



Waste and Resources

Waste is produced by every one of us. In our homes we generate waste when we remove the packaging from food products, throw out the junk mail or bin the grass clippings. Waste is also produced by industrial processes, by the construction and demolition industry, through commercial activities and agricultural practices and by public services and utilities. This chapter provides information on the amount of waste we produce and how we manage it to reduce impacts on our environment.

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The quantity of waste we produce is dependent on our population and economy. Waste generation has grown as society has become increasingly affluent with larger homes, higher housing standards, increased spending and a greater demand for products and services. This faster, more hectic lifestyle also makes convenient, disposable products attractive, contributing even further to the quantity of waste produced.

Waste generation, treatment and disposal places significant pressure on the environment, the severity of which very much depends on the volume of waste produced, its composition, how it is regulated and finally managed and disposed. Waste can impact on the environment in a number of ways as follows, which in turn affect human health and our quality of life:

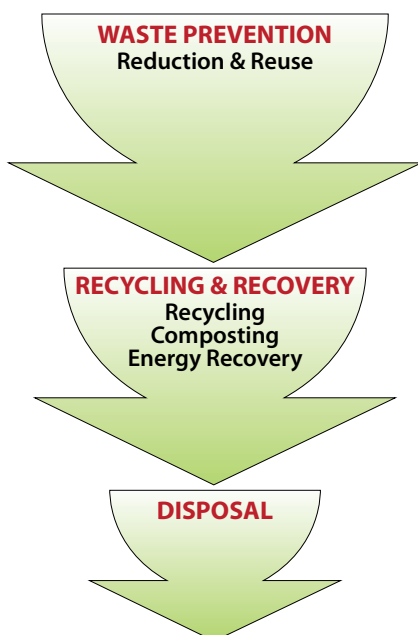
- Visual impact and aesthetic degradation through litter and fly tipping;
- Emissions to the air through transportation of waste, energy use and the production of greenhouse gases from decomposing material;
- Emissions to groundwater and surface water through leachate and unregulated discharges, and
- Contamination of land through landfilling.

In Northern Ireland we rely heavily on landfilling as a means for managing wastes, which can lead to the generation of potentially polluting substances. Leachate is produced when water filters downward through a landfill, picking up dissolved materials from the decomposing wastes. Methane and carbon dioxide, both major greenhouse gases, are formed as a result of the decomposition of biodegradable wastes.

In the past, low engineering standards for landfill sites created the potential for these pollutants to escape to the environment and cause harm. All landfills accepting biodegradable wastes must capture and use methane for energy recovery where possible.

Whilst we now have the knowledge and technology to effectively control these emissions, landfilling is considered a waste of valuable resources which could otherwise be reused or recycled. The Northern Ireland Waste Management Strategy⁷⁶ focuses on the waste management hierarchy which emphasises the need to move away from landfill towards more sustainable practices such as waste reduction, recycling and recovery. It places high importance on waste prevention and the need to break the link between economic growth and waste production.

Figure WR1: Waste Management Hierarchy (Source EHS)



Box WR1: Waste Description

Waste is described as:
“any substance or object... which the holder discards or intends or is required to discard”

Box WR2: Waste Types

Municipal Waste (also referred to as MSW or Municipal Solid Waste)
 Wastes from households and commercial premises which is under the control of District Councils. Also includes street cleaning and civic amenity wastes.

Household Waste
 Wastes collected by District Councils from households. This is included in MSW.

Commercial and Industrial Waste
 Wastes produced by the commercial and industrial sector. Some of this will be included in municipal wastes.

Construction and Demolition and Excavation Waste
 Wastes produced by the construction and demolition sector. These may be inert in nature and often reusable under the appropriate regulatory regime.

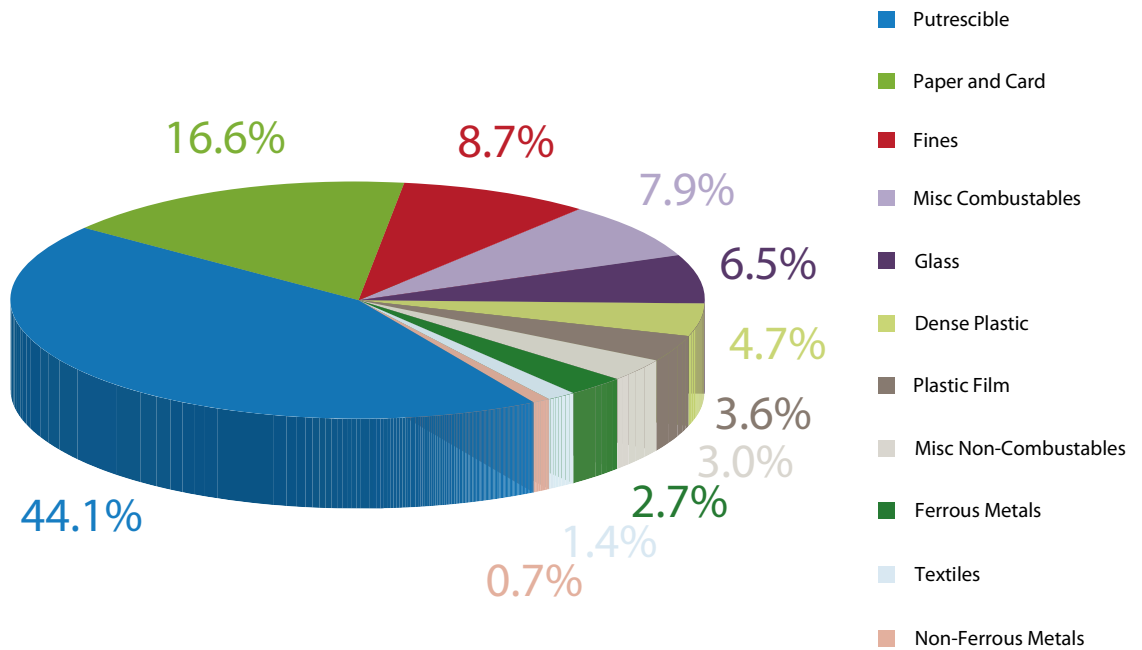
Agricultural Waste
 Farm plastics, manures and slurries produced from agricultural processes. Manures and slurries are often applied to land for their fertilising properties.

Driving Forces and Pressures

Waste production in Northern Ireland is mainly driven by population increase and economic growth, generating more household waste, and also large quantities of construction and demolition wastes. Municipal waste generation is predicted to rise by 50% from 2005/06 levels to 1.5 million tonnes by 2020⁷⁷. For example, the tonnage of waste per household per annum did not change from 1.36 tonnes between 2004/05 and 2005/06, but the total household waste collected increased by 1.97% during the same period. The increase in total household waste arisings is a result of the increase in the number of households.

A large proportion of **household waste** material is biodegradable but also contains specific waste streams, such as waste electrical and electronic equipment, batteries and paints⁷⁸. Improved waste segregation, collection and treatment methods have been introduced by District Councils to reduce the landfilling of biodegradable waste.

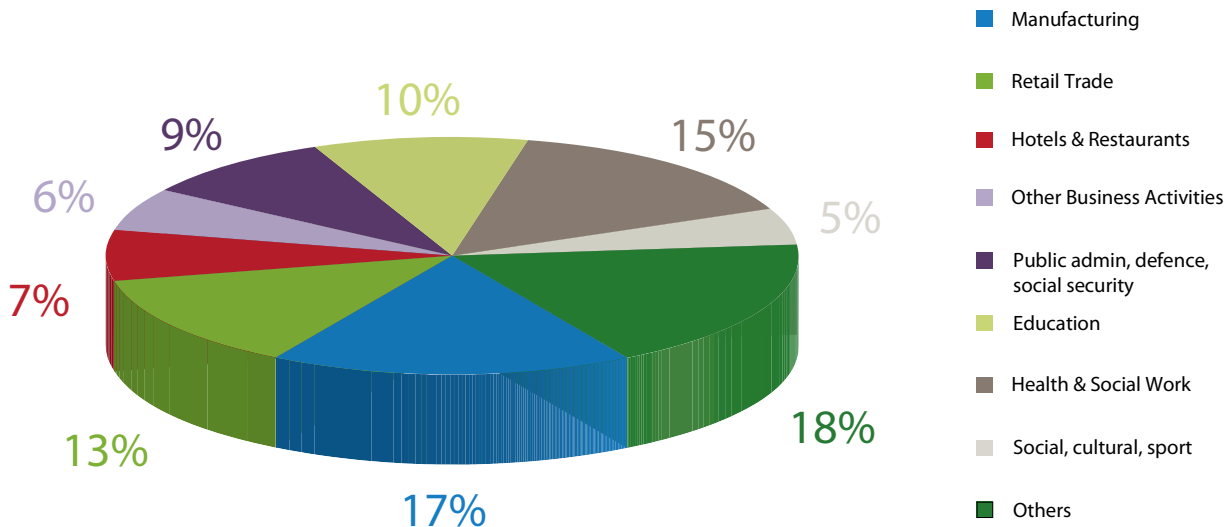
Figure WR2: Household Waste Composition (2000) (Source EHS)



A large proportion of **commercial and industrial waste** from a range of sources (Figure WR3) is suitable for recovery and recycling, however, historically this material has been disposed of to landfill. Surveys in 2004/05 indicate that 24% of this waste was recycled⁷⁹. In addition, the majority of businesses in Northern Ireland are small or medium sized enterprises (SMEs) with limited in-house resources to dedicate to implementing methods for reducing waste production.

Figure WR3: Breakdown of Commercial and Industrial Waste (2002)

(Source EHS)



The commercial and industrial sector is also the largest producer of hazardous waste in Northern Ireland. It includes materials such as certain categories of waste electrical and electronic equipment, batteries and paints, and end of life vehicles. There is currently no dedicated hazardous waste landfill facility in Northern Ireland and only a small number of hazardous waste treatment options available, limited mainly to oil recovery. The main proportion of hazardous waste material is exported to Great Britain for disposal or recovery.

The construction industry results in the generation of large quantities of **construction, demolition and excavation** waste. Although most of this material is inert and suitable for recycling and reuse, traditionally a large proportion of it has ended up in landfill, or illegal landfill.

Northern Ireland supports a developing industry for the recovery and recycling of waste materials, including composting facilities, glass recycling plant, paper reprocessing, waste electrical and electronic equipment dismantling, materials recovery facilities and metal reprocessing facilities. District Councils operate 96 licensed Civic Amenity Sites for collection of domestic and commercial wastes for recovery. Additionally 37 licensed recycling sites are operated by the private sector and 56 recycling sites are registered as exempt from licensing where collection activities are solely for recovery.

Agricultural practices produce large quantities of animal manures, slurries and effluents, the disposal of which is usually managed by land spreading. These manures and slurries are important nutrient resources and soil conditioners and are not deemed controlled waste where spread as fertiliser on clearly identified parcels of land in accordance with the requirements of the Nitrates Directive. Excessive and uncontrolled application of these materials can lead to polluting run-off and air emissions (see [Air](#), [Water](#) and [Land and Landscape Management](#)).

Box WR3: Hazardous Waste Definition

Hazardous waste is defined as: *“waste that contains hazardous properties that may render it harmful to human health or the environment”*

WASTE INDICATORS

Policy and Legislative Context

The Waste Framework Directive⁸⁰ establishes a framework for the management of wastes across the European Union. It requires member states to prepare plans for the management of waste under a hierarchy of prevention, recycling and recovery with disposal as a last resort and including establishment of an adequate network of facilities. It also identifies the requirement for controls over waste management to prevent pollution of the environment.

The Landfill Directive⁸¹ sets out further strategic targets with respect to the reduction of biodegradable waste deposited in landfill and requirements and criteria for the operation of landfills. The current standards aim to ensure that all potentially polluting substances are contained within the landfill and harmful effects dealt with before any release to the environment is permitted. The Thematic Strategy on the Prevention and Recycling of Waste develops the waste framework and recognises the need to break the link between economic growth and waste growth.

The requirements of the Waste Framework and daughter directives are incorporated in Northern Ireland legislation through the Waste and Contaminated Land Order⁸² and associated waste management and landfill regulations. Controls now also apply to agricultural wastes such as farm plastics, pesticides, veterinary products and packaging.

Producer responsibility focuses on specific waste streams identified as priority waste streams by the European Union due to growing concerns about their impact on the environment. The Packaging and Packaging Waste Directive⁸³ establishes targets for the recovery and recycling of packaging waste at the UK level. The Packaging Waste Regulations⁸⁴ implement this Directive in Northern Ireland.

The Northern Ireland Waste Management Strategy 2006 - 2020 and three sub-regional Waste Management Plans⁸⁵ together form Northern Ireland's plan to meet its obligations under these European Directives. These set out targets and actions to achieve statutory limits and other objectives for waste prevention and the amount of waste landfilled, recycled and recovered.

Indicator WR1: Waste Arisings

Total Municipal Waste Arisings (1995-2005/06)

The total waste arisings in Northern Ireland is comprised of four main sectors: municipal (including household waste); commercial and industrial; construction, demolition and excavation; and agricultural waste. This indicator measures total municipal waste arisings which is important for meeting statutory limits for the amount of biodegradable municipal waste that can be landfilled and for sustainable use of resources. Indicators for the other sectors may be developed in due course.

Policy

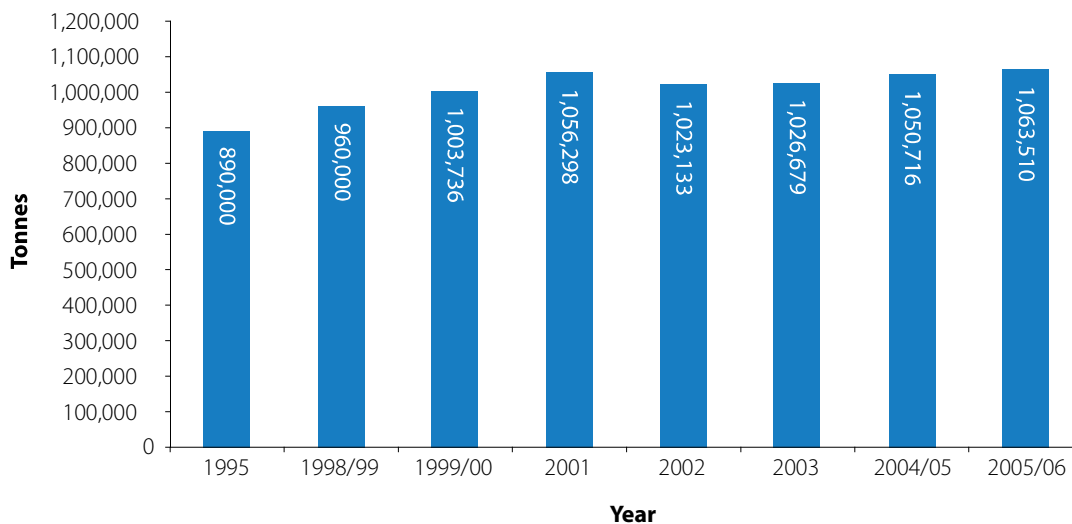
The Waste Prevention Action Plan for Northern Ireland⁸⁶, published in 2005, sets out an integrated approach to waste prevention, incorporating all sectors using a mix of initiatives. The Northern Ireland Waste Management Strategy explains the focus of the Action Plan and aims to stabilise waste generation.

Data

The total municipal waste arisings in Northern Ireland for 2005/06 amounted to 1,063,510 tonnes of which 71%, or 755,092 was biodegradable waste⁸⁷.

Household waste arisings for 2005/06 amounted to 937,331 tonnes or 543kg per person per year, an increase of 1.97% from 2004/05⁸⁷.

Figure WR4: Municipal Waste Arisings (1995 - 2005/06) (Source EHS)



The data were provided by all 26 District Councils in Northern Ireland through the "Waste Data Flow" system giving a 100% response rate. These data are collected and recorded annually.

Comments

The data show the total municipal waste arisings in Northern Ireland are increasing. In future, surveys may enable arisings in other waste sectors to be estimated, and a more comprehensive picture of waste from all sectors to be presented.

Indicator WR2: Waste Recycled and Recovered

Total Municipal Waste Recycled and Recovered (2005/06)

One of the main objectives of the Waste Framework Directive is to encourage recycling and the reuse of raw materials. This indicator measures the total amount of municipal waste recycled and recovered and compares trends with targets for the amount of biodegradable municipal waste that can be landfilled. Indicators for the recycling and recovery of other wastes may be developed in due course.

Policy

Towards Resource Management, the Northern Ireland Waste Management Strategy 2006-2020, sets household recycling and composting targets at 35% by 2010, 40% by 2015 and 45% by 2020. The Sub Regional Waste Management Plans set out how District Councils propose to meet these targets. The Northern Ireland Landfill Allowance Scheme sets the maximum amount of biodegradable waste that can be disposed of by Councils to landfill each year.



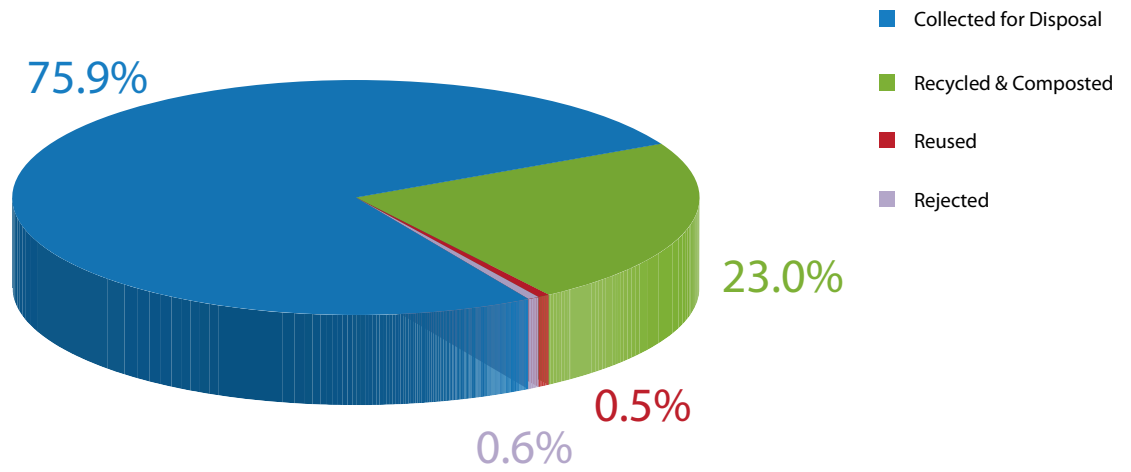
Recycling & recovery

Data

The proportion of municipal waste recycled and composted in 2005/06 was 23%, up 5% from 2004/05⁸⁷. The proportion of household waste recycled during the same period was 24.5%, an increase of nearly 5% from 2004/05⁸⁷.

Figure WR5: Municipal Waste Recycled and Recovered (2005/06)

(Source EHS)



Comments

Municipal waste arisings are increasing. Over the period to 2010, household waste recycling will have to increase by a further 10% in order to meet targets set out in the Northern Ireland Waste Management Strategy. The sub-regional Waste Management Groups have produced implementation plans setting out how they propose to achieve these targets.

Indicator WR3: Packaging Waste Recycled and Recovered Businesses obligated under the Packaging Regulations (2005)

Packaging waste includes materials such as cardboard, paper, glass, plastic, steel, aluminium and wood. This Indicator considers the amount of packaging waste recovered and recycled against Northern Ireland's packaging recovery obligation.

Policy

The Packaging Waste Regulations place obligations on companies with a turnover greater than £2 million and handling more than 50 tonnes of packaging per year to register with EHS and recover and recycle a proportion on their packaging waste, based on the type of packaging activity they perform.

Compliance with the Packaging Waste Directive requires the UK to recover 60% of packaging waste by 31 December 2008. Because smaller businesses are not obligated, the recovery target on obligated businesses has been set at a higher level (68% in 2008) to enable the UK to meet its Directive target. Northern Ireland does not have its own separate packaging waste recovery targets.

Data

In 2005, the total number of businesses obligated in Northern Ireland under the Packaging Regulations was 390. Their combined packaging recovery obligation was 127,987 tonnes.

Comments

As Northern Ireland does not have an individual target for packaging recovery, assessment of packaging recovered and recycled is related to the changes in the numbers of businesses which have registered with EHS. This means of recording only accounts for packaging recovered and recycled by obligated businesses and therefore will not include materials from non-obligated businesses. Changes in data from year to year may indicate a change in the regulatory system, rather than increases or decreases in packaging waste recovery and recycling.

Northern Ireland businesses have met all their obligations for packaging waste recovery since 1999 as part of their contribution to the overall UK total.

Indicator WR4: Number of Landfills

Number of Licensed Landfills (2005)

A key objective of the Landfill Directive is to reduce the amount of biodegradable waste going to landfill and improve the environmental performance of landfills. Additionally, all new landfill facilities must now comply with the Pollution Prevention Control Regulations in order to obtain a permit to operate. Existing facilities must be compliant by March 2007 or will not be permitted to accept waste beyond this date.

Landfill



Policy

Planning Policy Statement 11 sets out guiding principles for the development of waste management facilities in Northern Ireland and the presumption for regional facilities aims to reduce the total number of landfills operating.

Data

Of the total municipal waste generated in Northern Ireland in 2005/06, 77% or 813,523 tonnes was landfilled⁸⁷. 558,009 tonnes of this was biodegradable municipal waste⁸⁷. Under Northern Ireland Landfill Allowance Scheme the permitted amount of biodegradable waste to landfill in 2005/06 was 669,884 tonnes.

The amount of commercial and industrial waste estimated to have been landfilled in 2004/05⁸⁸ was 64% or 998,200 tonnes. It is not possible to compare this amount to previous years as data were collected differently in preceding years.

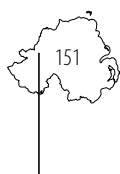
There were 75 licensed landfill facilities in Northern Ireland in the baseline year of 2005.

Comments

Northern Ireland is still heavily reliant on landfill as a means of managing waste although we have seen the total number of facilities decrease since the introduction of the Pollution Prevention and Control Regulations in 2003. Northern Ireland Landfill Allowance Scheme aims to reduce the proportion of biodegradable waste landfilled and this, together with the increased regulatory requirements for the construction and management of landfills, will reduce the negative impacts landfills have on our environment.

There is a need to provide recycling and recovery infrastructure and facilities necessary to deal with waste that is no longer landfilled.

In future this indicator will be further developed through measures of landfill capacity.



Key Challenges

Waste in Northern Ireland is comprised of four main sectors: municipal (including household waste); commercial and industrial; construction, demolition and excavation; and agricultural waste. The first of these, municipal, has sufficient data from regular monitoring to be used as an indicator. Other waste streams are subject to surveys using a range of methodologies for specific purposes. Further development of these data sets would be required before they could be used as indicators.

Waste management in Northern Ireland is regulated at both European and local levels. Government has already put in place a number of instruments, for example, legislation, taxes, and economic incentives which are targeted at householders, local authorities, business and industry. These are aimed at improving Northern Ireland's waste management performance and operational practices.

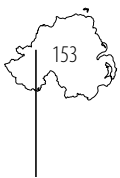
As a result of these measures, waste recycling and recovery rates have increased and waste management and landfill facilities are better regulated and controlled. A number of landfills that cannot meet the required standards have closed and new waste management infrastructure is being established.



The main challenges for waste management are the continuing increase in the amount of waste produced due to economic and population growth, and the need to comply with the increasingly strict limits imposed by the Landfill Directive on the amount of biodegradable municipal waste that can be sent to landfill. The need to address waste prevention therefore remains the main priority. Government, with its purchasing budget of approximately £1.8 billion, will continue to lead by example through improvements to environmental performance and procurement. This will impact positively not only on the public sector but also on business and individuals.

At the same time, the diversion of waste from landfill to other treatment methods such as recycling, composting and energy recovery will require the development of significant waste management infrastructure, requiring a substantial programme of investment in new treatment and recovery infrastructure for which capital and operating costs are estimated to be in excess of £2 billion. Central government is working closely with local government to procure these facilities, and ensure that Northern Ireland complies with the Directive requirements.

The Northern Ireland Waste Management Strategy provides the framework for developing a number of new measures and legal instruments for waste prevention and resource management to complement those that are already in place. The Department is also putting in place enhanced governance structures to ensure that the resources required to facilitate delivery of those new measures are available within that framework. Implementation of specific Waste Strategy targets will be driven and monitored by the new Strategic Waste Board, which is chaired by the Minister of the Environment.



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