WASTE AND MATERIAL RESOURCES

The European economy is based on a high level of resource consumption. This includes raw materials (such as metals, construction minerals or wood), energy and land. The main driving forces of Europe's resource consumption are economic growth, technological developments and changing consumption and production patterns. About one third of resources used are turned into waste and emissions. Around four tonnes of waste per capita are generated every year in the EEA member countries. Every European citizen on average throws away 520 kg of household waste per year, and this figure is expected to increase.

Are we preventing the generation of packaging waste?

There is a general increase in per capita quantities of packaging being put on the market. This development is seen across the EU-27 Member States. It is not in line with the objective of the Directive on Packaging and Packaging Waste, which aims at reducing the production of packaging waste.

However, the EU target to recycle 25% of packaging waste in 2001 has been met and significantly exceeded. In 2007 the average recycling rate over the EU-27 reached 59 %, already exceeding the 2008 target of 55%. Differences in performance of individual countries suggest further potential for improvement, however (see Figure 5).

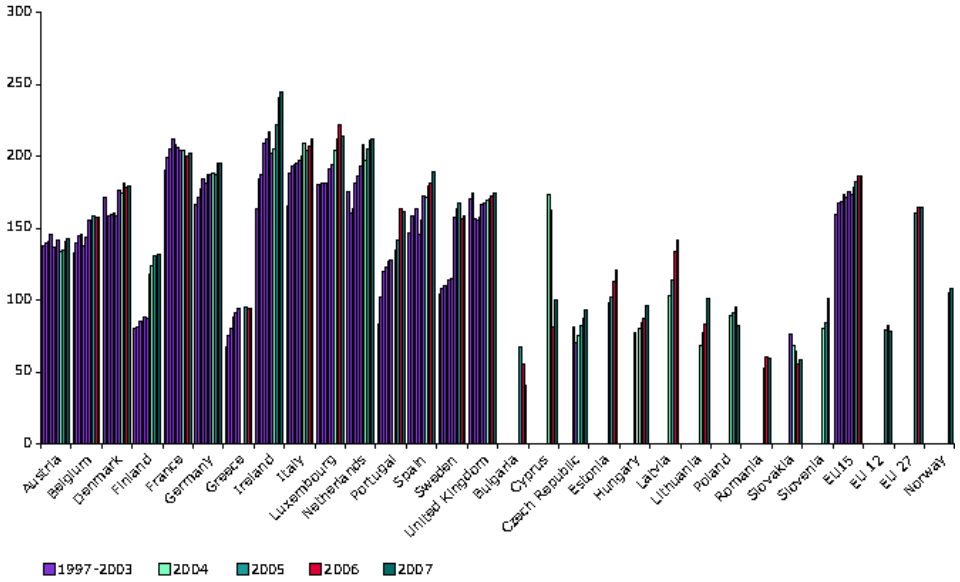

Fig. 1: Packaging waste generation per capita and by country (Ver. 4.00).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Austria	138	140	141	146	137	132	142	134	135	141	143
Belgium	133	140	145	146	138	144	156	155	158	158	158
Denmark	172	158	159	160	161	159	177	175	181	179	180
Finland	81	82	86	86	88	87	118	124	131	129	132
France	190	199	205	212	208	206	204	204	197	200	202
Germany	167	172	178	184	182	187	187	188	188	196	196
Greece	68	76	81	88	92	94			96	95	94
Ireland	164	184	187	209	212	217	202	205	222	241	245
Italy	166	188	193	194	195	197	200	209	204	207	212
Luxembourg	181	181	182	182	181	191	194	204	212	222	214
Netherlands	176	161	164	182	186	193	208	197	205	211	212
Portugal	84	102	120	123	127	128		135	142	164	162
Spain	147	159	155	164	146	156	173	172	180	181	189
Sweden	104	108	110	110	114	115	158	164	167	156	158
United Kingdom	171	175	157	156	158	167	168	170	171	173	174
EU15	160	168	169	174	172	176	174	179	182	186	186
Cyprus								174	162	82	101
Czech Republic						82	71	76	83	88	94
Estonia								98	102	113	121
Hungary						78		81	85	88	96
Latvia								103	115	134	142
Lithuania								69	77	84	101
Poland								89	92	96	82
Slovakia							77	69	64	56	59
Slovenia								81	84	102	
Bulgaria									67	56	41
Romania									53	61	60
EU 12									79	82	78
EU 27									161	165	164
Norway										105	108

Fig. 2: Packaging waste generation per capita and by country (Ver. 4.00)

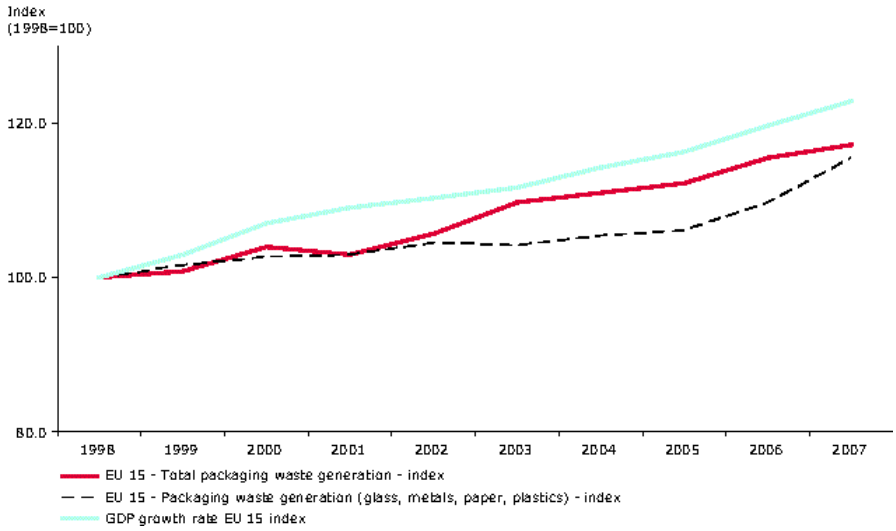

Fig. 3: Generation of packaging waste and GDP in the EU-15 (Ver. 4.00)

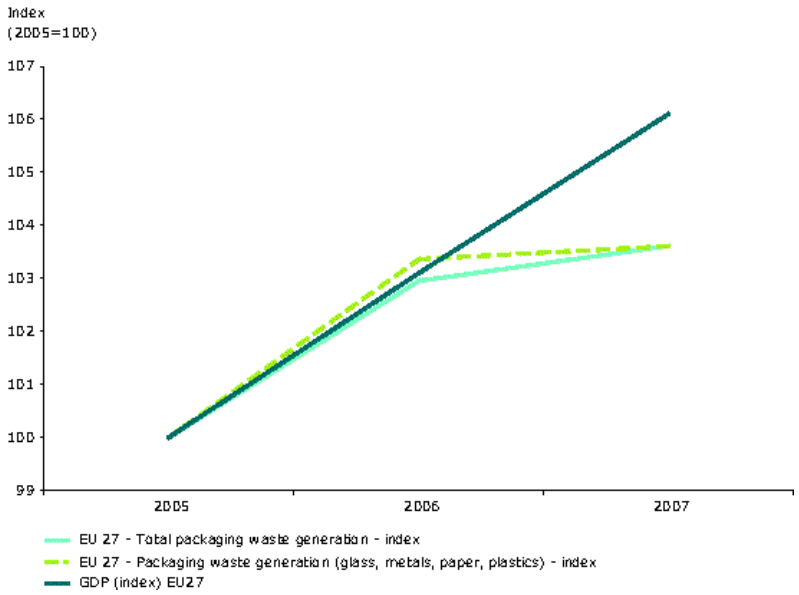

Fig. 4: Generation of packaging waste and GDP in the EU 27 (Ver. 2.00)

Key assessment

There are large variations between Member States in the use of packaging per capita, ranging from 245 kg/capita in Ireland to 94 kg/capita in Greece and 41 kg/capita in Bulgaria (2007). The average 2007 figure for the EU-27 was 164 kg/capita. There are clear

differences between the EU-15 and newer Member States reflecting different levels of consumption of packaging. The variations within EU-15 countries are harder to explain. One explanation may be different market shares of reusable packaging; another different consumption and production patterns. It is also possible that some Member States may have uneven coverage of data collection or slightly differing definitions of packaging and understanding of which types of packaging waste need to be reported to DG Environment.

While there are significant year to year variations, the general trend in EU-15 shows that amounts of packaging are still rising. Packaging waste generation in the EU-15 saw slight decoupling from GDP (fig.3) between 1998 and 2007 growing by 17.2%, compared to a nearly 23% real growth in GDP over the same period. However, all the decoupling occurred in the first years of that period; since 2001 growth in packaging waste has actually been more rapid than growth in GDP.

The four main fractions of the packaging waste stream (glass, metals, paper & cardboard, plastics), meanwhile, have seen more sustained relative decoupling over the whole period, growing at half the rate of GDP. The apparent rapid growth in *total* packaging between 2001 and 2003 may have had methodological causes - especially concerning the coverage of wood packaging. In 1997 only 6 countries reported wood packaging; since 2003 most EU-15 countries have provided complete sets of data.

Trends in packaging waste generation per capita vary between the countries (fig 2). While some countries (e.g. Germany and Portugal) show a relatively constant increase, others (e.g. France, Austria) have been able to stabilise and even reverse the increases in generation. The trend is less clear in the data reported from Scandinavian countries due to the above mentioned changes in data reporting.

Do we manage the generated waste (packaging) in a sustainable way?

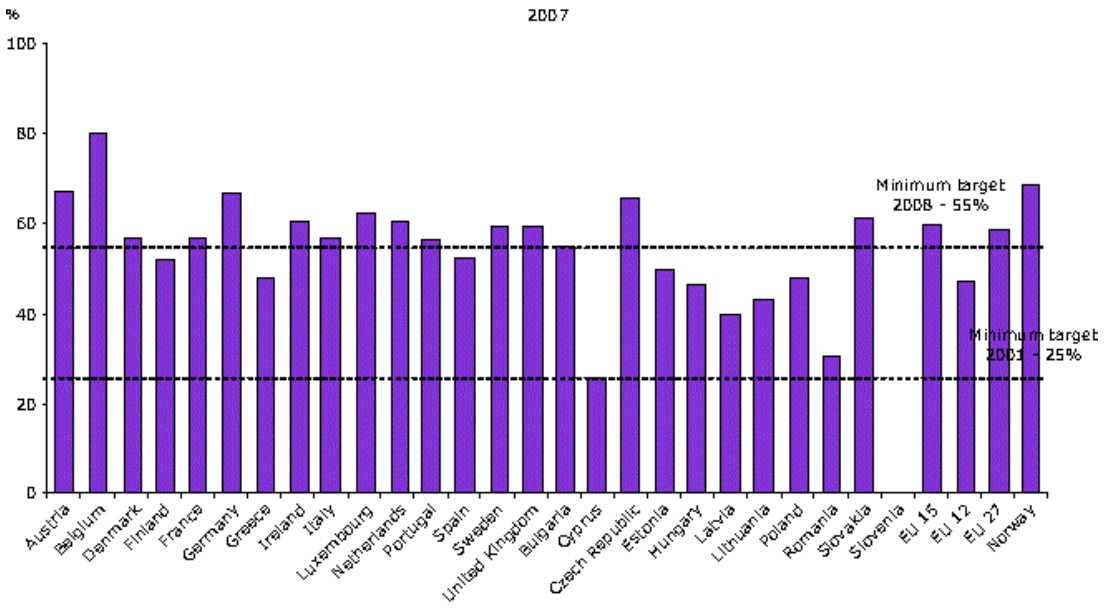

Fig. 5: Recycling of packaging waste by country, 2007 (Ver. 4.00)

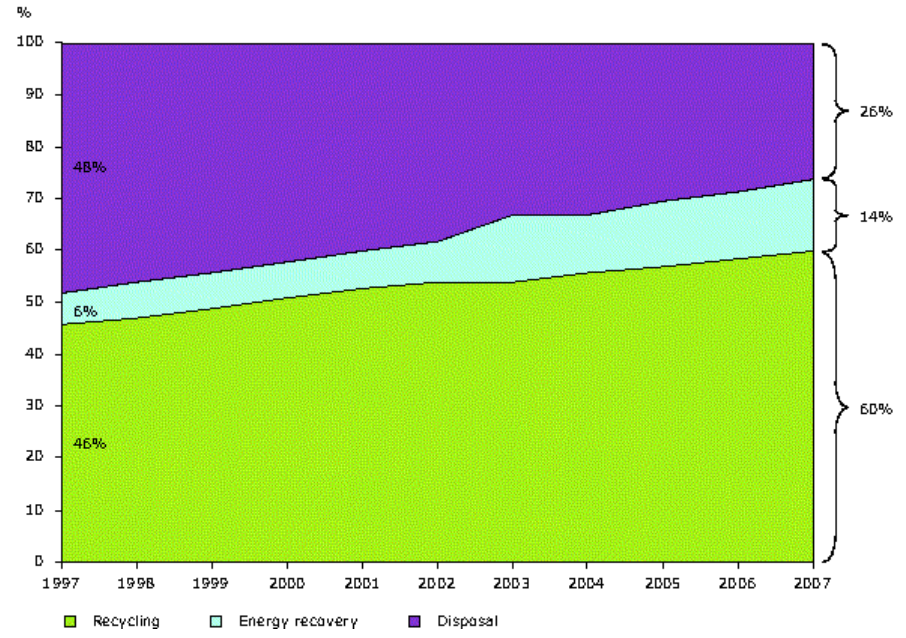

Fig. 6: Treatment of packaging waste in the EU-15 (Ver. 4.00)

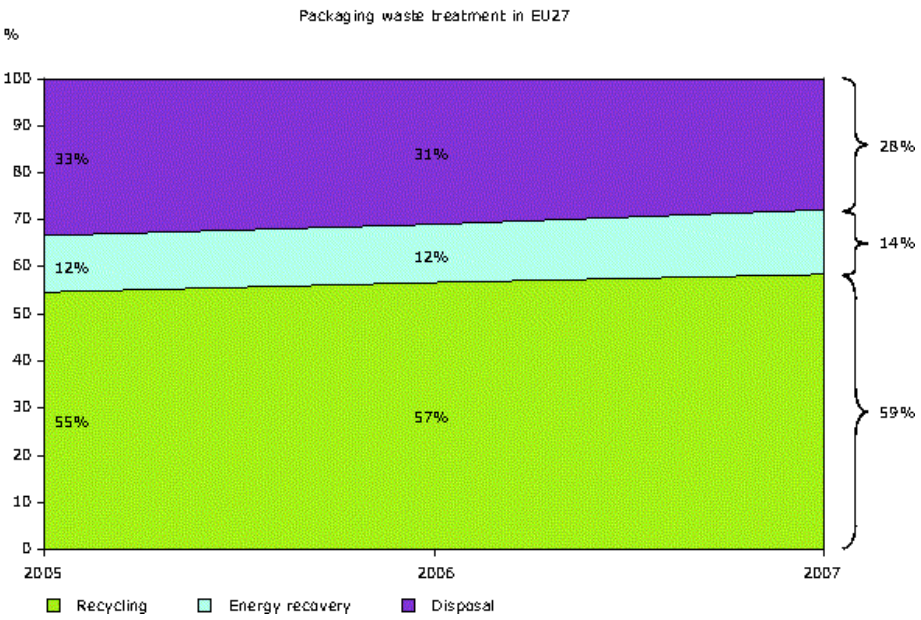

Fig. 7: Treatment of packaging waste in the EU-27 (Ver. 2.00)

Specific assessment

Recycling is a key element in the management of packaging waste.

The minimum target of 25 % recycling of all packaging materials was achieved by all EU-27 members in 2006. Furthermore, 15 of the 27 Member States had already complied with the overall minimum recycling target for 2008 by 2007.

The total EU-15 recycling rate increased from 45 % in 1997 to 60 % in 2007. The EU-12 recycling rate increased from 34% in 2005 to 47% in 2007. As with consumption of packaging per capita, the total recycling rate in the Member States in 2007 varied greatly, from 26 % in Cyprus to 80 % in Belgium.

Table 1: **Targets of the Packaging and Packaging Waste Directive**

G By weight	Targets in 94/62/EC	targets in 2004/12/EC
Overall recovery target	min. 50 %, max. 65 %	min. 60 %
Overall recycling target	min. 25 %, max. 45 %	min. 55 %, max.80 %
Year to achieve targets	30 June 2001	31 December 2008

To achieve the targets, several Member States have introduced producer responsibility and established packaging recycling schemes or introduced economic instruments (e.g. taxes, deposit systems). Other countries have improved their existing collection and recycling system.

Note: Greece, Ireland, Portugal and the EU-12 member states have individual derogations to meet the new targets. Depending on country, the targets will have to be reached 3 to 7 years later.

Source: Official Journal L 365 , 31/12/1994 P. 0010 - 0023 and Official Journal L 047, 18/02/2004 P. 0026 - 0032

Learn more about waste by consulting maps and data for European countries:
http://www.eea.europa.eu/data-and-maps/figures#c15=all&c0=15&b_start=0&c5=waste

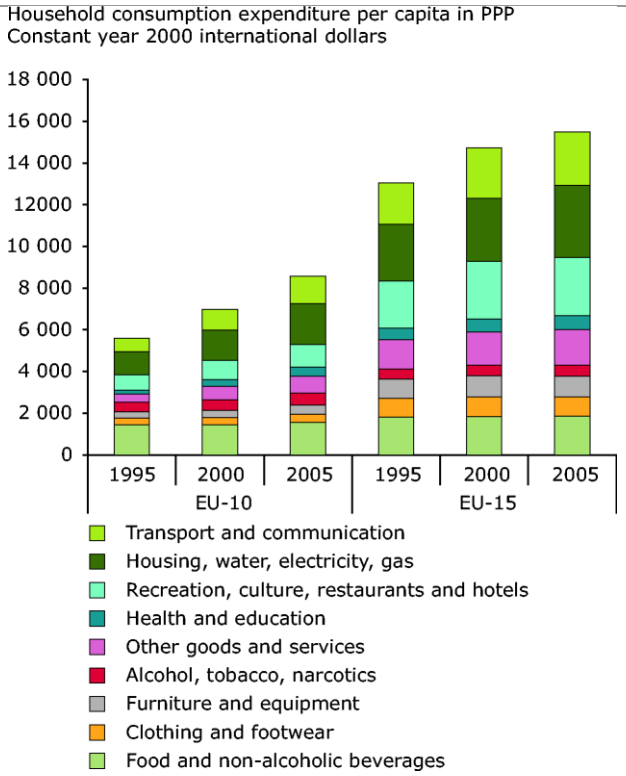

Fig. 8 - Changing household consumption patterns in EU-10 and EU-15.

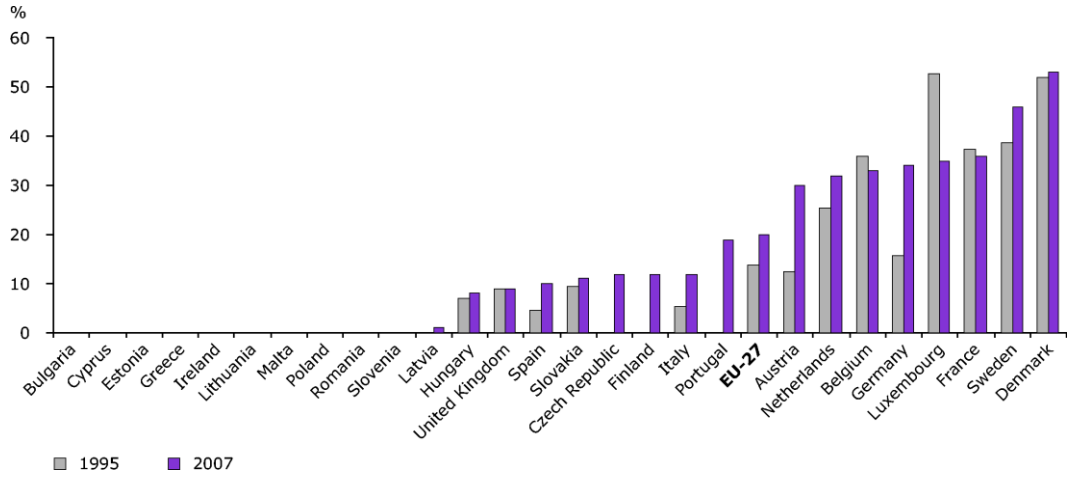

Fig. 9 - Percentage of municipal waste that is incinerated in the EU-27, 1995 and 2007.

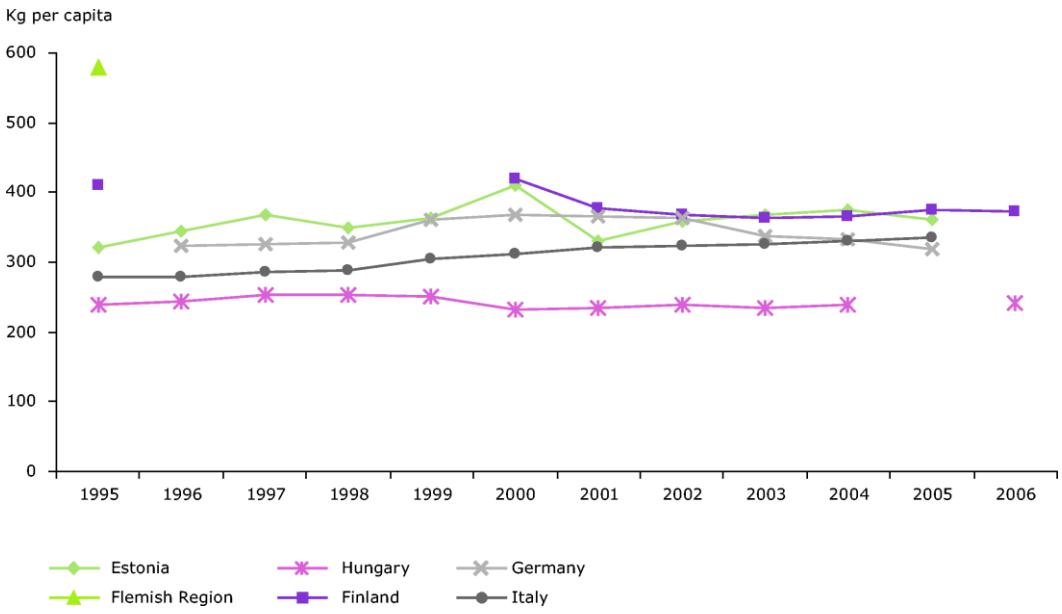

Fig. 10 - Generation of biodegradable municipal waste per capita.

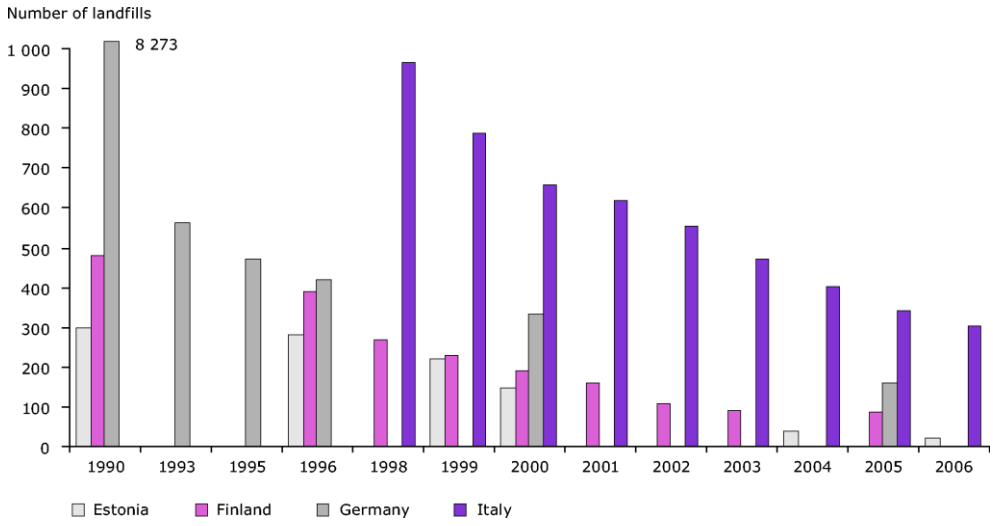

Fig. 11 - Development in the number of landfills for non-hazardous municipal waste in four EU Member States

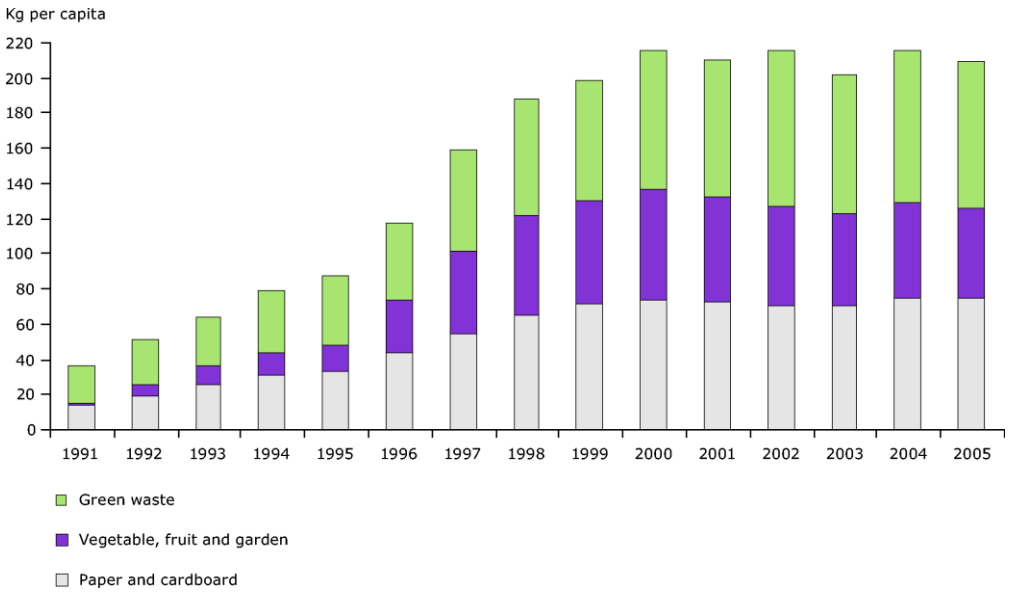

Fig. 12 - Separate collection of biodegradable waste fractions in the Flemish Region of Belgium. Municipalities are required to organise separate collection of either biowaste or garden waste (in combination with home composting of biowaste).

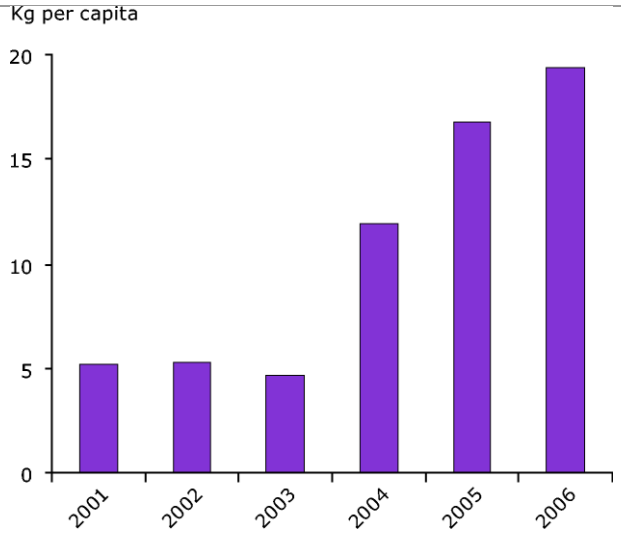

Fig. 13 - Separate collection of biodegradable waste in Hungary.

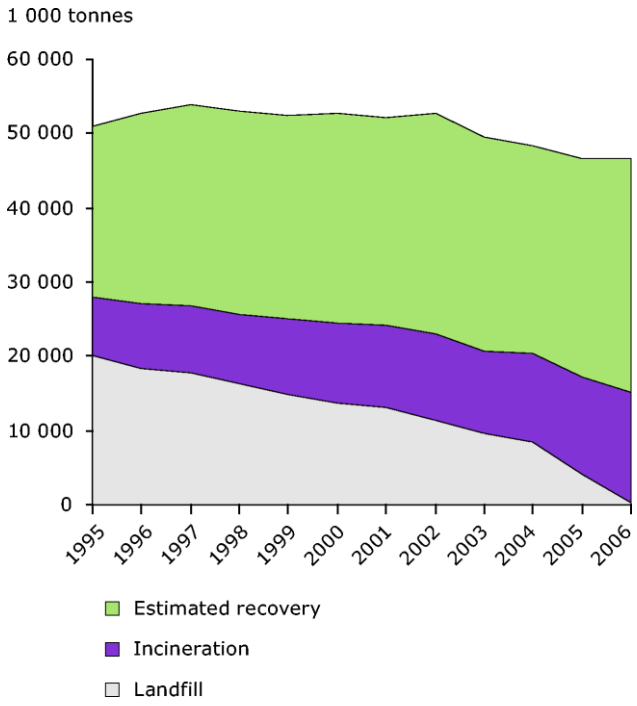

Fig. 14 - Management of municipal waste in Germany. Recovery is estimated as municipal waste generation minus municipal waste landfilled and incinerated.