

Environmental RTDI Programme 2000–2006

**ENVIRONMENTAL ATTITUDES AND
BEHAVIOUR: Values, Actions and Waste
Management
(2001-MS-SE2-M1)**

Synthesis Report

(Main Report available for download on www.epa.ie/EnvironmentalResearch/ReportsOutputs)

Prepared for the Environmental Protection Agency

by

Department of Geography, Trinity College, Dublin

Authors:

Anna Davies, David Taylor, Frances Fahy, Honora Meade and Abigail O’Callaghan-Platt

ENVIRONMENTAL PROTECTION AGENCY

An Ghníomhaireacht um Chaomhnú Comhshaoil
PO Box 3000, Johnstown Castle, Co. Wexford, Ireland

Telephone: +353 53 60600 Fax: +353 53 60699

E-mail: info@epa.ie Website: www.epa.ie

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Details of Project Partners

Anna Davies (Principal Investigator)

Department of Geography
Trinity College
University of Dublin
Dublin 2
Ireland

Tel.: +353 1 6081554

E-mail: daviesa@tcd.ie

Frances Fahy (EPA Doctoral Scholar)

Department of Geography
Trinity College
University of Dublin
Dublin 2
Ireland

Abigail O'Callaghan-Platt (Research Assistant)

Department of Geography
Trinity College
University of Dublin
Dublin 2
Ireland

David Taylor (Project Co-ordinator)

Department of Geography
Trinity College
University of Dublin
Dublin 2
Ireland

Tel.: +353 1 6081581

E-mail: taylor@tcd.ie

Honora Meade (Research Assistant)

Department of Geography
Trinity College
University of Dublin
Dublin 2
Ireland

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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. 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 householders. The participating householders were also aware of the many challenges associated with waste production and the possible policy approaches that could be adopted 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 that consumption patterns play in creating 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 proactive) in relation to waste management in terms of five main themes: relationships, personality, practicality, responsibility and culture.

- i. Good relationships between communities, local authorities and manufacturers were seen as pivotal in establishing collaborative action for managing waste effectively.
- ii. 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.
- iii. 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.
- iv. 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.
- v. 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, to be effective, information has to be provided from sources that are trusted by the recipients.
- 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 the public 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. Again, this information needs to be developed by sources that are respected 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.

References

- Davies, A.R., 2003. Waste wars – public attitudes and the politics of place in waste management strategies. *Irish Geography* **36(1)** : 77–92.
- Drury Research, 2000. *Attitudes and actions: a national survey on the environment*. DoELG, Dublin.
- Drury Research, 2003. *Attitudes and actions: a national survey on the environment*. DoELG, Dublin.

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. 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 (Fig. 1.1). 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:

- i. Desktop study
- ii. Questionnaire survey
- iii. Interviews
- iv. Focus group discussions
- v. Household waste minimisation exercise.

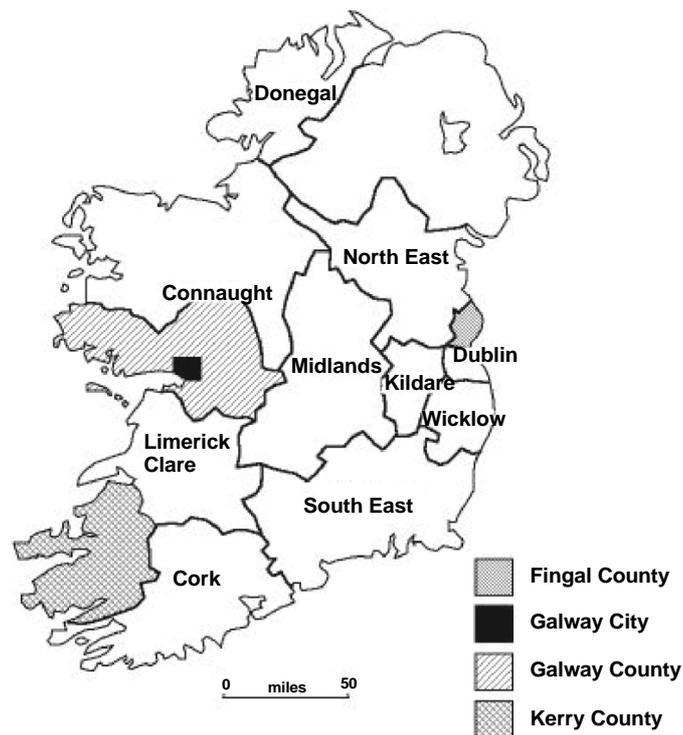


Figure 1.1. Case study locations.

2 Attitudes and Behaviour towards Waste Management

This section 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 participants reflect the diversity of the population in the local authority areas in terms of gender, age, education and housing tenure. Further details regarding the development and implementation of the survey can be found at [http://www.tcd.ie/Geography/Abt_06\(EPA\).html](http://www.tcd.ie/Geography/Abt_06(EPA).html) and in the Main Report.

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' (Fig. 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).

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 (Fig. 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 household level.

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. That

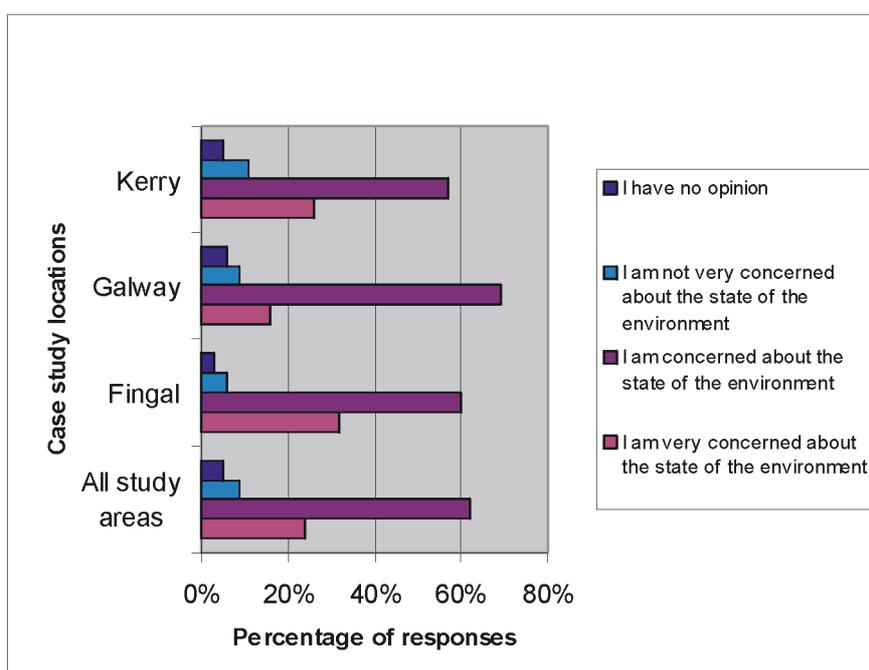


Figure 2.1. Level of concern for the environment.

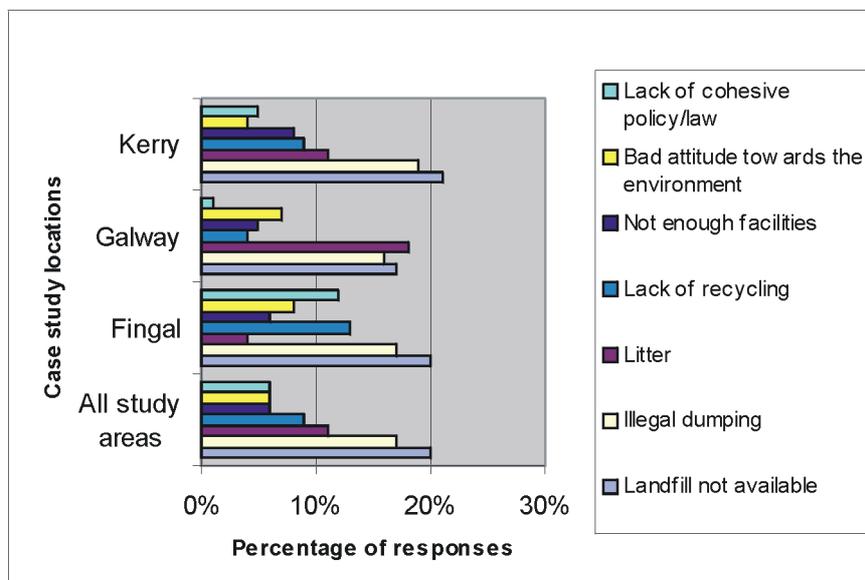


Figure 2.2. Main waste problem currently facing Ireland.

multiple causes were identified as creating problems for the management of waste indicates awareness amongst the respondents of the complexity of dealing with waste.

While 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 2 km 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 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.

Overall, the results indicate a concern about waste and an appreciation of what 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 Fig. 2.3.

As with the identification of waste management problems, there was general agreement amongst the respondents about which policy options would be preferable to solve waste problems. Fifty-two per cent of the respondents selected recycling facilities as the key to solving waste problems, more than double the number choosing 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, Fig. 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, 2005). An explanation for the relatively higher support could be that the public debate about incineration introduced more people in Galway to the process than in either Fingal or Kerry and

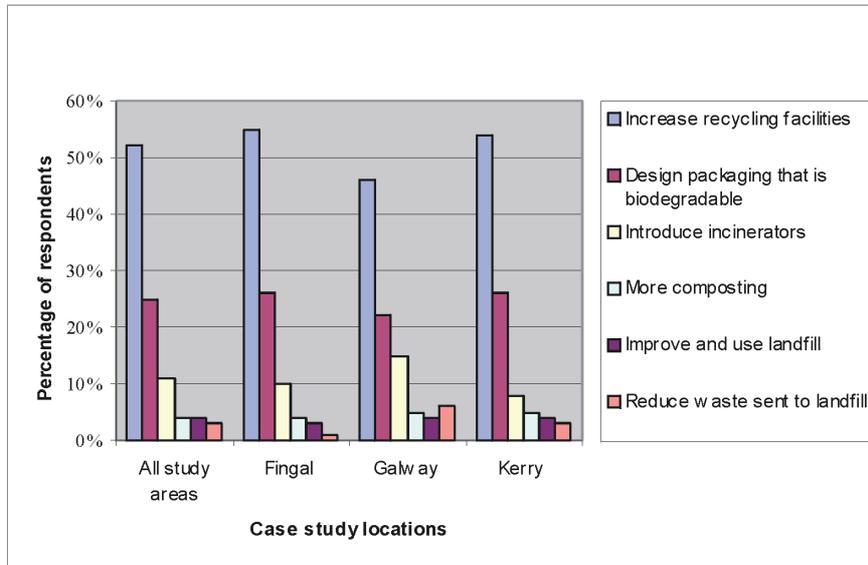


Figure 2.3. Highest priority for future waste management policy.

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 packaging 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, a more complex pattern emerges when other factors are used to analyse the data. For example, responses seem to be influenced by the age of the respondent. Respondents in the 70+ age category most frequently (30%) cited the introduction of incineration as the highest ranked priority, whereas only 5% of respondents in the 18–29 age group prioritised incineration. The youngest age group was 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, and 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 (Fig. 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 satisfaction 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.

The initial survey of waste management planning processes in Ireland had identified a number of issues on

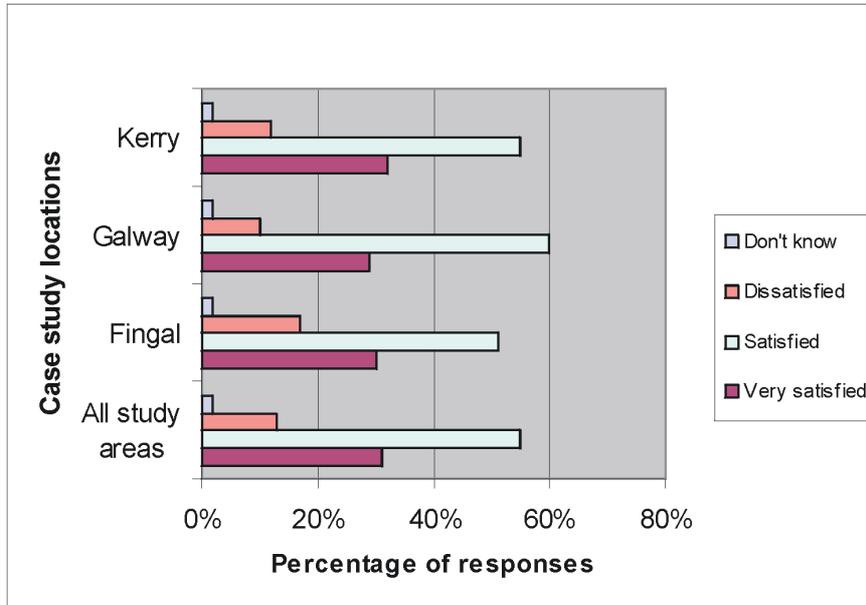


Figure 2.4. Level of satisfaction with waste services.

which public attitudes were considered to be important and which were 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 (Fig. 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 on waste service provision in their local authority.

It is clear from the results displayed in Fig. 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

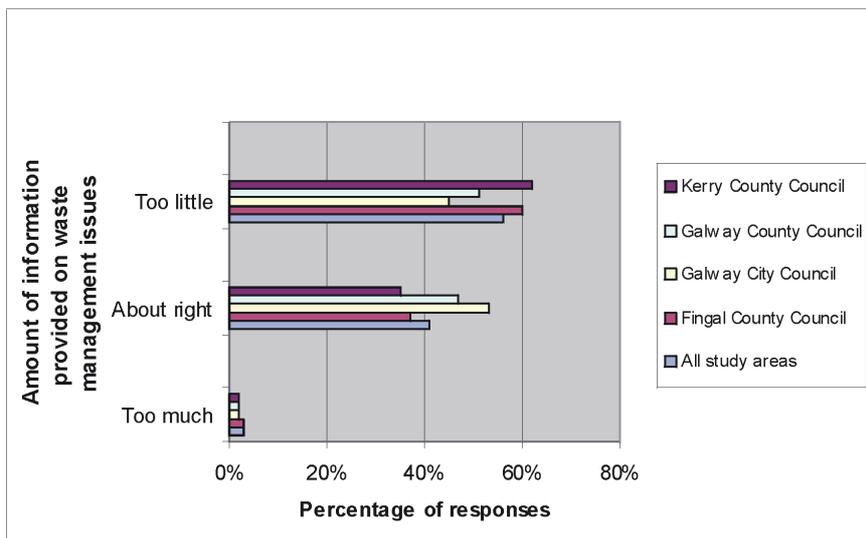


Figure 2.5. Views on amount of information provided on waste management issues.

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 (Fig. 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 is perhaps unsurprising as the questionnaire survey coincided with protests (covered by local and national

media) against the introduction of waste collection charges in the area. Equally, there is a longer history of charging for waste in Kerry and Galway than in Fingal.

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 to 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' (Fig. 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

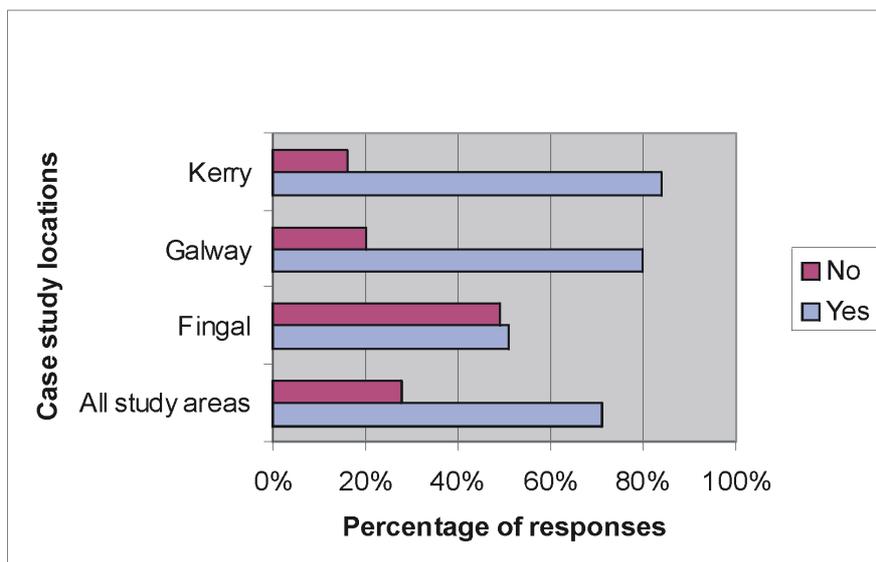


Figure 2.6. Views on whether waste disposal should be paid for.

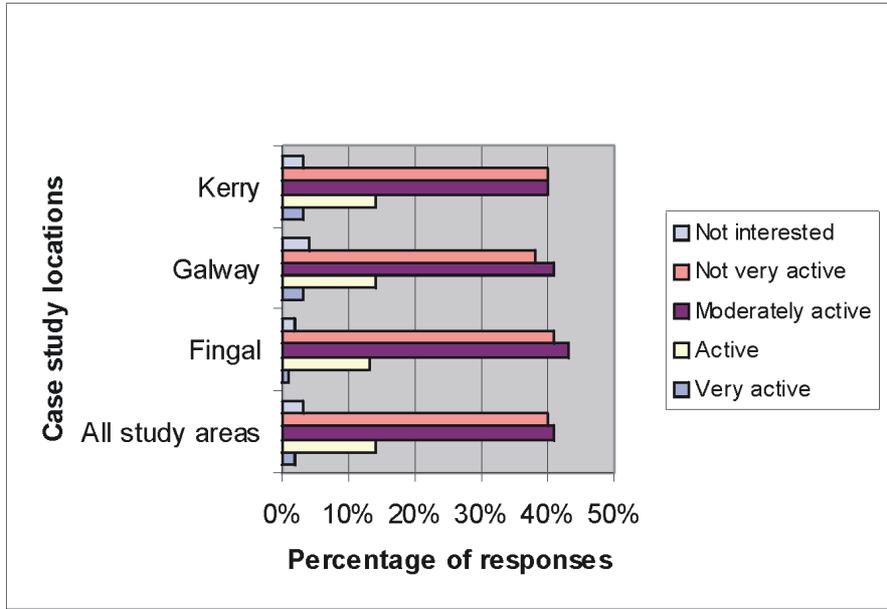


Figure 2.7. Levels of activity in relation to environmental issues.

active because they are aware they could potentially participate in many more activities.

Respondents were also asked about the nature of the activities that they participated in (Fig. 2.8). Most people referred to signing petitions and attending local meetings, 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. Again this activism may have been due to the controversy regarding 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 Fig. 2.9. The majority of respondents viewed themselves as either

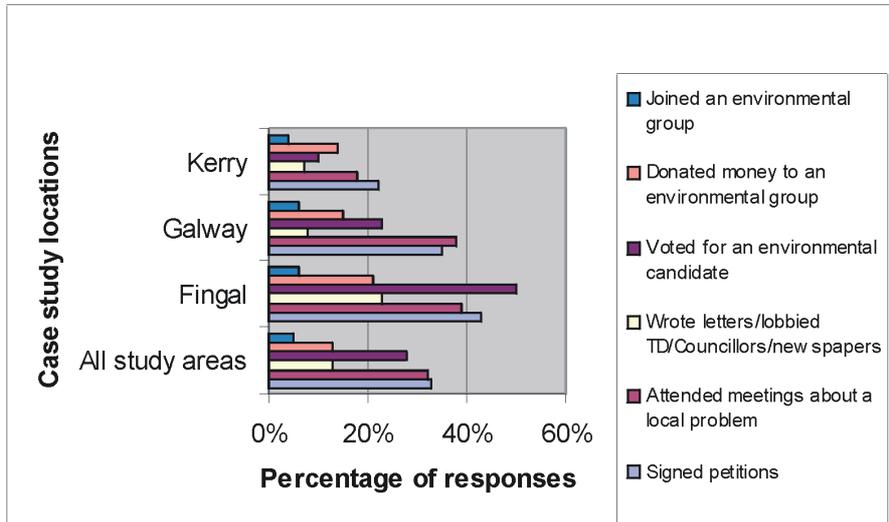


Figure 2.8. Environmental actions carried out in the past twelve months.

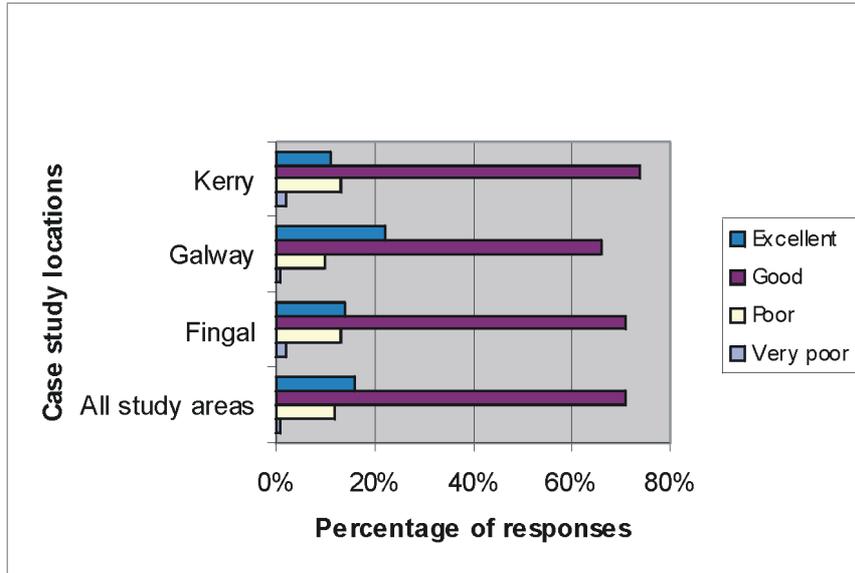


Figure 2.9. Householders ratings of themselves as managers of household waste.

'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 public 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 they always deposit their refuse in a bin and put out the bin for collection at the appropriate time. If this is typical of a householder's understanding 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 might be expected that many people would want to 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- to 39-year olds rated themselves as 'excellent' followed by 18% of 40- to 49-year olds, 23% of 50- to 59-year olds and 24% in both the 60–69 and the 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 opportunity 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 (Fig. 2.10). Indeed few people actually owned a composter. A greater proportion of respondents in Galway composted waste than in either Fingal or 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. The relatively higher level of composting in Galway 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.

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 underpinned their behaviour (results are listed in Table 2.1).

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 more environmentally friendly behaviour than in either Fingal or Galway. Galway respondents were more likely to talk about the simplicity of taking environmentally sound actions for waste management than those in 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.

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 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.

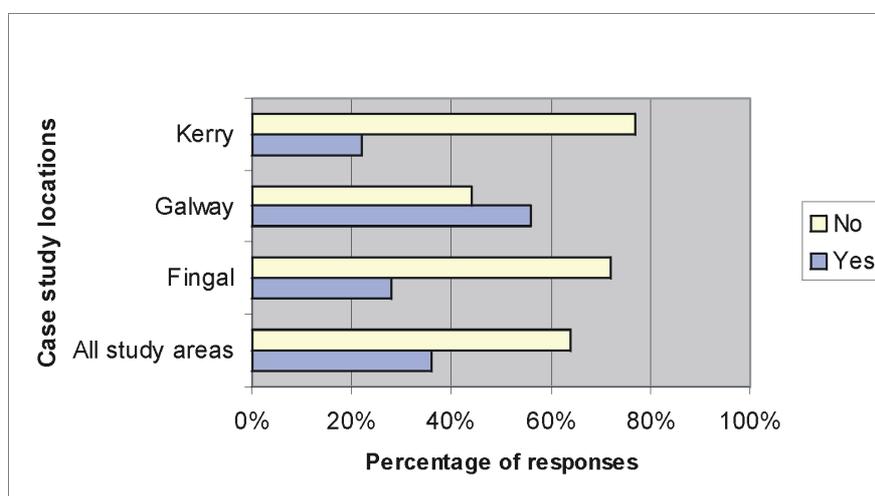


Figure 2.10. Participation in composting activities.

Table 2.1. Main reasons for managing waste in an environmentally friendly manner (percentages less than 1% are not included).

Reasons	All study areas	Fingal	Galway	Kerry
The environment	44% (n = 557)	52% (n = 211)	37% (n = 159)	44% (n = 187)
Hygiene and 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)

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. 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.

As with people who were already active, the most frequently requested mechanism for respondents who were not participating in positive waste management actions was facility provision, but economic incentives were more important to inactive respondents. This would suggest that households who are not already participating in positive waste management behaviour are 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 did not identify these consumption patterns as being an area where waste management problems could be addressed and there was a clear pre-occupation amongst respondents with end-of-pipe disposal mechanisms rather than waste prevention or minimisation activities.

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 were 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 60 interviews were conducted across the case study locations: 20 in Fingal, 20 in Kerry, and 10 in each of the areas administered by Galway City Council and Galway County Council. 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 or negative views about waste were included as were people who had articulated either commonly held or unusual views in relation to waste. 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.

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. 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 waste charges were not commensurate with the quality 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 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 proactive 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. 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. As a result, 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 counter-intuitive statistics on respondent's views 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.

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, 2005). However, the quantitative phase of the study indicated a significant level of support for the introduction of incineration; it was the third 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 uncertainties about its long-term impact on health and the environment.

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 there was some scepticism expressed over the actual treatment of recyclables. As with the issue of incineration, interviewees also highlighted the importance of trustworthy and clear information. 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. 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.

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 the public 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 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.

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 government 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 (Macnaghten *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 in them doing anything more than avoiding overtly negative waste behaviour 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 proactive 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. Most people felt that relationships between communities and government 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 proactive 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. 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. It was more common, however, for interviewees to cite practical barriers for not practising 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.

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. 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. 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, including businesses, agriculture and construction industries, demonstrate to householders 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 interviewees' responses. This manifested itself

in two major ways. The first is in the claim by householders that, as a previously colonised nation, Irish people do not like to follow regulations. Disobedience is seen as a form of resistance against authority, which was initially enacted against the colonial state, but has now 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 even though those who had experience of such systems remarked how easy they were to follow. Such cultural generalisations, as made by householders in this research, are somewhat problematic to engage with in detail in a broad research project such as this and require further investigation. For, while householders frequently mentioned a cultural tendency not to care about improving waste management practices, the success of the plastic bag levy, and the required conformity of the Irish public in order to make this a success, seems to contradict the assertion of civil disobedience against government legislation.

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 and a lack of cultural sophistication. 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 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 made 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, p. 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 the 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, but that 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. 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. 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. While there was an emphasis on education through schools, other respondents did talk about the need for general education of society. 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 government to communities, might even be counter-productive 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.

Of course, establishing appropriate consultation methods is key to achieving better communication between authorities and communities. Poorly implemented methods could actually be counterproductive 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. 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 mean 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 through community advisory fora, community liaison groups, citizen juries and good neighbour agreements (see Petts, 2001) and further work piloting such initiatives 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 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. 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. 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 factors that are social, cultural and contextual on the one hand and individual on the other. Following Ekins (2004, p. 3), a simplified interaction map of influences on behaviour might look like [Fig. 5.1](#) overleaf. 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.

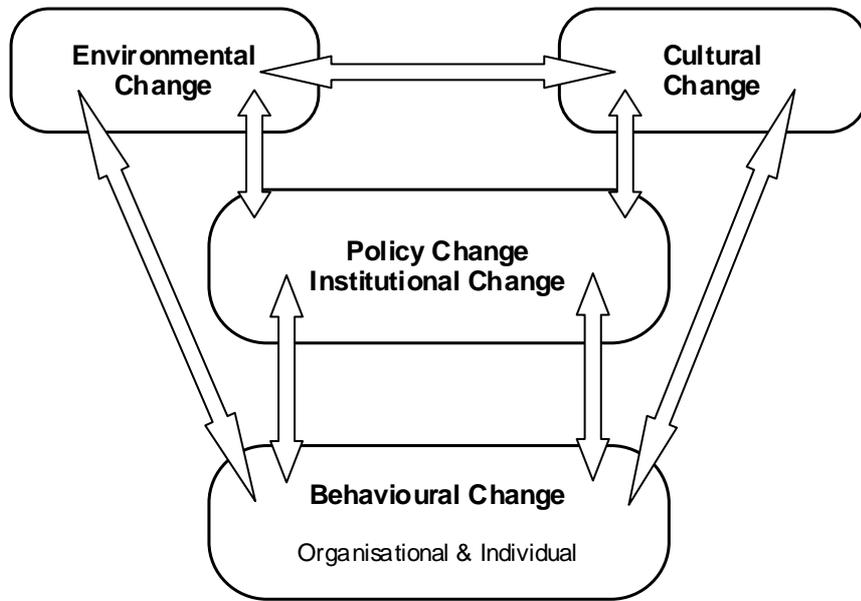


Figure 5.1. Simplified schema of influences on waste management behaviour.

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 young people are the future managers of waste, but it was also suggested 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.¹ 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 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,

1. 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.

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 9 pm 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.

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. 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.

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.

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 litter bin, 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 to investigate people's reactions to more proactive 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 from the case study areas attempted to compost, minimise, reuse and separate waste in their homes for a 4-week period. The questionnaire results and subsequent interviews identified households who, for a variety of reasons, were having difficulty managing waste. The households who participated in the testing of waste minimisation actions included young families with babies, families without waste collection services, students sharing rented accommodation and working householders with limited time.

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. They were also provided with a waste management pack containing an information folder, eco-friendly waste disposal equipment and eco-friendly household products.

The households were instructed to separate their waste for disposal, and recyclables were collected from the households for the first 2 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. 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 at 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 had 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.

Participants received, for the first 2 weeks of the exercise, a doorstep collection for recyclables. This facility considerably increased participation in recycling. 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 exercise was a family of four from Tralee. Overall, the family was surprised at the reduction of waste achieved over the 4-week exercise. They found it easy to participate 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 4 weeks, the family was

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 completion of the exercise.

A similarly positive experience was reported by a household that comprised 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. 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 3 they stated "we just got fed up with it to be honest, we just about manage the one bin". By Week 4 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 buying eco-friendly products or items with less packaging in order to reduce waste produced. Householders 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 householders 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 that manufacturers are more powerful in terms of influencing the nature of packaging and the development of recyclable products.

Very few of the participants in the exercise fully read the information provided at the beginning of the exercise. Many of them read it 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 is to balance the provision of information with the realisation that householders 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 householders 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 action. 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 to address, socially and politically, 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 which suggest that 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 introduction of waste charges in Fingal – 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 – Information: undertake 1) an evaluation of the effectiveness of waste awareness campaigns (at national and sub-national levels) for both changing attitudes and improving actions in relation to household waste management, 2) an analysis of waste education

curricula and practical initiatives, and 3) an evaluation of the communication strategies of local authorities in relation to waste.

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 (Fig. 8.1). 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), that have proved successful in creating a more open, accessible and transparent system of environmental planning. 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 to 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 need to 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 drawn from a range of different interest positions such as community, business, health, conservation and education meeting over a period of months to address specific waste management issues, finally reporting to local authority officers and councillors at the end of that period (a detailed articulation of how to establish and conduct a CAF is provided in the Main Report).

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

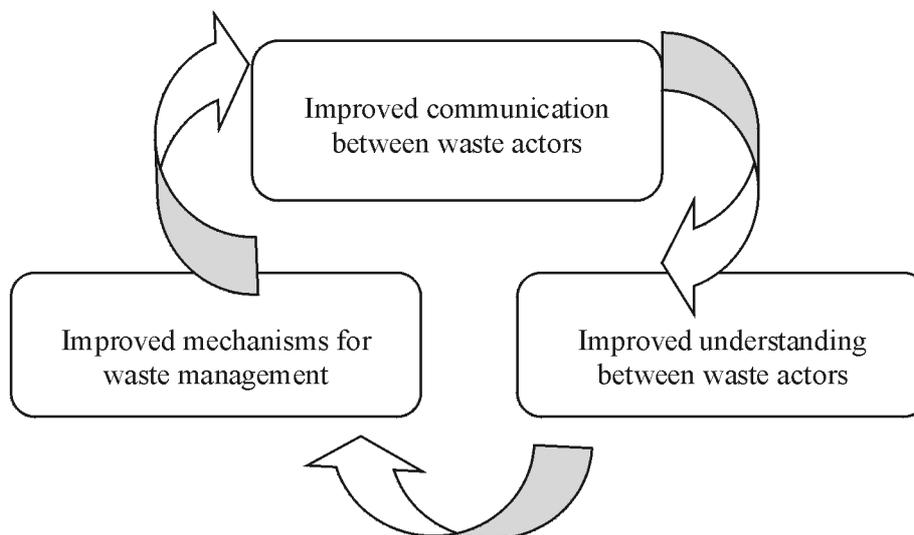


Figure 8.1. A virtuous circle of household waste management.

Finally, the research results confirmed that there is a growing awareness of waste issues amongst householders across Ireland and that levels of recycling are increasing as more facilities are provided. However, there is less awareness amongst householders of the role consumption patterns play in producing increasing amounts of waste and less commitment to activities that require some demand management of purchasing behaviour. Respondents tend to feel that they are unable to change their behaviour because their lifestyle does not allow them to, because they are not the right kind of person to behave in such a way and because they have no other option but to consume the products that are on the supermarket shelves due to the imbalance of power between themselves and manufacturers. While these factors may have some credence, they also betray a limited understanding of waste prevention practices. Further research is required to examine householder's understandings of waste prevention in order to develop appropriate and complimentary structures for improving the reduction of waste being generated as well as continuing to improve the recycling of waste material.

Proposed actions – Prevention: 1) conduct a study of international good practice in relation to

strategies to improve householder's waste prevention, and 2) develop a framework for the development of locally sensitive waste prevention initiatives for households in Ireland.

In sum then, it is very difficult and perhaps inappropriate to provide a detailed list or blueprint of 'recommendations' for local authorities or other waste actors in relation to household waste management because of the variation in local experiences. The message from our research is that local sensitivity (to geography, demographics, waste management history, age, gender, housing tenure, etc.) in policy making is essential. In order to be sensitive to local specificities, it is necessary to engage local communities either in terms of information provision (education), participation in waste planning (consultation) or waste prevention initiatives, i.e. the three areas identified as requiring action in this section. How you actually construct and conduct that engagement and formulate waste strategies and initiatives will then depend on the needs and experience of the communities (e.g. young people from Corduff or an elderly couple living near Dingle) that you are dealing with.

References

- Armour, A., 1991. The siting of locally unwanted land uses. *Progress in Planning* **35**: 1–74.
- Armour, A., 1995. The citizens' jury model of public participation. In: O. Renn, T. Webber and P. Wiedemann (eds) *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse*. Kluwer, Dordrecht.
- Biel, A., 2003. Environmental behaviour: changing habits in social context. In: Biel, A., Hansen, B. and Martensson, M. (eds) *Individual and Structural Determinants of Environmental Practice*. Ashgate, Burlington VT.
- Blake, J., 1999. Overcoming the 'value-action gap' in environmental policy: tensions between national policy and local experience. *Local Environment* **4(3)**: 257–278.
- Blake, J. and Carter, C., 1997. *Community and Environmental Attitudes and Actions in Huntingdonshire*. Committee for Interdisciplinary Environmental Studies, Cambridge.
- Buckingham, S., Reeves, D., Batchelor, A. and Colucas, S., 2004. *Research into Gender Differentiated Impacts of Municipal Waste Management Planning in the European Union*. Brunel University and Women's Environmental Network, Uxbridge.
- Burgess, J. Limb, M. and Harrison, C.M., 1988. Exploring environmental values through the medium of small groups: 1. Theory and practice. *Environment and Planning A* **20**: 309–326.
- Davies, A.R., 1999. *Sustainable Communities: end of project report*. Committee for Interdisciplinary Environmental Studies, Cambridge.
- Davies, A.R., 2002. Power, politics and networks: shaping partnerships for sustainable communities. *Area* **34(2)**: 190–203.
- Davies, A.R., 2003. Waste wars – public attitudes and the politics of place in waste management strategies. *Irish Geography* **36(1)** : 77–92.
- Davies, A.R., 2005. Incineration politics and the geographies of waste governance: a burning issue for Ireland? *Environment and Planning C: Government and Society* in press.
- DoEHLG (Department of Environment, Heritage and Local Government), 2004. *Waste Management: Taking Stock and Moving Forward*. DoEHLG, Dublin.
- DoELG (Department of Environment and Local Government), 1997. *Sustainable Development: A Strategy for Ireland*. DoELG, Dublin.
- DoELG (Department of Environment and Local Government), 2002. *Making Ireland's Development Sustainable*. DoELG, Dublin.
- Drury Research, 2000. *Attitudes and Actions: a National Survey on the Environment*. DoELG, Dublin.
- Drury Research, 2003. *Attitudes and Actions: a National Survey on the Environment*. DoELG, Dublin.
- Eames, M., Stirling, A., Burgess, J., Davies, G., Williamson, S., Mayer, S. and Staley, K., 2003. *Deliberative Mapping: Integrating Citizens and Specialists Appraisals in a Transparent and Inclusive Participatory Process*. Presentation at the Frontier 2 Conference, Tenerife 12–15 February 2003, available at: <http://www.eurocolegom.org/frontiers>.
- Ekins, P., 2004. Answers to the core programme questions on environment and human behaviour. *Environment and Human Behaviour Newsletter 02*. Policy Studies Institute, London.
- Faughan, P. and McCabe, B., 1993. *Irish Citizens and the Environment*. Environmental Protection Agency, Johnstown Castle Estate, Wexford.
- Freeman, C., 1999. Children's participation in environmental decision making. In: Buckingham-Hatfield, S. and Percy, S. (eds) *Constructing Local Environmental Agendas*. Routledge, London, pp. 81–93.
- Hart, R.A., 1997. *Children's Participation: the Theory and Practice of involving Young Citizens in Community Development and Environmental Care*. Earthscan, London.
- Harvey, A., 2002. *Combating Waste with Environmental Education*. M.Sc. thesis, Environmental Science, Trinity College, University of Dublin, Dublin.
- Heary, C. and Hennessey, E., 2002. The use of focus group interviews in pediatric health care research. *Journal of Pediatric Psychology* **27(1)**: 47–57.
- Hobson, K., 2003. Thinking habits into action: the role of knowledge and process in questioning household consumption practices. *Local Environment* **8(1)**: 95–112.
- Hoppe, M.J., Wells, E.A., Morrison, D.M., Gillmore, M.R. and Wilsdon, A., 1995. Using focus groups to discuss sensitive topics with children. *Evaluation Review* **19**: 102–114.
- Howe, S., 2000. *Ireland and Empire: Colonial Legacies in Irish History and Culture*. Oxford University Press, Oxford.
- Knightsbridge-Randall, J., 1999. Youth and agenda 21. In: Buckingham-Hatfield S. and Percy S. (eds) *Constructing Local Environmental Agendas*. Routledge, London, pp. 81–93.
- Macnaghten, P., Grove-White, R., Jacobs, M. and Wynne, B., 1995. *Public Perceptions and Sustainability in Lancashire: Indicators, Institutions and Participation*. Lancashire County Council, Lancaster University Centre for the Study of Environmental Change, Preston.
- Nash, K., 2001. The 'cultural' turn in social theory: towards a theory of cultural politics. *Sociology* **35(1)**: 77–92.
- Petts, J., 2001. Evaluating the effectiveness of deliberative processes: waste management case-studies. *Journal of Environmental Planning and Management* **44(2)**: 207–226.
- Shove, E., 2004. Future comforts, reconditioning urban environments. *Environment and Human Behaviour Newsletter 02*. Policy Studies Institute, London.
- Steel, B., 1996. Thinking globally and acting locally? Environmental attitudes, behaviour and activism. *Journal of Environmental Management* **47**: 27–36.
- Vari, A., 1995. Citizens' advisory committee as a model for public participation: a multiple-criteria evaluation. In: Renn, O., Webber, T. and Wiedemann, P. (eds) *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse*. Kluwer, Dordrecht.