



Case Studies of Organisations Managing Food Waste Properly



Comhshaoil, Oidhreacht agus Rialtas Áitiúil
Environment, Heritage and Local Government



Composting & Anaerobic Digestion
Association of Ireland



Environmental Protection Agency
An Gníomhaireacht um Doimhneacht Ombháil
National Waste Prevention Programme



Cleaner Greener Production Programme



Local Authority Prevention Network



Introduction

The Food Waste Regulations offer a number of potential benefits to businesses. Studies have shown that many businesses do not have a clear understanding of the amount of waste generated on their premises, of the circumstances behind its generation or of the associated costs. Unless they have that knowledge, it is difficult for a business to put in place systems aimed at reducing the cost of waste management. Accordingly, the Food Waste Regulations provide an opportunity for obligated businesses to accrue financial savings.

Businesses already using a brown bin-based collection service for food waste have gathered a valuable insight into their waste management practices. This information has led to financial savings in many instances. For example:

- ▲ Excessive quantities of food waste may arise due to over-ordering, unnecessary meal preparation or due to poor storage;
- ▲ A detailed investigation of food purchasing practices may suggest improvements, such as buying pre-prepared vegetables that are associated with less waste and lower preparation costs;
- ▲ Better food portion control may cause savings without affecting relations with customers. A pub/restaurant in Tipperary decreased portion sizes and managed to decrease the amount of food waste created by over a third;
- ▲ Initial findings at one hospital estimated that each kg of food waste costs €2. This is made up by purchasing ingredients, energy to cook, labour to prepare, and disposal to landfill. Wasted food may be costing this hospital an estimated €230,000 per year. By adopting better food portion control and using a brown bin, this hospital is set to save €1,000's.
- ▲ Refuse collection contracts are often based on the number of bin lifts carried out, regardless of the weight of waste in each bin. This may not be the most economical mode of collection, with a pay-by-weight approach offering appreciable cost savings;
- ▲ Decreases in the amount of food waste sent for disposal may create financial savings by the avoidance of landfill levy charges. At present, the landfill levy is €30/tonne. It will rise to €50/tonne in 2011 and then to €75/tonne in 2012. This will have a direct affect on businesses' black bin-related waste charges;
- ▲ Other financial savings can be accrued, such as less general waste causing a waste compactor to be used and emptied less often; and
- ▲ One large hotel, after the introduction of a brown bin service resulted in a 70% reduction of its waste going to landfill and made savings of €21,000 per year. These savings were a combination of factors, such as avoiding the landfill levy and no longer needing to rent a waste compactor for landfilling waste.

The following pages outline case studies of organisations which have made financial savings as a result of the introduction of a brown bin service or composting food waste on site and by introducing food waste prevention measures. As the landfill levy increases, the organisations used in these case studies will be able to save even more money.

Hotel Sector

The Environmental Protection Agency's (EPA) National Waste Prevention Programme Annual Report 2007/2008 contains examples of hotels which have saved money as a result of managing food waste by using a brown bin service or by composting the food waste.

The report states:

"There are already many examples of hotels that have realised annual recurring cost savings by applying a systematic approach to prevention such as:

- ▲ Systematically reducing waste, increasing recycling and composting food waste saved one premises alone €35,000 per annum.
- ▲ An in-vessel composting machine installed in one hotel is currently diverting over 150 tonnes of food waste per year and realising them cash savings of €30,000 each year"

Hotel, Wicklow

This hotel in Wicklow, which has 148 guestrooms, two restaurants, a bar and a wide range of meeting and conferences rooms to cater for 2-180 delegates implemented a food waste collection service in 2008.

The following information has been compiled by the hotel:

- ▲ Before food waste recycling, the average waste costs per month was €4,100;
- ▲ The introduction of a food waste recycling service and full segregation of recyclables resulted in a 70% reduction of waste going to landfill;
- ▲ Removal of the waste compactor led to savings on transport and compactor rental of €600 per month;
- ▲ Average waste costs per month, with full recycling system introduced, is €2,300 giving an average saving of €1,790 per month and €21,480 per year; and
- ▲ The recycling system has led to a 44% reduction in waste costs.

Hotel, Donegal

This hotel in Donegal which has 74 guestrooms, a restaurant, a range of meeting rooms and is renowned as a wedding venue, implemented a food waste collection service in 2008.

After the introduction of a recycling and brown bin it resulted in the following:

- ▲ 127 tonnes of food waste sent for composting;
- ▲ 6.5 tonnes of cardboard and paper recycled;
- ▲ 17.5 tonnes of glass recycled;

- ▲ 0.65 tonnes of plastic recycled; and
- ▲ 42 tonnes of waste landfilled.

The amount saved was €2,300 per year. The hotel delivers its own waste to the landfill directly and this has made significant savings by not getting a waste collector to do this.

Education Sector

Cork Institute of Technology (CIT)

CIT is conducting a Green Campus project funded by the EPA Science, Technology, Research and Innovation for the Environment (STRIVE) Programme, under phase 4 of the EPA Cleaner Greener Production Programme (CGPP). The project is managed by the Building & Estates Office and supported by the Clean Technology Centre. CIT started a food waste collection service in March 2010. Since then the canteen has achieved the Green Hospitality Award and the Department of Tourism & Hospitality have received the Gold Level Green Hospitality Award.

So far the following information has been gathered:

- ▲ Estimated 43 tonnes of food waste to be diverted from landfill this year;
- ▲ Estimated annual cost savings by using a food waste collection service is €3,077; and
- ▲ It is estimated that one tonne of food waste costs €2,000 - from purchasing food, preparation of food and food waste disposal costs. Currently it is estimated that food waste costs CIT €80,000 per year.

Food waste prevention measures adopted include:

- ▲ CIT canteen has taken measures to prevent food waste which will further reduce costs of waste and the purchasing of less food;
- ▲ The Department of Tourism & Hospitality has recently purchased new software to optimise purchasing within the department;
- ▲ Students are involved in the design and implementation of low waste menus;
- ▲ The canteen weighs the salad plates. Customers pay by weigh and are therefore less inclined to overload plates;
- ▲ CIT have a dedicated Green Campus website and newsletters which keep people informed and ask people to only purchase what they will eat and think waste prevention etc;
- ▲ Unused bread used for stuffing;
- ▲ Attention is paid to portion control; and
- ▲ The Canteen has a 'Green Team' which focuses on all aspects of environmental management.

Retail Sector

The SkyCourt Shopping Centre, Shannon

The SkyCourt Shopping Centre is in the heart of Shannon Town. It's a busy centre with over 50 retail units, 2 of which are supermarkets. Clare County Council in partnership with SkyCourt Shannon set out to demonstrate that waste could be prevented within a regional shopping centre using shared waste facilities. A key component of the project was to demonstrate real cost savings that would act as an incentive to retailers to prevent waste through reduced service charges. The programme worked with 12 food retailers.

The management team at SkyCourt were keen participants in the EPA Local Authority Prevention Demonstration Programme (LAPD) project, as they recognised the significance of spiralling waste quantities and costs. As waste management facilities were shared by all tenants, and paid for as part of an overall service charge, there was a lack of unit waste data and responsibility for unit waste arisings at the outset of this project.

An extensive waste audit, analysing waste from each of the individual retailers was carried out in November 2006. This was a very useful exercise as it clearly identified the different waste streams.

Results:

- ▲ 31% of all waste arising was organic waste from the numerous food outlets in the centre;
- ▲ An improved waste management system was implemented in the Centre in August 2007. This includes the rollout of a brown bin to retailers to collect organic waste separately as well as an improved collection system to capture more dry recyclables;
- ▲ A review of waste arising in March 2008 shows that the new system is working well. 15% of organic waste is now diverted from landfill and converted instead to compost for re-use on agricultural land; and
- ▲ Prevention and improved segregation reduced the need for waste compactors by 50% resulting in further waste cost reductions.

Key performance indicators	2006	2009
Kg of waste per footfall	0.18	0.11
Recycling rate	26%	38%
Segregation of organic waste	0%	15%
Cost Savings	0	€7,400

Dundrum Town Centre, Dublin¹

Dunlaoghaire-Rathdown County Council worked with Dundrum Town Centre as part of the EPA LAPD. The Centre's objective was to identify and implement best practice in food waste management to divert this waste from landfill.

The lessons learnt were:

- ▲ Involvement of all tenants and the commitment of the management company and the waste service provider are crucial to the success of any waste management programme in the town centre;
- ▲ Due to high staff turnover in the retail and hospitality sectors training programmes in waste segregation are vital as part of staff induction. The use of graphics on signage and provision of instructions in at least six languages are necessary for staff compliance with procedures;
- ▲ Ongoing monitoring of the quality of the waste presented for recycling and rejection of waste that does not meet the specifications are essential;
- ▲ Based on the contracts that exist between the centre and the individual units, there is no incentive to reduce waste volumes. The major waste producer was identified during the waste audits and, based on this experience, the centre management aim to change their contract terms to ensure that waste costs are not based on a flat fee, but rather on volume – thereby creating an incentive for individual units to reduce their wastes at source.

Public Houses

A new booklet to help publicans cut costs and improve their environmental performance was recently launched. The booklet, *Calling Time on Waste: a publican's handbook to a leaner, greener cost base*, is the result of a collaboration between the Vintners' Federation of Ireland, Monaghan County Council and the EPA.

Some examples from the booklet include:

- ▲ By preventing waste at source, a bar reduced the number of bin lifts per week from six to two, saving themselves €4,000 per annum on waste charges; and
- ▲ Another bar saved €1,200 per annum on waste charges by implementing a source segregation scheme and by re-tendering for waste management.

Daverns Pub², Cashel, Co. Tipperary

Daverns Pub is also a catering establishment providing bar food to the public. As a result of a project with the EPA LAPD and South Tipperary County Council, Daverns looked at the amount of food waste they were creating and by decreasing portion sizes they managed to decrease the amount of food waste created by 37% between 2007 and 2008. Typically the waste stream from pubs contains 42% food waste³.

Healthcare Sector

The EPA's Green Healthcare Programme is aiming to assist the healthcare sector with waste prevention activities.

Work is being carried out includes:

- ▲ Surveys of the amounts and sources of food waste (including unused food) arising within the hospitals;
- ▲ Monitoring of current practices for patient services and menu ordering; and
- ▲ Implementation and impact of the Food Waste Regulations

A recent study examining food waste was conducted by a hospital in Ireland. The study found that the largest source of food waste was from patient services, standing at 32%. This is waste from food not eaten by patients.

The study found that 115 tonnes per annum of food waste is generated from serving patients alone. This figure does not even take into account the quantity of food waste which goes to drain through the food waste dewatering systems. It is estimated that each kg of food waste costs €2 (purchase ingredients, energy to cook, labour to prepare, and disposal/treatment). Thus waste food in relation to patient services may be costing the hospital an estimated €230,000 per annum.

The survey found:

- ▲ 20% of the breakfast bread provided is returned as waste untouched portions (based on an estimated 700 breakfast meals and assuming bread is issued with every meal);
- ▲ 12% of all dinner portions at lunch-time are returned as untouched portions (based on an estimated 700 lunch meals and assuming a dinner plate issued with each meal);
- ▲ 27% of the weight of waste arising on trays coming back from patients at breakfast-time consists of untouched food; and
- ▲ 32% of the weight of waste arising on trays coming back from patients at lunch-time consists of untouched food.

A standardised menu design was recommended using options to reduce food waste, such as the patient being able to specify size. If a 'one tick' system combining both meal option and size is provided, the patient must specify the size required. Another recommendation was controlling portion sizes, particularly for potatoes and vegetables.

Monaghan Hospitals⁴

Monaghan County Council as part of the EPA LAPD worked with three Health Service Executive facilities within Monaghan County. Pre-intervention, each facility had a different level of environmental performance. Post intervention each facility had improved its environmental performance and demonstrated that a preventative approach to environmental management pays.

1 Environmental Protection Agency (2010) Results of the Local Authority Prevention Demonstration Programme 2006-2009

2 Local Authority Prevention Demonstration Programme. Synthesis Report South Tipperary County Council Cashel Waste Prevention Project June 2010

3 Calling Time on Waste (2009) published by Vintners Federation of Ireland, EPA & Monaghan County Council

4 Environmental Protection Agency (2010) Results of the Local Authority Prevention Demonstration Programme 2006-2009 & Synthesis Report for Monaghan County Council 2006-2009

Successes of the project include:

- ▲ Food waste prevention through an improved food ordering system from wards.
- ▲ Hospitals are saving over €21,000 each year after improving waste management practices.

Bandon Community Hospital

Bandon Community Hospital in Cork is a 23 bed hospital. About 5 years ago, as part of a programme to improve its environmental performance, it examined its waste management practices. It was determined that the hospital was producing approximately 15-20kgs of food waste per day. As a result the hospital did the following initiatives:

- ▲ Installed a small composting bin to turn the food waste into compost. The compost is subsequently used by the patients in their vegetable plots;
- ▲ Implemented portion control of meals, which had a knock on effect in stock management and ordering, which resulted in financial savings; and
- ▲ Since implementing this programme 5 years ago, it has continued to the present day and has saved money for the hospital.

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