

the environment, society and the economy

3 Waste crisis: economic boom, waste management and prevention



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Aim: To examine the waste crisis in Ireland and the variety of approaches to this problem, with reference to the Waste Management Hierarchy, and to emphasise the importance of waste minimisation and prevention in future planning.

SYLLABUS STATEMENT

Elective Unit 4.5 – Environmental Impact;
Economic activities have an environmental impact.

Students should study:

- › environmental pollution at a local/national and global scale
- › sustainable economic development so as to control its environmental impact.

OUTCOMES

Having completed this unit students should be able to:

- › outline the waste crisis in Ireland and the problems of the increasing generation of waste and its relationship to economic development
- › be aware of the potential and limitations of various methods of waste disposal (landfill and incineration) in terms of the Waste Management Hierarchy
- › be aware of the potential and limitations of recycling
- › identify the importance of minimisation, reuse and prevention in future planning.

the video clips

1 LAND FILLING IN NORTH DUBLIN

From ECOEYE, series 2, programme 2

2 INCINERATION / WASTE TO ENERGY PLANTS

From THE STATE WE'RE IN, series 2, programme 2

3 RECYCLING

From THE STATE WE'RE IN, series 2, programme 1

4 WASTE PREVENTION, REUSE AND MINIMISATION

From THE STATE WE'RE IN, series 2, programme 1



Land filling in north Dublin

- 1 In the video, what concerns were expressed about the location of the Ballealy landfill site?

- 2 Methane and Leachate are the two main polluting byproducts of the landfill. Explain what these substances are, and describe how they are produced.

- 3 What are the problems experienced by people living near a landfill that is not properly managed?

- 4 What is the place of landfill in Irish and European Union waste policies?

- 5 What changes have taken place in the way that the Ballealy landfill site is managed since new laws were passed in 1997?

- 6 What are the new engineering features of the extension to the Ballealy landfill site?

- 7 What places now cannot be considered when seeking a site for a new landfill?

- 8 Even though residents are not happy with the extension to the landfill, there are some benefits in the new development. What are they?



Incineration / waste to energy plants

1 What are the differences between modern incinerators and those of twenty years ago?

2 Why are modern incinerators called waste to energy plants?

3 What are dioxins?

4 What are the main sources of dioxin emissions in Ireland?

5 What are the worries people have concerning incinerators?

6 What are the main waste byproducts of incinerators?

7 Other than waste disposal, what are the benefits of incinerators?

8 Why is incineration on its own not considered a solution to waste management?



Recycling

- 1 Why has Ireland a waste crisis? Give two reasons.
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- 2 What else could be done with a lot of the material that ends up in landfill?
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- 3 According to speakers in the video, who should put infrastructure for recycling in place?
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- 4 What examples of public resistance to recycling are given in the video?
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- 5 List five types of material that can be brought to the Navan Civic Amenity Centre for recycling.
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- 6 What benefits does the Navan Centre give householders?
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- 7 (i) How often are Dublin's green wheelie bins collected?
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(ii) What materials are collected in green bins?
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(iii) What is it hoped to collect in the future?
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- 8 What happens to the paper collected in Dublin for recycling?
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- 9 More recyclable materials would be collected if there were markets for them. What do you think is meant by this? Why are there not markets for some materials?
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Waste prevention, reuse and minimisation

1 Why is packaging part of the waste problem in Ireland?

2 Why are there no aluminium cans for sale in Denmark?

3 How is waste dealt with in Swedish apartment buildings?

4 How is it suggested that the levy (tax) on plastic bags could be extended in Ireland?

5 (i) What is the packaging policy of the Swedish company Ikea?

(ii) How does the British company The Body Shop minimise packaging waste?

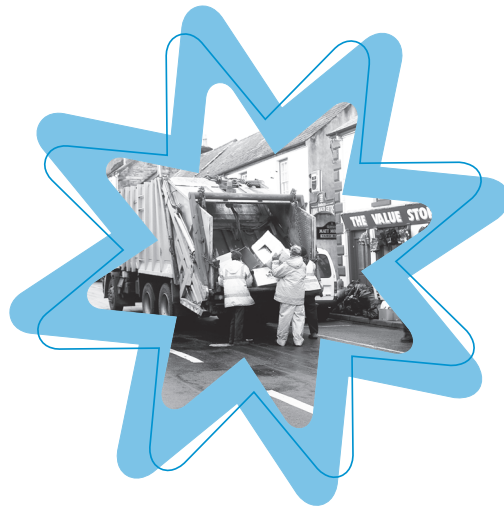
6 Which industry generates most waste going to landfill in Ireland?

7 Less packaging, better facilities and a commitment to recycling are all important in waste management, but what is the 'holy grail' – the most sought-after solution?

8 In the video, one speaker talks about an 'integrated solution' for waste management, while another talks about the need for a 'multifaceted approach'. Explain what these terms mean.



THE WASTE MANAGEMENT HIERARCHY



PAIR WORK

Write the following words on the board randomly:

- > Recycling
- > Disposal
- > Energy recovery
- > Prevention
- > Reuse
- > Minimisation

Ask students to form pairs and to work together to list the words on the board in order, starting with what they think is the most favoured option in waste management and finishing with the least favoured.

Ask students to report back their list to the class and to justify the order of their list.

Finally, if it hasn't emerged in feedback, put up the correctly ordered list on the board and outline the thinking behind it (see diagram at end of unit).

INTERNET SEARCH

The Minister for the Environment, Heritage and Local Government launched The National Waste Prevention Programme in 2004.

Examine this on the EPA website:
www.epa.ie/TechnicalGuidanceandAdvice/NationalWastePreventionProgramme/

GROUP WORK

Divide the class into groups and ask them to outline what they believe needs to be achieved in waste management (i) nationally and (ii) locally, in view of the following statement:

...Three of the greatest pressures on the efficient management of waste remain and need to be tackled: increasing waste generation, a continuing high dependence on land filling and the lack of the proper waste infrastructure ...

Dr Mary Kelly

Director General, Environmental Protection Agency
 Sherkin Comment, No.35, 2003.

Each group should then report their views to the class.

INTERNET SEARCH

In the video clip on the Ballealy landfill site, a spokesperson for Fingal County Council stated that when they were looking for a new landfill site, they excluded areas close to where people are living, flight paths from the airport, watercourses, groundwater and significant archaeological features.

Bearing this in mind, ask students to study the 1:50,000 OS Discovery Series map for your area and carry out the following exercises.

- (i) If there is a landfill site in the area, pinpoint its location on the map, noting the grid references and commenting on the suitability of the site.
- (ii) Select a new landfill site, noting its grid references and justifying its suitability for the purpose.



THE WASTE MANAGEMENT HIERARCHY

geographical investigation

SYLLABUS REFERENCE

Structure and organisation of the investigation, Core Unit 3, Leaving Certificate Geography Syllabus, pp 17–18.

SURVEY TITLE

Attitudes of people in the community to waste disposal and their opinions on the local authority's waste management strategy

The surveying process follows these steps:

- > identifying key aims
- > preparation
- > considering methods of gathering information
- > collecting data
- > preparing a report
- > reaching conclusions and making evaluations.



STEP 1

Identify key aims

Discuss the following list of aims with students.

Aims:

- 1 To survey current attitudes to waste disposal and management in the community.
- 2 To quantify awareness of the local authority's waste management strategy.
- 3 To quantify support for / opposition to the local authority's waste management strategy.
- 4 To compare local community attitudes to national attitudes on waste disposal and management (see national survey below).

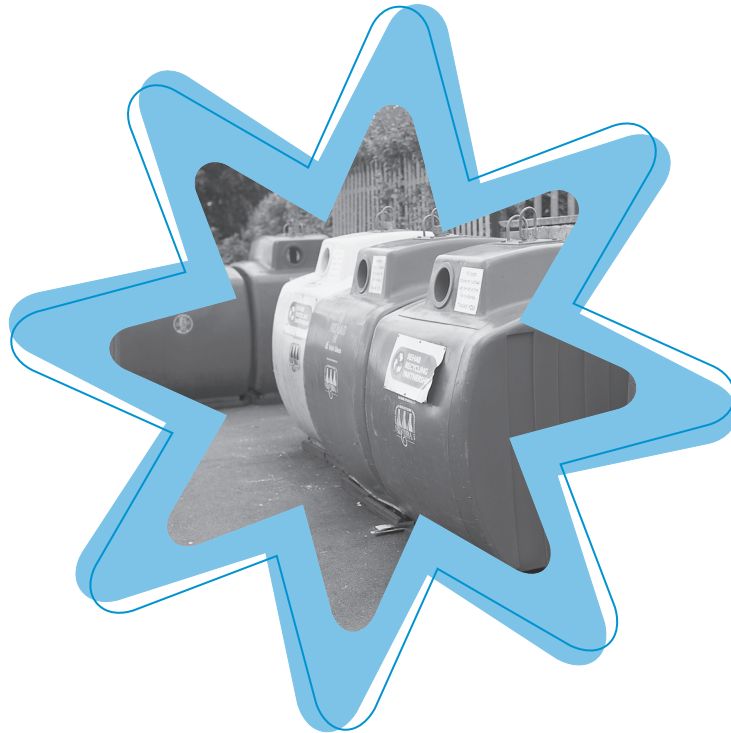
To achieve these aims, the opinions and attitudes of people in the local community must be considered.

STEP 2

Preparation

Ask students to:

- 1 view the video clips on waste management in Ireland
- 2 study the waste management strategy for the local authority
- 3 research the location of landfill sites and recycling centres and investigate current domestic waste disposal charges
- 4 study relevant sections of: Attitudes And Actions: A National Survey on the Environment (Department of Environment, Heritage and Local Government, 2000, also 2003)
- 5 study The National Waste Prevention Programme, 2004 at: www.epa.ie/TechnicalGuidanceandAdvice/NationalWastePreventionProgramme/



STEP 3

Considering methods of gathering information

Discuss with students the concepts of a survey of a sample group and a full survey. A sample survey of households in the community is proposed in this case.

Formulating questions

Ask students to study the information on types of survey questions given in the students' information sheet.

- > Following study and discussion on the background information, ask each student to suggest questions to be included in the survey. List all suggested questions on the board or on paper, and choose approximately ten questions, with reference to the aims of the investigation.
- > Consider taking some questions from the Department of Environment's 2003 National Survey, in order to allow comparison.
- > Practice the survey by getting the class to complete it themselves, and make changes as necessary.
- > Include a section in which the respondent's age group and gender can be noted. In this case include a section on car ownership to determine respondents' access to waste and recycling facilities.

STEP 4

Collecting data

- > Where students carry out / administer a survey in their own community, anonymity is compromised, and this might affect answers given. The class must reach an agreement on confidentiality and giving and maintaining assurances to people surveyed with regard to their identity and their responses to the survey.
- > Agree on an introduction that will be used with all people surveyed.
- > Choose a random sample: for example, each student carries out ten surveys of households in their own area. Surveys may best be done in pairs and personal security should be a priority. Students who live near each other should check that they will not duplicate surveys.
- > **Problems that may be encountered:** There are particular problems with attitudinal questions that students must take into account when carrying out the survey: for example, people may be reluctant to express opinions on sensitive issues, they may have contradictory opinions or they might not have an opinion on a particular issue at the time.



STEP 5

Preparing a report

In order to record results, ask students to:

- (i) construct a coding frame (a list of question numbers and possible answers) for example:

Q1	possible answers:
	yes no don't know no response
Q2	possible answers:
	agree disagree neither agree nor disagree no response

- (ii) create a tally sheet – a spreadsheet of questions and codes for all possible answers, for example:

Question	Response			
Q1	Yes	No	Don't know	No response
Number of Responses				
Q2	Agree	Disagree	Neither agree nor disagree	No response
Number of Responses				

- (iii) divide completed surveys among class groups and record results on tally sheets
- (iv) present quantified results as percentages
- (v) illustrate the results with histograms, pie charts, etc.
- (vi) use information and communication technology to present the results
- (vii) compare results where possible with results of the National Survey on the Environment 2000 or 2003 from the Department of the Environment, Heritage and Local Government.



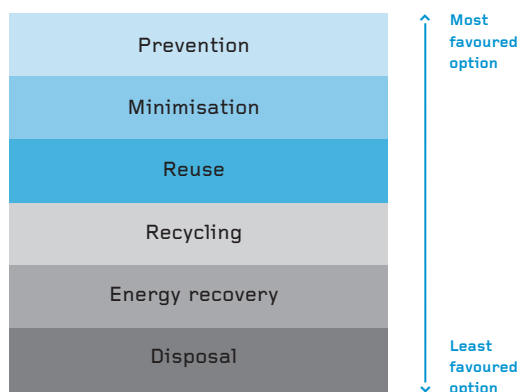
STEP 6

Reaching conclusions and making evaluations

Students should:

- > initiate a group discussion on the results
- > analyse the results in relation to the aims of the investigation, noting comparisons with national attitudes and opinions
- > draw conclusions based on the evidence produced by the investigation
- > evaluate the aims of the investigation in terms of the quality of information discovered and consider questions raised by what was found
- > examine how worthwhile the investigation has been and how it could be improved.

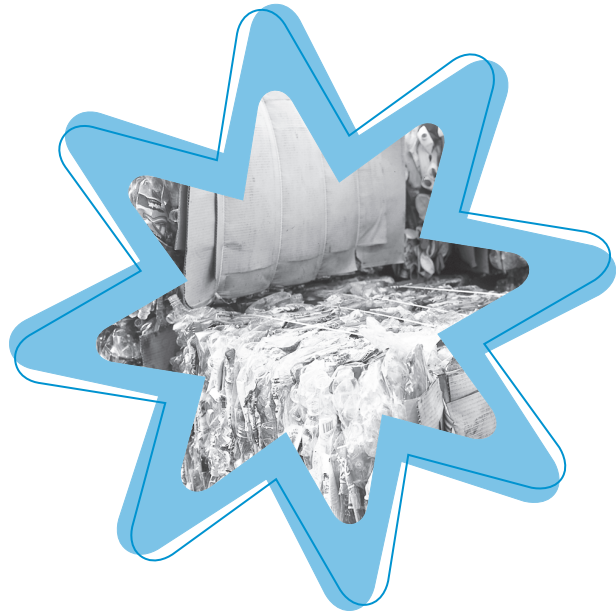
Irish waste policy is based on the idea of the waste hierarchy





THE WASTE MANAGEMENT HIERARCHY

—
background information



TYPES OF SURVEY QUESTIONS

Closed questions

Comprehensive categories are given and answer is circled/ticked. Answers are easy to quantify.

Semi-closed questions

Alternatives are provided, and respondents can offer new variables.

Open questions

Lines or spaces are provided for answers to be written. Answers are difficult to quantify.

Ranking/scaling questions

Responses can be provided either numerically (usually 1–5) or descriptively ('excellent' through to 'poor').

Attitudinal/opinion measures

Scale of opinion may range from 'strongly agree' to 'strongly disagree'.

Filter questions

May determine that a subset of subsequent questions is irrelevant.

