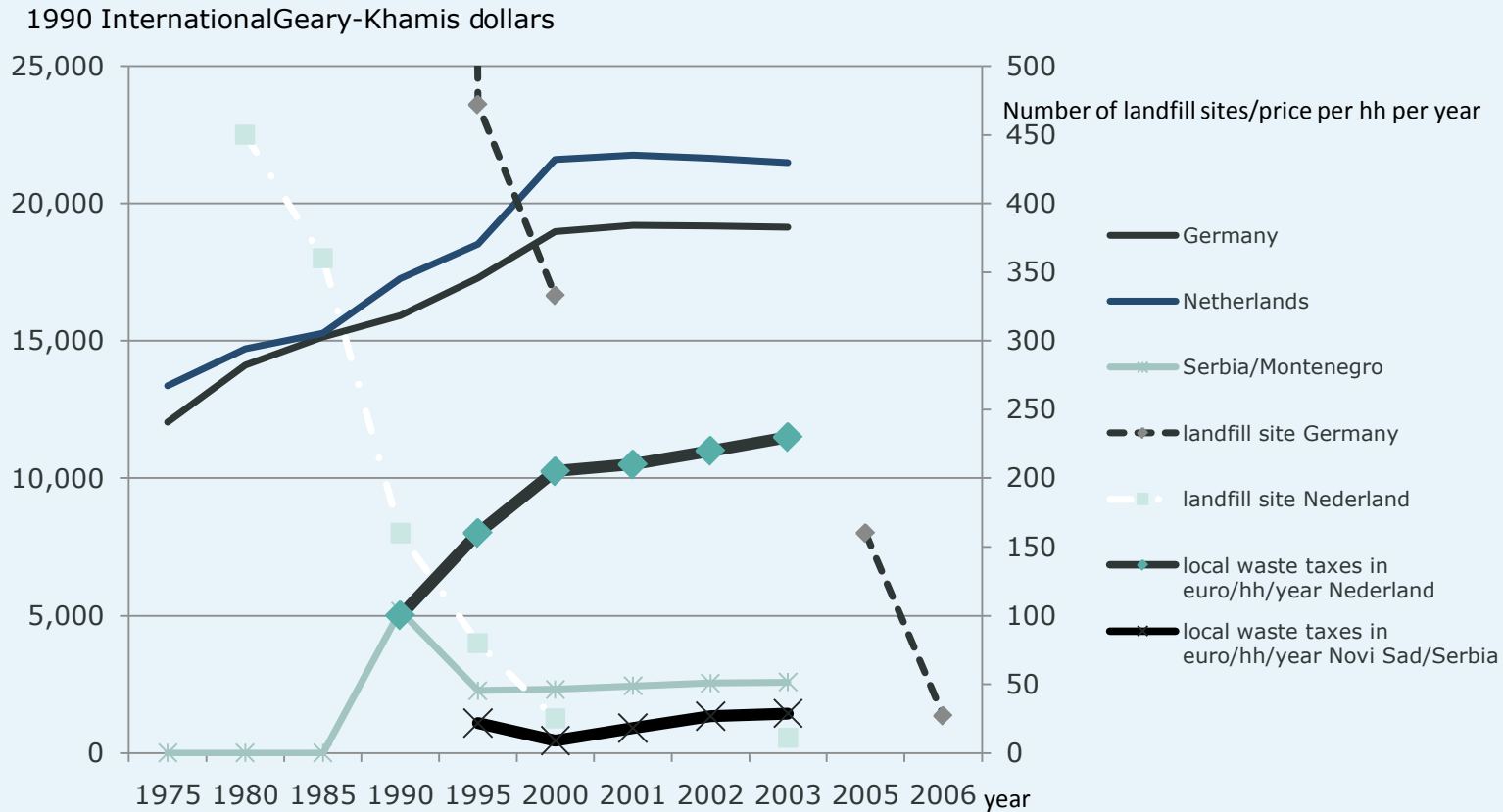
4. Solution



1990 International Geary-Khamis dollars



4. Solution



4. Waste to Energy as one solution



Processing costs
(per 1000 kg, taxes not included)
Erik de Baedts NVRD, ISWA ...

- **Landfilling** € 20
- **Composting** € 20
- **Digestate** € 30
- **Incineration** € 60-130 → down to....
- **Recycling** € 80 → market value secondary product

Conclusion



Landfill and Landfill Gas is certain future

