

National Waste Database

Interim Report 2002





National Waste Database Interim Report 2002

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National Waste Database Interim Report 2002

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Executive Summary

The Environmental Protection Agency carried out a series of surveys on waste generation and management for the calendar year 2002. Local authorities, recycling organisations and landfill operators were issued questionnaires and responses were received during 2003 and 2004. The findings from these surveys are presented in this Interim Report and represent a snapshot of waste management and export in 2002.

Overall, the trends highlighted in the Interim Report are positive and are moving in the right direction. The following are the principal conclusions to be drawn in relation to municipal waste management and waste exports in 2002, compared to 2001:

- the rate of increase in the generation of municipal waste has slowed;
- the recycling of municipal waste (household and commercial) has increased substantially;
- the landfill of municipal waste has decreased;
- the recycling of packaging waste has increased substantially;
- the export of hazardous waste has decreased; and
- the export of recyclable waste for recycling has increased substantially.

While increased recycling rates are good, the data show that as recycling rates increase, Ireland becomes more and more dependent on recycling facilities in other countries.

Progress is good towards the achievement of three waste management targets:

- the packaging waste recovery rate was 33% in 2002, up from 25.3% in 2001. The target is 50% recovery by 2005. Reports from Repak indicate a recovery rate of 40% was achieved in 2003;
- the municipal waste recycling rate was 20.7% in 2002, up from 13.3% in 2001. The national target is 35% recovery by 2013;
- the household waste recycling rate was 9.3% in 2002, up from 5.6% in 2001. The national target is for the diversion of 50% of household waste from landfill by 2013.

In each of these cases, the actual increase in terms of tonnes is not fully reflected in the recovery rates above. By weight, packaging waste recycling actually increased by 34%, municipal waste recycling by 63%, household waste recycling by 77% and commercial waste recycling by 58%.

The target for diversion of biodegradable municipal waste from landfill remains challenging (65% diversion by 2016, based on 1995 generation). Finalisation of the Government strategy for biodegradable municipal waste will undoubtedly have an impact and will accelerate progress.

There were fewer municipal waste landfills in operation - 39 in 2002 compared to 48 in 2001. A further 6 of these landfills have since closed while 2 more have been licensed. At these landfills, there remains eight years' national landfill capacity. Five proposed decisions (draft EPA-licences) have been issued. Taking these proposed facilities into account, there remains a potential ten years' municipal waste landfill capacity.

There were more bring banks in operation, up 13.9% to 1,636 in 2002. The picture with regard to civic waste facilities is less clear and there appears to be confusion as to what is actually defined as a civic waste facility.

1. Introduction

This report is an interim report in the National Waste Database series. It provides the latest collated information that is available in relation to waste collection, generation and management in 2002. National Waste Database Reports have previously been published on a three-year cycle – 1995¹, 1998² and 2001³. However due to other reporting requirements, full datasets on municipal waste management and waste export are now generated on an annual basis and these datasets are available in this interim report. A further interim report for 2003 will be published by end-2004 and the next full National Waste Database Report will be published in 2005 in relation to the calendar year 2004. In conformance with the EU Waste Statistics Regulation⁴, National Waste Database reports will be published on a two-year cycle from 2004.

1.1. Objectives and scope of this report

The objective of this interim report is to present updated waste information on:

- ## municipal waste generation and management;
- ## packaging waste recycling;
- ## the export of waste (including hazardous waste); and
- ## municipal waste landfill and other waste infrastructure.

Progress towards national and EU targets for municipal waste management are presented and trends highlighted. The main focus of the report is on waste generated by the household and commercial sectors, that is, municipal waste.

1.2. An update on Government waste policy

The Government policy document, *Waste Management – Taking Stock and Moving Forward*⁵ was published in April 2004. The main aim of the document is to consider development since publication of earlier policy documents^{6, 7}. The policy document identifies a series of 21 key points that are intended to “provide a solid basis for ensuring speedier and more effective realisation of ... policy objectives” aimed at modernising Irish waste management infrastructure and services.

¹ EPA, 1996, *National Waste Database Report for 1995*.

² EPA, 2000, *National Waste Database Report 1998*.

³ EPA, 2003, *National Waste Database Report 2001*.

⁴ Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics.

⁵ Department of the Environment, Heritage and Local Government, 2004, *Waste Management – Taking Stock and Moving Forward*, A Policy Statement.

⁶ Department of the Environment and Local Government, 1998. *Waste Management – Changing Our Ways*.

⁷ Department of Environment, Heritage and Local Government, 2002. *Preventing and Recycling Waste – Delivering Change*.

1.3. The National Waste Prevention Programme

The Minister for the Environment, Heritage and Local Government launched the National Waste Prevention Programme in April 2004. The Programme will be implemented by the Environmental Protection Agency and has the broad objective of reducing the generation of waste and decoupling waste generation from continued economic growth. Work has commenced on the Programme and an *Outline Work Plan 2004-2008*⁸ has been prepared to guide its initial stages. A National Waste Prevention Committee will be convened during 2004 to monitor the Programme and provide strategic direction to the EPA.

2. Sources of information used in this report

The following information sources were used to compile the information for this report:

- ## local authorities
- ## recycling organisations; and
- ## landfill operators.

Information is collected from local authorities and recycling organisations via questionnaires⁹ in the form of a spreadsheet. The timeliness of returns from these organisations remains extremely poor. To illustrate, Table 1 shows the response rate to the recycling questionnaire at various points in time during 2004. Considerable resources continue to be expended on retrieving information from tardy organisations.

Table 1 Response rates for the 2003 recycling organisations survey

Date	Returns received
February 2004*	13%
March 2004	39%
April 2004	52%
May 2004	56%

* The due date was 25 February 2004

The data submitted by a sample of recycling organisations is audited each year and the audit programme will commence shortly in relation to the data provided for 2003.

In an attempt to improve the timeliness, quality and reliability of submitted information, the scale and format of all questionnaires is under review. Information technology solutions will be sought to ease the overall reporting burden.

Thirty-four local authorities provided information on the generation and management of municipal waste in the calendar year 2002. Some of the more commonly encountered problems with the information provided by local authorities are:

⁸ The *Outline Work Plan 2004-2008* may be downloaded from www.epa.ie.

⁹ All current questionnaires may be downloaded from www.epa.ie.

- no information on collection services provided by other than the local authority itself. This is a significant omission in areas where private sector waste collectors operate;
- no information on commercial waste. As commercial waste collection is predominantly private sector in most local authority areas, this problem is linked to the absence of information on other than local authority-provided services; and
- inconsistent data year-on-year showing unexplained increases or decreases in waste collection or generation.

To address some of these matters and to provide assistance in completing the annual questionnaire, the EPA met with 33 local authorities at a series of three half-day workshops in February 2004. Step-by-step guidance was given on the questionnaires and discussion was facilitated throughout. Feedback from the workshops was generally positive and a detailed guidance document is now available on the EPA website to assist local authorities in making a return.

Over 180 recycling organisations responded to the recycling survey for 2002 (representing a 100% response rate). This survey also encountered considerable delays in obtaining data for 2002. Eliciting information is a resource intensive exercise and delayed responses contribute to the late publication of data. A complete return is essential in order to generate accurate statistics on the recycling of waste generated in Ireland.

To provide assistance in completing the annual recycling questionnaire, the EPA met with 31 recycling organisations at a series of three half-day workshops in February 2004. Step-by-step guidance was given on the questionnaires and useful discussion took place. Though attendance at the workshops was disappointing, the feedback received from participants was positive for the most part and it is planned to organise similar events in the future.

Thirty-nine annual environmental reports were received from all EPA-licensed municipal waste landfill operators.

3. Municipal waste generation

Table 2 shows that an estimated 2,723,739 tonnes of municipal waste were generated in 2002, consisting of 1,528,314 tonnes of household waste, 1,129,850 tonnes of commercial waste and 65,573 tonnes of street cleansing waste. An increase of under 1% is observed between 2001 and 2002 in the generation of municipal waste, a relatively small increase compared to previous years.

Table 2 Municipal waste generation, 1998 to 2002

Category of municipal waste	1998	2001	2002
Household waste	1,220,856	1,468,834	1,528,314
Commercial waste	754,797	1,156,732	1,129,852
Street cleansing waste	80,999	78,469	65,573
Total municipal waste	2,056,652	2,704,035	2,723,739

Figure 1 graphically represents the increasing trend in municipal waste generation from 1998 to 2002.

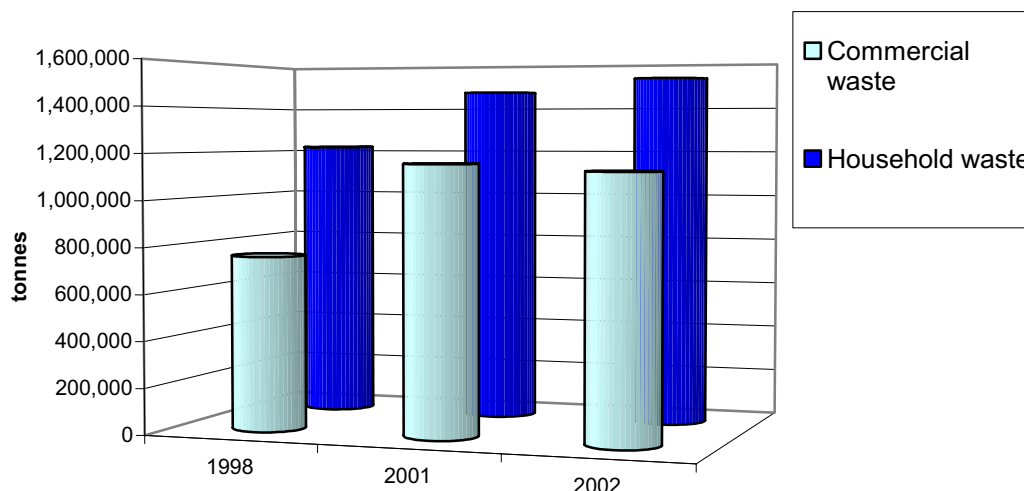


Figure 1 Trends in municipal waste generation, 1998 to 2002

The local authority questionnaire requests an estimate of household waste that is not collected by a formal collection service. Many householders (particularly in rural areas) do not have access to waste collection services and many more householders choose not to avail of the services of waste collectors. Fourteen local authorities provided no estimate of this waste generation. To compensate, the EPA used data on the number of households served in each of these local authority areas to estimate that 103,121 tonnes of household waste are not collected in these areas. The remaining twenty local authorities reported the generation of an estimated 145,647 tonnes of household waste that is not documented as having been collected. In some local authority areas, the proportion of households served by a collection service is reported to be as low as 15%, while in others, mainly city councils, 100% of households are provided with a collection service. The EPA has provided detailed guidance to local authorities on factors that should be taken into account in making this calculation. Without access to local data, such as the quantity of household waste delivered directly to landfills by individuals, the EPA estimate is likely to be an overestimate. However, the total estimate of 248,768 tonnes illustrates the potential scale of the problem of home burning of waste or other environmentally unfriendly waste practices at the household level.

The average generation of household waste per person (including “uncollected” household waste described in the preceding paragraph) in 2002 is 390 kg per capita, a 4% increase on 2001. As in earlier years, there is a wide variance, ranging from 174 kg per capita to 599 kg per capita. The unusually high and low values demonstrate that local authorities should take steps to review their information management systems to ensure they are up to the required standard of quality and robustness.

The generation of municipal waste, as reported by local authorities, is summarised in Table 3.

Table 3 Reported municipal waste generation reported by local authorities, 2002

Local Authority	Household waste (tonnes)	Commercial waste (tonnes)	Street cleansing (tonnes)	Total (tonnes)
Dublin City*	247,653	241,986	22,730	512,369
Dun Laoghaire-Rathdown*	78,099	60,819	4,069	142,987
Fingal*	70,195	33,102	0	103,297
South Dublin*	88,475	78,760	4,291	171,526
Dublin Region sub-total	484,422	414,667	31,090	930,179
Cork**	117,185	94,413	1,220	212,818
Cork City	50,713	54,000	0	104,713
Cork Region sub-total	167,898	148,413	1,220	317,531
Galway	51,794	58,203	1,135	111,132
Galway City*	16,120	70,770	1,080	87,970
Leitrim	9,309	3,686	655	13,650
Mayo*	52,792	9,366	879	63,037
Roscommon	10,158	4,183	714	15,055
Sligo	10,439	10,896	0	21,335
Connaught Region sub-total	150,612	157,104	4,463	312,178
Carlow	16,167	12,311	1,084	29,562
Kilkenny*	19,732	10,310	1,849	31,891
South Tipperary	23,083	3,423	611	27,117
Waterford	12,767	12,452	1,373	26,592
Waterford City	15,407	38,773	2,213	56,393
Wexford	32,044	20,446	9	52,499
South East Region sub-total	119,201	97,715	7,139	224,055
Clare	35,540	20,732	1,136	57,408
Kerry	55,659	30,992	1,221	87,872
Limerick	29,370	68,627	343	98,340
Limerick City	22,552	32,136	4,800	59,488
Mid-West Region sub-total	143,121	152,487	7,500	303,108
Cavan	9,820	9,800	272	19,892
Louth*	32,981	16,920	2,053	51,954
Meath	57,304	22,351	1,200	80,855
Monaghan	12,889	12,128	397	25,414
North-East Region sub-total	112,993	61,199	3,922	178,114
Laois	19,669	14,475	0	34,144
Longford	12,445	2,945	460	15,850
North Tipperary	25,168	7,646	876	33,690
Offaly	25,030	16,715	323	42,068
Westmeath*	15,414	15,981	1,287	32,682
Midlands Region sub-total	97,727	57,762	2,946	158,435
Donegal	34,982	9,000	1,268	45,250
Kildare***	75,814	0	2,225	78,039
Wicklow	38,423	31,505	3,800	73,728
Supplementary estimate of uncollected household waste	103,121	-	-	-
Totals	1,528,314	1,129,852	65,573	2,723,739

* No information was provided on commercial waste collection and generation. Quantities presented for commercial waste generation relate to 2001.

** Incomplete information was provided on household and commercial waste generation for 2002. Quantities presented relate to 2001.

*** No separation of household and commercial waste was provided. Household waste quantity includes commercial waste generated.

4. Municipal waste composition

No new waste composition surveys were reported as having been carried out by local authorities in 2002. Composition data presented in the *National Waste Database Report 2001* were applied to the 2002 information. The results of this analysis are presented in Table 4. In May 2004, the EPA issued a call for tenders for a programme of municipal waste characterisation surveys. It is anticipated that this programme will contribute towards the development of a comprehensive national database on the composition of household and commercial waste.

Table 4 Composition of household and commercial waste, 2002

	Household waste landfilled		Commercial waste landfilled		Household + commercial waste recovered		Household + commercial waste (total)	
Material	Composition (%) (Note 1)	Landfilled (tonnes)	Composition (%) (Note 2)	Landfilled (tonnes)	Composition (%) (Note 3)	Recovered (tonnes)	Composition (%) (Note 4)	Landfilled + Recovered (tonnes)
Paper	22.3	288,087	48.6	295,344	52.9	262,721	35.3	846,151
Glass	4.4	57,272	7.2	43,631	12.1	60,109	6.7	161,012
Plastic	11.6	150,208	10.3	62,476	7.4	36,630	10.4	249,314
Ferrous	2.1	27,231	1.6	9,950	0.4	1,935	1.6	39,116
Aluminium	0.9	11,441	0.9	5,423	0.4	2,149	0.8	19,012
Other metals	0.7	8,891	0.1	708	0.9	4,548	0.6	14,147
Textiles	3.7	48,324	1.3	7,674	0.3	1,291	2.4	57,288
Organics	32.2	416,124	20.6	125,002	6.8	34,013	24.0	575,138
Wood	0.0	0	1.0	6,078	12.8	63,837	2.9	69,915
Others	22.1	286,485	8.5	51,518	6.0	29,672	15.3	367,675
Total	100	1,294,061	100	607,803	100	496,905	100	2,398,769

Note 1: Composition is derived from household waste composition surveys carried out on mixed waste destined for landfill

Note 2: Composition is derived from commercial waste composition surveys carried out on mixed waste destined for landfill and some segregated fractions.

Note 3: Calculated from mass of material fractions reported by recycling organisations.

Note 4: Calculated from 'Landfilled + Recovered' column

5. Municipal waste recovery and disposal

The recycling and recovery of municipal waste is calculated by analysing information provided by recycling organisations. This provides the best information on actual recycling of waste as carried out by the recyclers. Information from recycling organisations is supplemented with information provided by local authorities on, for example, the collection of household waste at bring banks. Table 5, Table 6 and Table 7 illustrate the disposal and recovery of municipal waste in 2002.

Information on municipal waste disposal is obtained directly from landfill operators in accordance with their EPA licenses. The material specific quantities landfilled are determined by applying waste composition factors to the reported landfill quantities. From this the overall municipal waste (and material specific) disposal and recovery rates are determined.

Table 5 Disposal and recovery rates in the household and commercial waste streams, 2002

Material	Gross quantity available (tonnes)	Quantity landfilled (tonnes)	National landfill rate (%)	Quantity recovered (tonnes)	National recovery rate (%)
Paper	846,151	583,431	69.0	262,721	31.0
Glass	161,012	100,903	62.7	60,109	37.3
Plastic	249,314	212,684	85.3	36,630	14.7
Ferrous	39,116	37,181	95.1	1,935	4.9
Aluminium	19,012	16,863	88.7	2,149	11.3
Other metals	14,147	9,599	67.9	4,548	32.1
Textiles	57,288	55,997	97.7	1,291	2.3
Organics	575,138	541,126	94.1	34,013	5.9
Wood	69,915	6,078	8.7	63,837	91.3
Others	367,675	338,002	91.9	29,672*	8.1
Total	2,398,769	1,901,864	79.3	496,905	20.7

*Batteries, composites, waste oils and waste electrical and electronic equipment

Table 6 Disposal and recovery rates in the household waste stream, 2002

Material	Gross quantity available (tonnes)	Quantity landfilled (tonnes)	National landfill rate (%)	Quantity recovered (tonnes)	National recovery rate (%)
Paper	332,089	288,087	86.7	44,002	13.3
Glass	89,693	57,272	63.9	32,421	36.1
Plastic	157,917	150,207	95.1	7,710	4.9
Ferrous	27,231	27,231	100.0	0	0.0
Aluminium	12,850	11,440	89.0	1,410	11.0
Other metals	11,846	8,891	75.1	2,955	24.9
Textiles	49,615	48,324	97.4	1,291	2.6
Organics	449,484	416,124	92.6	33,360	7.4
Wood	1,766	0	0.0	1,766	100.0
Others	294,172	286,485	97.4	7,687*	2.6
Total	1,426,662	1,294,061	90.7	132,602	9.3

*Batteries, composites, waste oils and waste electrical and electronic equipment

Table 7 Disposal and recovery rates in the commercial waste stream, 2002

Material	Gross quantity available (tonnes)	Quantity landfilled (tonnes)	National landfill rate (%)	Quantity recovered (tonnes)	National recovery rate (%)
Paper	514,063	295,344	57.5	218,719	42.5
Glass	71,320	43,631	61.2	27,689	38.8
Plastic	91,396	62,476	68.4	28,920	31.6
Ferrous	11,885	9,950	83.7	1,935	16.3
Aluminium	6,161	5,422	88.0	739	12.0
Other metals	2,301	708	30.8	1,593	69.2
Textiles	7,674	7,674	100.0	0	0.0
Organics	125,655	125,002	99.5	653	0.5
Wood	68,149	6,078	8.9	62,071	91.1
Others	73,503	51,518	70.1	21,985*	29.9
Total	972,106	607,803	62.5	364,303	37.5

*Batteries, composites, waste oils and waste electrical and electronic equipment

Table 5 shows that the recovery rate for household and commercial waste has increased from 13.3% in 2001 to 20.7 % in 2002. The actual quantity recovered has increased from 305,554 tonnes in 2001 to 496,905 tonnes in 2002, a gross increase of 62.6%. Therefore, considerable progress has been achieved towards reaching the national target of 35% recycling of municipal waste by 2013. The disposal rate has decreased from 86.7% in 2001 to 79.3% in 2002 and for the first time, there is also evidence of an actual decrease in the quantity of household and commercial waste landfilled from 1,992,050 tonnes in 2001 to 1,901,864 tonnes in 2002, a decrease of 4.5%. Figure 2 illustrates progress on the recycling of municipal waste.

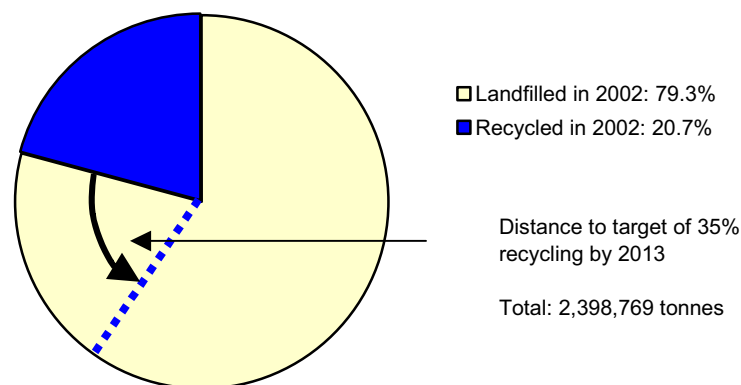


Figure 2 Recycling of municipal waste, 2002

Table 6 shows the breakdown of recovery and disposal in the household waste stream. The overall recovery rate has increased from 5.6% in 2001 to 9.3% in 2002. Considerable progress remains to be achieved to meet the national target of 50% diversion of household waste from landfill, as illustrated in Figure 3.

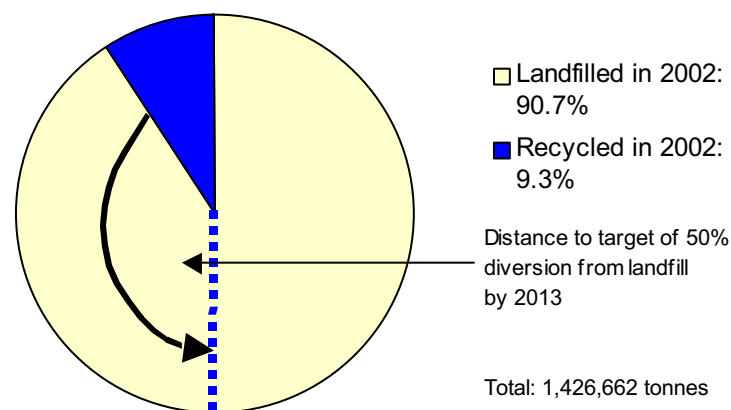


Figure 3 Diversion of household waste from landfill, 2002

For the first time, there has been an actual decrease in the landfill of household and commercial waste, as illustrated in Figure 4 and the municipal waste recovery rate has increased significantly from 13.3% in 2001 to 20.7% in 2002.

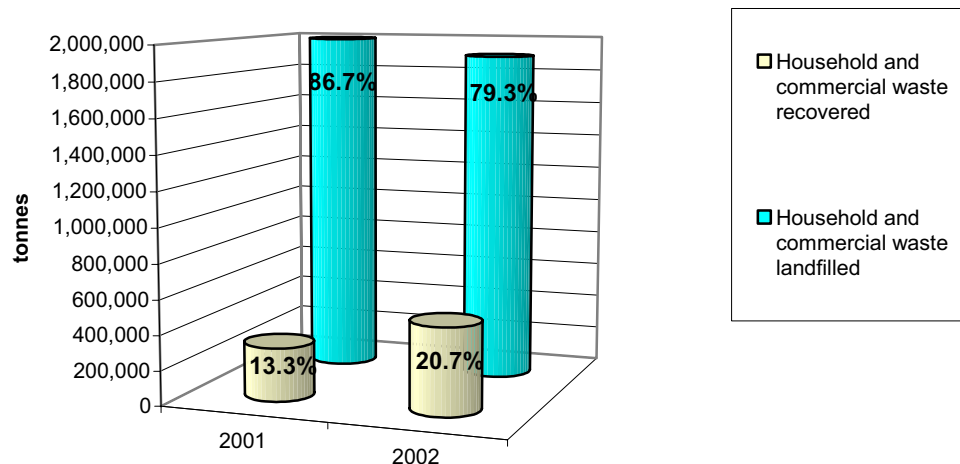


Figure 4 Trends in disposal and recovery of household and commercial waste, 2001 and 2002

6. Packaging waste recovery and disposal

The quantity of packaging waste recovered is determined by analysing the returns made by recycling organisations. Each organisation is asked to submit information on quantities of packaging and non-packaging waste recycled in Ireland and abroad. Table 8 shows packaging waste recovery has increased from 221,266 tonnes in 2001 to an estimated 296,389 tonnes in 2002. This represents an increase of 34%.

Table 8 Packaging waste generation, disposal and recovery, 2002

	Generated (tonnes)	Landfilled		Recovered	
		Tonnes	%	Tonnes	%
Paper and Cardboard	387,143	254,822	65.8	132,321	34.2
Glass	122,529	64,354	52.5	58,175	47.5
Plastic	209,108	179,764	86.0	29,344	14.0
Ferrous	56,998	31,935	56.0	25,063	44.0
Aluminium	13,698	12,699	92.7	999	7.3
Other Metals	8,857	8,857	100.0	0	0.0
Textiles	1,404	1,404	100.0	0	0.0
Wood	56,338	6,078	10.8	50,260	89.2
Others	43,051	42,824	99.5	227*	0.5
TOTAL	899,125	602,736	67.0	296,389	33.0

* Composite packaging material

As in the case of household and commercial waste, for the first time there has also been a decrease in the actual quantity of packaging waste consigned to landfill. This is good news as it allows the benefit of large increases in the actual quantity of packaging waste being recovered to be reflected in the recovery rate. Therefore, the packaging recovery rate has increased from 25.3% in 2001 to 33% in 2002¹⁰

¹⁰ A correction factor of 6% for contamination and moisture was applied to the 2001 data, bringing the recovery rate for that year to 27%. Applying this factor to the 2002 data increases the net packaging recovery rate to 35%.

illustrating significant progress towards meeting the Packaging Directive¹¹ target of 50% packaging waste recovery by 2005, as illustrated in Figure 5 and Figure 6.

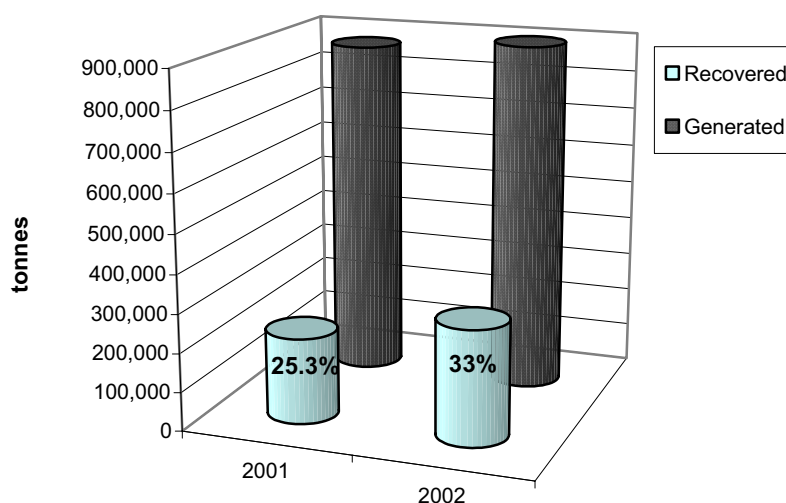


Figure 5 Trends in packaging waste generation and recovery, 2001 and 2002

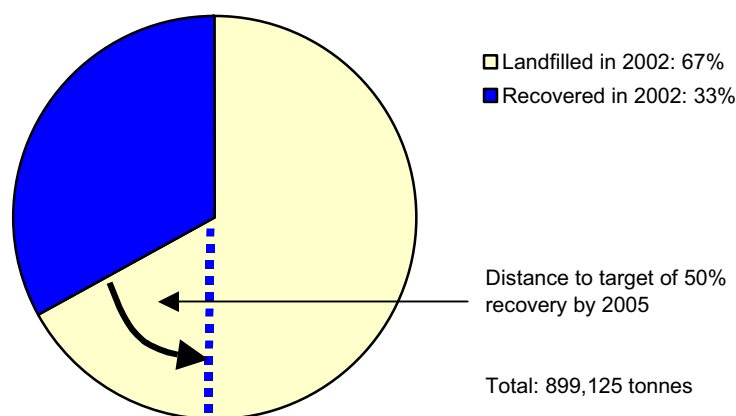


Figure 6 Recovery of packaging waste, 2002

7. Biodegradable municipal waste

Biodegradable municipal waste is waste that is capable of undergoing biological decomposition, such as food and garden waste and paper and cardboard. As shown in Table 9, an estimated 1,584,492 tonnes of biodegradable municipal waste were generated in Ireland in 2002, of which 1,186,632 tonnes were consigned to landfill and 361,861 tonnes were recycled. In 2002, a total of 23.4% of biodegradable municipal waste was diverted from landfill; an increase from 15.4% diversion in 2001, representing a quantitative increase of 55%.

Biodegradable municipal waste is specifically targeted in the Landfill Directive¹² due to the potential environmental impacts associated with landfilling this waste such as

¹¹ European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L No 365, 31.12.94, p. 10).

the potential to generate leachate, landfill gas and odour. Through a series of interim targets, by 2016 the quantity of biodegradable municipal waste landfilled must be progressively reduced. To this end, the Government has completed a consultation on a draft National Biodegradable Waste Strategy (see www.environ.ie) that will be finalised in 2004. Local authorities will need to take account of the strategy when updating their waste management plans.

Table 9 Biodegradable municipal waste generation and management, 2002

Material	Gross quantity available (tonnes)	Landfilled (tonnes)	Recovered (tonnes)	Recovery rate (%)
Paper and cardboard	846,151	583,431	262,721	31.0%
Textiles	57,288	55,997	1,291	2.3%
Organic waste	575,138	541,126	34,013	5.9%
Wood	69,915	6,078	63,837	91.3%
TOTAL	1,548,492	1,186,632	361,862	23.4%

8. Progress towards meeting national and EU targets

Table 10 summarises progress towards the achievement of several national and EU targets for improved waste management. While considerable progress has been seen in relation to the targets for household, municipal and packaging waste, a considerable challenge remains if the biodegradable municipal waste target is to be achieved.

Table 10 Progress towards national and EU targets for the management of municipal waste

Target	National / EU	Target year	Position in 2002
A diversion of 50% of overall household waste away from landfill	National	2013	9.3% recovery
Recycling of 35% of municipal waste	National	2013	20.7% recovery
Recycling of 50% of packaging waste	EU	2005	33% recovery
Reduction by 65% of biodegradable waste to landfill (based on 1995 rates and on a phased basis)	EU	2013	In 2001, 1,257,420 tonnes were landfilled. In 2002, this decreased by 5.6% to 1,186,632 tonnes. In order to meet the first phase of the target by 2006, the landfilling of biodegradable municipal waste must be reduced to approximately 840,000 tonnes.

9. Waste infrastructure

9.1. Landfills

A total of 39 landfills accepted 1,901,864 tonnes of household and commercial waste for disposal in 2002 (compared to 48 landfills in 2001). These landfills are listed in Table 11.

¹² Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (OJ L No. 182, 16.7.1999, p.1).

Table 11 Municipal waste landfills, household and commercial waste landfilled in 2002

Reg. No.	Landfill	Waste Management Planning Region	Household waste (tonnes)	Commercial waste (tonnes)	Total (tonnes)
109-1	Inagh	Clare Limerick Kerry	10,883	2,911	13,794
17-1	Gortadruma	Clare Limerick Kerry	73,598	59,358	132,956
1-2	North Kerry	Clare Limerick Kerry	45,316	0	45,316
59-1	Ballaghaderreen	Connaught	10,404	0	10,404
64-1	Carrick-On-Shannon	Connaught	1,321	0	1,321
65-1	Mohill	Connaught	1,682	0	1,682
67-1	Rathroen	Connaught	22,488	7,938	30,426
21-1	Derrinummera	Connaught	27,312	6,798	34,110
27-1	Pollboy	Connaught	30,930	46,920	77,850
68-2	Youghal	Cork	27,860	12,110	39,970
70-1	Benduff	Cork	4,843	0	4,843
89-1	Derryconnell	Cork	9,176	1,869	11,045
22-1	East Cork	Cork	60,628	12,362	72,990
23-1	Raffeen	Cork	0	0	0
12-2	Kinsale Road	Cork	46,497	19,409	65,905
90-1	Balbane	Donegal	5,069	0	5,069
24-1	Ballynacarrick	Donegal	16,352	0	16,352
15-1	Ballyogan	Dublin	67,612	0	67,612
4-2	Arthurstown	Dublin	414,665	53,826	468,491
9-2	Balleally	Dublin	48,717	124,868	173,585
81-2	KTK	Kildare	0	190,904	190,904
14-1	Silliot Hill	Kildare	0	0	0
71-2	Marlinstown	Midlands	14,444	4,868	19,312
78-1	Ballaghveny	Midlands	23,853	8,522	32,374
26-1	Kyletalesha	Midlands	24,751	11,625	36,376
28-1	Ballydonagh	Midlands	8,619	5,805	14,424
29-1	Derryclure	Midlands	25,944	4,871	30,815
34-2	Dundalk	North East	20,753	1,521	22,274
60-2	Whiteriver	North East	11,861	1,688	13,549
77-1	Corranure	North East	21,082	0	21,082
91-1	Baileborough	North East	0	0	0
93-1	Ballyjamesduff	North East	6,000	0	6,000
20-1	Scotch Corner	North East	15,103	3,737	18,840
10-2	Basketstown	North East	0	0	0
30-2	Dunmore	South East	10,465	2,179	12,644
32-1	Dungarvan	South East	5,019	5,715	10,734
74-1	Donohill	South East	36,474	0	36,474
75-1	Tramore	South East	12,063	4,819	16,882
16-1	Killurin	South East	28,797	10,862	39,659
18-1	Kilbarry	South East	16,285	2,318	18,603
25-1	Powerstown	South East	24,961	0	24,961
66-1	Rampere	Wicklow	5,199	0	5,199
11-1	Ballymurtagh	Wicklow	57,034	0	57,034
	Total		1,294,060	607,803	1,901,861

Note: All facilities are local authority-operated except KTK (81-2). Zeroes signify landfills that closed during 2001. Six landfills listed in the table closed during 2002 (64-1, 65-1, 71-2, 34-2, 93-1 and 11-1). Two additional landfills have been licensed by the EPA: Ballynagran, Co. Wicklow (165-1) and Knockharley, Co. Meath (146-1). Five proposed decisions (draft licences) have been issued: Usk, Co. Kildare (168-1); Bottlehill, Co. Cork (161-1); East Galway, Co. Galway (178-1); Rampere, Co. Wicklow (66-2); and Hardbog, Co. Tipperary (19-1).

A snapshot of remaining landfill capacity for municipal waste is shown in Table 12. Total remaining capacity for municipal waste at currently operating licensed landfills is 8 years. When proposed decisions (draft licenses) are taken into account, total remaining landfill capacity increases to 10 years. The table shows that four regions have less than five years' remaining landfill capacity for the disposal of municipal solid waste and eight regions have less than 10 years' remaining capacity. Local authorities should continue to plan into the future to ensure that adequate landfill capacity remains available.

Table 12 Remaining landfill capacity for municipal waste, by region, 2004

	Remaining capacity at operating licensed landfills (years)	Remaining capacity at operating licensed landfills plus landfills that may commence operation (i.e. at proposed decision stage)
North East Region	19	19
Wicklow*	17	13
Dublin Region	7	7
Mid West Region	7	7
Midlands Region	7	7
Connaught Region	6	7
Kildare	4	6
Cork Region	3	20
Donegal	2	2
South East Region	2	4
National	8	10

All data as at January 2004, or most recent earlier available data.

* The apparent anomalous result for Co. Wicklow can be attributed to the calculation method. The calculation is made according to the proposed annual intake of the planned landfill as opposed to using actual landfill rates where existing facilities are included in the calculation.

9.2. Bring banks, civic waste facilities and mobile collection services

Infrastructure for the collection of recyclable waste has improved considerably and is contributing to successful diversion of waste from landfills. In 2002, a total of 1,636 bring banks were in operation, representing a density of one bring bank for every 2,394 people. This represents an increase of 14% since 2001, with a consequent improvement in the ratio of bring banks to people.

A total of 49 civic waste facilities were reportedly in operation in 2002, down from 53 in 2001. The reason for the decrease is unclear – seventeen facilities reported by local authorities to have been in operation in 2001 were not declared in 2002. In a recent survey¹³ carried out in support of the development of national policy, the Department of the Environment, Heritage and Local Government found that 7 facilities had been misclassified in local authority reports to the EPA for 2001. The same survey found that 55 civic waste facilities were in operation in 2003 with a further 6 nearing completion.

¹³ Department of the Environment, Heritage and Local Government, 2004, *Waste Management – Taking Stock and Moving Forward*, A Policy Statement.

A total of 16 local authorities contracted the services of a mobile hazardous waste collection service in 2002. The mobile service is aimed primarily at householders and provides an outlet for small-scale household hazardous waste. In 2002, 122 tonnes of household hazardous waste were collected by this service.

10. Waste export

10.1. Notified waste export

The export of waste is regulated by local authorities in accordance with the EU transfrontier shipment of waste (TFS) Regulation¹⁴. Summary TFS records submitted by local authorities indicate that 270,857 tonnes of exported waste were notified in 2002. This included 109,547 tonnes of hazardous waste, 139,892 tonnes of contaminated soil¹⁵ and 21,417 tonnes of non-hazardous waste. Table 13 shows the breakdown by waste type of the 249,439 tonnes of hazardous waste exported in 2002. There were no notified imports of waste in 2002.

Table 13 Hazardous waste types exported, 2002

Hazardous waste type	Tonnes exported
Solvents	89,527
Asbestos	3,536
Laboratory and other chemical waste	2,514
Oil waste (mineral oil)	2,264
Paint, ink and varnish waste	2,106
Industrial hazardous waste not otherwise specified	2,103
Sludges and filter cakes	2,051
Equipment (including waste electrical and electronic equipment (WEEE))	1,239
Lead acid batteries	1,181
Acid and alkali waste	843
Packaging (contaminated or containing residues)	673
Photographic chemical waste	623
Healthcare risk waste	391
Oily sludges	164
Metals and heavy-metal containing waste	125
Thermal treatment and combustion residues	68
Pesticides, herbicides (including sheep dip)	57
Fluorescent lamps	35
Polychlorinated biphenyls (including contaminated equipment)	33
Batteries	15
Sub-total (excluding contaminated soil)	109,547
Contaminated soil	139,892
Total hazardous waste exports	249,439

¹⁴ Council Regulation (EEC) No 259/93 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community (OJ L30, 6.2.1993, p. 1), as amended; as implemented in Ireland by the Waste Management (Transfrontier Shipment of Waste) Regulations, 1998, S.I. No. 149 of 1998.

¹⁵ Contaminated soil is generally classified as hazardous waste. For clarity it is dealt with separate to other hazardous waste in this section of the report.

Some amendments have been made to hazardous waste descriptions presented in Table 13 from those presented in the *National Waste Database Report 2001*. The changes reflect the need to shorten and consolidate the list. For example, *organic and organic chlorinated solvents* are now categorised as *solvents*.

Table 14 shows the treatment methods to which exported wastes were subjected in 2002. Of the 270,857 tonnes exported, 80.8% (218,786 tonnes) was recovered and 17.7% (48,035 tonnes) was disposed.

Table 15 shows the destination and treatment method for all notified waste exports in 2002. This information is illustrated in Figure 7. Germany was the most important destination of waste exported in 2002 (compared to Belgium in 2001). The UK remains the second most important destination for exported waste, accounting for 23% and 20% in 2001 and 2002 respectively.

Table 14 Recovery and disposal of notified waste exports, 2002

Disposal or recovery operation		Hazardous waste (tonnes)	Contaminated soil (tonnes)	Non-hazardous waste (tonnes)	Total waste exported (tonnes)
D1	Landfill	4,124	443	2,253	6,820
D5	Engineered landfill	24		122	146
D9	Physico-chemical pre-treatment	84		0	84
D10	Incineration on land	37,336		3,241	40,577
D15	Storage prior to disposal	407		0	407
Sub-total disposal		41,975	443	5,616	48,034
R1	Use as fuel	32,616		73	32,689
R2	Solvent reclamation/regeneration	19,963		17	19,980
R3	Recycling or reclamation of organic materials other than solvents	4,609		7,301	11,910
R4	Recycling or reclamation of metals	4,844		8,206	13,050
R5	Recycling or reclamation of inorganic materials	19	124,516	0	124,535
R6	Regeneration of acids or bases	147		0	147
R7	Recovery of components used for pollution abatement	16		0	16
R9	Used oil re-refining or reuse of waste oil	82		0	82
R11	Use of waste from another recovery activity	19		0	19
R12	Waste exchange prior to recovery	42		0	42
R13	Storage prior to recovery	1,349	14,933	33	16,315
Sub-total recovery		63,706	139,449	15,630	218,785
U	Undefined recovery or disposal	3,864	0	171	4,036
TOTAL		109,545	139,892	21,417	270,855

Table 15 Destination and fate of notified waste exports, 2002

Country of import	Total exports		Disposal (tonnes)				Recovery (tonnes)					Unspecified treatment
	%	Tonnes	Thermal treatment	Landfill	Other disposal	Total disposal	Inorganic material recovery	Solvent recovery	Use as fuel	Other recovery	Total recovery	
Germany	37.8	102,449	23,778	4,039	491	28,307	55,673	114	826	16,697	73,309	833
UK	23.2	62,791	13,185	18	1	13,204		19,044	9,638	20,144	48,827	760
Belgium	19.6	53,142	2,419			2,419	49,320	153	23	1,168	50,663	60
Netherlands	8.8	23,758	506			506	19,543		3,577	133	23,252	
Denmark	6.9	18,663	99			99			18,417	2	18,419	146
Unspecified	3.7	9,897	532	2,909		3,442		650	229	3,340	4,219	2,237
France	0.0	97								97	97	
Finland	0.0	58	58			58						
TOTAL	-	270,857	40,577	6,966	492	48,035	124,535	19,960	32,710	41,581	218,786	4,036

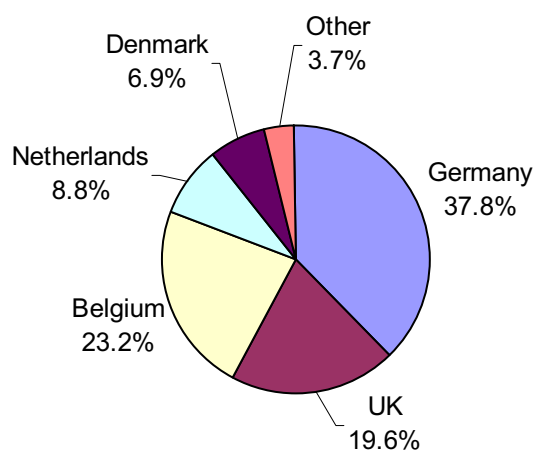


Figure 7 Destination of notified waste exports in 2002

Table 16 shows the local authority areas from which notified waste was exported in 2002. As in 2001, Dublin City Council and Cork County Council remain the local authorities with the highest proportion, 59% and 27.7% respectively, of notified waste exports in 2002. The majority of the waste exported from the Dublin City Council area was contaminated soil.

Table 16 Export of waste, notifications processed by local authorities, 2002

Local authority	Quantity notified (tonnes)	Local authority	Quantity notified (tonnes)
Dublin City Council	159,756	Carlow County Council	462
Cork County Council	75,051	Waterford County Council	390
Louth County Council	14,724	Offaly County Council	340
South Dublin County Council	7,118	South Tipperary County Council	186
Clare County Council	3,127	Galway County Council	160
Wicklow County Council	2,904	North Tipperary County Council	148
Fingal County Council	2,728	Sligo County Council	136
Roscommon County Council	1,842	Kerry County Council	68
Limerick County Council	620	Mayo County Council	67
Laois County Council	511	Kilkenny County Council	33
Westmeath County Council	484		
TOTAL			270,857

10.2. Non-notified waste exports and imports

According to the TFS Regulation, where green list (Annex II) wastes are to be exported or imported for recovery, no notification is required. Green list wastes are typically clean segregated recyclable waste fractions and their free unhindered movement within the EU has been the norm to date. Ireland relies on foreign infrastructure for the actual recycling of certain materials, particularly since the closure of Irish Ispat in 2001 and the Irish Glass Bottle Company in 2002. The data show that 568,658 tonnes of non-notified waste were exported for recycling in 2002, while 56,663 tonnes were imported.

Table 17 illustrates the growing dependence on recycling facilities in other countries. The table shows that 72% of recycling of Irish waste took place abroad in 2002 compared to 55% in 2001.

Table 17 Non-notified waste recycled abroad, 2001 and 2002

Material	2001		2002	
	Tonnes	%	Tonnes	%
Paper and Cardboard	134,252	77.6	168,867	64.3
Glass	4,912	11.4	40,003	66.6
Plastic	14,492	58.5	22,075	60.3
Ferrous	173,712	55.1	287,859	98.8
Aluminium	8,547	70.2	9,089	67.7
Other Metals	18,817	84.1	24,825	80.2
Textiles	4,044	0.00	491	90.2
Wood	4,175	9.2	8,927	14.0
Others*	8,535	25.2	6,522	28.2
TOTAL	371,488	55.1	568,658	72.0

* Composites, WEEE and batteries

Table 18 shows the quantities of packaging and non-packaging waste exported and imported for recycling in 2002. This information is illustrated in Figure 8. Imported waste is predominantly plastic, while ferrous metal and paper and cardboard account for the majority of the waste exported for recycling. Glass is no longer imported for recycling since the closure of Irish Glass.

Table 18 Export and import of non-notified waste for recovery, 2002

Material exported or imported for recycling	Export of non-notified waste (tonnes)			Import of non-notified waste (tonnes)		
	Total	Packaging waste	Non-packaging waste	Total	Packaging waste	Non-packaging waste
Paper and Cardboard	168,867	104,416	64,451	9,149	202	8,947
Glass	40,003	38,068	1,935	0	0	0
Plastic	22,075	21,345	730	41,396	41,396	0
Ferrous	287,859	24,958	262,901	0	0	0
Aluminium	9,089	997	8,092	202	0	202
Other Metals	24,825	0	*24,825	5,917	0	**5,917
Textiles	491	0	491	0	0	0
Wood	8,927	7,825	1,102	0	0	0
Others	2,100	0	***2,100	0	0	0
Batteries	3,298	0	3,298	0	0	0
WEEE	1,125	0	1,125	0	0	0
TOTAL	568,658	197,609	371,049	56,663	41,598	15,065

* Lead, copper, bronze, and stainless steel

** Lead imported for recycling

*** Cooking oil and waste mineral oil

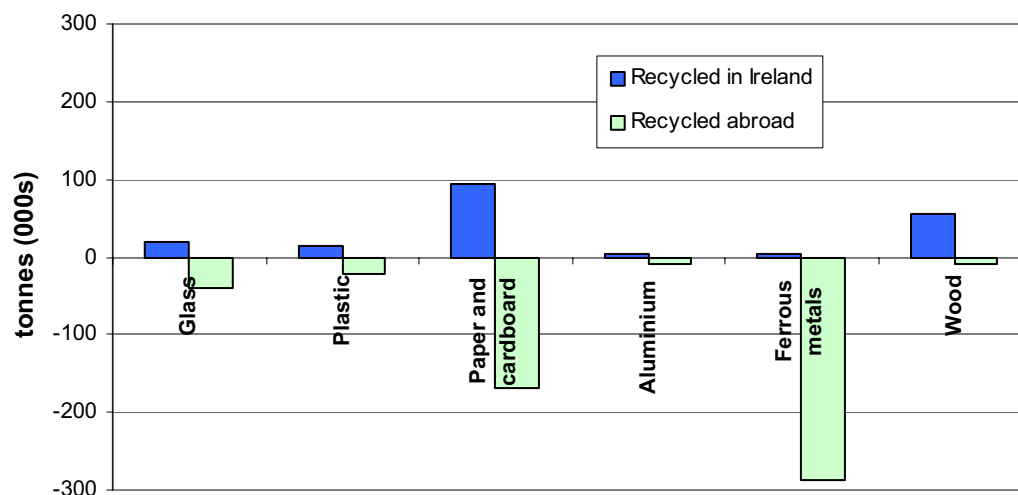


Figure 8 Recycling of waste in Ireland and abroad, 2002

10.3. Illegal shipments

A number of containers that contained exported waste were stopped in the Netherlands and Belgium in 2003 and 2004. It was contended by the Dutch and Belgian authorities that the waste had been misclassified as green list waste and was therefore exported illegally. These shipments contained mixed recyclable waste which cannot be classified as green list waste but should be classified under the amber list. The export of amber list waste requires a notification to be made and authorisation received. In all, 108 containers were returned to Ireland at the expense of the waste industry. The Office of Environmental Enforcement is keeping the situation under review and is working with local authorities and the authorities in other Member States with a view to ensuring that the relevant regulations are observed and enforced.

Appendix A – Indicators

Table 19 compares the major waste indicators for 2001 and 2002. Per capita indicators for 2002 were calculated using the final results from Census 2002, 3,917,203 persons¹⁶. Indicators are a useful way of looking at year-on-year changes in the generation and management of waste.

Table 19 Waste indicators, 2001 and 2002

Indicator	2001	2002
Municipal waste		
Municipal waste collected/person	0.59 tonnes	0.61 tonnes
Municipal waste arising/person	0.69 tonnes	0.73 tonnes
Disposal rate for household and commercial waste collected	86.7%	79.3%
Recovery rate for household and commercial waste collected	13.3%	20.7%
Number landfills accepting municipal waste	48	39
Number of bring banks	1,436	1,636
Household waste		
Household waste collected/person	0.34 tonnes	0.36 tonnes
Household waste arising/person	0.37 tonnes	0.41 tonnes
Disposal rate for household waste	94.4%	90.7%
Recovery rate for household waste	5.6%	9.3%
Commercial waste		
Commercial waste collected/person	0.25 tonnes	0.25 tonnes
Disposal rate for commercial waste collected	76.2%	62.5%
Recovery rate for commercial waste collected	23.8%	37.5%
Packaging waste		
Best estimate of total quantity arising	872,917 tonnes	899,125 tonnes
Packaging waste arising/person	0.223 tonnes	0.229 tonnes
Best estimate of packaging waste recovered	221,266 tonnes	296,389 tonnes
Packaging waste recovered/person	0.056 tonnes	0.076 tonnes
National recovery rate	25.3%	33%
Hazardous waste		
Quantity of hazardous waste exported	275,309 tonnes	249,439 tonnes
	226,904 recovery	203,156 recovery
	47,929 disposal	42,419 disposal
	476 unspecified	3,864 unspecified

¹⁶ Per capita indicators for 2001 are calculated using preliminary results for the national population from Census 2002, 3,917,336 persons (www.cso.ie).