

Environmental RTDI Programme 2000-2006

**Environmental attitudes and behaviour:
values, actions and waste management
(2001-MS-SE2-M1)**

Final report

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Contents

Section	Page
List of Figures	
List of Tables	
Acknowledgements	
Executive Summary	
1. Introduction and background to project	
2. Attitudes and behaviour towards waste	
2.1. Attitudes	
2.2. Behaviour	
2.3. Summary	
3. Examining waste management behaviour	
3.1. Waste services	
3.2. Rating waste management behaviour	
3.3. Waste disposal mechanisms	
3.4. Information	
3.5. Responsibility	
4. Understanding waste management behaviour	
4.1. Relationships	
4.2. Personality	
4.3. Practicality	
4.4. Responsibility	
4.5. Culture	
4.6. Summary	
5. Changing behaviour	
5.1. Education	
5.2. Consultation	

- 5.3. Policy evolution
- 5.4. Summary
- 6. Young people's views on waste
 - 6.1. Waste problems
 - 6.2. Waste solutions
 - 6.3. Responsibility
 - 6.4. Summary
- 7. Testing waste management actions
 - 7.1. The challenge of improving household waste management behaviour
- 8. A way forward
 - 8.1. Pilot community waste advisory forum

References

Appendices

- Appendix 1: Questionnaire
- Appendix 2: Interviewees selection criteria
- Appendix 3: Interview schedule
- Appendix 4: Table of schools participating in focus groups
- Appendix 5: Focus group topic schedule
- Appendix 6: Waste minimisation exercise explanatory sheet
- Appendix 7: Waste minimisation household audit
- Appendix 8: Waste minimisation evaluation sheet

List of Tables

- 2 Demographic information
- 2.1 Level of concern for the environment
- 2.2 Main waste problem facing Ireland
- 2.3 Priority for Irish waste management policy
- 2.4 Levels of satisfaction with waste services
- 2.5 Views on amount of information provided on waste management issues
- 2.6 Views on payment for waste disposal
- 2.7 Levels of activity on environmental issues
- 2.8 Participation in environmental actions in the past 12 months
- 2.9 Householder ratings of themselves as managers of household waste
- 2.10 Participation in composting activities
- 2.11 Main reasons for managing waste in an environmentally friendly manner
- 2.12 Main reasons for not managing waste in an environmentally friendly manner
- 2.13 Mechanisms to increase positive waste management actions (by respondents already participating in such actions)
- 2.14 Mechanisms to increase positive waste management actions (by respondents not already participating in such actions)

List of Figures

1. Case study locations
2. Fingal research locations
3. Galway research locations
4. Kerry research locations
5. Simplified schema of influences on waste management behaviour
6. A virtuous circle of household waste management

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Executive Summary

Recent high levels of economic growth and consumption have led to increasing pressures on the environment in Ireland. The growing volume of waste being produced is a particularly visible manifestation of these processes. As a consequence the effective management of waste in Ireland has become increasingly important for policy-makers and householders (Davies, 2003). Surveys of public opinion identify a population concerned about the quality of the environment including waste, but few people take actions that would help to protect or enhance their environment (see Drury Research 2000, 2003). These surveys have included indicators such as levels of recycling, but there has been no in-depth analysis of attitudes towards and behaviour in relation to waste management more broadly. This report is a synthesis of the findings of the research project 'Environmental attitudes and behaviour: values, actions and waste management' that sought to address this gap in research. Detailed reports from each stage of the project can be accessed at: [http://www.tcd.ie/Geography/Abt_06\(EPA\).html](http://www.tcd.ie/Geography/Abt_06(EPA).html).

Results

The research revealed that waste management is an issue of concern for the householders. The participating householders were also aware of the many challenges associated with waste production and the possible policy approaches to meet those challenges. The preferred solutions to waste management problems varied according to particular characteristics including geographical location, age, gender and socio-economic circumstances. However few participants recognised the role of consumption patterns in producing increasing volumes of waste and fewer still suggested that consumption patterns should be altered to reduce the amount of waste produced.

The participants in the research had diverse views on disposal methods particularly landfill and incineration. Their views on how waste services should be funded also varied according to geographical location and demographic variables. Issues of trust and justice were raised in relation to waste disposal choices and charges, particularly

in terms of poor communication between local authorities, business, industry and communities although most participants felt that everyone had a responsibility to contribute to positive waste management activities.

While recognising that waste management is a problematic area of environmental policy most people felt that they were doing a good job at managing their waste in their homes. On further examination it was found that most householders benchmark their waste management behaviour against the requirements of the door-to-door collection services they receive. Few participants actively sought out ways to reduce or recycle their waste if facilities were not on their doorstep. This explains, in part, the apparent mismatch between views of waste management performance and low levels of recycling.

Explaining behaviour

Respondents explained their current levels of behaviour (negative, passive or pro-active) in relation to waste management in relation to five main themes: relationships, personality, practicality, responsibility and culture.

- Good relationships between communities, local authorities and manufacturers were seen as pivotal in establishing collaborative action for managing waste effectively.
- Personality reasons for explaining behaviour revolve around people's conceptions of themselves as individuals. In other words, what kind of person they see themselves as.
- Practical reasons for behaviour are primarily related to factors such as the provision of facilities in accessible locations, the time available to deal with waste, their life-stage and the size of household.
- Explanations for behaviour that invoked responsibility referred to a concept of wider societal duty (even duty towards the environment) that respondents felt they had as citizens. Proper waste management is considered one part of this civic duty.
- In some cases the influence of cultural norms was suggested as an explanation for waste management behaviour. In this sense a particularly Irish attitude towards

authority, the environment and waste was mooted. This culture was not seen as conducive to positive waste management practices, particularly in comparison to other European cultures.

Changing behaviour

Aside from the provision of more and better waste management facilities and door-to-door waste collections respondents identified a number of other mechanisms for changing waste management behaviour: education, consultation and policy evolution.

- Most respondents felt that improved education, both formal and informal, about positive waste management behaviour was pivotal for reducing the amount of waste produced and dealing with it more benignly. However they were also clear that the nature of this education had to be appropriate to the target audience and information has to be provided from sources that are trusted by the recipients to be effective.
- Although not all respondents wanted to be actively involved in decision making about waste, some felt that a culture of non-participation in environmental planning generally should be tackled. It was felt that greater consultation amongst key waste actors, including publics and local authorities, would improve waste management.
- While respondents recognised that current waste management practices in Ireland were unsustainable they also acknowledged that practices had changed for the better. Most respondents felt that these positive developments could not be reneged upon and that there was now in place an upward spiral of policy and societal learning about waste. Respondents felt that this evolution needed to be encouraged and accelerated by government in particular.

Conclusion

Changing waste management behaviour will not be a simple or straightforward exercise. No single model exists to enable policy makers to quickly change the

actions of householders in relation to waste management. However the research revealed a number of steps that can be taken to facilitate improved household waste management behaviour:

- Improve two-way communication between all waste actors to create better understanding of different perspectives in relation to waste.
- Disseminate appropriate information and education about waste issues throughout society. The information needs to be developed by sources that are trusted by all waste management actors for it to be effective.
- Develop improved waste management facilities both in terms of door-to-door collections and off-site provision. The nature and extent of the waste management facilities provided helps to create the benchmark for social norms of acceptable waste management behaviour.

1. Introduction and background to project

Recent high levels of economic growth and consumption have led to increasing pressures on the environment in Ireland. The growing volume of waste being produced is a particularly visible manifestation of these processes. As a consequence the effective management of waste in Ireland has become increasingly important for policy-makers and householders (Davies, 2003). Surveys of public opinion identify a population concerned about the quality of the environment including waste, but few people take actions that would help to protect or enhance their environment (see Drury Research 2000, 2003). These surveys have included indicators such as levels of recycling, but there has been no in-depth analysis of attitudes towards and behaviour in relation to waste management more broadly. This report is a synthesis of the findings of the research project 'Environmental attitudes and behaviour: values, actions and waste management' that sought to address this gap in research. Detailed reports from each stage of the project can be accessed at: [http://www.tcd.ie/Geography/Abt_06\(EPA\).html](http://www.tcd.ie/Geography/Abt_06(EPA).html).

The project generated baseline information on attitudes towards and the behaviour of householders in relation to waste management in four local authorities Galway City and Council Councils, Fingal County Council and Kerry County Council (Figure 1). It revealed that while concerns about waste were articulated few actions were being undertaken to deal with waste effectively. The research then examined why this gap between attitudes and behaviour occurred and what steps could be taken to reduce the deficit. The research project had five methodological stages:

- Desktop study
- Questionnaire survey
- Interviews
- Focus group discussions
- Household waste minimisation exercise

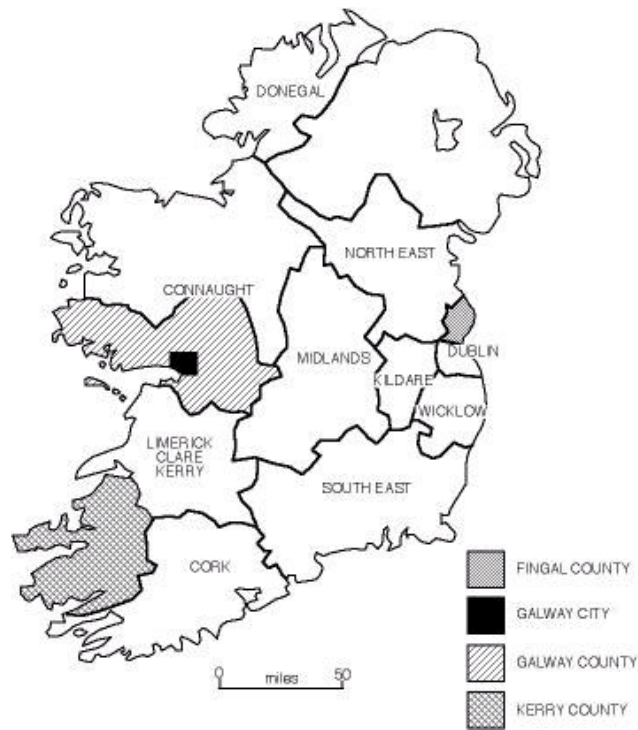


Figure 1 Case study locations

The desktop survey examined the different waste management strategies employed by local authorities across Ireland and identified four local authority areas as case studies for more detailed analysis: Galway, Kerry and Fingal County Councils and Galway City Council¹ (Figure 1). These local authority areas were selected to provide a geographical spread of case study locations across Ireland and because they exhibit contrasting social, economic and environmental conditions that might give rise to different waste management challenges.

A questionnaire-based survey was then conducted in the case study locations to generate quantitative baseline information regarding attitudes and behaviour with respect to environmental and waste issues. In total 1,500 householders completed the questionnaire, 500 in Kerry and Fingal, 250 in the Galway city region and 250 in the county of Galway. The structure of the questionnaire was derived from studies of

¹ Hereafter, these local authority areas are referred to as Fingal and Kerry. The local authority area administered by Galway County and Galway City Councils are for the most part in this report grouped together and referred to as Galway. In a few cases they are treated singularly and referred to as Galway County and Galway City.

environmental attitudes and behaviour that had been carried out outside Ireland (for example, Steel, 1995; Blake and Carter, 1997; Davies, 1999). A copy of this questionnaire can be found in Appendix 1. The questionnaire data revealed a mismatch between attitudes and behaviour in relation to waste management and established a number of mechanisms householders felt would help them improve their waste management behaviour. The questionnaire analysis also highlighted topics requiring further clarification and elaboration. These issues were addressed in the remaining stages of the research project.

Interviews were used to clarify ambiguous findings from the questionnaire and explore the reasoning behind the attitude-behaviour gap. A total of sixty semi-structured interviews were conducted. Twenty interviews were carried out in Fingal and twenty in Kerry County Councils; ten were conducted in each of Galway City and Galway County Councils. Interviewees were selected from the pool of questionnaire respondents who indicated that they would be willing to participate in further research. An example of the selection criteria can be found in Appendix 2. Using a combination of directed and open questions developed from the analysis of the questionnaire data (see Appendix 3) the interviews uncovered a complex of contingent conditions which affect the ability and motivation of householders to act according to their stated concerns about waste management. While some of the conditions refer to practical issues, such as the provision of facilities for waste management, others relate to broader social issues such as conspicuous consumption.

The research also examined the attitudes and behaviour of school-aged children towards waste. This phase was included in the project because children were not involved directly in either the questionnaire or interview stages of the research, yet they were frequently cited as being important actors in waste management by influencing parental waste management behaviour and because of their future role in waste management as adults. Focus group discussions were conducted in both mixed and single sex schools and in urban and rural locations with children in three different age groups 9/10 year olds, 13/14 year olds and 16/17 year olds (see Appendix 4 for further details of school selection criteria). The focus group discussions enabled children to collectively talk about their understanding of waste and to reflect upon their involvement in waste management activities (See Appendix 5).

The final phase of the project involved eleven households, drawn from participants in previous phases of the research, implementing a set of prescribed waste minimisation practices with the support of a facilitator over a period of one month. This activity provided householders with the opportunity to test the viability of a range of actions proposed by environmental educationalists and local authorities for improving waste management behaviour. A number of variables were considered in the selection of households, including location, household size, housing tenure and environmental attitude, in order to test the waste practices in a range of different contexts.

Householders were invited to honestly reflect on their experiences of particular practices at weekly meetings. Explanatory information sheets about the exercise were provided to householders along with a pack of supporting materials (see Appendices 6-8).

Project findings were communicated to the participating local authorities and to the participating communities at various stages throughout the research. Environmental officers from the participating local authorities also participated in a workshop to discuss the final results of the research. This feedback provided useful information for the development and further interpretation of the research results. It also assisted in the effective dissemination of the research results which, in addition to this synthesis report, have been discussed in the media (both radio and newspaper), in local authority newsletters, through academic and practitioner articles and publicly accessible working papers as well as at conferences in Ireland and internationally.

2. Attitudes and behaviour towards waste management

This section of the report summarises the results of the quantitative component of the research project. 1,500 respondents answered questions about their attitudes and behaviour towards waste and waste management in their local authority areas Galway, Kerry and Fingal County Councils and Galway City Council. The questionnaire was divided into three parts. Section A was designed to obtain information on the opinions of respondents towards waste management issues; Section B surveyed opinion on the environment more generally; and Section C enabled the collection of general

demographic information on the households surveyed. While not statistically representative the participants do reflect the diversity of the population in the local authority areas in terms of gender, age, education and housing tenure (Table 2). Questionnaires were conducted in a range of different locations within each case study area as marked on Figures 2-4.

	All study areas	Fingal	Galway	Kerry
Gender				
Male	37	39	36	35
Female	63	61	64	65
Age				
18-29	25	23	27	23
30-39	25	26	23	26
40-49	23	26	20	24
50-59	12	13	12	12
60-69	9	8	10	9
70+	6	4	8	6
Highest level of Education				
No formal education	10	9	9	13
Vocational certificate	7	4	9	6
Junior Certificate	12	14	9	12
Leaving certificate	30	30	33	28
Third level education	41	43	40	41
Dwelling type				
Detached	29	17	34	36
Semi-detached	51	65	41	45
Townhouse/terraced	15	15	13	17
Apartment	5	2	11	2
Ownership of dwelling				
Private ownership	71	80	67	66
Social/council housing	14	12	13	16
Privately rented	15	8	19	18
Occupation				
Professional	18	19	18	17
Service industry	18	18	13	24
Home maker	23	25	20	25
Managerial/technical	7	7	6	7
Government	4	5	3	3
Student	10	9	15	7
Retired	11	8	16	9
Unemployed	3	3	2	4
Other	6	7	7	4

Table 2 General information about the householders and their households surveyed. All figures are in percentages.

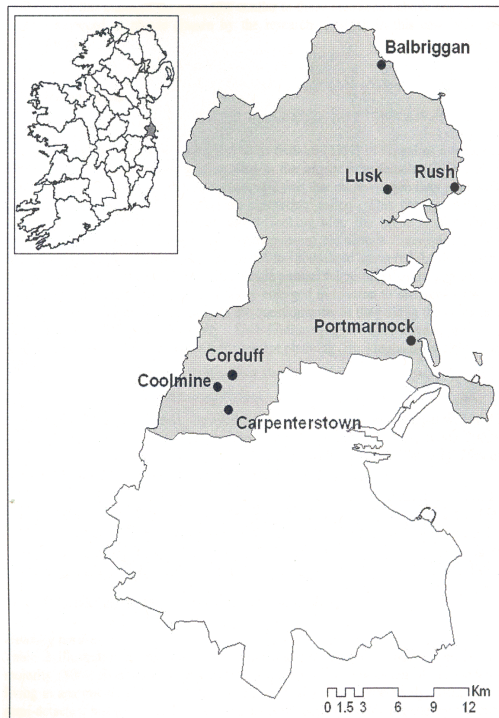


Figure 2 Fingal research locations

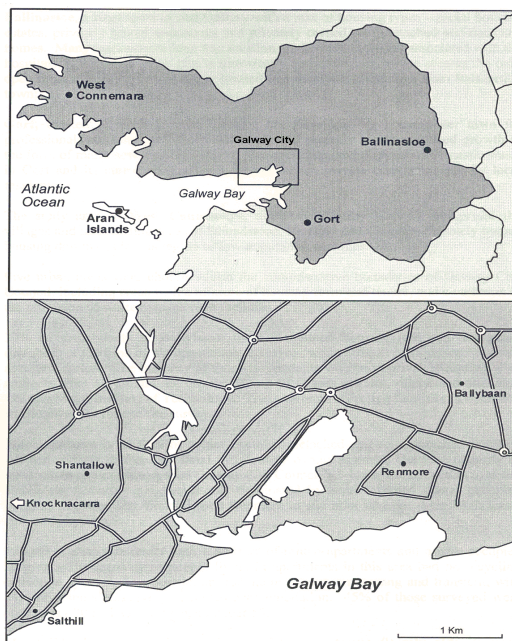


Figure 3 Galway research locations

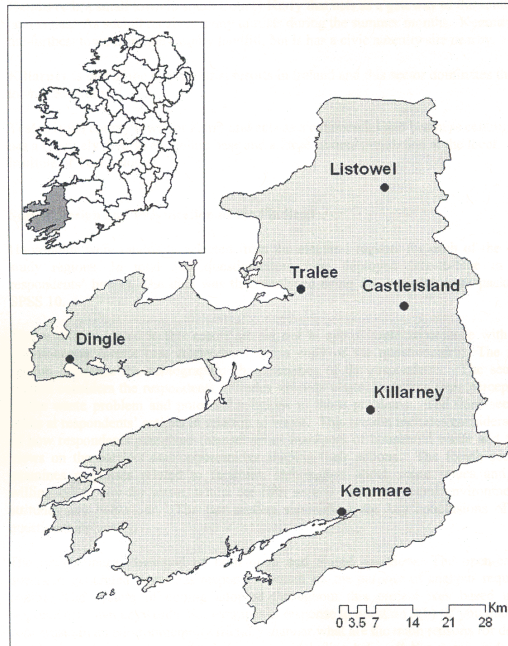


Figure 4 Kerry research locations

2.1 Attitudes

Householders were first asked to identify their personal level of concern for the environment along the scale of ‘very concerned’; ‘concerned’; ‘not very concerned’; and ‘no opinion’ (Table 2.1). In total 86% of the respondents in the three case study areas said they were either ‘concerned’ or ‘very concerned’ about the state of the environment. Respondents in Fingal expressed the highest level of concern, followed by respondents in Galway and Kerry, but levels of concern were consistently high across the three case study areas. Previous studies that suggested people in Ireland had a lower level of concern for the environment than their European neighbours (Faughan and McCabe, 1993) no longer appear to be reflective of Irish environmental attitudes, which concurs with the findings of other studies of environmental attitudes in Ireland (Drury Research, 2000, 2003).

Level of concern for the environment	All study areas	Fingal	Galway	Kerry
I am very concerned about the state of the environment	24% (n=363)	32% (n=157)	16% (n=77)	26% (n=129)
I am concerned about the state of the environment	62% (n=924)	60% (n=297)	69% (n=345)	57% (n=282)
I am not very concerned about the state of the environment	9% (n=129)	6% (n=29)	9% (n=44)	11% (n=56)
I have no opinion	5% (n=71)	3% (n=13)	6% (n=32)	5% (n=26)

Table 2.1 Level of concern for the environment

Levels of concern about waste management are similarly high with over 90% of respondents in the case study areas acknowledging that waste problems existed in Ireland (Table 2.2). A much lower level of agreement was evident, however, when it came to identifying the most pressing waste management problems, and how these problems might best be addressed at the level of the household.

The lack of available landfill sites and illegal dumping were the two waste management issues of greatest concern across the three case study areas. Other issues of concern cited by respondents were low rates of recycling, a lack of recycling facilities and litter. However it is useful to note that multiple causes were identified as problems for waste management reflecting awareness amongst the respondents of the complexity of waste management challenges and the range of possible solutions available.

While that there was general agreement in identifying the most serious waste problems facing Ireland across the three case study areas there were also geographical variations amongst responses within case study areas. For example in Galway 26% of the respondents from Ballinasloe, situated two kilometres away from the only landfill site in the local authority area, stated that the lack of available landfill was Ireland's biggest waste issue compared to the average of 17% in that Galway as a whole. Such geographical variations are important as they indicate the need for local sensitivity in

formulating waste strategies. They also suggest that the scale at which the analysis of data is carried out can both reveal and conceal differences of opinion within populations.

Problems	All study areas	Fingal	Galway	Kerry
Landfill not available	20% (n=231)	20% (n=79)	17% (n=61)	21% (n=91)
Illegal dumping	17% (n=205)	17% (n=66)	16% (n=59)	19% (n=80)
Litter	11% (n=125)	4% (n=15)	18% (n=63)	11% (n=47)
Lack of recycling	9% (n=104)	13% (n=50)	4% (n=14)	9% (n=40)
Not enough facilities	6% (n=76)	6% (n=25)	5% (n=16)	8% (n=35)
Bad attitude towards the environment	6% (n=75)	8% (n=30)	7% (n=26)	4% (n=19)
Lack of cohesive policy/law	6% (n=75)	12% (n=48)	1% (n=5)	5% (n=22)

Table 2.2 Main waste problem currently facing Ireland (percentages of less than 1 % are not included in this table)

Overall the results indicate a concern about waste and an appreciation of what problems could be contributing to these problems. A small number (6%) of respondents did cite a bad attitude towards the environment as being a factor in the waste problem in Ireland, but few respondents mentioned the role of their consumption patterns in terms of generating waste. This point was noted for further investigation in the later stages of the research. The respondents were then asked to

suggest solutions to the problems they had identified by ranking a set of policy options as detailed in Table 2.3.

As with the identification of waste management problems there was general agreement amongst the respondents about which policy options to solve waste problems would be preferable. 52% of the respondents selected recycling facilities as the key to solving waste problems, more than double the number choosing

Waste management priorities	All study areas	Fingal	Galway	Kerry
Increase recycling facilities	52% (n=637)	55% (n=239)	46% (n=163)	54% (n=236)
Design packaging that is biodegradable	25% (n=306)	26% (n=114)	22% (n= 77)	26% (n=115)
Introduce incinerators	11% (n=130)	10% (n=43)	15% (n=51)	8% (n=36)
More composting	4% (n=53)	4% (n=16)	5% (n=17)	5% (n=20)
Improve and use landfill	4% (n=45)	3% (n=14)	4% (n=15)	4% (n=16)
Reduce landfill	3% (n=40)	1% (n=6)	6% (n=20)	3% (n=14)

Table 2.3 Highest priority for future Irish waste management policy

biodegradable packaging, the next most popular choice proposed by a quarter of the respondents. Incineration was the only other option that received more than 10% of responses. Although the trends in choices between options are clear Table 2.3 does show some variation in the extent of support for particular waste management options. For example fewer Galway respondents prioritised recycling facilities (46%) when compared to Fingal (55%) and Kerry (54%) and more respondents in Galway supported the introduction of incinerators (15%) than either of the other two locations

(Fingal 10%, Kerry 8%). A factor for the relatively lower support for recycling facilities in Galway could have been the improvement of recycling collections both door-to-door and in recycling centres prior to the research project. More difficult to explain is the higher support for incineration in Galway compared to the other locations, particularly because Galway city has been identified as a site for an incinerator which generated considerable controversy in the city and surrounding areas (Davies, 2003, Davies, in press). An explanation for the relatively higher support could be that the public debate about incineration might have introduced more people in Galway to the process than in either Fingal or Kerry and that this generated support amongst a proportion of the population.

It is interesting to note that the first three priorities for addressing waste management are all end-of-pipe solutions rather than preventative measures. None of the three developments, recycling, biodegradable packaging or incineration, demand a reduction in the amount of products consumed or waste produced although both recycling and biodegradable packing might demand a shift in the nature of products consumed. Given that levels of consumption were not highlighted as a problem it is perhaps not surprising that managing consumption and the generation of waste was not considered to be a priority amongst the respondents, but it does highlight a limited understanding of the waste cycle.

Again although there is a commonality amongst responses when analysed on a case study basis when other factors are used to analyse the data a more complex pattern emerges. For example responses seem to be influenced by the age of the respondent. Respondents in the 70+ age category most frequently cited the introduction of incineration as the highest ranked priority whereas younger age groups did not rank this option so highly. Only 5% of respondents in the 18-29 age group prioritised incineration compared to 30% of respondents in the 70+ age group. Instead the youngest age group were most likely to call for increased recycling facilities.

There were also differences between responses according to gender. While 12% of the male respondents in Kerry ranked incineration as the key priority for managing waste only 6% of females in the same area agreed. This pattern was repeated in the other case study areas. In Fingal and Galway the division was, respectively, 14% and 23%

male, and 7% and 10% female. While men were happy to prioritise incineration women were more likely to prefer the development of biodegradable packaging. The difference here was most marked in Fingal, where 30% of women ranked this option highest compared to 20% of men. The role of gender in waste management has only recently begun to receive attention (Buckingham et al., 2004) and requires further research.

Given that high levels of concern about waste were expressed, problems identified and solutions proposed it came as a surprise when respondents then expressed a high level of satisfaction with the waste services they were being provided with (Table 2.4). Across the case study areas more than 80% of respondents were either satisfied or very satisfied with the waste service they received, with on average 86% of people expressing satisfaction. When asked about the degree of organisation with particular elements of the waste collection service there were some concerns raised particularly in relation to off-site recycling centres and hazardous waste collections, but overall waste services received positive evaluations.

Level of satisfaction	All study areas	Fingal	Galway	Kerry
Very satisfied	31% (n=452)	30% (n=151)	29% (n=147)	32% (n=154)
Satisfied	55% (n=810)	51% (n=254)	60% (n=296)	55% (n=260)
Dissatisfied	13% (n=187)	17% (n=83)	10% (n=49)	12% (n=55)
Don't know	2% (n=23)	2% (n=8)	2% (n=8)	2% (n=7)

Table 2.4 Level of satisfaction with waste services

The initial survey of waste management planning processes in Ireland had identified a number of issues on which public attitudes were considered to be important and which included in the questionnaire survey. It was envisaged, for example, that the levels of satisfaction with waste services would be influenced generally by the amount of information respondents received about waste issues (Table 2.5). Secondly and more specifically the issue of waste charges had been particularly controversial in the lead

up to the research and it was felt that this would also have focused respondents attention to waste service provision in their local authority.

Amount of Information	All study areas	Fingal	Galway	Kerry
Too much	3% (n=39)	3% (n=14)	4% (n=24)	2% (n=12)
About right	41% (n=607)	37% (n=176)	50% (n=242)	35% (n=176)
Too little	56% (n=817)	60% (n=290)	48% (n=232)	62% (n=310)

Table 2.5 Views on amount of information provided on waste management issues.

It is clear from the results displayed in Table 2.5 that a very small number of respondents felt that they had too much information about waste issues. Many more people felt that they had enough information on waste (41% across all survey areas) although 56% of respondents felt that they received too little information about waste matters. There are some locational differences evident in the results; with a greater proportion of respondents in Galway stating that they received sufficient information compared to the respondents in Fingal and Kerry. A further breakdown of the results reveals that it was respondents in Galway city who were particularly happy with the amount of information they received. The environmental department in Galway city has been particularly active in providing updates about waste issues to their residents prior to the research through free newsletters to every household and it should be noted here that Galway respondents were also the most satisfied with their waste service provision.

There were also slight variations in views between respondents with different levels of education such that 47% of respondents with no formal education thought there was too little information provided compared with 65% of those with third level qualifications. Overall the higher the final education level of respondents the more they felt that too little information was provided.

In relation to waste charges the general view was that waste services should be paid for although a far greater proportion of the respondents in Galway and Kerry felt that they should pay for the disposal of household waste compared to respondents in

Fingal (Table 2.6). There is an issue here over the interpretation of this question as it is one thing to agree that waste services need to be paid for, it is another to agree with the mechanisms through which that payment should be made. That Fingal respondents were less supportive of payment for waste charges was unsurprising as the questionnaire survey coincided with protests in the area against the introduction of waste collection charges that were covered by local and national media.

	All study areas	Fingal	Galway	Kerry
Yes	71% (n=1053)	51% (n=247)	80% (n=387)	84% (n=419)
No	28% (n=520)	49% (n=240)	20% (n=99)	16% (n=81)

Table 2.6 Views on whether waste disposal should be paid for

2.2 Behaviour

While the questionnaire showed that levels of concern expressed by respondents to both waste and environmental issues are high such findings from studies conducted in other countries have also indicated that attitudes and concerns are not always matched by positive environmental or waste behaviour (see Blake, 1999). In order to see whether a similar mismatch between attitudes and actions is apparent in Ireland householders were asked about the form and frequency of participation relating to the environment in general and household waste in particular.

First householders were asked to evaluate their general participation in environmental issues on a spectrum from ‘not interested’ to ‘very active’. On this scale most respondents rated themselves as either ‘not very active’ or ‘moderately active’ and relatively few thought they were ‘very active’ (Table 2.7). There are definitional problems with self-analysis questions such as this because respondents may well have different views of their level of activity. For example simply taking bottles to a bring centre may be considered by one respondent to make them ‘active’ while another who has participated more broadly, recycles regularly and is a member of an

environmental group may well feel that they are not very active because they are aware they could potentially participate in many more activities.

Level of activity	All study areas	Fingal	Galway	Kerry
Very active	2% (n=36)	1% (n=5)	3% (n=13)	3% (n=13)
Active	14% (n=201)	13% (n=63)	14% (n=68)	14% (n=70)
Moderately active	41% (n=599)	43% (n=206)	41% (n=201)	40% (n=192)
Not very active	40% (n=578)	41% (n=196)	38% (n=190)	40% (n=192)
Not interested	3% (n=36)	2% (n=7)	4% (n=22)	3% (n=16)

Table 2.7 Levels of activity in relation to environmental issues

Respondents were also asked about the nature of the activities that they participated in (Table 2.8). Most people referred to signing petitions and attending local meetings,

Actions	All study areas	Fingal	Galway	Kerry
Signed petitions	33% (n=501)	43% (n=216)	35% (n=174)	22% (n=111)
Attended meetings about a local problem	32% (n=478)	39% (n=194)	38% (n=192)	18% (n=94)
Voted for an environmental candidate	28% (n=415)	50% (n=249)	23% (n=116)	10% (n=50)
Donated money to an environmental group	13% (n=203)	21% (n=103)	15% (n=74)	14% (n=69)
Wrote letters/lobbied TD/Councillors	13% (n=191)	23% (n=116)	8% (n=40)	7% (n=35)
Joined an environmental group	5% (n=80)	6% (n=28)	6% (n=30)	4% (n=22)

Table 2.8 Environmental actions carried out in the past 12 months

with voting for an environmental candidate in third place. There were some geographical variations in the results to this question. In Fingal 50% of people said they had voted for an environmental candidate, more than twice as many people as in Galway and five times as many as in Kerry. Far more people in Fingal also wrote letters or lobbied local representatives than in the other case study locations as well. Again this activism may have been due to the controversy of local issues at the time in the area, such as the bin tax protests.

Householders were asked specifically about their waste management behaviour, and to rate their actions in relation to waste management as ‘excellent’, ‘good’, ‘poor’ or ‘very poor’. The results are presented in Table 2.9. The majority of respondents viewed themselves as either ‘good’ or ‘excellent’, and slightly more respondents in Galway felt that they were ‘good’ or ‘excellent’ managers of domestic waste than in Kerry and Fingal. These high percentages are difficult to reconcile with the evidence that exists for relatively low rates of recycling in the country as a whole, and problems such as the illegal burning and dumping of waste. One explanation for the discrepancy is that the public’s perception of waste management actions that constitute ‘good’ or ‘excellent’ behaviour may well differ from those proposed by environmental professionals as good waste management practices. Thus a respondent may view him or herself as an excellent manager of domestic waste simply because

Rating	All study areas	Fingal	Galway	Kerry
Very poor	1% (n=22)	2% (n=9)	1% (n=5)	2% (n=8)
Poor	12% (n=181)	13% (n=64)	10% (n=52)	13% (n=65)
Good	71% (n=1059)	71% (n=356)	66% (n=332)	74% (n=371)
Excellent	16% (n=233)	14% (n=69)	22% (n=110)	11% (n=34)

Table 2.9 Householder ratings of themselves as managers of household waste

they always deposit their refuse in a bin and put out the bin for collection at the appropriate time. If this is typical of householder's understandings of what constitutes excellent waste management behaviour this is problematic as householders may feel little motivation for undertaking further waste management actions. From a more positive perspective it could be said that householders seem to be willing to conform to what are considered to be the norms of expected waste management behaviour, such as placing your bin out for collection. Therefore if the behavioural norms relating to household waste management can be upgraded it could be expected that many people would adhere to the new expectations.

Despite the overall coherence across geographical areas there were differences in ratings of waste management according to age, gender, housing tenure and location within the case study locations. Respondents falling into the younger age groups were more likely to perceive themselves as 'poor' or 'very poor' managers of household waste, compared with those in older age groups. Across all the case study areas only 9% of those aged 18-29 classed themselves as 'excellent' managers of waste. This figure increased through the age categories such that 11% of 30-39 year olds rated themselves as 'excellent' followed by 18% of 40-49 year olds, 23% of 50-59 year olds and 24% in both 60-69 year old and 70+ age categories.

Owner occupiers were most likely to rate themselves as 'excellent' managers of waste (18%) compared to those in social housing (11%) and private renters (10%). More stark were locational differences within the same study area: for example, in Kerry 32% and 22% of respondents respectively in Dingle and Listowel considered themselves 'poor' managers of household waste compared with only 8% of respondents in Killarney. The questionnaire was useful in raising these differences, but did not itself provide information necessary to explain them. A number of issues might be relevant. It could be that there is variability in waste service provision such that one place may have a more comprehensive waste collection service or more recycling facilities giving householders the opportunities to participate in more waste management activities and overall helping them feel that they are better managers of their waste.

As an issue highlighted as being of interest to local authority environmental officers, householders were asked specifically about their management of organic household waste. Most respondents did not compost any of their organic waste (Table 2.10). Indeed few people actually owned a composter. A greater proportion of respondents in Galway composted waste than in both Fingal and Kerry. While it may be expected that the more urbanised areas within Fingal could affect the number of people with a garden and therefore the space to undertake composting, the high levels of people not composting in the more rural Kerry is surprising as Galway, with its urban and rural areas, has more than half the respondents saying that they compost. This high level can be in part explained by the local authority actions in this field prior to the research that have improved access to composting facilities and have provided information about why and how to compost.

	All study areas	Fingal	Galway	Kerry
Yes	36% (n=534)	28% (n=141)	56% (n=281)	22% (n=112)
No	64% (n=963)	72% (n=358)	44% (n=219)	77% (n=386)

Table 2.10 Participation in composting activities

Those householders who thought that they managed their waste in an environmentally friendly way were asked through an open-ended question to provide the main reasons that under-pinned their behaviour (Table 2.11).

A large number of respondents felt that good waste management behaviour was important for the protection of the environment (44%). Now this high figure may well have been influenced by the environmental focus of the preceding questions to the questionnaire, nonetheless it was more than twice as popular as the next most frequent response, hygiene and health (13%). It is also interesting that only a few respondents felt that financial benefits were significant considerations for managing their waste in an environmentally friendly manner (1%).

There were also differences in responses between the case study locations. Respondents in Kerry were far more likely to cite hygiene and health as reasons for

Reasons	All study areas	Fingal	Galway	Kerry
The environment	44% (n=557)	52% (n=211)	37% (n=159)	44% (n=187)
Hygiene & health	13% (n=161)	7% (n=31)	3% (n=12)	28% (n=117)
The future	10% (n=124)	13% (n=55)	6% (n=27)	10% (n=42)
Reduces waste	7% (n=87)	9% (n=38)	2% (n=8)	9% (n=39)
It makes sense	5% (n=58)	11% (n=44)	1% (n=4)	2% (n=10)
Easy actions	5% (n=66)	-	16% (n=66)	-
Feel good factor	4% (n=49)	2% (n=10)	8% (n=36)	-
Clean and tidy	4% (n=46)	-	11% (n=46)	-
Civic spirit	3% (n=39)	3% (n=11)	3% (n=15)	3% (n=13)
Information	2% (n=24)	-	6% (n=24)	-
Financial	1% (n=8)	1% (n=4)	-	1% (n=4)

Table 2.11 Main reasons for managing waste in an environmentally friendly manner (table does not include percentages less than 1 %)

more environmentally friendly behaviour than either Fingal or Galway. Galway respondents were more likely to talk about the simplicity of taking environmentally sound actions for waste management than Fingal and Kerry, while Fingal respondents referred to environmentally friendly actions ‘making more sense’ more often than in the other locations. The range of different reasons for managing waste in an environmentally friendly manner is significant in itself as it demonstrates the complexity of motivations for acting in a positive way in relation to waste issues. It also marks a challenge for waste policy makers in terms of setting frameworks to motivate all types of people to improve their behaviour in relation to waste. The matter is further complicated when considering the reasons given by people for not managing their waste in an environmentally sound manner.

Table 2.12 shows the most frequently cited reason given by those respondents who thought themselves ‘poor’ or ‘very poor’ managers of household waste was a lack of

recycling facilities in close proximity to their homes (32%). Laziness and a shortage of time were also

Reasons	All study areas	Fingal	Galway	Kerry
Not enough facilities locally	32% (n=63)	27% (n=19)	15% (n=7)	46% (n=37)
Laziness	18% (n=36)	17% (n=12)	11% (n=5)	23% (n=19)
No time	16% (n=31)	20% (n=14)	15% (n=7)	12% (n=10)
Inability to sort waste	9% (n=18)	19% (n=13)	2% (n=1)	5% (n=4)
Not a priority	8% (n=15)	3% (n=2)	26% (n=12)	1% (n=1)
Easiest option	6% (n=11)	-	24% (n=11)	-
No storage space	5% (n=10)	9% (n=6)	2% (n=1)	4% (n=3)
No information	2% (n=4)	-	-	5% (n=4)
No transport	2% (n=4)	4% (n=3)	-	1% (n=1)

Table 2.13 Main reasons for not managing waste in an environmentally friendly manner (table does not include percentages less than 1 %)

frequently cited in all study areas (18%). There is a danger here of over-extending the claims of the questionnaire as the number of people responding to this question was low because few people felt that they were not managing their waste in an environmentally sound way. Nonetheless the question was useful in raising the kinds of reasons for non-environmentally sound waste behaviour that were further discussed in the interviews.

Respondents were also asked to state what, if anything, would encourage them to manage a greater quantity of household waste in a more environmentally-friendly way. Participants who were already undertaking some positive forms of environmentally sound waste management practices most frequently called for better facilities to help them improve their behaviour (Table 2.13). Far fewer people in Galway called for better facilities and nearly the same number of people felt that better education and more information would be useful to increase waste management

behaviour. This response might be explained by better provision of recycling facilities in the Galway region.

	All study areas	Fingal	Galway	Kerry
Better facilities	41% (n=436)	47% (n=156)	25% (n=87)	51% (n=193)
Nothing	17% (n=184)	4% (n=14)	33% (n=114)	15% (n=56)
Education/information	11% (n=118)	8% (n=26)	24% (n=81)	3% (n=11)
Other people/local authority did more	7% (n=72)	9% (n=30)	3% (n=8)	9% (n=34)
Economic incentives	5% (n=54)	1% (n=5)	6% (n=22)	7% (n=27)
Shops should play a role	5% (n=50)	7% (n=22)	6% (n=22)	2% (n=6)

Table 2.14 Mechanisms to increase positive waste management actions (by respondents already participating in such actions)

As with people who were already active facility provision was also the most frequently requested mechanism for respondents who were not participating in positive waste management actions, but economic incentives were more important to inactive respondents (Table 2.14). Households who are not already participating in positive waste management behaviour appear to be more sensitive to the economic costs and benefits of waste management. This reiterates the need for local authorities to ensure that mechanisms selected to help improve waste behaviour engage with issues that provide significant motivations for targeted communities.

2.3 Summary

The respondents were generally aware of waste problems and aware of a range of management options available to deal with waste. There were diverse views regarding the prioritisation of the options considered according to age, gender, socio-economic position and levels of current waste management activity, but few respondents considered their consumption patterns as being linked to the waste management problems they identified. This meant that respondents also did not identify these consumption patterns as being a site where waste management problems could be addressed. There was a clear pre-occupation amongst respondents

with end-of-pipe disposal mechanisms rather than waste prevention or minimisation activities.

	All study areas	Fingal	Galway	Kerry
Better facilities	61% (n=110)	68% (n=39)	42% (n=18)	66% (n=53)
Economic incentives	13% (n=23)	7% (n=4)	14% (n=6)	16% (n=13)
Education/information	8% (n=15)	-	28% (n=12)	4% (n=3)
Make it mandatory	4% (n=8)	5% (n=3)	12% (n=5)	-
Involving children	3% (n=6)	3% (n=2)	5% (n=2)	2% (n=2)
Time	2% (n=4)	3% (n=2)	-	2% (n=2)

Table 2.15 Mechanisms to increase positive waste management actions (by respondents not already participating in such actions)

The questionnaire survey was useful in highlighting the existence of problems and indicating trends in attitudes and actions, but it was less informative about reasons why such attitudes and actions exist. Further clarification and elaboration of issues raised by the questionnaire survey was necessary to understand more clearly why people are concerned about waste but take few actions to reduce waste problems.

3. Understanding attitudes to waste management

All householders who participated in the questionnaire phase of this research were invited to take part in an interview to discuss further the results of the questionnaire. Many respondents were happy to participate further and sixty interviews were conducted across the case study locations: twenty in Fingal; twenty in Kerry; and ten in each of the areas administered by Galway City and Galway County Councils. The selection of householders for the interview phase of research was based on a number of criteria including their location, age, gender and socio-economic position. Respondents who had either expressed positive and negative views about waste were included as were people who had articulated either commonly held or unusual views

in relation to waste. Appendix 2 lists the selection criteria for Fingal interviewees and a similar process was conducted in Galway and Kerry. Details of these selections can be found in the case study reports [http://www.tcd.ie/Geography/Abt_06\(EPA\).html](http://www.tcd.ie/Geography/Abt_06(EPA).html). The aim was not to interview a representative section of the population, but to engage with a wide variety of people in order to clarify ambiguous responses and elaborate on the issues raised by the questionnaire findings (see Appendix 3). The interviewee responses were recorded and transcribed, before being analysed using computer assisted qualitative data analysis software (CAQDAS) N6. This software provides an effective mechanism for coding, managing and retrieving qualitative information obtained through the interviews.

A limited number of quotes from the interviews are used in this report to exemplify significant points that emerged during the interviews. These quotes are not intended to be statistically representative of responses, but to indicate the diversity and extent of feeling with respect to particular issues. Each quote has an identifier, for example FI01:12, which refers to the location of the interview (FI = Fingal Interview), the number allocated to the interviewee (e.g. 01 up to 20) and the numbered location of the text units, in this case paragraphs, that contain the relevant block of material (e.g. 12 refers to text unit 12) used in the quotation. Quotes are recorded verbatim, although where there is a lack of clarity some alterations have been added to ease understanding. These additions are enclosed by square brackets. Particularly relevant sections of text units are put in bold for clearer emphasis of the points being made. More extensive discussion of the qualitative interview data can be accessed at [http://www.tcd.ie/Geography/Abt_06\(EPA\).html](http://www.tcd.ie/Geography/Abt_06(EPA).html).

3.1 Waste services

The issue of waste service provision was highlighted as an area requiring more analysis because the questionnaire presented what seemed to be contradictory findings. Respondents to the questionnaire expressed a high level of satisfaction with waste services, yet they also stated that they wanted more and better waste management facilities. During interviews it became clear that the level of satisfaction with household waste services was much more variable than suggested by the

questionnaire results. The interviews indicated that respondents were often harbouring concerns that they were unable to elaborate on during the questionnaire phase.

In general the greater the availability of waste facilities to interviewees the higher the level of satisfaction expressed, with those respondents getting door-to-door recycling collections expressing the highest level of satisfaction. Waste conscious individuals stated that while they were satisfied with the service on one level, based on the continuance of historical patterns of service provision such as the door-to-door collection of waste, they also wanted to be given more opportunities to manage their waste better. The interviewees who were active in seeking out opportunities for recycling, reuse and minimisation were also the most critical of the services being provided, both in terms of door-to-door collections and off-site facilities:

None of us have green bins yet, and they still expect us to pay for our refuse collection. Okay, you have to pay for a service, and I have no problem paying for what I get. I think they should have introduced the charges with the green bin and said, "this is what we are doing; you don't have to pay for the green bin, as long as the correct stuff goes in, and you have to pay for your other rubbish." At the moment, I think it is badly managed; I have to pay for a service that I am not getting. I am paying to have my rubbish taken away but I should have the recycling service available on the doorstep. (FI10:19-20).

Those interviewees who were not already proactively managing their waste were more likely to be content with the waste management services, in part because they were not inclined to think about waste management issues as a priority in their everyday lives.

Interestingly some interviewees criticised waste management services in terms of equity and fairness. There was concern over a lack of sensitivity to individual living circumstances, which it was felt led to unequal access to waste management services. Interviewees suggested that more consideration should be given to providing a satisfactory waste service to people in different types of housing, for example

apartments using communal bins and terraced houses without a side passage to bring bins through for collection. Householders without private transport were particularly seen to be at a disadvantage due to difficulty accessing recycling facilities and the costs of waste services were seen as too much of a burden for poorer households. Issues of fairness were also raised in relation to weak enforcement of waste management policies against illegal dumping and in terms of the phasing in of improved waste management services. Certain interviewees also felt that affluent areas were prioritised for improved services before areas with households on lower incomes, leading to resentment and dissatisfaction.

In the questionnaire the main difference in attitudes towards waste management services surrounded the issue of waste charges, with 49% of Fingal respondents stating that they should not pay for waste disposal. The significant difference between views in Fingal and the other areas was identified as a point to be further considered in the interview phase. The interviews were revealing as while Fingal interviewees were more concerned with waste charges their concerns were not so much with the issue of paying for waste services, rather they were concerned about the mechanism used to gather those funds, the motivations behind the charges and the impact that charges might have on certain sections of society. Interviewees in Fingal were particularly concerned with the increasing privatisation of the waste services and feared the charges could rise without an improvement in service provision. Some interviewees expressed the view that already the level of waste charges was not commensurate with the level of service provided. So while the questionnaire suggested that a significant number of respondents in Fingal did not want to pay for their waste services this was not strictly the case. Rather the more negative response was generated by a general dissatisfaction with the way waste charges were being managed.

3.2 Rating waste management behaviour

A second area of ambiguity remaining from the questionnaire survey was the mismatch between the views of householders of themselves as good managers of waste and their low levels of composting, recycling and waste prevention. The

questionnaire revealed that the vast majority of householders surveyed perceived themselves as ‘good’ or ‘excellent’ managers of household waste. The interviews provided space to explore this issue further and they revealed a distinction between householders who perceived themselves as good managers of household waste because they complied with the basic waste collection requirements on the one hand and householders who were pro-active in their management of waste (e.g. they recycled and composted) on the other. The interviews revealed householders to be, on the whole, largely passive when it came to the management of household waste.

When the green bins are there, when they are provided, you tend to use them; I don’t think people go out of their way...maybe if they are spoon-fed and given the stuff and told to put things in the bin. (FI06:14)

Passivity here is defined as undertaking only activities that are provided on the doorstep rather than actively seeking out mechanisms for improved management of waste. Many interviewees measure their personal waste management performance against the requirements of the door-to-door collection services rather than in terms of higher environmentally-friendly standards of waste management. If this is the case then upgrading the sophistication of door-to-door collections should also improve the socially accepted norms of waste management behaviour.

3.3 Waste disposal mechanisms

The location of waste disposal mechanisms from landfills to recycling centres can generate strong public reactions in identified sites (Davies 2003). Such strong reactions however were not evident in the questionnaire results. Indeed the questionnaire results included some counterintuitive statistics on respondent’s view of waste disposal mechanisms. These included the fairly positive views of landfill in Ballinasloe, the site of Galway’s landfill and also the location of a well-supported anti-landfill group. Interviewees were asked to explain their views on landfill in more depth during the interview period. It seems that the improvements in the operation of landfills in recent years have bought about a more positive attitude towards them as a

waste management option, although concern still exists about the long term sustainability of such disposal mechanisms.

The local dump in the area is great and very professionally run and looks really well and you get great service at it. Just recently there are plans to put a dump out near my parents home in New Inn and I was just saying to my mum that if it's anything like the one in Ballinasloe it will be a credit to the place. The [landfill site at] Ballinasloe is really well run and looks very well (GCOI02: 11).

There were similarly surprising results in the questionnaire with respect to the incineration of waste. The introduction of incinerators for household waste disposal, proposed in the regional waste management plans, is a contentious issue and has provoked significant public protest in locations where incinerators have been proposed (Davies, in press). However, the quantitative phase of the study indicated a significant level of support for the introduction of incineration, it was the 3rd most highly ranked of the eight choices listed on the questionnaire relating to the future direction of waste management in Ireland. Given this apparent discrepancy between public protests against incineration and the results of the questionnaire interviewees were asked to expand on their views on incineration. Discussions about incineration evoked a range of responses, some respondents were highly supportive of incineration while others were not. On further questioning many interviewees indicated that they were unable to form an opinion on the incineration of waste either because they did not feel they had received sufficient information on the technology or because they were unable to come to a conclusion given the contradictory information that they were provided with. To compound matters a number of interviewees were sceptical of the information they had received, feeling that the sources of that information had a vested interest in promoting incineration despite remaining uncertainties of its long term impact on health and the environment.

Nobody really wants an incinerator on their doorstep. I have seen one or two programmes on Prime Time and there are differing environmental studies done as to the effects and I don't think people are really 100% sure whether these incinerators are going to have health consequences for the local population,

particularly when they are burning, let's say, animal carcasses, and substances that would produce chemicals. (FI09:31)

Several of those interviewed felt that the introduction of incineration for household waste in Ireland was inevitable, although many thought that the argument for incineration had not been clearly made. A commonly expressed concern was that the introduction and use of incineration could deflect attention away from recycling initiatives. Even those interviewees who were supportive of incineration were keen to see its introduction only alongside other methods for managing waste. At the same time many of the interviewees recognised that their views on incineration would be influenced by their proximity to the site of any proposed development. This is an important admission because while interviews and questionnaires can gain respondents views of potential developments these views may well differ once hypothetical scenarios become concrete proposals.

3.4 Information

The questionnaire suggested that the provision of information was an important mechanism for promoting positive actions for waste management and respondents also felt that they did not receive enough information about waste matters. This is an important finding, but such responses provide little guidance on the nature of information that is desired by respondents or how best to communicate that information to them. The interviews were used to further probe interviewees about these issues.

Interviewees wanted the provision of frequent, appropriate and practical information on waste management techniques in order to improve their waste management behaviour. Most of the respondents were aware that there was a problem with waste, but there was a general lack of confidence that they could do anything to improve the situation. In particular householders felt that information on the final destination of waste and recyclables was patchy and as a result there was some scepticism expressed over the actual treatment of recyclables. Interviewees also called for information to

be specific to their locality including information on the locations and accessibility of off-site recycling facilities and the services they provide:

I don't think people are informed enough around here about recycling and the transfer stations round here. I work around Killarney and I see the old fridges and old cookers and that kind of thing which is sitting in people's back gardens and they are just waiting for someone to get rid of them. I say "do you know you can rid of that at the transfer station" ...people don't know they can get rid of them locally. (KI17:33)

Information was felt by many interviewees to be inaccessible and outdated. The respondents wanted regular updates and reminders about waste management solutions and practices and they wanted this information to be provided to their door. This reflects the general passivity of the respondents in relation to waste management activities highlighted earlier in this section.

As with the issue of incineration, interviewees also highlighted the importance of trustworthy and clear information. The problems of contradictory information were mentioned in relation to incineration in particular, but it was also raised in relation to debates about the actual environmental benefits of recycling activities and the amounts of recyclable materials collected that actually get recycled. It is important to note, however, that while many respondents called for more information to promote greater public participation in waste management initiatives they also acknowledged that the simple provision of information would not necessarily lead to improved actions. In this way information was seen to be necessary, but alone insufficient to improve waste management behaviour.

3.5 Responsibility

The questionnaire revealed ambiguity amongst publics regarding the causes of the waste problems and the allocation of responsibility for action to reduce increasing volumes of waste. Most respondents to the questionnaire felt that waste was a responsibility for all, but during interviews it emerged that there was disagreement

about the burden sharing of responsibility between householders, government, business and industry. Interviewees generally did not feel empowered to take full responsibility for the waste they produced and felt that other actors, particularly government and business, were better placed to reduce waste volumes:

I think that businesses, and the likes of supermarkets, have a huge role to play. If you look at the rubbish that you have, basically most of it would come from the supermarket end, where you are disposing of food wrappers and things...maybe instead of charging residents, why not charge businesses and shops, supermarkets, multinationals, fast food restaurants, all that kind of thing. I think they are the people who can afford it. (FI02:63-64)

The interviews revealed that while ideally householders would work alongside manufacturers to reduce packaging waste, apartment dwellers would have management companies providing suitable recycling facilities for blocks and governments would provide adequate and accessible facilities for communities in every area, the reality is that relationships between the various spheres of social activity from politics to business and households are not ideal and challenges including poor channels of communication and mutual mistrust exist (Macnaughten et al., 1995). Given this imperfect background many interviewees were not well disposed to take on extra tasks for waste management; they felt that if other sectors, even other householders were not going to 'do their bit' then there was little point them doing anything more than avoiding overtly negative waste behaviours such as illegal dumping and backyard burning.

4. Understanding waste management behaviour

The interview phase of research not only facilitated clarification of confusing results and the further exploration of interesting areas raised by the questionnaire survey it also provided space for interviewees to talk more freely about their views on waste management. This material provided valuable insights into the reasons why levels of concern about waste are not always matched by appropriate behaviour. Rather than a simple picture of attitudes towards waste leading to appropriate actions in waste

management the questionnaire and interview results reveal a complex landscape of waste management concerns and behaviour. A range of factors including geography, socio-economic situation and environmental worldview complicate the attitudes and actions of respondents with respect to waste and this section categorises these factors into five main areas: relationships, personality, practicality, responsibility and culture.

4.1 Relationships

A recurrent theme throughout the interviews was the significance of relationships - relationships between different sections of communities and between different spheres of public, private and civil society – for waste management practices. The status and nature of these relationships affected respondents perceived capacity to make an impact on waste problems in Ireland and they certainly affected their willingness to become pro-active in relation to waste management by seeking out opportunities for preventing or minimising waste.

Given that the local authority has traditionally been the main service provider for municipal waste management it is perhaps unsurprising that nearly all interviewees referred to their relationship with that organisation at some point during the interview. While some of the respondents, who had strong negative views of the waste charges or who had had a poor experience in dealing with the local authority in the past, were overtly hostile towards the local authority, most were very understanding of the difficult decisions that local authorities and their personnel must make in their daily work. Within this latter category the concerns of respondents revolved around the ability to contact appropriate people when needed and to obtain a suitable response to their enquiries. In other words, their main concerns were with access and communication of information:

I get the feeling that by and large the guys, people in the local authority are fairly kind of open, but it's a question of getting access to them and I think that the whole structure of the local authority is not structured that well to facilitate people, they're like faceless bureaucrats...in fact they're not faceless bureaucrats it's just the structure of local democracy. (FI04:160)

Most people felt that relationships between communities and governments could be improved through better two-way communication, enhanced information provision and more transparent ways of working together. For the most part respondents were not suggesting that the relationship between local authorities and communities could be resolved simply by increased effort on the part of the local authority alone. Respondents were well aware that certain members of communities were equally not participating sufficiently nor genuinely enough to create the most effective relationship.

During interviews it became apparent that respondents were generally more comfortable talking about the actions of others, or more precisely their own actions in contrast to the actions of others, than talking solely about their waste management behaviour. This manifested itself in two ways. First, people often expressed quite strong negative views about certain groups of people who, in their opinion, were not adhering to the social norms of waste management behaviour either through littering, illegal dumping or backyard burning. Second if respondents were pro-active waste managers they would also often talk about how they felt others perceived them in a negative way; what could be called negative peer pressure.

Related to intra-community relationships a striking feature of many interviews was the way in which respondents referred to different generations in terms of waste management practices. There were two main ways in which these inter-generational themes were articulated. The first emerged in a general feeling that the older generations, especially those who had lived through times of extreme hardship, had been brought up to be recyclers although the motivation for recycling amongst this generation was seen as being for practical reasons rather than for environmental or ethical considerations. The behaviour of older generations was often contrasted with that of younger generations, particularly those who had benefited from the Celtic Tiger economic-boom years. Interviewees identified increased affluence as leading to a rise of conspicuous consumption and a 'throw-away' society.

Another relationship commonly discussed during the interviews was that between consumers and manufacturers. There was much discussion about where the power to

affect behaviour change for positive waste management lies within this relationship. Interviewees frequently felt that power lay with the manufacturers rather than with themselves and that as a result it was the responsibility of government to regulate the practices of businesses and industries as part of the effort to move higher up the waste hierarchy from a preoccupation with disposal to minimisation and prevention at source. A number of research projects being undertaken in the European Union deal explicitly with the consumer/citizen-manufacturer relationship (Hobson 2003, Ekins 2004). The main conclusion of these projects is that simple assertions by governments that people should change their consuming behaviour are likely to be ineffective because patterns of consumption are situated in complex webs of social and cultural norms. Consumption practices are not necessarily related to simple 'free will' on the part of consumers. Often consumers feel tied into particular patterns of consumption from which they are not easily able to extricate themselves. Therefore consumption choices are tied into wider structural relationships. What is clear from the interviewees discussions of relationships with government, communities and manufacturers is that poor relations can create an 'us' versus 'them' scenario negating the development of positive co-operative or collaborative processes for waste management.

4.2 Personality

Sometimes patterns of waste management behaviour were attributed to instinctive reactions to situations. These positions tended to be justified by simple statements that the interviewee was 'just that kind of person'. It was an individual *personality* characteristic. Personality characteristics were used to explain both positive and negative behaviour:

I was always inclined to be mindful of the environment. I wouldn't be an all out environmentalist. I would consider myself to be a part-time environmentalist. I sometimes use washable nappies and I sometimes use disposable nappies, depending on what suits. I was always inclined to be aware of waste. (FI01:5)

It's because we are all so busy either going to college or working and we just don't have time...Just laziness and I know it's quiet now, but the lads are usually up. There are always too many people around and it's just easier to use the one bin. (GCI04: 15)

However, while personality characteristics were assumed by interviewees to be fixed, much of their discussions actually focused on habits or habitual behaviour, which can be modified albeit with some difficulty (Biel, 2003).

4.3 Practicality

The most commonly identified factor influencing waste management behaviour was whether the actions were practical or not. If the positive waste management options were easy to do and compatible with the lifestyle of householders positive action was more likely to be undertaken:

The fact that we do use our green bin, but it's almost like, because it is practical, because we come from a large family we generate quite a bit of household waste, so in essence the green bin, while its function is essentially an environmentally friendly one it actually serves a practical one for us. (FI09:4)

It was more common however for interviewees to cite practical barriers for not practicing positive waste management behaviour, including a lack of time, lack of facilities (in terms of household capacity, door-to-door collection services and off-site provision) and a lack of information and encouragement from waste authorities:

Well I could improve [my behaviour if I had] a bottle bin closer to here because I have no transport, and if I was to walk to the nearest bottle bank with a big bag of bottles it would be half a mile and through town. There is a big population here (GCOI04:14).

There is some discussion about whether the emphasis on practical challenges by householders actually conceals a reluctance to change lifestyles in order to accommodate alternative waste management practices. This was referred to as passivity in waste management behaviour, as mentioned earlier, but it is also related to the problem that habits are resistant to change because newly formed intentions require conscious deliberation not required by habitual behaviour (Biel, 2003).

4.4 Responsibility

Several interviewees cited a sense of duty to the environment, to other people and to future generations as a factor contributing to their positive management of domestic waste:

The main reason I am so environmentally aware is because I was reared in the country and we never really thought about it, but once you start thinking about it, it makes sense. We have to look after the environment. I don't have children myself, but I have nieces and nephews and we have to look after it for them.
(GCI06:13)

In the explanations for positive waste management behaviour there was an articulation of responsibility in terms of care for the environment and care for future generations, but other respondents proposed the opposite argument. Some felt that fundamentally it was someone else's responsibility to tackle the waste problem rather than theirs, whether it was the responsibility of the local authority, younger generations or manufacturers:

I think the main people responsible for waste are the manufacturers. They produce too much packaging. The householder too has responsibility but it is only 10-15% of the total waste package...Industry are just getting away with it and no-one is stopping them. (FI20:18)

A clearer definition of burden sharing for waste management is required to convince all householders of the part they have to play in waste management activities. It is

unlikely that all sections of society will come on board unless other waste producing sectors demonstrate their commitment to waste management.

4.5 Culture

Although reasons related to relationships, personality characteristics, practical options for waste management and views of responsibility were used to explain both positive and negative waste management behaviour, there was also a more culturally based consideration present in interviewee's responses. This manifested itself in two major ways, first in the claim that as a previously colonised nation Irish people do not like to follow regulations. Disobedience as a form of resistance against authority, initially against the colonial state, has been extended into the waste management field. The second manifestation took the form of country and cultural comparisons of waste management behaviour. The good practices of other countries were frequently mentioned as models that Irish people should adopt. Not all respondents were confident that such systems would work so well in Ireland, even if they could be implemented, because people were not used to being so active in waste management. However those who had experience of such systems remarked how easy they were to follow:

Yes, where I lived in France we had three different bins given to you by whoever government whatever blue, yellow and green. You had a calendar for each day of the week and the bins had lids on them to avoid any kind of messing around. You put the calendar in your garage and you have your bins there. Every time you had a glass bottle you go there and put it in the container it was easy. (FI19:47)

There appeared to be some frustration amongst several of the interviewees about what they described as the underdeveloped national commitment to waste management, and environmental issues generally. For some it was an embarrassment, a sign of backwardness or a lack of cultural sophistication:

People really don't have the time and they don't care...I don't think they can see past their noses and see the long term effect that it has on us. My husband and myself went to Budapest a few years ago and that is a relatively poor country and just before we went to the airport to come home we went to McDonalds which was amazing, when you had finished there was a place for plastic knives, cups and cardboard. Everything was separated before you left. A separate bin for all. That doesn't happen here, all goes into one bin, black sack and out. (FI15:69)

Discussions of national culture are complex and much work has been done on issues of national identity, post-colonialism and culture generally (Nash, 2001) and in Ireland (Howe, 2000), but there has been little attention to how such factors might affect attitudes and behaviour towards areas of environmental policy such as waste.

4.6 Summary

There is no simple reason either why people are motivated to undertake appropriate waste management behaviour or why they do not. It is likely that a mix of factors - including practical opportunities or difficulties (such as a lack of accessible facilities), pessimistic or optimistic personality traits (such as believing that individual recycling can make a difference), a weakly or well defined sense of civic responsibility and finally general socio-cultural norms - will shape behaviour. It is often difficult for householders to imagine changing their waste management behaviour. The changes are often erroneously assumed to be significant simply because waste is not prioritised in their busy schedules.

5. Changing behaviour

The previous section addressed the reasons people gave for their current waste management practices and provided explanations for why their actions failed to match their concerns for the waste management problems in Ireland. Resolving some of these problems is relatively straightforward. For example it was commonly agreed

that more and better accessible recycling facilities should be provided for all sections of society and that existing regulations for waste management need to be more effectively enforced. Such practical demands require funding and good planning of course, but these are relatively straightforward to provide given political will. Interviewees did however often provide other suggestions for reducing the gap between their concerns and actions, which are less clear-cut both in their definition and implementation.

As noted by other researchers examining environmental behaviour, 'the idea that people can be persuaded to change their behaviour supposes that behaviour is something that can be adjusted at will' (Shove 2004:9). Such a supposition goes against the findings of this study which indicates that personal routines and habits are, in fact, constrained and sustained by a plethora of shared social and cultural norms as well as institutions and infrastructures. For respondents their behaviour takes place within a social and cultural environment in which certain practices are taken for granted.

In addition to the practical demands for more facilities and the enforcement of regulations there were three main categories of changes proposed by interviewees: increased and improved education for householders about the problems of waste management and the actions they could take that would lead to reducing those problems; improved and appropriate consultation methods that would encourage householders to be more active in their participation in waste management and which would provide householders with channels for two-way communication with waste service providers; finally and in a slightly different vein, householders suggested that there might be a trend in waste policy making and householder actions which will lead to an evolution in positive householder waste management behaviour over time.

5.1 Education

Greater education about positive waste management behaviour was the most frequently suggested mechanism for changing householder's behaviour. Three-quarters of respondents mentioned the role of education at some time during the

interviews. Education through formal schooling for children was the most common channel proposed as a means to change both attitudes and behaviour. It is assumed that providing information and facilities in schools would not only make younger generations more aware of the waste problems in Ireland and give them practical experiences of positive waste management behaviour, it would also have a knock-on effect to parents who would be pressurised by their children to reduce waste production in their households. Such ideas have been supported by research into projects such as the Green Schools Campaign (Harvey 2002) and were identified by interviewees:

[A] way of increasing awareness is through education like in Creagh National School. Because the children are great to dictate to the parents and make them recycle. Even when we go out home he tells my father 'you can't be burning things! And to my mum he says 'we wash all out bean cans' and she just says 'that's ok for you!' ...Even in work the people say that their kids are brilliant. (GCOI02:9)

Other interviewees felt that more emphasis should be placed on education about waste in schools rather than through media awareness campaigns. A number of respondents commented on the recent advertisements that ran with the Race Against Waste campaign. Most of them felt that the shock tactics of the campaign were inappropriate and would not make people feel any more predisposed to try and manage their waste. In fact they felt it might add to people's feelings of helplessness in making a difference, due to the extent of the problem:

It should really start with the schools...I feel not enough is done in environmental education now you've probably seen those weird ads...it's a science fiction sort of thing with waste flying everywhere, we are now so used to those horrific car ads, but so what. If you showed the litter that's say lying in Ireland's scenic areas, that's lying on the streets or little country roads in Connemara...I think that would affect the pride of people much more than this pseudo-science fiction thing so a lot of money has gone on something that I don't think will have any effect at all. (FI06:23)

In some cases schools were seen as appropriate sites for recycling centres making recycling 'real' for students rather than it being a theoretical, abstract idea:

I would like to see it [education about waste] going into schools...I think if the government were to introduce it as a real thing in schools that would be a great asset. (FI03:66F)

While there was a general emphasis on education through schools other respondents did talk about the need for general education of society:

If you had an educated population...it's all about education. People would be able to rationalise things for themselves and weigh things up properly. Education and consultation and showing people that things work and that there is a result at the end of the day. As I said it should be everyone's attitude to leave the country the way we found it. It is incumbent on us for future generations. If it costs money then so be it. (KI06:18)

Information provision as part of this education was identified as important, but as mentioned previously it has to be appropriate to the recipient's situation. Respondents felt that while they were generally aware of waste problems, they were less sure of the practical steps they could take to help ameliorate them.

5.2 Consultation

Although information and education were seen as important elements of any transition to better waste management behaviour it was felt by respondents that alone such mechanisms would not necessarily solve existing problems. There was a sense in which information and education from the top-down, from governments to communities, might even be counterproductive unless the relationship between governing authorities, waste service providers and communities was improved. Increased consultation was identified as one means through which such improved

communication could be achieved. Waste management would then become a joint enterprise:

Yes, I do think it [consultation] would improve matters. At least people would feel they had been consulted, but at the moment I don't think there is much consultation with the general public. The hackles get raised and people get very annoyed. (FI01:72)

Of course establishing appropriate consultation methods is key to achieving better communication between authorities and communities. Poorly implemented methods could actually be counter-productive with people feeling that they are being excluded from discussions of local significance or that participation is mere tokenism.

Although by no means all the respondents felt they would want to be very active in local waste matters a number did say that this was because the opportunities for getting involved were limited, and perhaps not their 'sort of thing'. It was felt that if alternative processes existed, such as voluntary fora, people might be more willing to participate:

Nobody is consulted. We don't have waste management committees for Gort, so there isn't a county one. So there is no forum for ideas or leaders in the country that is related to a modern population. (GCOI06:28)

The nature of these fora is crucial to their success. Respondents felt they should be non-confrontational, but that this might be difficult in such a contentious area as waste management. Getting people to participate more in defining and implementing waste management will not be an easy job, particularly because of the long history of limited public involvement in policy decisions in Ireland. The breakdown in trust, the centralisation of politics generally and the dominance of the councillors role means that respondents to this survey generally did not think that it is their job to participate and did not believe that their contribution would be taken seriously even if they did. The area of consultation and participation in waste management has been addressed in other countries (see Petts, 2001) and further work would be useful in an Irish context.

5.3 Evolution

The results of the questionnaire and interviews may appear to present a negative picture of waste management in Ireland, but respondents were aware that waste management issues were beginning to be addressed and they generally appreciated that local authorities in particular had many important demands on their budgets that precluded wholesale changes in the ways waste is managed. Indeed a significant number of interviewees talked about how they had seen waste management facilities evolving in recent years and that local authorities and service providers were to be congratulated on this:

We are quite close to Ballealy, the dump, and they have a bring centre there. Around about Christmas about three years ago they introduced cardboard in the bring centre, specifically for boxes from children's toys from Christmas. They kept it up because people said "if this was here all the time we would use it". Bit by bit they introduced more, they took steel cans...that sort of thing. So as it became available we started using it. (FI01:6)

Respondents felt that as procedures and facilities were improved so people's norms and values in relation to waste management would shift to match over time. There was also a sense from interviews that waste management had come a long way in the past decade and that momentum had been developed that meant practices would not be allowed to slip back to past conditions:

People are beginning to realise now maybe. It's just more awareness now because people see the advertisements around the place and there is a lot more effort now to keep places tidy and neat. People are now more aware of the damages of waste that was never seen before (GCI02:9).

The respondents recognised the huge task ahead in terms of managing waste but many remained optimistic that the task could be effectively met by continuing the evolution of waste management strategies already in place.

5.4 Summary

So changing behaviour is not a simple or straightforward exercise. Human behaviour is the outcome of the interaction of an enormous amount of factors that are social, cultural and contextual on the one hand and individual on the other. Following Ekins (2004:3) a simplified interaction map of influences on behaviour might look like Figure 2 below. There is no one simple model that can be developed to enable policy makers to input a waste problem and emerge with a one-size-fits-all solution; people and places are simply too diverse. Equally simply telling people to change behaviour or establishing voluntary initiatives are unlikely to move things far towards reduced waste production unless collaborative and co-operative endeavours focusing on increasing waste prevention and minimisation are developed.

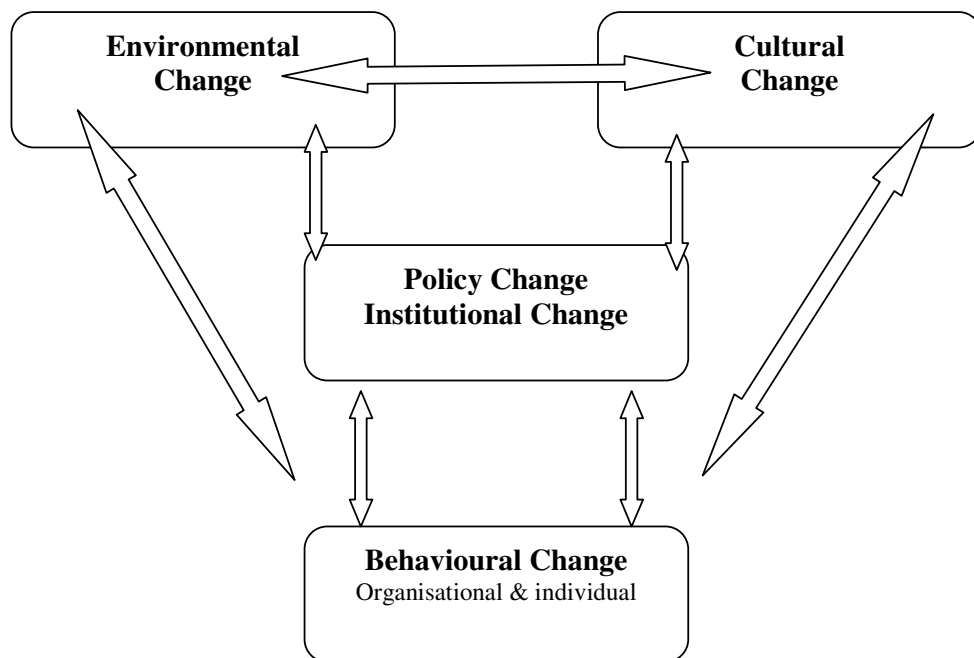


Figure 2 Simplified schema of influences on waste management behaviour (from Ekins, 2004:3)

6. Young people's views on waste

During the questionnaire and interview stages of the research respondents frequently mentioned the role of children in environmental and waste management. This was often in association with the view that by educating younger people adults might be pressurised to adopt improved waste management practices. The potential role of children as catalysts for improved environmental behaviour has been identified in other studies (e.g., Hart 1997, Freeman 1999, Knightsbridge-Randall 1999), but little research on this issue has been carried out in relation to waste management in Ireland. As a result this project incorporated research with students as a preliminary investigation of the role of children in waste management.

The focus group technique was adopted in the current research as an appropriate means of eliciting information on the attitudes and actions of young people. As Hoppe et al. (1995) argue, one of the key advantages of using focus groups with younger people is that when carefully managed they allow students to participate in discussions in a familiar, non-threatening environment. The opportunity for social interaction - through conversation – is the key benefit of focus group research, which is particularly important when issues under discussion (such as waste management) involve values, attitudes and opinions (Burgess et al., 1988).

To ensure that a reasonable cross section of schools from the case study areas were involved in the project, mixed and single sex schools from both rural and urban areas were selected.² Group discussions were conducted with students in three different age groups (9/11 years old, 13/14 years old and 16/17 years old) to elicit views from students at different stages of development. The length of the focus group meetings depended on the age group concerned, with meetings involving the two older age groups lasting for about 45 minutes, approximately 15 minutes longer than those involving the 9/10 years old students (see Heary and Hennessey 2002). In order to facilitate discussions, teachers in the schools involved were asked to advise on the composition of focus groups, each of which comprised on average five or six students,

² Once moderators had identified the schools the school principals were approached. Once agreement had been obtained from the principal there was a process of seeking consent from both the children and their parents for their participation in and the recording of the discussions.

the optimum number identified by Hoppe et al. (1995) to encourage discussion amongst all participants.

The focus group discussions were semi-structured with the moderators posing open-ended questions on a variety of issues related to the topic of waste management. Many of the same topics were broached with all the groups, although students in the two older age groups had the opportunity to discuss the various issues raised in greater depth. Physical prompts and activities were introduced during the meetings to maintain interest in the topic under discussion and to engage participants in specific topics of conversation. For example, the moderators invited younger students to take part in a pass-the-parcel game to encourage discussions about packaging. Similarly, when the topic of littering arose during discussions with older students, the moderators introduced litter awareness posters and focussed a section of the discussion on these posters.

6.1 Waste problems

All focus group members agreed that there was a waste problem in Ireland. The younger age groups tended to be more dramatic in their articulation of the problem, linking waste problems with other environmental issues (such as deforestation), with disease and even death. Part of this dramatisation comes from the recent Race Against Waste advertising campaign, even though advertisements relating to the campaign were only aired on TV after the 9pm watershed. While it is important to convey the seriousness of the waste problem to young people, it is also important to ensure that people of different ages are able to comprehend the message(s) in the way(s) intended:

Alan – The worst thing is...That it could happen...there is a chance of it happening...they will run out of dumps and there is a chance that it will happen.

Andrew – The dump keeps on growing and eventually they will have to spend thousands on it.

Aisling – There, as Andrew said, if the population continues growing then they will have to probably take down the trees.

Caroline – In the end it's mainly about these...innocent people and they have probably been recyclers or something and all this waste comes and kills them.

(Kerry, 9/11, Mixed)

Moderator – Why is it important to keep the area around us clean?

James – Because the rats, they'll get into your house and you could get poisoned by them.

Sarah – The same.

David – It pollutes the environment and animals, and even us, can die, well, like any disease could be on it, maybe like cancer and polio.

Sarah – It is important that we don't leave litter around to hurt the environment, because when you are littering it is just killing things.

(Fingal, 9/11, Mixed)

The students, even the younger ones, were aware of waste issues beyond their locality at the national and even international scale. Replicating remarks made by adults in earlier stages of the research, students sometimes made a comparison between poor waste management in Ireland and the situation that they believed existed in other countries, with experiences gained while on holiday often appearing to underpin their statements:

David – When I was in Spain I saw that it was much tidier than Ireland.

Andrew – When we were in Spain my mum was commenting on the fact that there are bins nearly every few metres where in Ireland, in Tralee, there is only one bin in every street if at all. My mother says that Spain is much more organised than here and they look after their country as well.

Aisling – When I was in Turkey the place is spotless over there and there are so many of them, almost 75 million, so many people and they are clean and then people from Ireland, Germany and other countries come over and throw their beer cans and bottles on the street.

(Kerry, 9/11, Mixed)

An explanation for poor waste management behaviour commonly offered by adults in the questionnaire and interviews was a lack of time. It is perhaps more surprising that students as young as 9 expressed similar sentiments:

Moderator – What stops you from recycling?

David – We are in sixth class and we have a lot more study in sixth class to get into secondary school and not so much time to separate the rubbish. It's hard to do everything.

Aisling – When your parents are working they won't have time and when you are doing your study, there are lots of jobs to do and not so much time to recycle.

Alan – Not enough time.

(Kerry, 9/11, Mixed)

Older students highlighted the inconvenience of separating waste as an important barrier to recycling. Other factors influencing actions were peer pressure and the activities of older children:

Audrey – Teenagers in groups are generally at fault. They won't bother. The fellas instead of the girls, they are showing off.

Sarah – Younger children learn from older children and they are taught to litter.

(Fingal, 16/17, Girls)

6.2 Waste solutions

Students were able to identify problems associated with waste and they were also able to identify possible solutions. They identified the role of good quality information provision in developing awareness of the waste problem and as a means to communicate appropriate actions for reducing waste. Up-to-date information was seen as particularly important, but students were keen to stress that information relating to the reduction and recycling of waste should be informative and relevant.

Rather than passively receiving information on waste issues, a number of students felt that they should be introduced at school to practical methods of reducing and recycling waste, perhaps through involvement in recycling schemes and initiatives such as the Green School programme. Students emphasised their desire for participative learning; that is learning by doing in relation to waste issues:

Brian – If they, let's say in schools, if there was a recycling week or something and if every school did it and if they see how it went, they could do it and they might keep it on and if they could keep an eye on it for let's say a year and see how well it would help the place.

(Kerry, 13/14, Boys)

6.3 Summary

The focus groups indicated a range of diverse opinions amongst the students on issues relating to waste. Several of the issues raised by the school students were the same, or similar, to those raised by older people during earlier stages of the research project (that involved questionnaires and interviews). Despite this diversity of opinion there was unanimous agreement that waste was a problem in Ireland. There was, however, less agreement about exactly why waste was a problem and who was responsible for dealing with it, with some students claiming that the responsibility for waste management was not theirs. In general, even in the older age groups, there was a lack of understanding about what happened to waste once it had left the house, or had been deposited in a litterbin, or recycling facility despite the recent waste awareness campaigns that had been shown on television.

Few notable differences were detected between the discussions in the different geographical locations, although there was relatively more interest shown in those issues that were also receiving media attention locally at the time: the provision of recycling facilities in rural areas (Kerry); incineration and recycling in urban areas (Galway); and waste charges (Fingal). In addition, while there was a progression in the level of sophistication of discussions, there were few overt differences in the sentiments expressed through the different age groups.

The main actions required to change attitudes and actions towards waste in Ireland, suggested by students at the focus group meetings, were the provision of more facilities and appropriate information, the enforcement of socially acceptable behaviour and of existing waste management regulations, and a greater emphasis in school on practical techniques of waste management. Although young people were often cited in earlier stages of the research project as crucial to positive environmental actions within society, particularly in the future, it was clear from the focus group discussions that the students wanted guidance from adults on appropriate environmental behaviour and wanted to see adults setting them good examples to follow.

The students also felt that more information was required and that direct involvement in practical measures to reduce and recycle waste, through incorporation of these measures into school activities, was more likely to lead to behavioural changes than relying on comparatively passive techniques of information dissemination. Issues of responsibility for waste and trust in local authorities, also raised by students through the focus group meetings, paralleled themes that emerged in previous stages in the research, as did the barriers that students felt prevented people from reducing and recycling their waste, such as time constraints and the level of provision of accessible facilities. There was also a sense, particularly amongst the older students, that it was not fashionable to admit to being concerned about the environment and acting accordingly.

In conclusion the focus group research raised a number of interesting issues in relation to how students conceptualise waste problems, how they see their role in waste management and how they respond to messages about waste, both in the formal school setting and in general life. It is evident from this preliminary research that a clearer understanding of how children themselves relate to waste and other environmental issues is required. Specifically there is a need for more detailed research into the reception and comprehension of information about waste and environmental issues. Such research would be beneficial for future planning of educational curricula and environmental awareness campaigns.

7. Testing waste minimisation actions

A household waste minimisation exercise was developed as a method of investigating people's reactions to more pro-active waste management. The exercise allowed participants to experience, with personalised support, a range of waste management practices that are commonly encouraged by local authorities and environmental educationalists. Eleven households across the case study areas attempted to compost, minimise, reuse and separate waste in their homes for a period of four weeks. The questionnaire results and subsequent interviews identified households who, for a variety of reasons, were having difficulties managing waste such as young families with babies, families without waste collection services, students sharing rented accommodation and working householders with limited time. The participants for this exercise were chosen from those members of the public who had undertaken the questionnaire and indicated a willingness to participate in future studies and fulfilled one or more of the criteria mentioned above.

In Galway county two households participated in the exercise, the first was a family with a new house in a rural location outside Roscahill and the second was a working mother with a young daughter living in Ballinasloe who had no access to private transport and lived in an apartment in the centre of a town. In Galway city a student house with six students sharing private rented accommodation participated as did a household comprising of a young professional couple sharing a new apartment. Neither of these city households was serviced by the three-bin collection service run by the council at the time of the research.

In Fingal three households were selected, a family of six living near the Baleally landfill, four young professional co-owners of a new house in Blanchardstown who had no waste management facilities and five students in rented accommodation in Carpenterstown.

In Kerry four households participated in the exercise. These were a family with limited bin facilities living a number of miles outside Tralee, a young professional couple with limited time living in Tralee, a young family with a new born baby in

Dingle that lived in a rural location and a family with limited time, living outside Castleisland near to the North Kerry landfill site.

Participants in the exercise were first provided with explanatory information about the exercise and they then conducted an audit of their household waste, in order to identify their waste management practices (Appendices 6-7). They were also provided with a waste management pack containing:

- An information folder. This included a guide detailing the waste minimisation exercise, a laminated sheet containing information on recyclable and compostable waste, useful tips on reducing waste, and a list of local recycling centres.
- Eco-friendly waste-disposal equipment. This included a large bin with two or three compartments for separating out recyclable and compostable waste, a composter/wormery, a liquid compost maker, a can crusher, a kitchen caddy, and reusable shopping bags.
- Eco-friendly household products. These included Ecover household cleaning products, Eco-nappies (if relevant), recycled toilet paper, Eco-bin liners, reusable mugs and a water filter. Information was also provided on where these products could be purchased locally.

The households were instructed to separate their waste for disposal and recyclables were collected from the households for the first two weeks of the exercise. After this time the householders were encouraged to take their recyclables to local bring centres, and to compost where possible. The householders were asked to keep in mind the reuse of items, reducing the use of plastic and buying durable products while shopping. At the end of each week the householders discussed their experiences of the waste minimisation exercise with a moderator and filled out evaluation sheets for the week (Appendix 8). At the end of the exercise the householders were asked for general feedback on the exercise.

7.1 The challenge of improving household waste management behaviour

The experiences of the participants in the waste minimisation exercise highlighted the challenges facing households who want to improve their waste management practices. The main challenges for householders were related to the accessibility of recycling and waste management facilities, particularly when households did not live close to a bring centre and did not have access to private transport. However there was a willingness amongst most households to undertake recycling if they felt it was feasible. All of the participating households separated and recycled throughout the duration of the exercise to varying degrees. Those households with a garden also composted organic waste. The separation for recycling and composting resulted in a noticeable reduction in the amount of waste the participating households put out for disposal, which provided the householders with a visible reward for their actions. A positive result from the exercise was that many of the householders were surprised how little time activities such as separating waste and recycling took and they expressed a desire to continue with these activities once the exercise was completed. What have previously been assumed to be an arduous or complex task was revealed to be far more straightforward. This was a direct benefit of the practical waste minimisation exercise that facilitated learning by doing.

Participating households received, for the first two weeks of the exercise, a doorstep collection for recyclables. This facility increased householder participation in recycling considerably. Once recyclables were no longer collected and the participants were required to use local bring centres, the total amount of waste recycled decreased. This is in part because the provision of recycling centres varied between different households. In some cases the nearest centre was inaccessible without private transport. In addition the range of items accepted at the recycling centres was variable, with some accepting a lot of materials and others offering only a relatively limited service.

One example of a household that gained a great deal from the household exercise was a family of four from Tralee. Overall the family were surprised at the reduction of waste achieved over the four-week exercise. They found it easy to participate in the exercise and felt that separating their waste was little hassle once the equipment and

information was supplied. They also acknowledged that after the first week they experienced a 'feel good factor' because 'less waste going out makes you feel good that you are doing your bit for the environment'. By the end of the four weeks the family were noticing that there was unnecessary amounts of plastic and packaging on products in shops and that they would welcome more refills for detergents and cleaners as well as a token system for the return of bottles as an incentive for greater recycling. As the exercise fitted well into the established practices of the household they said they were happy to incorporate the extra bins in their kitchen and continue recycling after the completion of the exercise.

A similarly positive experience was reported by a household that comprised of a working couple in their mid-twenties renting an apartment in Galway city. While the apartment block had no facilities for separating waste there were bottle banks a short distance away from the apartment. The respondent had been one of the few people to classify herself as a poor manager of waste in the questionnaire survey because she did not prioritise waste minimisation activities and did not undertake any separation of her waste. By the end of the exercise she recorded a significant reduction in the size of her waste bin and also mentioned the positive personal and social benefits that participating in the exercise had given her. She said 'you feel like you are doing your bit, especially with the recycling. It hasn't been too much hassle...it's a matter of just breaking your routine'.

Not all households were so positive about their experiences or convinced that they would maintain their waste management practices after the end of the exercise. A household of six students in Galway city were very honest about their lack of commitment to the separation exercise stating 'the separation bins are fine, but we still use our own bin for stuff we don't think about'. As the exercise progressed the amount of waste minimisation and recycling activity declined within the household such that at the end of week three they stated 'we just got fed up with it to be honest, we just about manage the one bin'. By week four they said 'we didn't mind doing [the project], but we got lazier as we went on'.

Although levels of recycling generally increased among the households there was more resistance to changing purchasing habits, for example through the purchase of

eco-friendly products or purchasing items with less packaging, in order to reduce waste produced. Household holders were not willing to pay the increased cost involved in purchasing eco-friendly products and did not feel that they were gaining any obvious benefit by changing from their regular brands. Prevention of waste involves a change in lifestyle; a choice that requires time and commitment, which few of the household holders involved in this exercise, were willing or able to give. As one household in Tralee of two working adults in their early thirties said 'many of the manufacturers use plastic bottles and there are few refills available for many items. Those items that have refills offer the refill at almost the same cost as the original, so there is no incentive to reuse your plastics. The supermarkets rule the system so the amount of packaging will not change until they change'. This comment reiterates the views of interviewees during the interview stage of the research in terms of the imbalanced power relations between the consumer and the manufacturer in relation to influencing packaging around and generally recyclable products.

Very few of the participants in the exercise fully read the information provided at the beginning of the exercise. Many of the participants read the information on a 'need to know' basis and cited a lack of time for not reading materials comprehensively. Despite this several of the participating households requested further information on issues such as the environmental impact of household detergents, the disposal of waste, and the location and opening times of recycling centres. The challenge here to balance the provision of information with the realisation that household holders are unlikely to invest a lot of time reading the information provided.

Overall the waste minimisation exercise provided an insight into the practical issues that household holders have to contend with when attempting to minimise domestic waste. While identifying a general willingness to participate in certain waste management activities such as recycling, there was less interest in changing consumption patterns to move from recycling to waste prevention and minimisation activities. This is not surprising as most of the waste awareness literature focuses initially on easy actions such as recycling. The results of this project suggest that at least the attitudinal battle has been won in this regard, but that door-to-door facilities need to be improved to allow people to convert willingness to recycle into actions. Also more attention needs to be paid to activities higher up the waste management hierarchy such as waste

minimisation and prevention, both in terms of raising awareness of how consumption patterns lead to the production of waste and in terms of viable options householders can choose to reduce the volume of waste they produce. Minimisation and prevention activities will be more challenging, socially and politically, to address because they infringe more on lifestyle choices and established practices than simply taking materials to be recycled.

8. A way forward

A clear conclusion of the research is that people are diverse and their views and experiences of waste management differ widely. As Ekins (2004) has argued such social diversity is something to be celebrated, but it does not make the lives of policy makers any easier when trying to manage environmental problems such as waste management. Nonetheless even within such social complexity common themes emerge in the research that suggest the development of certain procedures might facilitate movement towards a more sustainable household waste management system.

The first key point is that waste management is a process set within a wider framework of social and political structures and it cannot be divorced from those contexts. The perception of waste management services by householders, rightly or wrongly, will be affected by these wider structures. This finding supports other research projects examining attitudes and actions in other areas of environmental policy (e.g., Blake 1999, Davies 2002, Hobson 2003, Shove 2004). Where positive social and political structures exist this interconnection will not be problematic. However, when controversial aspects of waste management processes are proposed – such as the proposal to build an incinerator in Galway – then wider frustrations and concerns with politics and politicians may bubble to the surface and negatively impact implementation of waste management practices. Such interconnectedness means that simply providing information about what actions for waste management are the right ones is likely to have little impact on behaviour, particularly on sceptical sections of the public. Without a doubt information is crucial in creating a groundswell of social concern and comment about waste issues, but there also needs to be a more

sophisticated understanding of both the kind of information provided, the recipients views of that information and importantly their views of the information providers.

Proposed actions: undertake an evaluation of the effectiveness of environmental awareness campaigns and environmental education curricula and an evaluation of the communication strategies of local authorities.

There is a tendency within waste management to only consider the transfer of information about waste from service providers and other waste experts to householders and communities. In contrast the interviews conducted for this research, and the research findings of other studies (see Petts 2001), suggest that people actually have a valuable role to play in terms of providing information for these waste experts. Householders, without a doubt, have a detailed understanding of their own waste generating habits and the barriers and opportunities they face on a daily basis in terms of waste management practices. The household waste minimisation exercise included in this research provides an example of just one mechanism for establishing householder-driven information about waste management practices. As experts of their own experiences householders should play an active part in waste management policy making. Two-way channels for information flows about waste management would enable such communication between communities, householders and waste service providers.

A note of caution is necessary here. Two-way channels of communication for information flows about waste management practices, or for that matter any environmental process, are unlikely to produce the desired reduction in waste if there is a lack of trust between the partners involved in that communication (see Eames et al. 2003). Throughout the research numerous allusions were made to the lack of trust between different sections of society. For example respondents were not always convinced that local authorities have their best interests at heart and they sometimes felt that manufacturers create a problem that they, as householders, then have to pay for. A number of interviewees also felt that certain sections of communities receive preferential treatment in terms of the benefits of improved waste management services at the expense of others. Although these articulated feelings of mistrust and injustice may, in part at least, be driven by the desire of interviewees to deflect responsibility

away from themselves to other sections of society, they nonetheless demand attention if waste service providers seriously value householders as collaborators in active waste management.

Better understanding between waste management actors could lead to a reduction in mistrust and a more open and transparent system of waste management planning, creating a virtuous circle of household waste management (Figure 3). There are many pilot studies in European countries that have been undertaken already, some in the waste field (such as deliberative mapping or community advisory councils) and some in other areas of environmental policy (such as citizens juries). A proposal for such a pilot project is described in section 8.1 below.

Proposed action: undertake a pilot study of more deliberative consultation procedures to establish two-way communication between local authorities and communities regarding waste management activities.

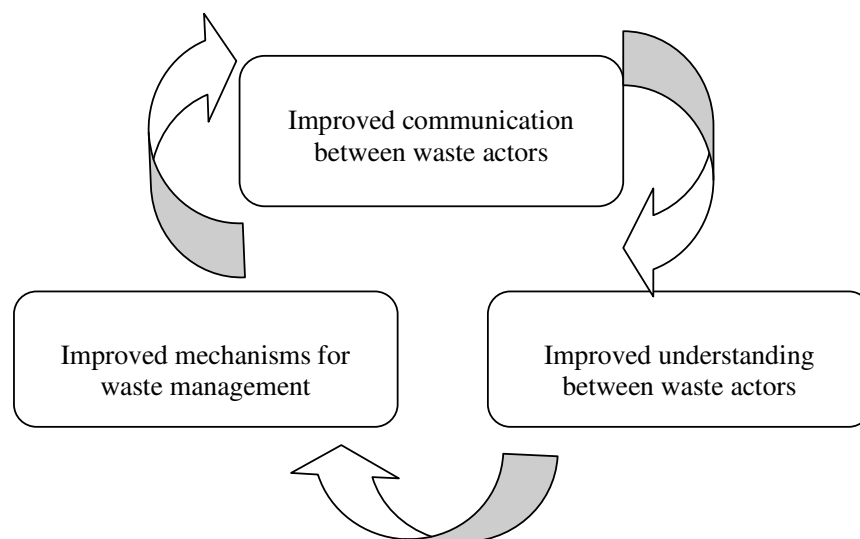


Figure 3 A virtuous circle of household waste management

8.1 Pilot community waste advisory forum

The need for community participation in environmental planning generally is clearly identified in documents such as ‘Sustainable Development: A Strategy for Ireland’ (DoELG 1997) and ‘Making Ireland’s Development Sustainable’ (DoELG 2002). In relation to the field of sustainable waste management, community cooperation will be essential to meet EU and national waste targets outlined in the recent government document ‘Waste Management: Taking Stock and Moving Forward’ (DoEHLG 2004). The urgent need for greater involvement of communities specifically in waste management planning has already been empirically identified by research on attitudes and behaviour in relation to waste conducted in Ireland and by international researchers (see Armour, 1995; Petts, 2001). In addition there remains significant public opposition to many waste facilities in Ireland. In this context of conflict it is essential to develop reconciliatory mechanisms to establish some community consensus about appropriate local strategies for waste management and provide decision-makers with the confidence to take difficult decisions. A Community Advisory Forum (CAF) may provide one mechanism for improving participation, communication and eventually waste management practices.

The CAF would be developed to suit the local waste management planning context from tried and tested models of Community/Citizens Advisory Committees that have been used in the USA for over 100 years (e.g. Armour, 1991; Vari, 1995) and have been adapted to waste management planning contexts in the UK since the mid 1990s (Petts, 2001). The CAF would involve participants - between 16-20 individuals - drawn from a range of different interest positions such as community, business, health, conservation and education. The CAF would meet six times over a period of nine months to address specific waste management issues, reporting to local authority officers and councillors at the end of that period. The CAF would involve meetings, information provision, site visits to waste management facilities and expert presentations. The project would need to be co-ordinated by an individual with expertise in collaborative and deliberative practices of public participation.

Goals and objectives of the project and CAF co-ordinator duties:

- To liaise with local authority officers and examine current practices in the local authority with regard to community involvement in waste management practices and assess how a CAF might fit in with and improve these current activities.
- To develop a framework for an appropriate CAF that involves representatives of different interests from the local area.
- To identify participants for the CAF and develop a plan for its operation including scheduling meetings, developing information packs and organising site visits.
- To facilitate the CAF throughout its nine-month duration and work with local authority officers to facilitate training in the technique and ensure a skills base exists to continue participatory processes after the duration of the Fellowship period.
- To assess the effectiveness of the technique from the perspective of the participants, the wider community and the local authority after the nine-month CAF meeting period.
- To reflect on the assessment of the technique and modify the CAF so that a general model that could be adopted by other local authorities may be generated.

Description of various stages of the work

Months 1-6 Preparation

- Conduct a desk study examining the benefits and limitations of community advisory committees in waste management and other areas.
- Liaise with officers to review current practices with regard to community involvement in waste management planning.
- In conjunction with local authority officers, develop a CAF that will deal with waste management issues of particular concern.
- Use contacts and findings from *2001-MS-SE-2-M1* in conjunction with a general community analysis and appraisal exercises to identify participants in the CAF. Secure agreement from participants about roles and responsibilities of participation in CAF and finalise logistics of meetings.

Months 6-15 CAF meetings (6) & presentation of CAF report

- Introduction to process and objectives of CAF
- Provide an overview of the challenge facing waste management in the local authority – e.g. waste arisings and flows
- Seek views and understanding of CAF members of opportunities and barriers to reduction, re-use and recycling. To consider advantages/disadvantages to resource recovery and other disposal options
- Expert presentations on landfill/incineration processes and site selection criteria
- Visit to landfill/incinerator
- Discussion of expert presentations and landfill visit and development of a consensual CAF position on particular waste management issues in Ireland.
- Meeting with local authority councillors and officers to present CAF findings

Months 16-22 - Reflection

- Review experiences of CAF members, of local authority officers and councillors and seek views of the general public about the CAF process
- Produce reflective report on the CAF exercise
- Develop a generic CAF model for presentation to other local authorities

Demands on the local authority

The local authority would need to provide the co-ordinator with workspace and general facilities to conduct the development and running of the CAF, while also providing access to relevant personnel and documentation as required. In return the co-ordinator will provide the local authority with concrete and practical evidence of wider stakeholder views on waste management planning options in the area and will provide a comprehensive pilot study of a more participatory approach to waste planning. A structured process of active participation, as demanded by sustainable development, should lead to a more reconciliatory outcome for future waste planning decisions. Funding for the position of co-ordinator could be applied for from the EPA via their ERTDI Scheme.

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Appendix 1 Questionnaire

Q1 Do you have a waste collection service?

- ☐ YES - If so please go to Q 2 and 3
- ☐ NO - If no please go to Q 4

Q2 Who is in charge of collecting your waste?

- ☐ Local Authority
- ☐ Private Waste Collector
- ☐ Personal Disposal

Q3 (a) How satisfied are you with the waste management services?

- ☐ Very Satisfied
- ☐ Satisfied
- ☐ Dissatisfied
- ☐ Don't Know

Q3 (b) Comment (if any)

Q4 (a) Which of the following facilities do you use?

Type	
One Bin collection/Wheelie bin/Plastic Bag	
Recycling bin collection/Green bin	
Bring Banks e.g. Bottle banks, clothes banks	
Civic sites – recycling centres for disposal of items i.e. fridges	
Brown bin/composting service	
Household hazardous waste collection e.g. Paint	
Landfill site	
Occasional bulky item collection	

Q4 (b) On a scale of 1-4 please rate how IMPORTANT the facilities you have are to you.

1= very important, 2=important, 3=not important, 4=not very important

Type				
One Bin collection/Wheelie bin/Plastic Bag	1	2	3	4
Recycling bin collection/Green bin	1	2	3	4
Bring Banks e.g. Bottle banks, clothes banks	1	2	3	4
Civic sites – recycling centres for disposal of items i.e. fridges	1	2	3	4
Brown bin/composting service	1	2	3	4
Household hazardous waste collection e.g. Paint	1	2	3	4
Landfill site	1	2	3	4
Occasional bulky item collection	1	2	3	4

Q4 (c) On a scale of 1-4 please rate how well ORGANISED are those facilities in your location.

1=very organised, 2=organised, 3=disorganised, 4=very disorganised

Type				
Single Bin collection / Wheelie bin /Plastic Bag	1	2	3	4
Recycling bin collection/Green Bin	1	2	3	4
Bring Banks e.g. Bottle banks, clothes banks	1	2	3	4
Civic sites– recycling centres for disposal of items i.e. fridges	1	2	3	4
Brown bin / composting service	1	2	3	4
Household hazardous waste collection e.g. Paint	1	2	3	4
Landfill site	1	2	3	4
Occasional bulky item collection	1	2	3	4

Q5 What other schemes do you think would help reduce waste in your locality?

Q6 (a) Do you have any concerns about any of the above facilities?

☐ Yes ⇒ **6b**

☐ No \Rightarrow 7a

Q6 (b) Please list your concerns if any?

Q7 (a) Do you have trouble disposing of any items in particular?

☐ Yes \Rightarrow 7(b) + 7(c)

☐ No \Rightarrow 8 (a)

Q7 (b) If yes, what are these items_____

Q7(c) What method of disposal do you currently use for these items?

Q8 (a) Do you pay for the disposal of household waste?

☐ Yes

☐ No

Q8 (b) Do you feel you should pay to dispose of waste

☐ Yes

☐ No

Q8 (c) Why/ Why not?

Q9 (a) With regard to the environment, how would you rate yourself as a manager of household waste?

☐ EXCELLENT \Rightarrow 9 (b) + 9 (c)

☐ GOOD \Rightarrow 9 (b) + 9 (c)

☐ POOR \Rightarrow 9 (d) + 9 (e)

☐ VERY POOR \Rightarrow 9 (d) + 9 (e)

Q9 (b) If you manage your waste in an environmentally friendly manner what are the main reasons for doing this?

Q9 (c) What if anything would encourage you to manage a greater quantity of your household's waste in an environmentally friendly way?

Q9 (d) What are the main reasons for not managing your household waste in an environmentally friendly way?

Q9 (e) What if anything would persuade you to start managing your household waste in an environmentally friendly manner?

Q 10 Do you presently compost any of your household/garden waste?

☐ YES

☐ NO

Q 10 (a) Do you have a compost bin

☐ YES

☐ NO ⇒ 10 (b)

Q 10 (b) How do you dispose of household and garden waste that you do not compost?

I let it decompose on site (in garden)		Give it to others to make compost	
Put it in with the general rubbish		Other (please specify)	
Burn it			

Q 11 (a) Do you think that there are Waste Management problems in Ireland?

☐ YES ⇒ 11(b) and 11(c)

☐ NO ⇒ 12

Q 11 (b) In your opinion what is the main waste management problem facing the country?

Q 11 (c) What measures would you as a householder be prepared to take to limit this problem?

Q 12 (a) What influences you most with regard to waste management issues?

Advertisements	
Educational Programmes	
Unwelcome local issue	
Political parties with green politics	
Levies e.g. plastic bag	

Q 12 (b) Where do you get most of your information on waste management issues?

Environmental Groups/Organisations	
Media campaigns e. g. <i>'It's easy to make a difference'</i>	
Local Authorities	
National Government /law	
Newspaper	
Leaflets	
Others (<i>please specify</i>)	

Q 13 (a) Which of the following statements best describes your view on the amount of information that is provided on waste management issues?

- ☐ Too Much
- ☐ About right
- ☐ Too little

Q 13 (b) What waste management issues would you like more information on?

Q14 (a) When it comes to household waste, what do you personally think should be the main priorities for Irish waste management policy over the next few years? *Please rank your top three*

Increase recycling facilities		Design packaging that is biodegradable	
Improve and use landfill		Leave things as is	
Introduce incinerators		Don't know	
Reduce landfill		More composting	

Q14 (b) Out of the three you have chosen which do you think is the most important priority and why?

SECTION B

This section is designed to get general information on your opinions about the environment

Q15 Which of the following statements best describes how you feel about the state of the environment? PLEASE TICK ONE ONLY

- ☐ I am very concerned about the state of the environment
- ☐ I am concerned about the state of the environment
- ☐ I am not very concerned about the state of the environment
- ☐ I have no opinion

Q 16 (a) Here is a list of common environmental concerns please look at the card and tell me which five of these are most important to you? List in order of importance to you, where, 1= most important and 5=least important.

<i>Concern</i>	<i>Most Important</i>
decline in finite resources e.g. coal, oil	
marine pollution sewage on beaches eg oil spills	
river pollution	
global warming /hole in ozone layer/ acid rain	
landfill	
traffic congestion and pollution	
Deforestation	
litter, rubbish	
Loss of countryside to building development	
nuclear radiation/radioactive waste	
Loss/extinction of plants and animals world-	

wide	
Incineration	
fumes and smog from factories	
backyard burning of waste	
Dog fouling	

Q 16 (b) Why does (No. 1 above) concern you so much?

Q 16 (c) What in your opinion is the best solution to this problem

Q16 (d) Where did you obtain most of the information about this problem?

Q 17 Are there any environmental topics that you would like more information about?

Q 18 (a) Please tick how often you carry out the action:

<i>Activity</i>	<i>Daily</i>	<i>Weekly</i>	<i>Monthly</i>	<i>Yearly</i>	<i>Never</i>
Read about environmental issues in papers or magazines					
Watch TV programmes on environmental issues					
Involved in clean up with Tidy Towns /local green areas					
Select one product without packaging for the sake of the environment					
Compost kitchen waste					
Recycle glass/cans/paper/plastic					
Buy organically grown fruits & vegetables					

Q 18 (b) Have you ever taken part in the following activities:

Cut down car use and/or use alternative transport

YES ☐ **NO** ☐

Cut down the amount of energy/water your household uses (switch off lights when you leave a room)

YES ☐ **NO** ☐

Find another use for old household items e.g. Saucepans for flowerpots!

YES ☐ **NO** ☐

Repair broken goods instead of purchasing a new one

YES ☐ **NO** ☐

Pick up other peoples litter on the street

YES ☐ **NO** ☐

Q 18 (b) Are there any other environmental actions that you have done which were not mentioned above?

Q 18 (c)[If 'never' to some] Why would you never do some of these actions?

Action

Q 19 Do you think that the public's role in environmental policy making is...

(Please tick one)

☐ Of no value

☐ Of little value

☐ Is valuable

☐ Is very valuable

Comment

Q 20 On environmental policy issues would you consider yourself to be (Please tick one)

☐ Very active

☐ Active

☐ Moderately active

☐ Not very active

☐ Not interested

Q 21 How frequently, if ever, in the last twelve months, have you used any of the following methods to influence Irish environmental policy?

Influence	Yes	No	How often
Signed petitions			
Donated money to an environmental group			
Joined an environmental group			
Wrote letters or lobbied TD/Councillors/newspapers			
Voted for an environmental candidate			
Attended meetings about an local problem			
Other(<i>Please specify</i>)			

Q 22 Have you any additional comments to make?

SECTION C

This section is designed to acquire general information about you

Q23 Are you <input type="checkbox"/> Male <input type="checkbox"/> Female	Q27 How many people are in your household? -----
Q24 Age <input type="checkbox"/> 18-29 <input type="checkbox"/> 30-39 <input type="checkbox"/> 40-49 <input type="checkbox"/> 50-59 <input type="checkbox"/> 60-69 <input type="checkbox"/> 70+	Q28 Do you share your accommodation with <input type="checkbox"/> Family <input type="checkbox"/> Live alone <input type="checkbox"/> Share with ____ people
Q25 Occupation <input type="checkbox"/> Professional <input type="checkbox"/> Service industry <input type="checkbox"/> Looking after home <input type="checkbox"/> Managerial & Technical <input type="checkbox"/> Government <input type="checkbox"/> Unemployed <input type="checkbox"/> Student <input type="checkbox"/> Retired <input type="checkbox"/> Other	Q29 Is your home <input type="checkbox"/> Privately owned <input type="checkbox"/> Social/Council housing <input type="checkbox"/> Privately rented <input type="checkbox"/> Other (<i>please specify</i>)
Q26 Last Public exams <input type="checkbox"/> No formal education <input type="checkbox"/> Vocational Certificate <input type="checkbox"/> Junior Certificate	Q30 Type of dwelling <input type="checkbox"/> Detached House <input type="checkbox"/> Semi-detached House <input type="checkbox"/> Town house

<input type="checkbox"/> Leaving Certificate <input type="checkbox"/> Third level qualification (<i>please specify</i>)	<input type="checkbox"/> Apartment <input type="checkbox"/> Other (<i>please specify</i>)
---	--

Are you willing to participate in either interviews or other in-depth studies in the future. (Tick box if yes) ☐

If yes, may we please have your

Name -----

Address -----

Phone Number /email address -----

Thanks for completing the questionnaire

The information you supplied will remain completely confidential

<u><i>For office use only</i></u>	
Name -----	Number -----
Location -----	Date -----/2003

Appendix 2 Interviewees selection criteria (Fingal)

Interview No.	Location	Criteria
FI01	Baleally	Female Interested in environmental issues Pro-active manager of waste Young family Owner occupier
FI02	Corduff	Male Anti-bin charges Interested in environmental issues Passive manager of waste Owner occupier
FI03	Balbriggan	Female Anti-bin charges Not very interested in environmental issues Not interested in waste issues Younger age bracket Rented accommodation
FI04	Balbriggan	Male Pro-bin charges Interested in environmental issues Moderately active in positive waste management Sceptical of politics and politicians Owner occupier
FI05	Balbriggan	Female Pro-bin charges Pro-incineration

		Older age bracket Owner occupier
FI06	Corduff	Female Lives with parents Green bin Not very interested in waste issues
FI07	Portmarnock	Male Pro-bin tax Manufacturers responsible for waste problems Higher income bracket Owner occupier
FI08	Carpenterstown	Female Green bin Child in Green School Pro-bin charge (anti- tag system) Owner occupier
FI09	Carpenterstown	Male Student Younger age bracket Lives with family Lived in Germany
FI10	Blanchardstown	Male Former councillor Professional knowledge of waste systems Owner occupier
FI11	Portmarnock	Male Pro-bin charges

		<p>Moderately interested in environmental issues</p> <p>Middle age bracket</p> <p>Owner occupier</p>
FI12	Blanchardstown	<p>Male</p> <p>Interested in environmental issues</p> <p>Younger age bracket</p> <p>Student</p> <p>Lives in an apartment</p> <p>Rented accommodation</p>
FI13	Portmarnock	<p>Female</p> <p>Interested in waste issues</p> <p>Active in the local community</p> <p>Pro-bin charges</p> <p>Owner occupier</p>
FI14	Coolmines	<p>Male</p> <p>Interested and active in waste issues</p> <p>Older age bracket</p> <p>Pro-bin charges</p> <p>Owner occupier</p>
FI15	Rush	<p>Female</p> <p>Interested and active in environmental issues</p> <p>Anti-bin charges on grounds of poor recycling facilities</p> <p>Owner occupier</p>
FI16	Coolmines	<p>Male</p> <p>Not interested in environmental issues</p> <p>Anti-bin charges</p> <p>Owner occupier</p>

FI17	Corduff	Male Moderately interested in environmental issues Social housing
FI18	Fancourt Heights	Male Interested in environmental issues Pro-bin charges Owner occupier
FI19	Carpenterstown	Female Non-national Anti-bin charges Owner occupier
FI20	Lusk	Male Non-national Interested in environmental issues Pro-bin charges Owner occupier

Appendix 3 Interview schedule

A. Home

How do you manage your waste in your own home?

How do you rate yourself as a manager of household waste?

What is it that made you manage (not manage) your household waste?

Are there any ways in which you could improve? (*opportunities*)

What would discourage you from doing more? (*barriers*)

Do you ever think about minimising or preventing waste i.e. buy products with less packaging?

B. Local Area

Are there any waste issues in your area?

What are your opinions on them?

Are you involved in any of these issues?

How /why did you get involved?

C. Waste Management in Ireland

How do you feel about incineration as a form of waste management in Ireland?

What is your opinion on waste charges?

Landfill

Prevention and minimisation of waste?

Backyard burning?

Illegal dumping?

Recycling?

What do you think of the information provided on waste?

D. Responsibility

Who do you feel is responsible for waste?

What role do you think state bodies/ local authorities play in relation to waste?

What do you think of the relationship between local authorities/govt and the public?

E. Public Participation

Do you feel that the public has a role to play with regard to waste issues/policy?

Are there are obstacles that could be overcome to improve participation?

Is there enough communication between local authorities and the public?

Appendix 4 Table of schools participating in the focus group research

School	Location	Age	Single sex/mixed School	Green School	Rural/Urban
Loughshinney N.S.	Rush, Fingal	9/10 years	Mixed	No	Rural
Kinvara N.S.	Kinvara, Galway County	9/10 years	Mixed	No	Rural
Creagh N.S.	Ballinasloe, Galway County	9/10 years	Mixed	Yes	Urban
Tralee National School	Near Tralee, Kerry	10/11 years	Mixed	No	Rural
Castleknock Community School	Carpenterstown, Fingal	13/14 years	Mixed	No	Suburban
Inverin Community School	Inverin, Galway County	14/15 years	Mixed	Yes	Rural
St.Bernards School	Killarney, Kerry	13/14 years	Single sex - Boys	No	Urban
Loretto Convent	Balbriggan, Fingal	16/17 years	Single sex – Girls	No	Urban
Mercy Convent	Newtownsmith, Galway City	16/17 years	Single sex – Girls	No	Urban
Castleisland Vocational School	Castleisland, Kerry	16/17 years	Single sex - Boys	No	Urban

Appendix 5 Focus group topic schedule

Focus Group Schedule for 9/10 year old students (ca. 30mins duration)

- What is waste?
- Where does it come from? (Activity – pass the parcel assess amount of wrapping)
- Where does it go?
- Do you think waste is a problem?
- Why is it important to keep our area clean?
- What do you do with waste in your home?
- What would encourage you to pick up litter off the street?
- What do you think of people who throw litter on the street?
- Why would someone ask you to pick up litter?
- Who tells you about waste?

Focus Group Question Schedule for 13/14 and 16/17 years old students (ca. 45mins duration)

- What is waste?
- Do you think that waste is a problem for the environment in this country?
- Who is/are responsible for waste?
- Do you have a role to play?
- Do you feel that there is enough information directed at your age group?
- Do you do much with waste at home?
- What would encourage you to do more with waste?
- What would you be willing to do to improve waste management in your area?
- Any particular spots that you know people litter in?
- Why do you think people litter?
- Who litters?
- What do you think would stop people from dropping litter?
- Do you think people have a right to ask you to pick up litter?

- What do you think of this advertisement? (Litter poster)
- Questions about poster including: What does littering bring out in people?
- Are there any waste issues in this area at the moment?
- What's your opinion on Landfill?

Incineration?

Plastic bag levy?

Backyard burning?

Bonfires at Halloween?

Appendix 6 Waste minimisation exercise explanatory sheet

What is a waste minimisation exercise?

It is a method of developing means of understanding people's actions in relation to waste in their own homes.

Why are we carrying out this exercise?

We want to discover the most practical method of minimising waste in your household. Therefore the success of this project relies on you being as honest as possible e.g. if the bins are too awkward, tell us!

What you will participants receive?

- ✓ Information pack
- ✓ Separation bins
- ✓ Composter
- ✓ A number environmentally friendly household products e.g. washing-up liquid

How will it operate?

We will visit your home for a short meeting to evaluate the exercise over four weeks. For the first two weeks only we will collect your recyclables should it be necessary. We want you to be honest and open with us during the evaluation period and state the advantages and disadvantages of the information and equipment provided, and also to identify items that are still difficult to recycle or dispose of.

How long is it going to take?

A short meeting will be held once a week for four consecutive weeks from the start date (at a time that is convenient to you).

What does it involve?

- Read the information pack
- Meet with the researcher once a week to review progress
- Use equipment e.g. separate your waste
- Find and use local recycling facilities, if possible

Fill in the weekly evaluation sheet with the researcher.

What will participants get out of participating?

- ✓ Equipment
- ✓ Information booklet
- ✓ The knowledge that you're doing your bit for the environment!
- ✓ Opportunity to influence local waste policy

What will we get out of the participants responses?

As sustainable development policies have emphasised the need for local participation in policy- making, your feedback is vital. By understanding the way householders practically use waste management equipment and information and the problems they encountered with same, we hope to inform and improve local waste policy.

Appendix 7 Waste minimisation household audit

Household No: _____ Location: _____

How many bins/bags do you put out per week? _____

In your opinion what is your greatest source of waste?

What waste do you have difficulty disposing of?

Do you currently burn any rubbish? Yes No

In the household fire?

In the garden?

What do you burn? _____

How much waste would you burn in a week? _____

Recycling

Do you feel you have enough information on recycling: Yes No

<i>Where are the nearest recycling centres?</i>	
Collection from my house	
Within walking distance	
In my local supermarket	
Other access: specify	
No access	
Don't know	

What is recycled...	Bulky items	Hazardous waste	Paper	Cardboard	Plastic	Glass	Tin cans	Textiles
from your house?								
at a bring centre?								
at another depot?								

Reuse:**In your household do you ever reuse...**

	Yes, always	Yes, occasionally	Seldom	Never
paper?				
envelopes?				
clothes?				
glass containers for example: jam jars?				
plastic bags?				
cardboard?				
plastic containers?				

Minimisation:***Do you ever...***

	Yes, always	Yes, occasionally	Seldom	Never
buy and use refills?				
buy goods with less packaging?				
overbuy food and have to throw some away?				
take a recyclable/green bag shopping?				
buy recyclable goods?				

Composting

Do you produce compost?	Yes	No
Do you feel you have enough information on composting?	Yes	No
What is collected from/what do you put into your...		
composting service i.e. collection from your door?		
composter?		
informal compost heap?		

Appendix 8 Waste minimisation evaluation sheet

Week _____

Household No: _____ **Location:** _____

Has there been a reduction in the amount of waste produced in your household?

If there is a reduction, comment on what has been reduced.

If no reduction occurred, comment on why this happened?

Recycling:

Do you find the separation bins easy to use?

Are they helpful when segregating your waste?

What is recycled...	Bulky items	Hazardous waste	Paper	Cardboard	Plastic	Glass	Tin cans	Textiles
from your house?								
at a bring centre?								
at another depot?								

Composting:

Have you any comments on the composter?

Was it easy to use?

What did you put into the composter this week?

Reuse:

	Yes	No
<i>Paper</i>		
Envelopes		
Clothes		
Glass containers		
Plastic bags		
Cardboard		
Plastic containers		

How have the other members of the household found the:

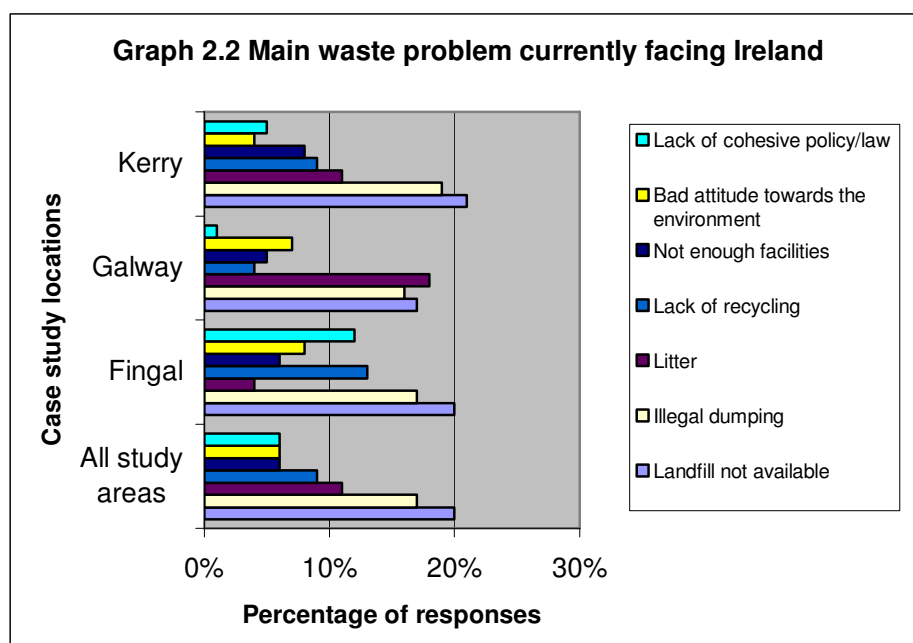
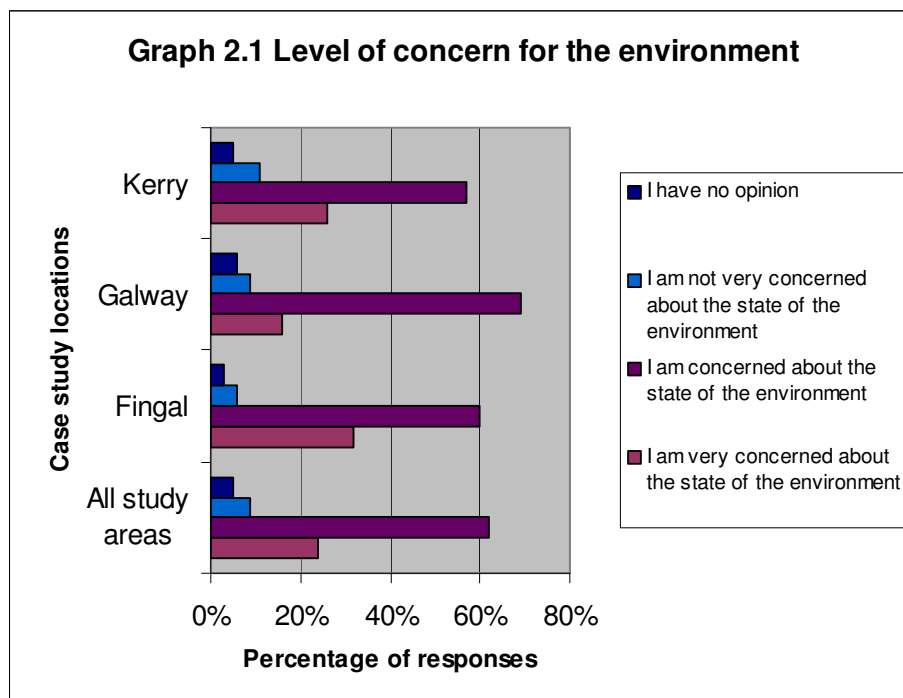
Information?

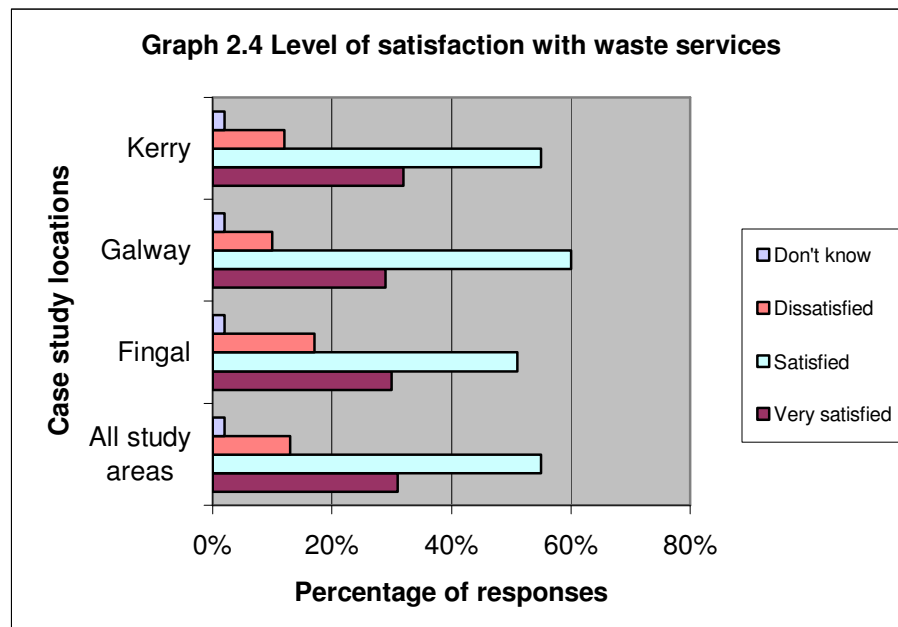
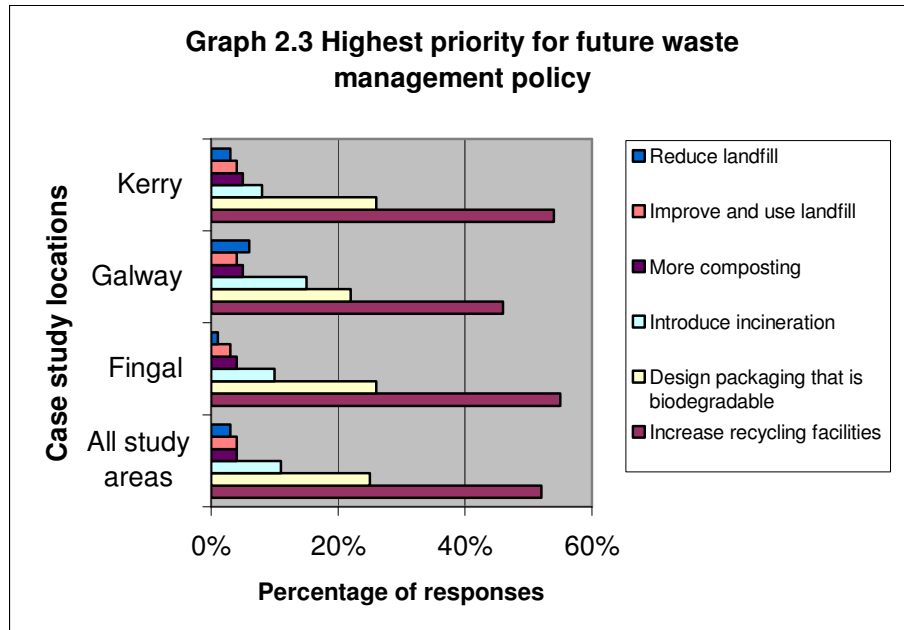
Equipment?

What problems if any did you encounter this week with the exercise?

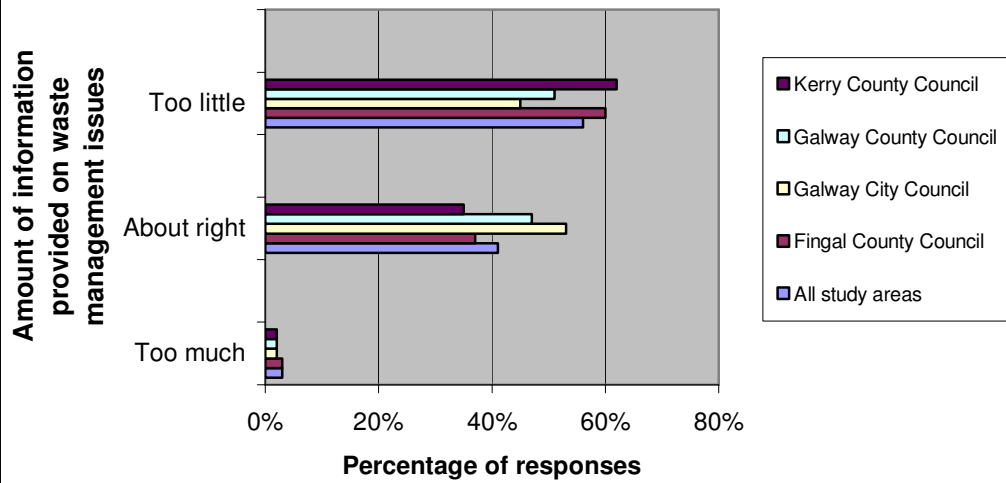
What were the positive aspects of the exercise this week?

Appendix 9 Graphical representation of selected data tables

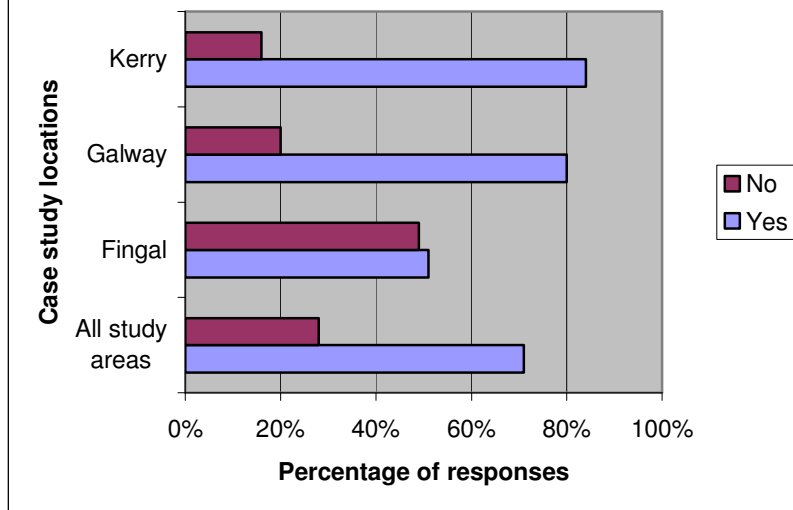


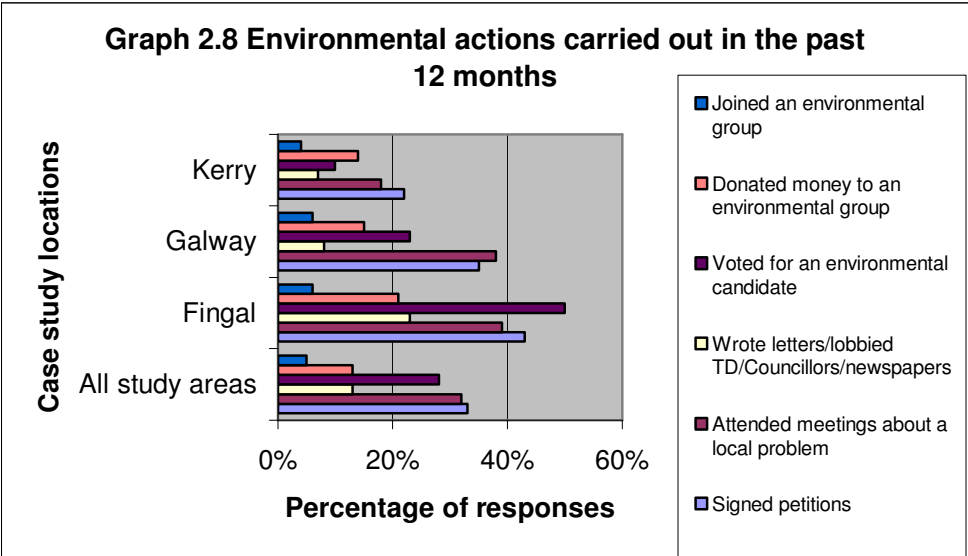
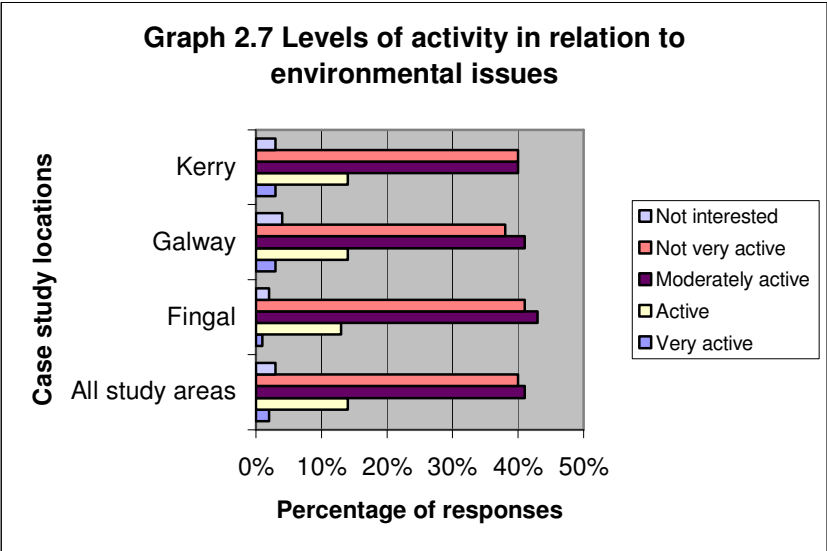


Graph 2.5 Views on amount of information provided on waste management issues

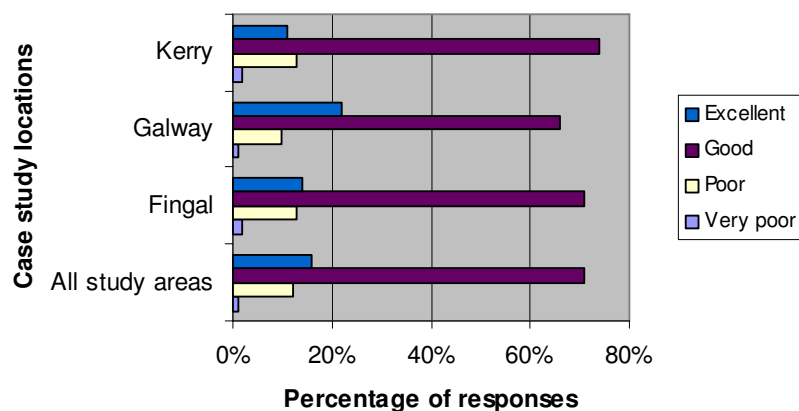


Graph 2.6 Views on whether waste disposal should be paid for





Graph 2.10 Householder ratings of themselves as managers of household waste



Graph 2.11 Participation in composting activities

