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**Waste Management Strategy:
A Cross-Border Perspective**
(Amended Version)

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Abstract

The issue of waste management is examined from a social science perspective focusing on its social 'construction' and the issue of governance (Chapter 1). Chapter Two summarises the legal and policy parameters. Chapters Three and Four report on the findings based on interviews with 'key players' in terms of (a) their perception of the current situation on waste management; (b) their understanding of current 'drivers' of waste management strategy; (c) their perspectives on ways forward and on the potential for North/South co-operation in this area. Chapter Five analyses the issue in terms of democratic participation, sustainable development, and governance. Chapter Six on conclusions and recommendations charts a way forward, emphasising the need to follow the 'waste hierarchy', a genuine partnership process and better governance.

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Preface

In both parts of Ireland waste management is entering a critical period, in light of EU regulations and the attitude of many communities to incineration in particular. European Directives that require enhanced environmental sustainability are affecting industry, commerce, local authorities and households in an increasingly direct way. Significant targets include a considerable reduction of waste going to landfill, increased energy recovery from waste, and a substantial recovery of municipal waste including recycling. Companies and local authorities are increasingly required to account for their waste ‘cradle to grave’ to improve their efficiency in terms of resource and energy use and waste management.

In practice, waste management in both jurisdictions in Ireland falls substantially short of European targets. The Southern waste management policy document admits openly that ‘with very few exceptions, authorities have not so far developed or applied integrated management techniques or innovative technology solutions’. With most landfill sites facing closure within the next two to three years and the main conventional alternative (incineration) meeting massive opposition, Ireland is on the brink of its biggest ever environmental problem. The practical benefits of any movement towards a viable alternative policy and practice in this area are, therefore, obvious.

The report begins, in Chapter One, with an attempt to situate the waste management issue within its wider parameters. These issues, which are taken up again in the conclusion in Chapter Six, include the European (1.3) national (1.4) and North/South (1.5) dimensions. We also go through a basic definition of the issue in terms of the so-called waste hierarchy (1.1) and consider the way waste management has come to be seen as part of the problem of global environmental sustainability (1.2). As this is a social science guided report and not one by engineers for example, we inevitably focus on the social aspects (1.6) of waste management and what we call the issue of governance (1.7).

Chapter Two summarises the legal and policy parameters of waste management in Ireland, North and South. We examine the main European legislation on waste management (2.2) and compare Southern and Northern Irish legislative policy responses to EU Directives (2.3). We then outline the main policy implementation mechanisms in the two jurisdictions, including legislation and major policy documents (2.4). The chapter ends with an examination of the cross-border initiatives arising from the Belfast Agreement and briefly points to where waste management would fit within this framework (2.5).

The main substantive parts of the report are the findings, which we report in two parts. Chapter Three reports on the current situation regarding waste management (3.1) and on what are considered to be the main ‘drivers’ of waste management strategy (3.2). The way we have come at an answer to these issues is through in-depth interviews with key ‘players’ in the waste management problem and debates. These informed and carefully chosen ‘actors’ in the process include environmentalists, environmental scientists, Department of Environment officials, what we call ‘environmentally minded’ politicians, local authorities and industrialists. People representative of these categories have given the open and in-depth insight into the issues from their perspectives and they are quoted at length to give a rich ‘textual flavour’ of their particular approaches. The results of these interviews were then summarised and debated with a focus group in the North and in the South. This was designed to check the relevance and validity of our findings.

In Chapter Four, our findings report on the perceived ‘way forward’ for waste management in terms of the development paths of the two jurisdictions (4.1) and the potential for North/South co-operation (4.2). The same ‘actors’ are heard as those in Chapter Three and the same interview procedures are followed. The results seem to show that before we can move towards immediate North/South co-operation we need to understand the issues better. That is to say, some more ‘mapping’ of the parameters of waste management North and South is needed, bearing in mind that the issue has only become headline news and has only in recent years appeared in the public and political attention. What is clear is that there is agreement across the board that the waste management issue needs to be tackled on an all-island basis. We recommend that policy makers critically examine our study in order to make the specific recommendations needed within the established North/South structures.

Chapter Five takes up the process of analysing the waste management issue from a social science perspective. We listened to the ‘actors’ reported in Chapters Three and Four and stood back a bit as it were. Hopefully, this is not abstract but grounded theorising we engage in. In terms of the policy

process we see a clear breakdown between the stage of policy orientation (particularly at EU level) and its implementation (particularly by local authorities). We also explore the themes of democratic participation (5.3) and exclusion to examine the degree to which the political process hinders or assists the implementation of a better waste recovery strategy (5.6). We emphasise the importance of the new cross border structures (5.7) for implementing a more holistic and sustainable strategy. Finally, Chapter Six lays out our conclusions and recommendations. Going back to the ‘issues’ (Chapter One) we see what our study has added to an understanding of the issues and in charting a ‘way forward’. We emphasise the need to work more towards the waste hierarchy. We feel that a genuine partnership process would defuse many of the problems arising with current waste management strategy. We see waste management policy as part of the issue of ‘good governance’. We call for a cross-border research centre on all aspects of waste management.

The Appendices to this report are an integral element of it and need to be consulted to get the ‘full picture’. Appendix One lists the main EU Directives, Southern and Northern legislation, and cross-border provisions with respect to waste management. Appendix Two provides thumbnail technical sketches of such issues as landfill, incineration and recycling that come up in the main text. Appendix Three sets out succinctly our research methodology explaining the nature of our social science and ‘qualitative’ (as against ‘quantitative’) approach.

Summary

1. Issues

- 1.1 According to the widely accepted Waste Hierarchy principles waste should first be *minimised* i.e. a reduction in the actual amount generated, achieved mainly through increases in efficiency and by careful design. Then material should be *recovered*, a term that includes recycling, composting and then energy recovery can be considered. Finally *disposal* is the least favoured option but even then safety considerations are paramount.
- 1.2 Waste management is now seen as part of the broad global concern for sustainability. It clearly overflows national boundaries in terms of problems and thus in terms of solutions.
- 1.3 The Directives of the European Union, North and South set the immediate context for the waste management issue in Ireland. These are guided by the principles of sustainability and environmental protection.
- 1.4 The UK and Irish states do not have a good performance in terms of the waste hierarchy. It is now widely recognised that waste management strategy is in need of radical imaginative solutions.
- 1.5 The Belfast Agreement sets the immediate political and legislative context for cross border co-operation of waste management issues. Waste management is one of the issues where co-operation is to be developed through existing structures.
- 1.6 The attitudes, perceptions and actions of individuals and communities set the social context for waste management. There is widespread local opposition to incinerators as a main plank of waste management strategy.
- 1.7 Waste management can also be seen as an issue of good governance, which is supposed to include transparency, effectiveness, openness, responsiveness and accountability. To what extent does waste management strategy meet these criteria?

2 Waste Management Legislation and Policy

- 2.1 The European Communities Act (1972) made European laws binding on both jurisdictions in Ireland and empowered Ministers to implement such law through Ministerial regulations. The power of EU law was strengthened further by the Single European Act (1986), the Treaty of Maastricht (1992) and the Treaty of Amsterdam (1997).
- 2.2 European Directives cover interrelated aspects of waste management, including recycling and re-use of waste, self-sufficiency in waste disposal, minimisation of waste flows, and the establishment of competent authority to plan, authorise, and supervise waste disposal operations.
- 2.3 Northern and Southern Irish legislation with regard to these EU Directives include the Waste Management Act (1996) in the South and the Waste and Contaminated Land (NI) Order (1997) in the north, and subsequent amendments. Both jurisdictions have also published key

policy documents on waste, including the Southern ‘Waste Management: Changing our Ways’ (1998) and the Northern ‘Waste Management Strategy’ (2000).

- 2.4 Southern Irish legislation divides responsibilities for policy implementation between the Minister for the Environment, the Environmental Protection Agency (EPA), and local authorities. In the north, central responsibility is given to the Department of the Environment, which has powers to delegate responsibilities to other agencies and local authorities.
- 2.5 Strand Two of the Belfast Agreement provides that both jurisdictions will develop all-island and cross-border co-operation and common policies on matters of mutual interest. Article 17 states that the North/South Ministerial Council should consider the EU dimension, which includes environmental policy and waste management policy. The Annex to the Agreement specifically names ‘Waste Management’ as a possible area for co-operation and implementation.

3 Findings: Current Situation

- 3.1 In answer to our question regarding the current waste management situation those interviewed held a range of views. In summary, waste management strategy was seen to be in crisis by all those interviewed in the South, although they differed as to what they saw as the cause of and the solution to the problem. The South’s waste management strategy is a year or so in advance of the Northern strategy (September 1998 in the case of the ROI and March 2000 in the case of the Northern Ireland strategy) and has thus reached its crisis point earlier at the point of implementation. The Northern interviewees, on the other hand, with the exception of the environmentally minded politician, were pleased with the waste management strategy itself although most foresaw problems with its implementation at local level. In the Northern constituency there was very little sense, again with the exception of one politician, that local communities would become active against waste management plans.
- 3.2 In answer to our question of who or what ‘drives’ waste management strategy we saw unfolding a number of interest groups and some serious conflict of interests. Most interviewees agreed that EU legislation was leading waste management strategy. All appeared happy with the specifics of the EU legislation, but when it came to the other influences on waste management strategies there was considerable worry on the influence of commercial interests, specifically waste companies. On the other hand, the worry from state officials was the fact that community groups, through local politicians, could block the implementation of specific waste management strategies. From both ends of the continuum there was a call for the government to take a more decisive, informed leadership role in waste management, one that was not led by small community groups, or by business interests, but rather policies implemented in the interests of good governance.

4 Findings: Way Forward

- 4.1 For the environmentalists and the environmentalist scientists the ‘way forward’ in each jurisdiction for waste management strategy was squarely within the parameters of sustainability and the principles of waste hierarchy. A much greater emphasis on recycling was called for with the end objective being zero-waste. The DOE (Department of Environment) in both jurisdictions spoke of the economies of scale (particularly in relation to recyclables) to be achieved by an all-island strategy. However, the crisis of the landfill sites and the opposition to incinerators were uppermost in the mind of the Southern DOE and EPA officials. The environmentally minded politicians in the North and South were sceptical of the political system’s ability to see beyond the short term ‘need’ for incinerators and a market driven orientation. The local authorities tended to see the issue in terms of how to avert local opposition to incineration through financial inducements and bypassing local councillors. For their part the industrialists interviewed stressed the need for government to provide greater support, research backing and finance to help businesses move towards more sustainable waste management strategies.
- 4.2 In summary, the Northern interviewees seemed more interested in cross-border co-operation, better informed and more willing to discuss cross-border co-operation on waste management than most of the Southern interviewees. This is true in the sense that some of them not only strongly prioritised it as a way forward, but also were insistent that progress on waste management could *only* be made on an all-island basis. According to our respondents there

appear to be no significant party-political objections to North/South co-operation and there has been co-operation (albeit of a different nature) previously to resist proposals for an all-Ireland incinerator. As well, there is consideration of the EU 'Proximity Principle' that indicates that we should deal with waste management on an all-island basis. It was also felt that opposition to large incinerators had created a situation where many small ones would be built in the North and therefore there appeared to be no urgent reason for anything but small scale regional planning. Thus no one seemed to be actually working on developing all-island strategy and so North-South co-operation was not coming into play to any large extent. Areas in which there was seen to be considerable scope for co-operation would be developing markets for recycling, and in the sharing of information and data on waste management 'best practice'. The areas in which there was seen to be an immediate need for co-operation was in the 'levelling of the playing field' with regards to waste taxation policy.

5 Analysis

- 5.1 We believe that before an alternative waste management strategy can develop an adequate analysis of its main parameters needs to be carried out.
- 5.2 Sustainability, as over-arching criteria for waste management, needs to be defined more precisely. As a concept or as an ideal it does not make much sense unless we aim towards a 'strong' conception of non-depletion of resources and zero-waste. This may be an unattainable goal in practice but waste management strategies may only be considered sustainable if they encourage societies, institutions and individuals to move towards waste reduction.
- 5.3 One of the clearest problems arising from the interviews and focus groups (see 3 and 4 above) is the democratic deficit in terms of the participation in the construction and implementation of policy. Genuine forms of consultation and participation at all stages of the waste management process might reduce particularistic local reactions against state policies and practices.
- 5.4 Another element coming across in many interviews was the 'economisation' of the problem of waste management. The discourse is primarily about how to make sustainable waste management practices profitable. This would appear to contradict the EU Directives on waste management, which call for stricter regulation on an increasingly deregulated global economy.
- 5.5 There was also a strand of thinking in the interviews that was not market oriented and stressed the need for partnership arrangements between businesses and consumers. Such social partnerships may be a way of involving local communities in waste management at all levels.
- 5.6 Policy makers need to recognise more clearly the interconnectedness of waste management and other spatial policies for population growth, industrial placement, physical infrastructure and other socio-economic factors.
- 5.7 The appropriate scale for waste management strategy requires further research. Development of an all-island market for recovery and recycling of certain materials would make sense. However, other alternative strategies such as composting are perhaps best implemented at the local or 'micro' level.

6 Conclusions and Recommendations

- 6.1 In terms of 'waste hierarchy' (see 1.1) we find that in practice the two jurisdictions (Republic of Ireland and Northern Ireland) tend to start at the bottom of the hierarchy (incineration) and work towards (waste reduction) rather than the other way around.
- 6.2 Waste is not only a global issue (1.2) but can now be seen as a 'glocal' one where the global and the local intermix as shown by ready access to global information (Internet) by local campaigners.
- 6.3 We find that European Directives are the main drivers of waste management policy in Ireland, North and South (see 1.3), while the Belfast Agreement has now the potential to be a driver on an all Ireland basis.
- 6.4 Across the professionals interviewed it was agreed that waste management is becoming a growing issue. The principles of good governance (see 1.4) need to be prioritised in developing waste management strategy for the future.
- 6.5 There is considerable potential for cross-border co-operation (see 1.5) and no political opposition was encountered to it. Economies of scale point towards an all-island strategy for waste management but so do the principles of political co-operation enshrined in the Belfast Agreement.

- 6.6 In terms of the social aspects of waste management (see 1.6) we recommend further education around recycling but do not find individual householders to be the main problem. Furthermore, the accusations of NIMBYISM (not in my back yard) do not appear to be well founded.
- 6.7 Finally we conclude that waste management strategy in Ireland, North and South, can only proceed on the principles of good governance (see 1.7). Specifically, we recommend the establishment of a cross-border research centre on the technical, social, economic and legal aspects of waste management.

1.1 Definitions

We need to first *define* the waste management issue. According to the European Union’s waste management general strategy document: “The current situation cannot continue. Waste is now not only a danger to our environment. It is increasingly a threat to human health and our way of life” (EU, 1995:5). The various waste streams include mining and quarrying waste, construction and demolition waste, agricultural wastes, sewage, packaging, plastics, metals, tyres and household waste amongst many others. Current waste disposal methods include landfill sites but these are increasingly full as well as being ecologically unsound. The main alternative disposal method is incineration but this is subject to a series of scientific and social objections. There are various and evolving waste management *hierarchies*, one of which, in descending order reads:

- Prevention (of waste but also on impact on the environment);
- Waste reduction;
- Material recovery (including recycling for example);
- Energy recovery;
- Safe disposal.

There are various permutations of this model and ongoing debates on the order, but the general policy implications are clear enough: first try to prevent waste, then seek to minimise it, then seek to recover material through recycling for example, and only then move on to ‘energy recovery’ through various means and only finally can we consider disposal, with the emphasis on safe disposal.

The problem of waste disposal cannot be seen in *isolation*, or as a *technical* problem. Indeed, as the EU’s Environmental DG puts it: “Waste production is one of the best indicators of our progress towards sustainable development’ (EU, 1999:10). The amount of waste produced in some countries, or regions of the world, needs to be seen as part of their unsustainable lifestyles. To transport waste from one country to another (with lax or non-existent disposal controls) does nothing to resolve the issue at a global scale, and sustainable development is clearly a global issue. Sustainable development, although its meaning in different societies may alter, is at least (since the 1992 UN Conference on Environment and Development in Rio) taken as an internationally accepted summary term for a commitment to quality of life, the conservation of the world’s finite natural resources and a sense of moral obligation to future generations. Waste management strategy would appear to fall squarely within the social implications of sustainability.

1.2 A Global Issue

Since the mid-1980s it has been recognised that waste, as with other environmental problems, is a *global* issue. Sustainable development is now an integrated global issue in terms of environmental problems but also in terms of solutions. From the dioxin disaster in Seveso, the nuclear disaster in Chernobyl to the chemical carnage of Bhopal, the environment was seen to transcend national frontiers. Whether it is air pollution, acidification, ozone depletion, or groundwater pollution, the environment and its problems are transnational issues. The popularising of the notion of *globalisation* in the 1990s has broadened that understanding today as products, money, images and people are seen to cross national boundaries and to be beyond the control of individual nation-states. As a recent study of globalisation and the environment argues: “This is particularly true for flows related to the environment: greenhouse gases, ozone threatening gases and toxic wastes move from more developed to less developed countries; raw materials and commodities, produced at huge environmental costs, flow from less developed to more developed countries” (ESRC Environment and Globalisation, University of Lancaster).

At a general and abstract, if not strictly global level, we need to reflect briefly on the political economy of waste because it is such an under-studied area. We know about production, we know about consumption, but we prefer not to know about waste. Yet waste is of crucial economic significance. In the UK, for example, spending on waste management alone – and this *excludes* recycling, landfill, mining and other forms of recovery – had reached nearly £3 billion by the mid-1990s. Waste management is one of the healthiest economic sectors in many of today’s developed countries. Lucrative waste contracts explain the readiness of the private sector to become engaged in this crucial

social function. Yet there is no indication that the market alone can resolve the waste issue and in many ways goes against a rational solution to waste reduction and management. Unfortunately, as Martin O'Brien notes, many of the governmental instruments to streamline waste management have as their aim and purpose "not to reduce wastes arising at all but to organise their profitability in a rubbish political economy" (O'Brien, 1999:291).

1.3 The European Angle

The *European Union's* (EU) Directives (See Appendix 2 for full details) set the more immediate context for waste management in Ireland, North and South. EU policy in regards to the protection of the environment and natural resources has increased steadily in importance since the mid-1980s with the 1989 Community Strategy for Waste Management enshrining the principle of sustainable development and a high level of environmental protection a top priority. The total amount of waste generated in the EU is estimated at 1.3 billion tonnes or about 3.5 tonnes per capita, while the amount of hazardous waste was around 36 million tonnes. Half of this waste is generated by the manufacturing and construction industries, with municipal mining and other sources of waste each contributing one sixth of the total. In most countries disposal prices of waste through landfilling is far below those of other methods. This means that without regulations in place, market mechanisms would work in direct opposition to proclaimed EU strategy on minimising waste. However, there has been no noticeable improvement across the EU in the course of the 1990s.

The European Environment Agency (EEA) stresses that the problem of dealing with ever increasing waste quantities cannot be resolved in a sustainable manner by more efficient waste management and recycling alone. The EEA argues that: "There is an urgent need for integration of waste management into a strategy for sustainable development, where waste prevention, reduction of resource depletion and minimisation of emissions at the source is given high priority" (EEA, 1999:206). From this perspective it is clear that waste needs to be both analysed and managed as an integrated part of the total material flows through society. The policies adopted by the EU, and binding on all member states, are guided by the overall principles of the Community Waste Management Strategy (1989), which aims to establish an *integrated* waste management policy and respects the principles of the waste hierarchy. The 1996 review of the EU waste management strategy maintained these guidelines but added that preference should henceforth be given to the recovery of material (recycling) over energy recovery (incineration).

1.4 State Angles

The *UK* and *Irish* member-states of the EU do not have a good record on waste management issues. It was only in the 1990s that international pressure led the British government to cease its practice of dumping chemical and sewage waste directly into the North Sea. While the rest of the EU forges ahead with recycling and composting the UK continues to rely on landfills. As the Netherlands gets rid of 13 per cent of its waste through landfill, and Germany 34 per cent, Britain still disposes of 83 per cent of its waste in this way. Conversely, while Germany and the Netherlands recycle 39 per cent of their waste, the UK only does this with 8 per cent of its waste. The UK accounts for a miserly 1 per cent of its waste through composting. Now, there is a plan to build 165 large incinerators across the country to replace rubbish dumps but this plan has been criticised not only by environmental groups but also by the Waste Management Company, a director of which admitted that: "The history of the waste industry is littered with ambitious 'technology solutions' (The Guardian, 8/2/00). There is no 'magic machine' as one of our respondents told us.

As to the Irish state, it is now entering a crisis in terms of waste management strategy. With well over 90 per cent of waste still going to traditional landfill and local opposition to plans for building regional incinerators showing no signs of abating, it seems increasingly unlikely to meet EU Directives. Following a belated recognition of the growing waste problem by the environmental authorities (see Dempsey, 1998), seven regional waste plans were developed across the Republic. These aim to increase recycling from 8 percent to 35 per cent over the next 15 years. However, the core of the new strategy is a set of six large incinerators in Dublin, the South East, Galway, Limerick, the midlands and the North East. Community opposition has galvanised against these incinerators on health and other grounds, and there is also opposition to the plan for householders to bear the full cost of their waste disposal. The government is aware that "New waste management facilities are generally unwelcome to the public" and advocates a campaign of "public education" (Dempsey, 1998:19). The government also calls for "greater participation by the private sector in the provision of waste management services" (Dempsey, 1999:20).

1.5 North/South Angle

The immediate political context for the development of cross-border co-operation in relation to waste management strategy is set by the terms of the 'Good Friday' agreement (see Appendix 2 for more detail).

The Belfast Agreement was not the first attempt to set up North-South bodies for the implementation of public policy but it was probably the most significant. After intensive negotiations between the Irish and British governments (and the various political parties) the specific nature and administrative form of North-South co-operation was established in December 1998. Six North-South implementation bodies were established covering waterways, food safety, trade and business, EU programmes, the Irish language and agriculture/marine matters. As well, the so-called Trimble-Mallon statement in December 1998 contained an initial list of six matters for North-South Co-operation through existing North-South public policy bodies. These were to include transport, agriculture, education, health, tourism and the environment, the latter specified to include research into environmental protection, water quality and waste management. So, in terms of subsequent debates on sustainable development and waste management in Ireland we can say at least that an all-island dimension is officially part of the public policy framework.

At one level it is obvious that the environment cannot be partitioned off into different political jurisdictions. Yet it is not clear what an all-island waste management strategy might entail. In the past, as with the proposed DuPont incinerator in Derry, cross-border co-operation at *a de facto* level has existed. It has not, however, been particularly directed towards sustainable development goals. At present one of the main 'all-island' issues surfacing seems to be the creation of a bigger market for recyclables. Waste management would appear to be eminently 'non-political' in terms of party politics and thus political co-operation (even cross the border) is not too difficult. However, as the impasse in current strategy deepens - particularly in the Republic - we can expect the political process to become more fraught. If the official policy of partnership among the stakeholders in waste management is to mean more than bringing the waste management industry on board, consultation will have to broaden and deepen. Then an all-island strategy based on genuine consultation at local, regional and national level might have some impact on the democratic deficit currently prevailing.

1.6 Social Issues

The *social* context for the development of a waste management strategy in Ireland is set by the attitudes, perceptions and actions of people in communities and organisations concerned with its social impact. The debates on waste management strategy recognise that there is a wide discrepancy between the proportion of people who believe in a recycling strategy and those actually practising it. Market researchers also seem to be puzzled by the apparent contradiction between a general lack of interest (or knowledge) around the technicalities of waste management and the high proportion opposed to landfill and incinerator-based approaches (see Lansdowne Market Research, 1999). To date we have not been able to establish a clear-cut and strong relationship between attitudes towards the environment and actual behaviour. It would not appear to be a simple matter of 'education' though, as the facilities for good environmental practice also need to be in place. Research has shown that the type of 'environmental empowerment' necessary for good waste management practice occurs when community control over environmental events exists. When authorities make environmental decisions for citizens they tend to experience "helplessness" (Werner, 2000:238).

When we pass from an individual to a community level, we find a common argument being that opposition to current waste management strategies is based on a socially irresponsible 'NIMBY' (Not In My Back Yard) attitude. Local authorities are furthermore accused of ignoring the problem of waste management and of political cowardice by going along with this NIMBYism (see, for example, Sunday Times, Oct 29, 2000). There is, however, in the literature a consistent international pattern of the NIMBY concept being part of how governments and corporations deal with citizen or community concerns over environmental hazards. One summary of this research finds that: "Citizens are typically ridiculed for over-reacting or being uninformed, and they are often blamed for their situation" (Werner, 2000:239). For example, 'The polluter pays' principle is taken to apply equally to the householder and the chemical company. Specifically on the question of NIMBYism, it seems to be a way in which 'experts' or authorities seek to shame people into accepting incinerators or other unpopular waste management strategies. A different 'spin' to the NIMBY concept is given by another new term LULU,

(Locally Unacceptable Land Use) which gives much more legitimacy to often well-founded local community concerns.

1.7 Governance Issues

Waste management issues and the broader issue of sustainable development are, ultimately, issues concerning *governance* in contemporary societies. Governance is taken to refer to the sum of interactions between civil society and governments. Good governance is currently taken to include transparency, effectiveness, openness, responsiveness and accountability. These are all criteria by which we can legitimately evaluate the government of the day in terms of its dealing with civil society and its concerns. So, if sectors of civil society, concerned individuals, community groups and environmental groups, have concerns with the government's waste management strategy (as an indicator of the broader concern with sustainable development in particular), we can expect them to be dealt with according to the internationally accepted criteria of good governance. Accusations of 'NIMBYism', Utopianism and worse levelled against those concerned with the adequacy of current waste management practices seem to be defensive knee-jerk reactions not in keeping with the rules of good governance.

The essence of governance is its focus on mechanisms to govern society, which do rest on the use of authority and of sanctions by government. Forms of partnership with the organisations of civil society are one of the preferred options of the governance approach. Following one of the authorities in this area "... governance recognises the blurring of boundaries and responsibilities for tackling social and economic issues" (Stoker, 1998:21). Both in terms of strategic decision-making and of service delivery there is a widespread turn away from the 'Westminster model' to a more complex model of governance more in tune with the complex societies we live in. So, in terms of waste management strategy, government by central decree would need to be replaced by a more consensual model based on multi-agency partnerships, the blurring of responsibilities between the public and non-public sectors, and the emergence of self-governing networks concerned with waste management as a central issue in sustainable development.

2.1 Introduction

When Ireland and the UK joined the European Union in 1972 both jurisdictions provided for the application of European law through the European Communities Act (1972). This Act, operational in both jurisdictions, gave ‘direct effect’ to existing or future European acts over domestic laws and constitutional provisions. As well as European laws being binding to the State, Ministers were empowered to implement European law, if need be, through issuing Ministerial Regulations. Previously, Ireland and the UK had adopted a ‘dualistic’ approach to international treaties and law, whereby such laws and agreements could only be given effect through parliamentary acts and thus ensuring the respective parliaments as primary legislative authorities in both jurisdictions. The ratification of the Single European Act (1986), the Treaty of Maastricht (1992) and the Treaty of Amsterdam (1997), however, further ensured the supremacy of EU law over domestic law. These changes are reflected, for instance, in the amendments made to Article 29.4 of the Irish Constitution, which recognises the role of the European Community in domestic law.

2.2 European Union Legislation

European Union legislation includes Directives that cover a series of interrelated aspects of waste management.¹ While Directives do set out a stated time period for implementation, it is essentially up to individual Member States to decide how the individual Directive is to be given effect. Directives, therefore, are not directly or immediately applicable to domestic law. Failure to implement a Directive within the given period of time can result in a Member State being penalised by the European Court of Justice although this is often a long and tedious process. Early EU Directives were of particular relevance to the formation of Irish and UK government policies on waste management including Council Directive 75/442/EEC – July 1975, which states that Member States must encourage steps that prevent and minimise waste flows. These include recycling and the extraction of raw materials and energy for re-use of waste (Article 3). It also notes that Member States must ensure that waste is disposed of ‘without endangering human health and without harming the environment, and in particular: - without risk to water, soil, and plants and animals, without causing a nuisance through noise or odours, without adversely affecting the countryside or places of special interest’. (Article 4)

This Directive was later reinforced to ensure that the Community as a whole and Member States individually must aim towards self-sufficiency in waste disposal (Article 5, Council Directive 91/156/EEC (March 1991) amendment to Directive 75/442/EEC). Furthermore, the EU wanted the establishment of ‘a competent authority’ in order to plan, authorise and supervise waste disposal operations (Article 5). This plan was to include the type and quantity of waste, suitable disposal sites, costs, and ‘appropriate measures to encourage rationalisation, of the collection, sorting and treatment of waste’ (Article 6). The authority was also charged with issuing permits to those who store or tip waste on behalf of a third party (Article 8), and was to ensure that the conditions of the permit are fulfilled thereafter. As a sanction against default, waste costs would be in accordance with the ‘polluter pays’ principle (Article 11).

2.3 Comparative Legislation – North and South

The main legislation in the Republic of Ireland and Northern Ireland covering the provisions set out in Council Directive 75/442/EEC and subsequent amendments were:

- Ireland - Waste Management Act (1996)
- Northern Ireland – The Waste and Contaminated Land (NI) Order (1997), S.I. 1997/2778 (N.I. 19)

Implementation of the EU Directives also facilitated a series of revisions. In the South of Ireland the following were introduced - the Environmental Protection Agency Act (1992), the Waste Management Act of 1996 was amended in 1998, and the Waste Management (Licensing) Regulations (1997). In the North the corresponding basis of policy has been the 1997 Order, which replaced the less comprehensive Waste Management Licensing Regulations (NI) (1994), S.I. 1994/1056. Differences in the interpretation of the EU legislation between the different jurisdictions has not be an issue since the

¹ EU legislation includes Directives on dangerous substances, waste oils, groundwater, urban waste water, licensing regulations, the disposal of PCB/PCT, toxic waste, sewage sludge in agriculture, emissions from waste incinerator plants, the disposal of animal waste, and batteries containing dangerous substances.

original reconciliation accepted through Article 164 of the EC Treaty (1958) which stated that it is the European Court of Justice that shall, in the interpretation and application of EU Treaties and law, ensure that ‘...the law is observed’. Differences may arise, however, with regard to the timing of the implementation of Directives within the two jurisdictions, but this ‘staging’ has been a notable feature of the implementation of EU law throughout the Member States. It is worth reiterating that Ministers are provided with regulatory powers in order to enforce Directives.

The Waste Management Act (1996) in the South aims to create more effective and defined roles for the Minister, the Environmental Protection Agency (EPA) and local authorities in relation to waste management. It set out to introduce measures in order to improve national performance in the prevention, minimisation and the recycling or recovery of wastes. It also provides a regulatory framework in response to EU legislation and national waste management requirements. The Act was designed to facilitate the development of the private waste industry and provides for the recouping of costs relating to regulatory functions. In effect it amounts to a reassertion and reapplication of the ‘polluter pays’ principle. The Act provides for regulatory measures in order to impose obligations on persons involved in industry, agriculture and commercial activities that will minimise waste. This includes ‘product design’. It gives the Minister for the Environment powers of policy direction in certain aspects of waste management and also has wide ranging regulatory powers in relation to the prevention, minimisation, and recycling of waste. The Southern Act allows for ‘penalties of up to £10 million and/ or ten years imprisonment for offences’ (Section 10).

Alternatively, in the Waste and Contaminated Land (NI) Order of 1997 waste and contaminated land includes, specifically, ‘commercial waste from premises used wholly or mainly for the purposes of a trade or business or the purposes of sport, recreation or entertainment’ with exclusions, ‘associated waste in relation to pipes’, ‘controlled waste’, the Department of the Environment, ‘domestic property’, ‘industrial waste’, and general pollution of the environment. As it stands it represents the most comprehensive legislation on contamination in the North of Ireland to date. It put a prohibition on ‘unauthorised or harmful deposit, treatment or disposal, etc., of waste’ (Part II, 4). It also addresses the interference with waste sites and receptacles for waste, and introduced special provisions and powers to prohibit, setting up public registers, exclusion from registers, ‘duty to produce authority to transport controlled waste’, the ‘seizure and disposal of vehicles used for illegal waste disposal’, legal proceedings and civil liability, and monitoring radioactive substances. In relation to contaminated land, Part III of the Order deals with the identification of contaminated land, designated sites, the referral of site decisions, the duty of enforcing authority, the ‘determination of the appropriate person to bear responsibility for remediation, compensation and rights of reference, liability, special sites designation, radioactivity. Part IV deals with supervision and enforcement.

In addition to existing legislation, both jurisdictions have introduced a number of key policy statements which state existing policy positions, as well as incorporating the targets set out in the EU Council Directive 1999/31/EC on landfills.

In the South in September 1998 the policy statement ‘Waste Management: Changing Our Ways’ offered some parameters for the establishment of the legislation. In his statement - aimed chiefly at local authorities - the Minister, Noel Dempsey, stated that Ireland’s waste management policy will be set firmly in the waste hierarchy of prevention, minimisation, reuse, recycling, energy recovery and the environmentally sustainable disposal of waste which cannot be prevented or recovered. From this initiative the priority was to reduce the reliance by Ireland on landfill as a disposal option. Pre-empting the 1999 EU Landfill Directive and fulfilling existing Government policy, the Minister set out targets to be achieved over a 15-year period. These are - to divert 50% of overall household waste from landfill, reduce by 65% the amount of biodegradable waste that goes to landfill, develop waste recovery facilities as an alternative to landfill, recycle 35% of municipal waste, recycle at least 85% of construction and demolition waste, steadily reduce the number of landfills, and reduce methane emissions by 80%. It was also acknowledged that the private sector must be encouraged to participate more fully in waste management. The ‘polluter pays’ principle would mean ensuring that the waste generator pays directly and fully the costs of waste collection, treatment and disposal. The application of costs also provides more scope for private investment on infrastructure while focusing public attention on the implications of waste generation - and becoming an incentive to reduce waste. Charging would therefore vary according to usage.

The Northern equivalent to the Southern statement came from the Department of the Environment and its comprehensive Waste Management Strategy (NI) (March 2000) A key target of this initiative was a two-thirds reduction in waste sent to landfill in Northern Ireland. This would mean providing new and better ways of recovering, re-using and getting value from up to 600,000 tonnes of household waste a year. It was expected that the Strategy would create in the region of 1,500 new jobs in the recycling and manufacturing sectors using recovered materials. To put the scale of waste management into context, Belfast City Council alone collects 200 tonnes of litter every week and spends £8 million per year, 10% of its budget, on collecting that litter and keeping the streets clean.

The Northern Strategy had four key objectives:

- To reduce the amount of waste generated.
- To make best use of the waste that is generated.
- To minimise the risk of environmental damage or harm to human health.
- To move practices towards re-use, recycling and recovery - with landfill disposal as a last resort.

In launching the Strategy at Belfast Hilton Hotel 16th March 2000, George Howarth, the acting Minister for the Environment, stated that: “The Strategy will enable Northern Ireland to comply fully with a wide range of new legally binding European Directives. But it goes much further than just that. For manufacturers, business and the whole community, the Strategy is about looking at the ‘life cycle’ of consumer products so that we use less raw materials, generate less waste and win back more materials to use them again. In short, it is about generating less waste and realising more value”. He also called for the general public to be better informed about the options and urged that government, business and community should work towards a culture where people could “do the right thing”.

Going on, Mr Howarth noted that the objective was to: “...bring about a well-regulated infrastructure that provides recovery, treatment and safe disposal facilities on a regional and local basis. The knock-on effect of this will be to provide essential support for business growth and inward investment with an estimated 1,500 new jobs being created”. He also praised the excellent consultation process embarked on to bring the strategy forward, commended the environmental consultants involved and praised the remarkable work of the independent Advisory Group who produced 104 recommendations for development of the draft proposals. 98 of these recommendations were eventually incorporated in the final strategy.

2.4 Policy Implementation Mechanisms

In the South, the Waste Management Act 1997 designated the EPA responsibility for the licensing of all significant waste recovery and disposal activities, and for the planning, management and control in relation to hazardous waste. In addition, the EPA was required to formulate a national hazardous waste plan. The plan was to reflect the EU waste hierarchy. The EPA has subsequently overseen the licensing system for waste recovery and disposal facilities, including local authority facilities. It also provides for public consultation and objections to licensing.

The 1997 Act also states that County Councils and County Borough Corporations are responsible for waste management planning in relation to non-hazardous wastes, the authorisation of commercial waste activities, the collection, recovery and disposal of household wastes, and the control of waste movements. Local authorities may introduce by-laws that require ‘the segregation and separate collection of recyclable wastes’. In addition, local authorities are required to formulate detailed waste management plans, either individually or regionally. Again, these plans were to reflect the EU waste hierarchy.

The policy statement ‘Waste Management: Changing Our Ways’ makes it clear that waste management planning should include effective public consultation and participation. What was noticeable with the statement was that it acknowledged that local authorities have a vital role to play in educating the public in waste minimisation and recovery. In this document the Ministry recognised that although local communities give a generally negative reception to new waste management facilities, public involvement in waste recovery and minimisation is crucial.

In the North, the Waste and Contaminated Land (NI) Order 1997, contained provisions for the Department of the Environment which require ‘...waste to be accepted, treated, disposed of or delivered’, and also included ‘powers to require the removal of waste unlawfully deposited’. There are

further provisions that cover the granting of waste management licences, supervision, revocation and suspension of licences, compensation, appeals, the 'collection of controlled waste', receptacles for household waste, receptacles for commercial or industrial waste, waste management plans by district councils, payments for recycling and the disposal of waste.

In addition, the public consultation element of policy implementation was also recognised in the 'Waste Management Strategy (NI)'. In mapping the way forward Mr Howarth noted that building the role of stakeholders in the whole waste management strategy was essential. To service and indeed accelerate this process the Department would establish a 'non-executive Advisory Board representative of all key sectors'. The central role of this agency would be to facilitate the working relationships between the various key sectors, which could impact on the successful implementation of the initiative.

2.5 Cross Border Legislative Initiatives

Strand Two of the Good Friday Agreement, on the North/South Ministerial Council, provides that both jurisdictions '...develop consultation, co-operation and action within the island of Ireland - including through implementation on an all-island and cross-border basis - on matters of mutual interest within the competence of the Administrations, North and South' (Article 1).

This is further defined in Article 5 – 'to exchange information, discuss and consult with a view to co-operating on matters of mutual interest within the competence of both Administrations, North and South; (ii) to use best endeavours to reach agreement on the adoption of common policies, in areas where there is a mutual cross-border and all-island benefit, and which are within the competence of both Administrations, North and South...'

Taking this further, Article 17 states that this Council should consider the European Union dimension, which includes environmental policy and waste management policy. The Agreement fully accepted the need for the implementation of EU policies and programmes building comparable and compatible systems, which are functional within the overall EU framework. Arrangements were "to be made to ensure that the views of the Council are taken into account and represented appropriately at relevant EU meetings". The Annex to the Agreement specifically names 'Waste Management' as one of the possible areas for co-operation and implementation.

Overall, with the commitments of the Good Friday Agreement - coupled with standing legislation on waste management and driven by EU Directives - the integration of respective strategies, North and South, is at a stage where joint policies and joint projects would facilitate a rationalisation which could be more cost effective yet more efficient in its delivery of policy.

3.1 The interviews

The interviews conducted in Northern Ireland and in the Republic of Ireland investigated the parameters of current waste management strategy as identified by key players (See Appendix 3: Research Methodology for details). The data collected reveals how the different interest groups view the current waste management strategy in both jurisdictions. They provide us with their perspectives on the:

- (1) Current situation of waste management and
- (2) Forces driving waste management (Chapter 2)
- (3) Best way forward for waste management and
- (4) Potential for North South Co-operation (Chapter 3)

The interviewees have different viewpoints, and represent a range of sectors within society having an interest, and knowledge of, waste management issues. Their views sometimes coincide and sometimes do not, but when they are brought together there emerges a picture of the potential future of waste management in the island of Ireland.

Politicians make decisions on behalf of society, and are influenced by briefings (largely from past experiences and vested interests) and political leanings, but they know the working of decision-making in government. Technical practicalities and the sheer bulk of centrally collected waste, and profit influence the Waste Industry, so they think in terms of a scale appropriate to their size of operation. Companies managing their own wastes see practicalities and lessons from their own industry and try to apply these widely, but appreciate economies of waste management. Scientists and engineers place their solutions in the context of their research field but are influenced by politicians and employers who may direct research towards predetermined ends. Environmentalists look first at environmental and social concerns, but do not always appreciate financial imperatives of the market. The focus groups reflect the opinions of community groups already sensitised to the issues of waste management. By reading the voices of these interviewees we are alerted to:

- The interests at stake in waste management;
- The debate on waste management;
- The critique of waste management strategy North and South;
- The perceived potential of North/South co-operation on waste management.

3.2 The Current Situation in Waste Management

The current situation with regard to waste management strategy is much talked about in the South and less talked about in the North of Ireland. A brief content analysis of the press North and South indicates that the issue of waste management strategy is a political ‘hotbed of debate’ in the Republic, which is not the case in Northern Ireland. While there was an Assembly debate in the North it received short press attention. On the other hand, local presses in the South have focused intensely on describing the development of anti-incineration groups, the planning debates, waste costs, waste issues and decisions on waste management policy. The Republic of Ireland’s National press has taken to the issue regularly, particularly focusing on the situation in Dublin though with attention to the overall statewide situation. In the interviews we carried out with key players positions ranged from those who were vehemently critical of the current situation to those who felt that some progress was being made.

3.2(a) *Environmentalist’s Response*

In the Northern jurisdiction there was a general feeling that the situation was coming under control. Progress was apparent though much progress remained to be made. As the environmentalist we interviewed saw it, the NI waste management strategy just recently formulated was a very productive one, although he saw problems with the local authorities handling of the issues:

I am reasonably pleased with the recommendations. There has been a shift but the over-all view is that local government has not really begun to internalise the regulations. There has been a minimalist attitude coming from the local authorities.

He favoured the NI strategy as currently formulated, because although ‘we are only off the starting block’ he felt that the ‘NGO’s did make an input to that strategy, there was representation’. The EU targets that have informed the Northern strategy are ‘coming from the drive of civil society’ and an ‘alternative worldview on sustainable development’. Despite his positive perspective on the NI waste management strategy, the actual situation regarding waste recovery at that moment was seen to be ‘embarrassing, pathetic’. On top of this, the strategy was being severely challenged by the ‘inertia and resistance’ at the level of the local authorities who are supposed to implement the strategy.

In the Southern jurisdiction, the environmentalist we interviewed was much more critical of the waste management strategy and spent the greater part of the interview outlining the problems associated with it. She focused on the current reality of waste in the South where there is a ‘major reliance on landfill’, which is seen as a primary method of ‘waste disposal rather than management’. She outlined the problematic history of landfill, including ‘uncontrolled dumping’ that caused ‘water pollution and problems for local communities’. This she outlined as the backdrop to the current situation where she saw a one-sided approach to waste that focused on the problematic notion of ‘disposal’ rather than management. For this environmentalist the attitude of regional authorities is to move swiftly toward incineration, a simplistic and erroneous view that she described as follows:

Okay, we can’t dump everything in landfills anymore – what are we going to do with it?
We’re going to burn it.

She described this policy as ‘expensive, it’s environmentally damaging and it has social repercussions’. In terms of the waste management strategy she believed that ‘a lot of money was put into the plan’ but that ‘the government needs to channel money in the right direction’. She went on to criticise the current funding structure where:

...Unfortunately the situation we have at the moment is the most expensive things are landfills and incinerators so that’s where the most amount of money is going to go, but unfortunately that’s where we see the least return.

In summary, both our environmentalists described the current realities of waste management as deeply problematic and both see radical changes and shifts as being necessary to lift us out of a ruinous situation. Both looked to the EU Directives as a very positive force that is at the very early stages of impacting on current policy in Ireland, North and South. The Southern environmentalist was, if anything, more critical of the current state of waste management than the Northern environmentalist.

3.2(b) *Environmental Scientists’ Responses*

The Northern scientist we interviewed described the current time as one of change.

Change is happening and this needs to be constructed in such a manner that it serves the environment as well as industry, government and domestic households.

She saw domestic waste as a key problem with ‘the highest growth and some of the most complicated problems’. It falls to the local authorities to handle this. She believed this was problematic in the past but is now less problematic.

Some of the authorities in the North have not acted in good faith in relation to the development of a proper strategy, and now taking a strategic overview they have to work on the basis of sub-regional plans. It cannot just lapse.

She saw the NI strategy and the setting up of the Waste Resource Partnership as positive developments although a lot still needs to be achieved.

Again, the Southern environmental scientist is far less positive and far more critical of the current situation. According to him the current state of waste management strategy is ‘in a total crisis’. There is a historical component to this crisis:

Most towns in Ireland were served by small, local dumps. And they really were dumps. The sites had been selected by engineers on the basis that they were close to the town and the land was cheap. So, mostly we dumped our refuse in old quarries, bogs, areas beside rivers that

were flooded... where there would be marshes... places that engineers thought could be reclaimed or filled up, that's the whole idea. They would have had no ecological or environmental training. That didn't matter too much in the 1940's, '50's and '60's when all we were dumping was potato peelings and ash... literally. But by the time the 1980's came, our dumps were getting bigger... and worse. Large amounts of organic matter were going in. You had problems with flies, rats, birds, smells, fires. Particularly with large amounts of paper and plastic. By the early '80's and in some places the mid '80's, local people began to complain.

So there is a history of local opposition to the handling of waste 'disposal' in the Southern jurisdiction. He sees the context as one where Irish communities have suffered abuse from international companies, which leads them to mistrust outside companies coming in to an area:

there's an enormous hole in the ground at Silvermines in Tipperary... north Tipperary... that is being dug by a company called ____ and ____ extracted barium oxide... and they left this enormous hole, and there's a railway line running through it. So what better place to dump? Railway and a hole in the ground. But the people of Silvermines didn't like the idea, so they contacted myself, and they contacted a hydro-geologist named _____ and we looked at the site. And what we noticed that beneath the hole in the ground, there were further old mines, and these are the _____ mines... lead and zinc mines, and they're collapsing because Mogul, a big international company... and not caring very much about Ireland, didn't backfill properly. And not only that, they mined with what's known as the 'room and pillar' method. You mine out the ore, but you leave supporting pillars of ore to support the roof. Otherwise the whole thing caves in. But that's annoying for a miner; you've got to leave stuff behind that's good ore. But if you're really 'fly by night', you prop up the roof with timber and steel, then you take out the pillars, and then you run. And there were numerous collapses down there including one enormous subsidence you could put a church into, not a house, you could put a whole cathedral into it, and other small collapses around. In other words, the area is subsiding, the geology is unstable, and there is waste mining water flowing down the site... and there are a lot of other reasons as well, but these are the real sticky reasons. The Silvermines group got themselves really well organised, talked to their councillors and Tipperary county council refused planning permission. We sent in submissions on their behalf to the EPA and the EPA refused a waste license. So now we were nearly there, but the company has appealed the planning refusal, and the company has appealed the waste license refusal. And on the 11th of November, at a hotel near Nenagh, there starts a second public enquiry or oral hearing into a landfill site. So getting landfill sites in Ireland is very, very difficult.

As this one example shows, the experience of local communities predisposes them towards a critical role with local authorities and with large international companies. Health and environmental issues leads them to this contestation.

The context is currently one of political conflict according to our environmental scientist. The conflict between communities and local and government authorities around waste is long standing and local communities have had to take community action against incorrect practices:

Arising out of that, the government and the county councils have embarked on a policy of closing down these small landfill sites, while retaining a few of them and enlarging them. That proved worse because they were not well located in the first place. So when you make it bigger, you're only going to increase the nuisance. Then they tried a second kind of policy that was to designate potential sites for mega-landfills in Galway, in Cork, in Waterford. And everywhere that the council selected a possible location for a future landfill, there was uproar. And local people said 'no way'. The result of that was that you had a lot of potential landfills being opposed tooth and nail by local groups.

Local communities seemed better served by European Directives rather than by the Irish government or the local authorities:

Since 1996, the Environmental Protection Agency is the licensing authority for all landfill sites. Before that, you could open up a landfill site and just get permission from the county council. Or if you were the county council itself, you didn't need permission. So there was a clear breach of the EU Directive. Following on from the establishment of the EPA in 1992 [in

1996] the EPA was made the responsible authority for landfill sites. Thereafter every county landfill site had to be licensed... and new ones had to be licensed.

Therefore, the history of mis-governance feeds into the problems surrounding of the current waste management situation. He sees the process that occurs in the planning of incinerators as directly paralleling the previous process of acquiring and mismanaging landfill sites. According to this scientist, with opposition to landfill sites proving successful, the government turned to incineration on the advice of one single engineering company. Incineration was put into all the regional plans, but 'not up-front', rather towards the end of the plans.

When local groups of people saw this, smoke came out through their ears and they said 'no way are we going to have an incinerator in our locality'

3.2(c) *Environment Officials' Responses*

The difference in the situation North and South seems to be that while both have poor records on waste management the Department in the North emphasises the consultative process it underwent, but that the practicalities of waste disposal in the North are enormously behind where they should be. Even though the official strategy is seen to hold most of the answers. In the South, the departmental position is one of disarray and dismay in the face of local opposition to the plans. Their emphasis is not on the consultative process but rather on the role of private enterprise in the strategy adopted.

More specifically the position taken in the Northern jurisdiction was that 'In terms of practice it is a long way short of what it needs to be'. The hopes for improvement lay with the waste management strategy and the good governance practice on which it was built:

In this, first of all, we put together a steering group to scope the strategy, with the NGO's and the CPI, public authorities etc. Then we had public conferences and workshops. We had adverts in the Irish Times and the Belfast Telegraph.... We had a large response to consultation compared to anywhere else in the UK. We then saidthat we would create another independent advisory group. This would then make recommendations for change. We built in most of the 104 recommendations, which is phenomenal. We felt that we had a process that is continuing and we are about to appoint a non-executive advisory board to see whether we are achieving our goals or not.

The result of this he indicated is that:

What has been happening is that instead of making organisational policy the strategy took a rational balanced view.

In the Southern jurisdiction the perspective was that a strategy has already been developed and:

an integrated approach has been adopted, which encourages diversifying into alternatives such as composting, recycling/reuse, thermal treatment, specific strategies on hazardous waste, as well as the reduction and strict management of landfill sites.

According to the interviewee from the Department:

There has been considerable interest from the private sector in the waste management area. There is a precedent for the involvement of the private sector because historically public authorities were not obliged to provide collection service. £600 million of new funding will become available for infrastructure, £450 million of which will be provided by the private sector.

There was recognition that there have been severe difficulties in getting some of the regional plans adopted and this in fact means that Ireland is running out of time in meeting the EU Directives. This is causing severe difficulties for the Department of the Environment and Ireland is already in breach of EU legislation. It was felt that this could lead to a situation in which there will be no other recourse for the Minister but to enforce the plans in the face of opposition using the powers that he has in terms of the 1996 act. Since completing this research, the Minister has indeed amended the 1996 Act in July 2001,

giving County Managers powers to decide methods of disposal, where previously, this decision would be taken by county/city councillors.

In summary, two interrelated issues emerge as central to waste management in the South: the public/private partnership and local opposition to incineration.

The interviewee from the Environmental Protection Agency (an independent statutory body) outlined how agricultural waste is 'probably in the long term, the single biggest waste problem in Ireland because they are causing other problems such as pollution of rivers, and lakes'. On the other hand industrial waste is 'relatively well managed'. However the 'most visible waste management problem in Ireland is the problem of dealing with household and similar waste'. Here we have no other infrastructure but landfills and there is a need to move away from these, 'so there is a conflict between a desire to move away and the acceptance of the alternatives', often based on what he calls a 'fear of the unknown'.

The practicalities on the ground according to the EPA interviewee are that:

We have done very little in the waste area through the 1970's and 1980's, and it wasn't until the 1990's that any kind of focus started on waste. And because we didn't start when we should have, we are twenty-five years behind others. It's as simple as that.

In terms of household waste, in the regional waste plans the percentage of recycling and reuse should move from 9% to between 40-60%. This represents at least a five-fold increase in recycling. The second major practicality is the money for the infrastructure that has to be found, namely 3 billion punts or thereabouts.

3.2(d) *Environmentally Minded Politicians' Speak*

The Northern politician whom we interviewed was the first interviewee to provide a critique of the waste management strategy in Northern Ireland. He saw it as a year behind the Southern strategy and was obviously conscious of the difficulties involved when the strategy would have to be translated into plans at the level of the local authorities:

We are quite critical of the strategy that is being deployed. We think there is a lot of tokenism in relation to discussing the issues arising from the famous waste hierarchy. But we see no resourcing of those aspects of waste management such as recycling, reuse or reduction, and we think the entire exercise that is going through the sub regional stuff - the local government at the present time - is actually geared towards the issue of municipal incineration. If we do not address the issue of waste reduction then we are facing a future with a discussion about more incineration. So we think the argument is back to front and if there is an existing argument for incinerating based on the levels of waste reduction then we have to begin to reverse that argument. It requires government action. It requires departmental policy and resources and if there is any credible argument that the councils can carry this load then I think it can really only be in terms of their role within a broader strategy.

In terms of practicalities he argued that the strategy has gone for only a 15% reduction target a strategy that he saw as 'complacent' and lacking in 'discipline'. The policy is not just ineffective:

It is more than that, it is counter-productive, its not just that its ineffective in economic terms, it does damage to the economy and it does damage to the environment.... rather than people taking the opportunity...to develop the best practice of our own and perhaps do something the others could emulate. Where tokenistic efforts towards recycling are made while in fact directing the bulk of it towards incineration, and land fill while its available to us, but incineration is in fact their ultimate option.

On the other hand this politician argues that when this is actually implemented and incineration facilities are installed, these public attitudes to incineration 'which are close to that of nuclear energy' will come into play:

But the reality is that councils are well through this process of marshalling their arguments and developing their strategies. We are close now to a decision and there is a lot of incentives and financial assistance being pointed towards them to help them to do that. Now on an island wide basis you find that all the county councils are engaged

in a similar exercise. But they are meeting at a local level, they range from a 'NIMBY' attitude to people who have genuine and informed concerns and incineration is a very unpopular option in its own way. It is as unpopular as the nuclear option. So when it comes to building the facility I think there is a real possibility of a significant backlash in public opinion.

The Southern environmentally minded politician's position on the current situation is also clear:

I think it is pretty disastrous, reflecting the fact that at national level there hasn't been the will to have a proper waste disposal policy in place. Not just disposal but dealing with waste as a whole and that has worked itself down to local authorities.

The reason why the situation has emerged is, according to him, due to:

The main political parties are beholden to the commercial interests and they are responding to the pressures and therefore not implementing measures that would force manufacturers and retailers to drastically cut down on a lot of the waste created. I believe that there is a very shortsighted approach to what is commercially viable in terms of recycling and reuse, without thinking of environmental costs or the other environmental or social overheads.

3.2(e) Local Authorities' Attitudes

The problem as seen by local authorities centres around a political system which depends on elected politicians, who inevitably have short term views:

We will produce all the plans, and while we produce the plans, everybody is very happy, but then when it comes to the acceptance and the implementation of the plan, we then very much get down to the micro issue. And maybe it's not right in our political system that politicians depend on local constituencies for their votes. Those votes are not dependent on a ten, fifteen or twenty year plan for waste.

There was a strong feeling of frustration where specialist or expert led time-consuming planning work has gone on and that those plans then had to be placed at the mercy of the democratic process which includes the local politician and his/her short-term self-serving vote-seeking agenda:

But if I say that I'm going to build a reservoir there or a dam down in that valley, then everybody else will come out and try and stop me. But they still expect you to find water, or what ever it is, for twenty years time. Similarly with the waste I think. And this is the problem, our politicians are being asked to make decisions and I don't think they are capable of making those decisions, because it's local politicians, and that I think is our biggest problem.

So the planner's frustration has a dual source: They are being asked to solve the problem in a rational 'scientific' manner, but then the people also expect no inconvenience with the solution. Second, the politician can block the implementation of the plan by not voting it through and their vote for implementation is believed to bear little relation to the merits of the plan.

3.2(f) Industrialists

Both industrialists perceived waste as a commodity that should be reprocessed. They argued that incentives should be innovative and targeted. The industrialist from the printing industry believed that there is a better understanding of the problems of waste in industry in general. However, according to him the market drives recycling.

Waste can be seen as a commodity and it should be reprocessed for reuse. It would be easier to do in certain sectors, such as the paper industry, than others. The government does offer some support but the incentives need to be more innovative and targeted at reducing the waste products that are damaging to the environment.

From his perspective more research is needed into recycling, new uses for paper wastes and replacement technology for dioxins. He believed that there is potential to recycle, and resources are free, but it is still very costly to establish recycling as a business.

There is no recycling of wastepaper on the island except for three pulp companies. There is the potential to recycle paperboards although it has been estimated that it could take up to £100 million to establish a business.

Again he saw the need for a feasibility study, that is, research into the recycling process.

The second industrialist felt that there was no help forthcoming on mixing recycling with business:

It is left up to the business itself. If it has a cost it will be balanced up with the best option looked at from the business perspective. With regards to the local authority there is no particular guidance or help on waste management. We have not had support from government as such.

As far as he was concerned there was no guidance or help from local authorities or government, with the exception of some support offered through an 'energy demonstration scheme'. This man's business converts waste to energy, as his business is appropriate for this. According to him recycling and dumping occur in general according to cost effectiveness and so what currently happens is that most businesses dump although there is often enough of particular wastes generated between the two countries for economically viable handling.

It would be efficient for companies to recycle as much waste as possible. Big benefits are being lost because companies are unaware of the waste and its cost.

He made the argument that plastics from Germany are processed here, but that there would be enough waste plastic here to sustain a business. However, the problem is that people are unaware and left without guidance by government.

3.2(g) Summary

In answer to our question regarding the current waste management situation those interviewed held a range of views. In summary, waste management strategy was seen to be in crisis by all those interviewed in the South, although they differed as to what they saw as the cause of and the solution to the problem. The South's waste management strategy is out a year or so in advance of the Northern strategy (September 1998 in the case of the ROI and March 2000 in the case of the Northern Ireland strategy) and has thus reached its crisis point earlier at the point of implementation. The Northern interviewees, on the other hand, with the exception of the environmentally minded politician, were pleased with the waste management strategy itself although most foresaw problems with its implementation at local level. In the Northern constituency there was very little sense, again with the exception of one politician, that local communities would become active against waste management plans.

3.3 What Drives Waste Management?

The question as to what drives waste management was designed to ascertain the nature of the political process behind the development of the waste management strategies in the different jurisdictions. Was it seen to be 'people driven', to be driven from the European level or from the state level? Who was seen to be driving waste management strategy? Was there a critique of who was driving waste management strategy and were there suggestions as to who *should* be driving waste management strategy?

3.3(a) Environmentalists' Response

When asked the question the environmentalists we interviewed were in no doubt that Europe is the key driver:

Europe! Only EU Directives have impacted. The targets have filtered through to the NI strategy, but it merely reflects attitudes in the EU.

This Northern environmentalist found it particularly interesting that from his point of view civil society and alternative politics have fed into the production of these Directives and now they have to be implemented in mainstream practice:

The curious thing is that those European targets are coming from the drive of civil society that has been mobilised for the past 20 or 25 years and have a very different perspective when it comes to sustainable development. You are receiving the targets in a political class, which comes from this alternative worldview.

The Southern environmentalist perspective again referred to EU as the driver:

At EU level I think they are guided more by the principles of sustainability and things like that... I mean they have more time to stand back and have a look. The EU has been dealing with it a lot longer than we have, you know.

The EU thus upholds principles of sustainability as driven by particular Directives, but from this environmentalist's point of view, nobody in Ireland except for the Greens are taking the European drivers seriously in planning for sustainable options. Specifically, she argued that the consultants drawing up the plans are not driven by EU Directives on sustainability, rather 'industry and profit' are the motivators:

So nobody's really stepping back and having a look at what we really should be doing... nobody's examining (apart from ourselves here... certainly the consultants didn't do it with the plans)... sustainable options.

Again, looking at the national level she indicated that it is not rational planning that is driving the process:

What's driving it here now I'm not too sure. I think there's a certain amount of panic involved.

Interestingly, she indicated that incinerator companies are looking for new markets in an aggressive way and as such they must be seen as key drivers of policy:

Because, for example, with the incineration industry, I mean it is a bit of a dying industry and so they are looking for new avenues, they are looking for new places to go to build them, so they're looking to Eastern Europe and Ireland.

3.3(b) *Environmental Scientists' Attitudes*

The environmental scientist from the North whom we interviewed outlined who should drive waste management. She believed that it is now very important that government should now lead and that each department be seen as part of the planning process on waste management, rather than just the Department of the Environment:

There should be a clear lead regarding the waste system. It should be led now and dovetailed across the various departments. This is particularly relevant for the Department of Agriculture.

Second, she believes that industry could play an important role:

It is also true of industry that could have a very progressive attitude to the whole waste management strategy. Industry could get the economic benefits from managing their waste and from the recycling they could maximise the potential. If they think they can make economic benefits from that then industry will be happy with that. Any waste management research always leads to saving money.

Interestingly she argued that incinerator companies are attempting to lead strategy through influencing decisions:

There has been a lot of lobbying from the incinerator companies. The thing that they do not tell the government people are the amount of times they breach the omission levels with pollutants being released. There is also the problem of the disposal of the hazardous ash, which has not been dealt with at all in the process of incineration. They are actually creating a further problem. Instead of just the waste to be dealt with they are generating pollutants. We should be trying to reduce the levels of hazardous waste. Many other countries are trying to get away

from incineration after making all the mistakes. Japan for example. Even in America there is the problem of trying to get away from the whole system of incineration. Europe needs to look at this urgently, but there are vested interests that have to be protected. The companies are a problem. They are well known and would set up subsidiary companies in Ireland. They would give them a local focus even though they are multinationals. The French and Belgian are leading the field in this. The hope is that North and South will not go down this road.

The Southern environmental scientist we interviewed believed that we have a situation where one individual engineering company who 'carried out many of the regional waste management plans, 90% of the plans', were the ones who actually put incineration 'into all the waste management plans'. He pointed to the historical situation where:

What in the older days drove waste management was very simply cost. Every local authority wanted the cheapest possible solution to dump waste. . That's why they bought the cheapest land in the most convenient place near the town. Then waste management began to be driven more and more by the EU. The EU demanded that we manage our landfill sites better; they demanded an end to pollution. And some of the waste management decisions were actually influenced by small groups of people who took county councils to court.

So his answer to the question of who drives waste management decisions outlined a transitional process, where previously local councils drove it and now the EU drive it, but increasingly now local community groups may impact on decisions:

I think what I would like to see more of, driving waste management decisions, are local citizens, saying, 'we want a recycling, zero waste economy, we don't want a waste management system based on dumps and incinerators'. Now if we could get that driving force up and running and empower those people, so much the better.

These 'citizens' he counter posed to the waste companies, who to him represent the opposite of the people's interests. A key driver to him is the Minister of Environment who has the authority to move in the people's interests or face community opposition:

That 1996 Act is a tremendous Act and it gives the minister power to do so many things. He can encourage recycling, he can charge people for their wastes, and he can prohibit certain substances in manufactured products. He can do a lot of the things that we talked about earlier. He can impose charges on objects put on the market in Ireland. In other words, he has the power to transform us over a period of time, into a recycling, zero waste economy. He has, and I'll have to check the Act, as you say, the power, to impose incinerators. Now that, to my mind, would be an aggressive step because he would be taking power away from local communities and there would be tremendous resistance. I could see small, local groups in cities and towns around Ireland, chaining themselves to railings. There would be anti-candidates, both in local elections and national elections. He would be signing his death warrant.

Companies set up in Ireland to profit from waste are now seen to be a key driver of waste management strategy. However, what he indicated is the key problem in terms of drivers is that a consultation process, at least a genuine one, is totally absent even though it was provided for in the 1996 Waste Management Act:

What's gone wrong really is that consultation hasn't really begun until recently. The 1996 waste management Act does allow, does provide for, consultation when waste management plans are being formulated. The problem is that still, local councils not really thinking in terms of consultation. They think that consultation consists largely of producing a plan, then asking citizens to comment on it, then defending the plan against those comments. So there is a mechanism for public input, but not for the public to markedly change the plan. And there is no process at the moment, whereby the very basis of the plan can be put before the public for their input before the plan is put together.

The process as it stands involves a situation where:

a waste management plan with a large element of the solution based on landfilling, and or incineration. That goes out to the public for their quote 'consultation' unquote, back come all these comments. The engineering firm _____ who have produced 90 percent of the plans, defends the plan against the comments, and we get nowhere.

Local activists have managed in some cases to shift this procedure sideways a bit by pressurising elected councillors to intervene in the 'consultation process':

Now, what has happened recently, and only in a small number of cases, local councils have invited into the council chambers for discussion... it happened in Longford, members of local communities to critique the plan and offer an alternative view. I remember in Roscommon recently, the county council there, at the suggestion of one of the elected members, decided they wanted a different view from that being put forward to them by _____ (the engineering company).

3.3(c) Environment Officials' Responses

The Northern DOE official interviewed believed that 'EU law is the key driver'. The problem with this is that it is not the best system where the law drives. Alternatively:

You could set up a framework, which would say we could do better but people have a tendency to look at the environment and the economy and disaggregate the two and also forget about the social.

On the other hand he argued that public resistance to a facility could also be a driver.

What is driving the current debate is public resistance to having any kind of facility anywhere near them. The famous is BANANA and that has been added to the word NOTE - banana means 'absolutely nothing nowhere near anybody' or something like that. The NOTE was 'not over there either'. Everyone wants the comfort of a robust system. There is a parallel in Belfast where there is 200 tons of rubbish picked up on the street every week, a lot of it newspapers wrappers, from cars. There has to be the idea of the clean and healthy neighbourhood.

The Department was trying to deal with the resistance at the stage of implementation of the plan:

Whatever the facility people always think that it should be better elsewhere. Also with communities who feel that they have been forced to have these facilities may feel that they have not been given an opportunity to do something different. The bridge is that the standard of any facility no matter where it is situated should be so good so positive that any community would be happy to have it. The only way to do that is to pay enough money to achieve it technically to make sure that no host community feels anything other than welcoming. That is possible. The council licensing or the environmental protection laws or the EU can protect them.

Problems at the practical level included how to deal equitably with the question of where an incinerator would go, and how to attach financial rewards to the community who adopts one, and how to ensure that 'waste management plants' that are community lead are adopted. He looked to where he says that due to financial rewards, communities are actually bidding to host the waste plant:

What happens in America and Canada is that they go for financial rewards for incinerators. It is not that they want a cheap and nasty facility. They will build a top of the line facility.... They have reversed the process in the States where you have host communities bidding to have the rewards, the extra \$10,000 per year to have this waste plant. The problem is getting some equity in choice.

However, in the North the problem, as he saw it, was locating places for incinerators and then dealing with public resistance:

The difficulty at the moment is public resistance and a lack of opportunity to find places north or South. Policies on new strategies are only just beginning to bite. The Directive and the EU law will be an enforcer. Planning guidelines at the moment are looking to waste management

plants, which are community lead. A council or a group of councils will come together and say that this is what we are going to do. The problem is that the pockets of resistance may be located where the proposal is for the plant.

The interviewee from the Department of Environment in the Republic saw the driver as being 'the need to address Ireland's landfill problems'. In other words, there is a matter of some urgency driving decisions. As well as this there is 'an acknowledgement of the need to increase Ireland's 'recycling performance' the promotion of 'energy recovery' as opposed to landfill. He indicated that the drivers are neither totally 'green' nor 'profit pursuit' orientated, but emphasised the opportunities for job creation through 'private enterprise':

Waste management decisions are not necessarily driven by a desire for Ireland to maintain it's 'green' image in terms of attracting tourists. Neither is it driven by the private sector's pursuit of profit. However, waste management plans have created opportunities for private enterprise and therefore the potential for job creation.

The interviewee from the Republic's Environmental Protection Agency's view on the drivers was that:

The legislation has been driven by Europe. You've got waste Directives from 1975 right up to the current day. And you've got general Directives on waste and Directives on specific waste streams that are now being brought in. You've got a Directive on landfill which was introduced in 1999, that has to be put into effect by April next year, and so on. So at a legislative level, the primary driver has been Europe. Then you've got the Waste Management Act that was brought in 1996, and under which we started licensing in 1997. So in terms of providing the legislative basis for planning and for licensing and for general improvement, that is the main tool available. The Waste Management Act and Regulations in relation to planning and licensing, dealing with hazardous waste and other waste is the driver.

Politics can also be seen to drive decisions at a later stage:

In many cases, a lot of the decisions relate to adoption of waste plans... and they're political decisions because it is the elected members that are making those decisions.

It is at this stage that the media and the voices it reflects begin to drive decisions on adoption of plans:

So... I would say... the media has a huge influence in the attitude being taken... and certainly those who are vocal in voicing their opinions have a huge influence. Whether what they're voicing is informed or not... it is being listened to. Therefore there seems to be a body of opinion that would suggest that we are not going down the right road... or at least a vocal body of opinion that suggests Ireland is not going in the right direction.

The problem here at the level of implementation is seen to be a vocal opposition to the plans backed by the media. This influence is advanced at the local level, where 'fear of the unknown' and the mismanagement of landfill sites, fuel opposition:

So I would say the decisions are based on, in many cases, fear of the unknown. And the difficulty there is that while people can go and look at facilities in operation in other countries and be convinced and come back and say 'these work very well', the vast majority of people do not see those facilities. They do not see how they operate and they cannot identify with the fact that all they see is a hole in the ground that's badly run, it smells... And they have a difficulty in seeing how people running or managing that, can move forward to running a facility in a professional manner.

So we have an account here where the driver is seen to be European legislation and then that sees that drive, which includes a drive towards incineration, being held back by the media and the misplaced fear and misinformation on the part of locals. These local's information, experience and knowledge base only relates to the history of the 'dumps' in the South according to this interviewee.

3.3(d) Environmentally Minded Politicians Talk

According to our Northern environmentally minded politician interviewee it was the 'the status quo' of the current economic system which is driving waste management strategy. Creating 'better machinery' to preserve the 'existing system' and the 'benefits of the system' are priorities rather than creating a new system. He believed that waste is being driven by the EU but finds this problematic and is trying to work towards a situation where the Northern constituencies decide for themselves a radical policy on waste management.

We know what we have and we know the implications of it economically. Environmentally we know the implications of that already – and we do not have to wait on a EU directive. We don't need to wait on other societies to test it and see, because the evidence is already available, so lets bring that back to a point where we decide we're going to take another direction.

This politician had a keen interest in transforming the waste situation by changing the drivers, and this in turn would not only impact the waste situation for the better, but the polity would become more democratic by its engagement of the waste management strategy.

The Southern environmentally minded politician we interviewed saw the EU as the driver, but believed that this is a discreditable situation and that it is the place of the central government to have instituted a waste management strategy without EU having to push it:

Well the thing is that the EU obviously has been pushing. It shouldn't have been necessary for a proper waste management system to be in place. The other thing is the reuse and recycling is constantly turned down because it wouldn't be profitable. 'There wasn't a market' for this and for that and that is inexcusable. There should be a market, and if necessary, there should be subsidies to ensure material can be reused and recycled.

So the government in his view has not come up with a proper 'holistic' approach to waste because they are 'beholden' to large commercial interests. The incineration question in particular:

cannot be left in the hands of private enterprise, so-called, who in reality would have the incentive to have more and more waste.

According to this view the EU is seen as the driver, but the central government should be the driver, although their position on private enterprise leaves them no scope to produce a 'holistic' approach to waste management.

3.3(e) Local Authority Attitudes

A local authority representative we interviewed gave us more detail on what he described as the vested interests of the 'green extremes'. He believed that they are driving decisions now at local level and that this is problematic because 'the silent majority' are not driving decisions.

The silent majority, once the waste has been got rid of, no one really cares, so that they haven't been motivated to take an active interest. And nobody at the moment asks, its like when we want to put in a landfill - the debate is in the chamber. It is based on the people living around the landfill, or it is based on the Green party, not based on the majority of the people in that locality, or in the catchment area. Because, as long as you solve the problem, ninety percent of those people will never contact their local representative.

So, the ordinary non-activist population is not part of the driving force. He also had problems with the process not being driven by the engineers:

And the other thing that is not driving it is the technical problem solver, which would be the engineers. Because engineers are seen as not providing the correct solution and they have a credibility gap, because they are seen as maybe the creators of the pollution in the first place. So there is a perception there... sometimes when you talk about the drivers, sometimes it's the non-drivers that I tend to look at.

In terms of who will have to drive implementation, he believed that the local politics would have to be bypassed by central government, which must now become an active driver.

Central government then, has to take an active role in the implementation of the strategic waste plans, and if that's enforcement, then it has to go that way.

3.3(f) Industrialists

The first industrialist interviewed was of the opinion that what led strategy was the NI government's interpretation of British interpretation of EU ideas.

Government strategy is based largely on the EU and their interpretation of waste management. The British Government interprets this in a certain manner and this is reinterpreted into another system in the Northern Irish legislation, which is slightly different anyway.

The problem as he saw it was that:

Companies here are badly hit by it because it depends on whether you are exporting or importing. Raw materials are imported. Then trying to export costs. The South has different legislation as well, which restricts trade between the North and South. It would be good for business if there were one legislation.

As far as he was concerned, North/South differences in legislation restrict trade and if these differences were removed that would be good. He would like to see greater recycling driving the Irish market, which according to him is big enough to diversify.

The second industrialist was convinced that when waste management becomes profitable, the culture would change. As far as he was concerned current legislation hinders as opposed to helps businesses handle waste.

Apart from this economic interests are the drivers and where the government does not service small businesses that are trying to develop, the situation is tantamount to the absence of a driver operating in the interests of proper waste management.

One consideration is that currency fluctuations across Europe cause a lot of problems for businesses that are trying to develop beyond local and regional confines. The needs of industry are not serviced by the current state of affairs.

He was adamant that it was up to the Government to help industry develop a waste market. He argued that industrialists feel legislation is not clear or direct and can be bent. He was in the paperboard business and was adamant that government should be helping businesses like his which has a potential for zero waste and, on the other hand, should curtail the plastics industry since plastics cost millions per year to 'clean up'. According to him plastics are used by industry without regard to waste aspects.

Basically when asked who drove waste management both interviewees believed the market did, but that the government should be driving and were not. They both argued that there was no lead from the government in sustainable waste management. It is driven by EU Directives but left up to business to find solutions. They believed waste could be used profitably if it was organised on an all-island basis but there is no knowledge resource or assistance, and no carrot and stick to help companies like theirs. It was felt that government-backed structure was needed to advance from this position. Companies lack knowledge about the field of waste management. They are aware of a responsibility to manage waste in a sustainable way but lack guidance and the opportunity to access it in a profitable way.

3.3(g) Summary

In answer to our question of which 'drives' waste management strategy we saw unfolding a number of interest groups and some serious conflict of interests. Most interviewees agreed that EU legislation

was leading waste management strategy. All appeared happy with the specifics of the EU legislation, but when it came to the other influences on waste management strategies there was considerable worry on the influence of commercial interests, specifically waste companies. On the other hand, the worry from state officials was the fact that community groups, through local politicians, could block the implementation of specific waste management strategies. From both ends of the continuum there was a call for the government to take a more decisive, informed leadership role in waste management, one that was not lead by small community groups, or by business interests, but rather policies implemented in the interests of good governance.

3.4 Focus Groups

Focus Group discussions were held in the North and the South around the preliminary findings and perspectives that emerged from the in-depth interviews reported on above. These were designed to 'brain storm' the issues from the perspective of people who were already involved with waste management issues. The format was that of six people discussing for nearly two hours the issues emerging, facilitated by one of the researchers, while the other one transcribed and took notes.

In relation to the current waste management situation reactions and comments from the focus group carried out in the South included:

Southern Focus Group

...the waste management plan in Ireland at the minute is based on the opinion of one or two individuals. Experts do everything, I think _____(named individual) is the expert in Ireland. He's Mr expert on waste management and all the plans of the country are his plans... and it's the way he sees and therefore that's what we're going by. So whether we're right or wrong, that's what we're stuck with.

The whole single-minded focus of this government seems to be to get incineration going quickly. And if the county councils won't push this through, then central government will intervene and create a greater authority, whether it's a greater Dublin authority or the north-eastern authority, and get it in there. Because they see it perhaps as a cheaper alternative to landfills... I don't really know what their justification is but it's a blind propaganda campaign from all angles.

There is no lead from the politicians... the will just isn't there.

No money is spent on actually preventing waste.

More money should be made available for recycling.

There seems to be a policy of the government to get to public-private partnerships or to contract out services and this seems to be part of the process of a company coming in with an incinerator and they're going to solve the problem for the government. I don't think there's any real vision among the political parties

Reactions and comments from the focus group carried out in the North included:

Northern Focus Group

The general population don't really care at the minute. It will have to be government or local government. It usually comes down to local councils to work on the environmental side of domestic waste. Apparently 80% of this is recyclable.

Often people want to do it, want to get rid of the waste in the right way but there are no options to do it.

It is down to the Councils too. Belfast City Council never had a strategy on this. The only question was where you get the next landfill site and that was the big debate. It was not about giving people the education or the resources.

People are speaking out.

Big business is creating waste.

In the Republic, the main issue emerging from the focus group was that of incinerators, opposition to them at local level and the political conundrum that presented in terms of developing a sustainable (environmentally and socially) waste management strategy. There is a view that the previous stage of minimising waste is neglected and that political leadership or 'vision' is missing in the whole area of waste management.

In Northern Ireland the focus group discussion, broadly confirmed the views of the 'experts' interviewed. A political lead was also considered necessary as with the Southern group. Further resources placed to encourage recycling and to develop relevant education were also called for. People are seen to be willing to recycle but this needs to be facilitated.

4.1 Development Paths

This chapter reports on the discussions held with 'key players' when asked what they saw as the 'best way forward' for waste management and the 'best way forward' for an all-Ireland waste management strategy. In asking the question on what they saw as the 'best way forward' we hoped to uncover the different perspectives on where waste management strategy should or could go. We wished to see whether or not there exists the basis of an agreed way forward.

4.1(a) Environmentalist Perspective

The environmentalists we interviewed were in no doubt that there *is* a 'best way' to move forward. According to the Northern environmentalist:

Sustainable development offers wisdom in thinking about jobs and wealth. The opportunities for policy development for the integration of the objective for an economically dynamic community that does not compromise health or well-being... The whole framework of the new society gives us the need to be much more reflective about what we mean about modernisation and reflective about the risks that we are taking on board and reflective about the way that production can no longer drive the notion of modernisation.

A sustainable agenda with its attention to risk, rather than the production process should drive development. These policies would come 'through' the NGO's and research. As well as this, strong government investment is needed:

Fiscal incentives, grants and such like must coincide with the environmental hierarchy. In other words we cannot have a system that is existent in the UK where incentives make incineration the most viable option. This needs to be reversed. There needs to be investment in the alternatives that abide by the environmental hierarchy, which has been accepted by the European Union. Unless profitability becomes part of the equation then all the technical fixes and the aspirations will come to nothing.

He saw the future lying in 'transforming the system in order to establish a materials recovery programme rather than a waste disposal is necessary'.

The Southern environmentalist we interviewed also saw government funding as playing a critical role in future management strategy:

For example, setting up a recycling board or some sort of fund for business, where they can attract businesses into the country who are recyclers or who do reuse materials. Also some sort of initial start-up funding should be given to them. Also funding that's allocated by the government should reflect the waste management hierarchy as in the most amount of funding should be given for prevention, the second for reuse, and third for recycling.

While funding should reflect the accepted waste hierarchy, it should also be designed to support small local enterprise as against foreign multinational waste companies.

Unfortunately the situation we have at the moment is the most expensive things are landfills and incinerators, so that is where the most amount of money is going to go. But unfortunately that is where we see the least return. We see the least amount of jobs, you know it's usually a privately owned American company that would come in, build the landfill, build the incinerators. Whereas, if you could encourage recycling you are encouraging a conglomerate of smaller local industries.

This means that:

We stop thinking of waste as something to be got rid of as quickly as possible and think of it as a raw material, you know. So once we take the attitude, right, then we can start thinking about

ways as to how we're going to recover these materials and return them into the economy, thereby providing local jobs.

Not only would government funding be required to turn the situation around, but they should also take responsibility in all areas alongside business and local authorities. Central government stands accused of setting targets without translating them into a 'how to do it' policy:

Then there needs to be another approach, and this other approach needs to come from national government. For example with markets - there needs to be funds put into trying to find markets or attract business in...to bring in regulations or voluntary agreements that stable markets would exist. Local authorities can't do it all on their own. They can provide the infrastructure, collection, composting schemes, you know, but really national government and business really have to take some responsibility as well.

Local authorities could begin with practicalities:

I would say immediately if I was in a local authority I would start a massive composting scheme, about fifty percent of waste that's currently going to landfill is municipal waste, which is household and commercial. It is biodegradable. That's where I would start immediately.

There is also the question of research on markets for recyclables:

...the next thing to have would be have a look and see where the market exists for dry recyclables and start collecting them.

In this way 'you have quite a big proportion of your waste-stream taken care of immediately'. In terms of practicalities, local authorities could thus start composting, research could begin into markets for recyclables, and government and business could join together to establish (with subsidies where necessary) steady markets for recyclables. A concerted drive for recycling is needed, where it is made convenient and cost saving as opposed to the current situation in Dublin where 'they are introducing a charge, £150 per household' for recycling.

4.1(b) *Environmental Scientist's Speak*

The Northern environmental scientist we interviewed emphasised the need for sustainable development. Waste must be tackled at the level of its production that is a shift from an emphasis on disposal to its minimisation:

To completely shift the emphasis away from disposal. Even the strategy that we have in the North at the minute, it does not control waste minimisation. We need to be looking at the amount of waste that we reproduce.

Second, she argued that we move towards the recycling of what is produced:

We also have to maximise the amount that can be reused. Developing ways that can be developing energy sources, such as composting. Disposal will have to be dealt with in an environmental way.

In terms of achieving these objectives the government must drive the sustainable development policies:

and that is going to require a culture change in government that will feed down to the individual. It is a huge challenge. Government should lead it by example. A first port of call is the procurement of contracts. They need to specify at the contract level certain standards of management from the contractors. They need to be committed to sponsoring and using recycled materials. Industry should be encouraged to have a waste minimisation programme. They should come together to look at the whole issue of waste within the sectors and work towards building confidence with the consumer.

Then, at the level of the individual, the government must also, along with business, co-operate with the consumer:

We, the consumer, need to find out how to purchase things that are sensitive to the environment. We need to build up a culture of accepting recycled things.

The educational system has a role to play at the level of producing the consumer sensitive to environmental issues and open to buying recycled produce since 'That [building of a culture] has to be through education.'

Moreover, the community needs to be involved:

We need to look at large scale operations in terms of reprocessing. It can also have large potential for community based initiatives and ventures. Without the voluntary and community sectors on board it is going to be very difficult to change the culture. They have the links to the community, skills of dealing with people and educating people at community level. There are currently initiatives in recycling within the community sector.

This way forward is opposed to the 'quick fix' that incinerator companies would bring to the scenario:

Whereas, on one side where a lot of local authorities are facing decisions, there is recycling which includes long-term projects. These are going to take a long time to get off the ground. On the other hand we have multinational companies wanting to build incinerators having no responsibility and short-term objectives.

The Southern environmental scientist saw the solution as, 'to move towards recycling, reuse, waste minimisation, eventually reaching zero waste'.

However, he considered central government planning to be essential to achieve the environmentally friendly solution. According to him, the government must be totally involved, that is that the government must regulate the economy:

That problem cannot be solved at local level, and the reason is we are stuck, for better or worse, in a market economy and we've got to adjust that market economy. If you talk to the government, they act as if the market economy is like the weather, it can't be changed. But it can, it's only a human construct. You can change it by passing laws and what our government should be doing, and this is what Zero Waste are saying to the government is... we should be bringing in incentives that will lead people to reduce their waste, and recycle.

On the matter of household waste our respondent argues for a two-stage process:

Now imagine for a moment, and this could easily be done technically, everybody's bin is bar-coded or has a computer chip, as it goes on to the lorry, it's weighed and you get a free allowance every week of say a kilo or two kilo's in waste, which is reasonable for a family. Above that, you pay. That's step one. Step two, you have a second bin and that's also bar-coded or has got a computer chip in it. And that bin is for recycling...cardboard, paper, tins, bottles, plastic, not all together of course, but you could even do that and they could be separated by mechanical means at a central facility. You are now handing back to society useful materials which society can reprocess and turn into valuable goods. So now, you pay people for that, for every kilo, you might get two pence, or ten pence...so that the money that people are paying to the county councils to get rid of their unsorted, dirty, useless waste, people are now getting money back for handing back to the councils useful materials that can be recycled.

The next step involves composting:

So, we get that organic matter out and we compost it, you make it into compost for parks, gardens, etc, etc.

This also involves funding. Recycling, according to this scientist should have financial rewards. In particular, there should be no increase in costs if you recycle. To produce a market for recycled goods

it would be necessary that they be sold cheaper to the consumers than the non-recycled equivalent. This scientist went into depth on how the government funding and subsidies could create the conditions in the market place that rewards recycling and penalises non-recycling:

It's so simple. So, for example, I put a television set on the Irish market...whether I import it or make it, it should make no difference, otherwise it's a barrier to trade. And that television set is non-recyclable, I pay £10 to the government for every set. And if that set is 100 percent recyclable, I get £10 from the government for every set I make. So you immediately set up an environmental fund, into which some companies pay money if they're producing non-recyclable substances or non-recyclable objects and not reusing materials. Other companies get money if they are putting on the market something that is recyclable or if they're recycling something. So you now transform the market into one that rewards recycling and penalises non-recycling.

However, according to this interviewee the notion of green taxes is being rejected by industry in the South:

At the moment, IBEC are totally against any change, they're against green taxes because they just don't see it. They don't see that to create a recycling economy would be of benefit to industry. They're only thinking on behalf of the existing big industries they represent, but they're not thinking of small industries that could be set up by the markets here.

One other suggestion this environmental scientist made, apart from redesigning the tax system to promote sustainable development, was that action research has to be funded in this area:

would like to see adopted by one region in Ireland, a pilot study, an alternative waste management plan. It would have to be very thorough, examine all the options, but it would not start out that the solution is engineering, be it landfill engineering or incinerators. It would start from how do you change peoples behaviour, what length of time will it take to change peoples behaviour, what would it cost, how do we do it? Can we get peoples behaviour changed from 'lets just dump it in a waste bin' to 'how do we recycle and decrease our waste?' And can we do it quickly enough, given that we have wasted so much time with these, what I would call, blind alleys. We have very little time left, otherwise every single dump will be filled to high heaven. I can't see a local council doing it... yet. Maybe an NGO could do it. It would have to be strong and well funded.

4.1(c) *Environment Officials' Views*

In the Northern constituency the current waste management strategy is seen as the way forward combined with the Belfast Agreement:

We need to go beyond that potential, to make sure we realise that potential. The key driver here is the Good Friday Agreement. That is very helpful.

The interviewee from the Department of Environment in the North of Ireland was clear that the waste management strategy had very significant potential *if* the economy of scale it was working off was an all-Ireland scale. In a North-South context:

If we are going to reduce our waste, if we are going to share good practice, and if we are going to deal with the waste that we are inevitably going to have to deal with, then we need a big market to decipher. Scale is the issue, if you are achieve anything then scale is what does it.

In other words success in the future, that is, the success of the Northern waste management strategy, is according to this departmental official dependent on the scale of operation being the island of Ireland:

The economy of scale should ensure that the costs go down every year. Recycled products should be of the highest quality. Scale is vital. One and a half million people in the North need more scale. There is enormous potential to do well on both sides.

Apart from getting the economy of scale right there, key steps are required in order to organise the fulfilment of the potential. Specific work has to be done to prepare the way:

This is one of the keys. If you want to push change, you have to pull it as well and you do this by having the framework. That is participation in the planning, building an infrastructure, and creating the markets. These are the pull.

With the ground laid in this way, then, according to this interviewee, the tax system can be applied to reward good environmental practice on the part of households, industry and agriculture:

Once you have those you can have all sorts of taxes, tax incentives for doing the right thing for the community.

In the Southern Department of Environment while there was support for North/South planning, in the interviews it did not seem to be prioritised as part of 'the way forward', until a specific question on the North/South dimension was placed. There was less immediate concern with the North/South dimension and more focus on solving the immediate crisis of landfill and opposition to incineration. We can probably expect that the state's waste management strategy, that is the implementation of the plans, will be enforced in the face of community opposition by the use of the ministerial powers granted in the 1996 Act. (Indeed, this later occurred with the July 2001 amendment to the Act). According to the department official interviewed a key element of the way forward will be education. The area of education needs 'to be looked at' and specific educational programmes have to be expanded according to this interviewee.

The Environmental Protection Agency official saw the 'way forward' through resolving what he calls the 'huge misunderstanding' between those proposing waste management plans and those opposed to them:

The immediate thing I would say is that there isn't a huge disparity between people who are opposed to what's proposed and what's actually proposed. I think there's a huge misunderstanding. If you can bridge the gap between the awareness of people and their knowledge, and what's actually proposed, that would make a huge contribution.

Second, this interviewee saw a need to solve the financial aspect of the waste management strategy, in order to move forward:

You then have to provide the finance for the facilities, infrastructure, training for people to run these and operate them to be put in place.

Thus the EPA seems to be proposing a dual strategy:

So, it's a combination of convincing people that the solutions being offered are workable. I'm not suggesting and saying that every waste plan or strategy done is absolutely right. But where the general thrust is to maximise recycling and maximise the use of alternatives to landfill and minimise the quantity going into landfill, I think that that is the thrust that we should continue to be heading towards.

The unfounded fear of incineration has been the main problem to date for him and has led to the rejection of some plans. He feels that if the public were better informed of the reality of the situation ('you have got to educate people' as he puts it) then this problem could be resolved. The reality of incineration for the EPA official is that it should not be feared as a health hazard:

On the incineration side, there is a fear...and a fear that it will impact primarily on their health and a fear in particular that incineration creates dioxins and causes dioxins to be emitted to the atmosphere, that the dioxins are harmful to their health and cause cancer, and other health related effects. In Ireland there are 11 licensed incinerators operating at industrial plants at the moment, all of which have been monitored by the companies concerned, usually on a quarterly basis and all of which have been independently monitored by the Agency. The dioxin emissions from those are well below the licensing limits and the limit we apply is the limit in the Directive on incineration and the limit is 0.1 nanograms. That is in stark contrast to other countries where they have had problems with dioxins, where you are talking about emissions sometimes three or four hundred fold in excess of this figure. In Ireland there is a fear based on

the potential for dioxin emissions from technologies that are no longer in use. We have carried out dioxin sampling at existing sites. We've carried out a national survey five years ago and that's been repeated this year and the results will be shortly available. So, there is a fear in relation to people's health and the effect on the environment, animals, etc. and that has to be dealt with if incineration plans are ultimately going to be put in place. But certainly the evidence available, in terms of the incinerators operating in Ireland, is that they are operating to a very high standard.

After one has resolved the fear of incineration, the problem of financing needs to be addressed:

The other aspect of this is that there is a huge capital investment needed in the waste area...our infrastructure is simply not there. We are talking about a capital investment in the order of two to three billion, in order to bring us up to the standard necessary. If you add up the figures in the regional waste plans, based on costs in the 1997, early '98 period that comes to almost two billion. And if you allow for inflation and increased costs you're up to almost three billion. So there is a very significant cost and to get from where we are to where we want to go, education is a large part, but we have to actually deliver the alternatives. You can imagine that kind of money is more available now than it was. It is still a very significant sum, like improving our roads. We all talked about having better roads and better public transport but until we actually invest in it, it doesn't happen.

So the way forward for the EPA then involves (a) resolving people's fear of incineration and (b) financing the infrastructure to back up the waste management plans. The EPA official adds the proviso that: 'in my view incineration is possibly part of the solution, but only part of it'.

In relation to domestic waste, at the level of the individual household, a regulated method of collection with financial rewards could be instituted. But no matter what type the treatment plant is it would still need to generate an income:

As I've said earlier, whether its going to recycling, whether its going to compost, or landfill, or wherever else its going, no facility can operate without some income because you have to pay staff, you have to run it properly, etc. So, while it might be a political issue, the reality is that these places have to have a budget, have to have an income and they have to be run properly. They have to be run in the way that protects the environment and the health of people...But there is a cost whether it is paid up-front or not and its almost impossible to get away from that unless someone else comes up with the money...and I don't see a fairy godmother out there offering money.

For this interviewee, therefore, a critical question in terms of the way forward was where was the finance to come from to implement the best way forward.

Finally, a whole series of co-ordinated educational programmes are argued for. Regional authorities could lead some but others would need to be introduced into the school curriculum:

I would certainly think that a much more intensive and sustained campaign, sustained over a number of years, will be needed...There is a need for good information on the alternatives, and if you take, say, regional strategies and implementation of regional plans, there are proposals in many of them to put in place communication officers who would provide accurate information in an accessible format for people, who could provide packs to local communities, school children, etc...There probably is a need to introduce a much greater level of environmental awareness into the school curriculum...So education is a key component.

4.1(d) *Environmentally Minded Politicians' Views*

According to the Northern politician, all political parties claim environmental sensitivity but nearly all see incineration as the solution. He felt that only the Women's Coalition and Sinn Fein want to seriously explore the alternatives:

Anyone who listened to the environment debate this week would hear all the parties proclaim their sensitivities to this issue. I think with the possible exceptions of the Women's Coalition all the parties accept the logic of incineration as being the end of the waste production process. That's the balance of political option in the Assembly. Existing policy in Sinn Fein's opinion is absolutely ineffective, inefficient, and counterproductive and that is in economic terms as well as environment terms. So something needs to be change.'

According to him the way forward will be problematic because the balance of power in the assembly has no wish to 'build into policy and enforce within legislation a different approach', in short to implement policy that will make a difference.

All the other parties (with the exception of the Women's Coalition) say they want to see minimisation, recycling waste reduction and when asked how they don't have a how. So there will be bottle banks and there will be voluntary organisations. There will be no developed market. There will be no attempt to put this on the basis of an industrial process. There will be no exploration funding research of development to transform this, to create both the public consciousness and the actual economic market that would sustain a different approach to waste management.

Matching the economic costs of waste management against the environmental consequences needs refinement because the Waste Management Strategy itself further damages the environment according to him. Appropriate costings would show the long-term economic benefits of a different approach according to this politician. The way forward for him involves developing economic forecasts for alternative waste strategies over a 10 or more year period because capital costs of high technology waste processing can be put into perspective. However, the current strategy is totally problematic in terms of producing a viable way forward.

With the existing policy, the waste management strategy that has been outlined, pays token attention to the alternative methods of waste management. It then addresses the issue of the volumes that are being produced at the present time and just opposes that with the Hobson's choice of landfill, which is dangerous and is becoming unacceptable to authorities, and environmentalists or incineration. It all comes back to Hobson's choice, the other choices are not developed and I think there is a responsibility to get those arguments through.

The Southern politician too wished to get to the root of the problem in his vision of the way forward. For him this involved addressing waste at the stage of its production with legislation.

It needs to start at national level with rigorous legislation, which isn't there at the moment despite what the government might say. There should be an outlawing of a lot of the waste that is created that is unnecessary. The mad commercialisation that has two or three packages on everything in the supermarkets to make them sell better than their rivals, should be prohibited. We need to get back to a situation where products are much more simply presented, not wrapped several times.

Then the principles of reuse, recycling and composting should be imposed as policy. On the question of domestic charges being imposed on households, he had this to say:

I think that domestic charges are used for a cover for a lack of policy in reality.....Their only answer is to charge the consumer.... In my view the PAYE people have funded all these services, continue to fund the bulk of the taxation system and I'm not in favour of a new system of local taxation, which these charges are.

The barriers to building structures and infrastructures that create a culture that reuses, recycles and composts are seen to be part of the equation where the main political parties are 'beholden' to commercial interests. The government is responding to these pressures and 'therefore not implementing measures that would force manufacturers and retailers to drastically cut down on a lot of the waste created'. Local authorities are also blocking the way forward:

The lack of flexibility, the bureaucracy that pervades local authorities is a problem and all pushed together, they mean a very low pace of progress in regard to implementing what would make a huge difference in the situation.

4.1(e) Local Authority Views

In direct opposition to the environmentalist's view of the way forward, our respondent identified the need to proceed with both incineration and recycling: 'I think people have to wake up to it, that in actual fact, the first thing that should be built should be the incinerator, and alongside that, a very strong drive for your recycling, composting and all that'.

Key to this rationale is an insistence on the financial factor of dealing with waste, and financing of waste disposal is seen as the responsibility of the individual household:

See, again it comes down to cost. I think people here haven't been explained cost. If you go to a community, and I find it difficult that we haven't thought about... and say 'you want 100 percent recycling in this community, fine. We would be absolutely delighted to carry it out. It's only going to cost every household here £500'. It might go to £750.

Thus, recycling is seen as costly by the local authorities and this cost is seen as one that can only be extracted from the householder. This interviewee believed that incineration would have to go ahead despite opposition and that the way forward would be to offer financial inducement to the community hosting the incinerator, which in turn would be relayed to the individual householder:

But if we can build one incinerator in the region, a thermal plant...we'll provide electricity, or heating for up to 15,000 houses, which they would then get free of charge. You add an economic benefit for putting an incinerator in the area. Your bill only becomes £250 at the most (as opposed to £700). What will people say?

For the local authority representative, the best way forward is to implement the plans and the way to do this is to out-manoeuvre the local politician. According to this interviewee, the central government must bypass the blockage at the local level.

Well, you have two parts. One part is you have a plan prepared by technical people. Then you have the councillors who have to accept it and implement it. But the problem that arises is that in implementing the plan, they have to finance it. Therefore getting the finance is the problem. Now if we accept that councillors will not put on local charges, you then ask the question 'how does the next layer of management get the strategic plans implemented?' It means that they say 'we'll centrally fund it, but it's one percent on everybody's tax'. So therefore you have identified... the next layer of management are prepared to take on board the issue because it is for the good of the country, for the good of the people. And now they say 'we have identified a source of finance, and that source of finance is one percent'. Until people start to put in local charges, if any county wants to put in local charges, you will get a credit off your tax bill.

Implementing the plan by averting local opposition to incineration by financial inducements, bypassing local councillors and applying a tax is the way forward. However, in addition to this he echoes the concern of the majority of the other interviewees that an educational programme be implemented. According to him the future can only be managed through education of young people on the issues around waste management:

Every so often we get news-bites, a launch plan, and then we have the national strategy. I definitely think that there should be a series of programmes done on national television... half hour programmes, showing the waste situation, how it's done in other countries, we have to do it. And you build on that, of what the scenarios are. But there's no question, education has to start with the young people, all the way up. Young people are throwing litter on the streets, they still have got no idea what's happening. Say when you get to a teenager, which is when you rebel against everything. Right. But the defining issues have to be put in at the younger stage and brought up along, whether through comics, through projects. There's no question, it should be part of the curriculum. Even though as teenagers, they might reject part of it, when they begin to take on responsibility, this just comes back in memory recall.

4.1(f) Industrialists

Both industrialists interviewed were strongly of the opinion that there needs to be government direction, support and research to help businesses on an all-Ireland scale. Private enterprise on recycling and research into economic development should be subsidised by government.

Solutions must also come from the government. The red tape burden needs to be overcome. There could be tax incentives and alternatively there could be easier tax collection methods.

The second industrialist saw the way forward as one where government and Europe would lead in setting up international markets and they would link the small business to it, and 'then let business handle it from there'. According to him, incinerators have received funds so likewise funds should be available individually. Local government should co-ordinate activities and waste should be dealt with based on what is produced and where. Critical to this way forward then was the development of the knowledge of what is produced and where, and he suggested that a mapping system, government funded, should be put into play to find out what is being produced and where.

A mapping system should be developed for the whole area to find out what is being produced and where it is being produced. That is the starting point.

Making recycling viable for commercial interests is the central axis of the way forward according to both industrialists.

It has to be remembered that primarily we are talking about business and there has to be a cost benefit. This is the central issue.

4.1(g) Summary

In summary, there are significant differences in perspectives on the way forward. There are those who agree that incineration is a very definite part of the way forward and those who believe that incineration should play a minimal role in the future. For the environmentalists and the environmentalist scientists the 'way forward' in each jurisdiction for waste management strategy was squarely within the parameters of sustainability and the principles of waste hierarchy. A much greater emphasis on recycling was called for with the end objective being zero-waste. The DOE (Department of Environment) in both jurisdictions spoke of the economies of scale (particularly in relation to recyclables) to be achieved by an all-island strategy. However, the crisis of the landfill sites and the opposition to incinerators were uppermost in the mind of the Southern DOE official. The environmentally minded politicians in the North and South were sceptical of the political system's ability to see beyond the short term perceived 'need' for incinerators and a market driven orientation. The local authorities tended to see the issue in terms of how to avert local opposition to incineration through financial inducements and bypassing local councillors. For their part, the industrialists interviewed stressed the need for government to provide greater support, research backing and finance to help businesses move towards more sustainable waste management strategies.

4.2 North/South Waste Management Strategy?

We asked whether the respondents saw the need for an integrated plan for North-South waste management in order to gauge the level of attention they paid to the possibilities for North/South co-operation on waste management. We also hoped to uncover details of specific changes that would have to be made to enable, or what could possibly block, the development of an integrated plan. Did the respondents think cross-border strategy was important? What existing cross-border initiatives were the respondents aware of? Which particular areas of waste management were considered ripe for a joint strategy? Would there be a need for huge infra-structural changes to implement a joint strategy on waste?

This was certainly a more live issue for our Northern respondents than for the Southern ones. However, there was no opposition to a joint North-South strategy from either jurisdiction. There was, however, a sense that the Southern respondents had not thought out the implications of a North-South strategy, while it was clearly an area of growing interest in the North. In general terms, there was a prevalent notion that the new inter-governmental institutions (See 1.5) created under the Belfast Agreement allowed for new flexibility, especially on the environment. Furthermore, the immediate answer for most interviewees was that the North/South dimension was most important in the development of markets and in capturing economies of scale.

4.2(a) Environmentalists Speak

The Northern environmentalist we interviewed believed that the market is the key area for co-operation.

Also there is an all-Ireland dimension to the new institutions, which is favourably pitched to address the absence of markets. It is very difficult to talk about markets within the Six-County perspective or the Southern perspective, but on an all-Ireland basis there are great opportunities to do that.

He developed this theme specifically in relation to recycling markets:

There are a number of options for businesses that straddle the North and the South which are offering important ideas for co-operation. There is one recycling company on the outskirts of Derry, which imports plastics and card, etc., hundreds of tons of material from throughout the island. It is probably recycling more in the company on a monthly basis than Derry Council does on a yearly basis. This business exports recovered material. It is ahead of the game in identifying markets, yet a few miles down the road we are informed that there are no markets.

In addition:

A North/South policy strategy has been recognised particularly by the NGOs with a view to co-operation. There are funding opportunities that the various bodies have. The sharing of experiences can take place more richly on an all-Ireland level. The institutions can provide a perfect opportunity. The environment is seen as a reasonably soft issue in terms of cross-border co-operation. It offers no threat.

When asked about the potential for North-South co-operation, the Southern environmentalist also recognised its potential to flourish without politics interfering:

I think so, definitely, in terms of finding enough waste for market supply and providing stable markets the potential for co-operation will be great.

She mentioned work already ongoing in border counties such as Donegal and referred to her involvement in setting up an all-Ireland community-recycling network, that is, community-based recycling and composting. However, she recognised that 'I've only really been looking at the South' and is only now beginning to think about cross-border co-operation. Without knowing 'too much' she emphasised that if there is to be viable co-operation there 'has to be a level playing field', by which she means that if legislation and policy differs (for example resulting in different taxation regimes), there would be problems.

4.2(b) Environmental Scientists Speak

The Northern environmental scientist we interviewed was clear on the importance of an all-Ireland waste management strategy. In fact, in common with the Department of Environment official we interviewed, she believed that progress was *only* possible on an all-Ireland basis:

This is a massive growth area and it is totally essential. What we need to do in order to deal with the waste is to reprocess the materials. There is only a population of six million people on the island. It is like a spread out big city. It does not make sense to look at waste management unless it is on an all-island basis. We would probably only need one plastics recycling plant. We cannot keep exporting problems. We have to deal with it here. The waste management system will not be able to make any progress if we do not make it on an all-island basis. Developing markets for recyclables. We need to make sure that we are working this north and South. This is policy through to practice.

The border is seen as causing serious problems for current waste management strategies. Again, as already mentioned by the Southern environmentalist, there is a discrepancy in relation to the UK practice of 'landfill tax' that needs to be ironed out in the immediate term:

There will still be barriers to development where there are borders. So in the South they are trying to redevelop their structure in a number of ways. They might not be able to get the

capacity in time before the landfill space runs out. They may be seeking to export to the north because there is a slightly longer timescale before landfills close. Also the differences in landfill tax North and South have caused complications. At the minute there is pressure to work on landfill tax in the South but we need to be looking on an all island basis. There needs to be parallels so that the north does not end up with the waste from the South in the interim.

She does not view these issues as party-political:

Even with the unionists in the north, they know that it makes economic sense to share the burden. The legislation needs to be dovetailed together and at the minute the policies are very badly out of step.

Another key area for co-operating she sees is in relation to agricultural waste:

In terms of the agricultural waste strategy it was emphasised that the north should fit in with the South to achieve the best possible action for the farming industry.

In terms of domestic waste this respondent felt that the South had a better record in relation to recycling.

The South is three or four years ahead in developing a culture which is sensitive to waste.

The Southern environmental scientist also saw the necessity of North/South co-operation. The particular area where he saw potential was the sharing of technical information and data on waste:

Where I believe there is tremendous potential for North/ South co-operation is, first of all, in learning about waste, exchanging information and data, because wastes in Ireland have their own peculiar characteristic. I would guess that our waste is very different from French waste or British waste or Russian waste. So, information, sharing of ideas, sharing of technical data...very good...and another thing where the recycling would come in nicely, is, at the moment in the North, there's a kind of a waste exchange network. If I have waste and want to get rid of it, this network will put me in touch with a company who might want to buy it. Now, that should be extended to the whole country, so that if I'm manufacturing and I have to produce a certain class of waste, I've tried to avoid producing it, I might find a company who might want to use it. So I think the sharing of waste, the sharing of technology, sharing of recycling, the sharing of specific...say plants or facilities to reprocess aluminium cans, reprocess bottles, reprocess paper, and so on...That's where the co-operation and potential exists.

Industries set up around recycling should always, according to this respondent, be conscious of the all-Ireland dimension and not set up in direct competition with each other:

Now, recycling, that could be very important. For example, we have one paper mill in Ireland, in Dublin, which produces paper from 100 percent waste paper. If there's another one in Ireland, maybe that could be in the North, why not? If we had a second glass bottle producing plant in Ireland, that could be in the North. If we had an aluminium recycling plant, that could be somewhere in the midlands to serve the whole country. When you come to move small amounts of material around, you need a very highly... highly technical, highly expensive facility. Let's put it where it could serve the whole country.

In terms of waste disposal, and here he is referring to residual wastes, he believes there is not a lot of room for co-operation because 'those wastes should be disposed of locally in order to minimise transportation costs'.

Interestingly, this scientist was adamant that incinerators are not the answer in the way they have been constructed to be in the South's regional plans and by the Dublin government. However, there seems to be a grudging acceptance that there might be a single incinerator for the disposal of residual wastes (in spite of the risks especially when they go wrong) for the whole of Ireland.

Now certainly, if you talk about incinerators, well, I don't think the country really needs more than one incinerator. A lot of people would say that you don't need an incinerator at all.

He then referred to the history of a 1980's attempt at co-operation over an all-Ireland incinerator and believes insofar as it failed that, while in theory there was room to manoeuvre this was in practice annulled by local opposition in Derry and Donegal. Therefore, according to him there is not much potential to proceed with an all-Ireland incinerator:

In the 1980's, there was a very strong push by the Industrial Development Authority to get the government to establish an incinerator for hazardous industrial waste. Now, this story has a North/ South dimension to it. And the Department of the Environment said there was European funding for this. They invited tenders from companies to construct, manage, and operate such a toxic waste incinerator. And five companies applied, eventually it boiled down to two. And eventually both of those more or less dropped out. And we still had the Industrial Development Authority say 'we must have a toxic waste incinerator, we cannot bring in any more industry unless we have one'. ____ (company name) meanwhile, at Derry, had a huge acid tar problem, gigantic. They had been producing acid tar for 15 to 20 years and dumping it locally. And they were now up against it to do something about it. There were two alternatives, dig it all up, transport it to England at £200 or £300 a drum, it would cost them millions. So they thought that they would build an incinerator. And then they thought, 'why not use that incinerator for the whole country'. And they came down and spoke to the Minister for the Environment and he was delighted because if he had gone ahead with an incinerator in the Republic of Ireland, he knew, as everybody else knew, there would be instantaneous local opposition to a hazardous waste incinerator. And that any constituency into which the incinerator would be put would lose a Dail seat. Certainly they would have lost some county council seats. But if the incinerator was in Derry... you now had an incinerator that was not under his jurisdiction. It wasn't in a Dail constituency... So while the minister was happy to have an incinerator in Derry operated by ____, he didn't reckon on the people of Donegal and Derry getting together and within a year, something like 63 small groups were set up and they were amalgamated to form a major alliance there. And they managed to defeat that project. ____ decided, when it saw the opposition, that it better not become involved, because it was a business after all. So that was the end of that incinerator.

According to this respondent, local opposition, while not being enough to block the government's proposals, was eventually of concern to the company which had won the bid who could not withstand the negative notion of incineration attached to its image and pulled out of the deal. This story indicates that there does not appear to be a party-political blockage to North/South co-operation, and that there is room for both governments acting in unison on specific practicalities.

4.2(c) *Environment Officials' Perspectives*

The Southern DOE official we interviewed indicated that the topic was difficult to discuss referring to the 'sensitive political situation at the moment'. However, he did indicate that it made sense to have North/South co-operation on 'developing markets for recyclables'. He indicated that there was some co-operation on clinical waste and that there might be room for co-operation on hazardous wastes.

The Northern official appeared to be more forthcoming, insisting that 'the whole North/South thing - it is where it is going to happen'. According to him, the Belfast Agreement is a significant driver that has established the potential for further developments. He sees the situation as one where we now need to build on that potential. All-Ireland markets provide the appropriate scale to make Northern Irish environmental policy economically viable. However, key issues need to be sorted out to take advantage of the potential. Taxes need to be harmonised in order to build the infrastructure for co-operation and an all-island market. Indeed, this respondent prioritised taxes, which would then feed into the building of infrastructure.

He gives some practical examples of where the economies of scale are on an all-island basis, and where it is possible to develop integrated markets:

It is a necessity to work together. To export bulk products across the water is madness. You have got this arterial barrier to exports. It could cost £500 pounds to transport across the water yet it could cost £5 pounds on the train to Dublin. You have got this natural commerce...For

example, we export plastic to Holland and France and this comes back as park benches and rollers. We have the brokerage for plastics here and we have the sales team, all we need is the piece of kit that converts the whole thing. The North does not have the capacity. Tarmacadam has just given away hundreds of thousands to support the production of Britmas. In this example you have got to be saying that you have to redo the M1 or the M2 in big chunks or the new carriageway from Dublin. That is the scale. Scale means that you can develop.

The representative of the Environmental Protection Agency in the South indicated that there was room for co-operation but that there would be need to reconcile the differences in legislation:

In terms of the general thrust, I would say there should be plenty of room for co-operation. I think that one of the specific difficulties is that we both operate under separate sets of legislation, albeit that all legislation is generally based on EU Directives and EU requirements. But the specifics are quite different. In the longer term, if legislation could be reconciled, I could certainly see closer co-operation.

Aside from legislation the European proximity principle on waste actually means that we simply *have* to deal with waste on an all-island basis:

One of the things that Europe now demands and which is desirable is that we are self-sufficient in dealing with what we produce. The Proximity Principle means that if we produce waste in Ireland, then where possible, we should deal with it in Ireland, rather than send it to someone else. We should either recover it or deal with it on our own island. In that context, there are wastes produced for which the quantity produced wouldn't be sufficient for facilities to be located North and South. So, for example, a facility in the North might serve areas of Donegal, Cavan – Monaghan, Louth, or alternatively a facility might serve all the needs of the all North, as well as the Republic.

On the subject of actual co-operation, he pointed out that research was being now funded on markets for recyclables:

One of the things we have done is that we have recently set up a research project to look at this, to look at markets and recycling and available markets for recycled goods. I would have to say that in the Irish context, I am not aware of any research prior to this...specifically focused on this area. And...if you look at the question of markets, it's almost down to the specific component.

One specific example he offered indicates that while we can at least establish an Irish market, we must also remember that we are part of global economics which will impact our markets even with an all-island infrastructure in place.

For example, the paper market internationally totally collapsed about three years ago. In the last year and a half, it has come back reasonably well. But that market is totally determined by the major multinationals and world supply, so Ireland by itself would not be able to create a stable internal market unless it brings in an element that allows it to store almost indefinitely large quantities so that a cyclical market demand can be met. So you can store until such time as you can sell at an economic price.

In short, establishing a North/South market certainly has more potential than a six-county or a twenty-six county one. But even an all-island market is still subject to global economic trends.

4.2(d) Environmentally Minded Politicians' Views

The Southern opposition politician we interviewed was generally in favour of North-South co-operation going ahead. The Northern environmentally minded politician seemed less optimistic on how the current legislation and plans could promote an all-Ireland strategy, although he was very keen to see it go ahead. According to him:

Under the current policy there is less likelihood of that because what regional models or strategies are being developed are that councils or groups of councils are developing on their own and there is no economic or market rational for developing a national critical mass. I think if there were outputs that had manufacturing potentials then I think you're talking about

opening up all sorts of island-wide arguments, good strong arguments for developing those strategies. And this might well mean that specialist recycling plants are actually developing something like the sub regional model, but probably a regional model with resources island wide being drawn towards those specialists treatment centres.

The existing policy almost argues against it because it is sub-regional, it is self-contained, it is part of a competitive internal market on the island of Ireland. So there is no economic rationale for Derry to be looking towards Dublin for either exchanging material or for services and likewise in reverse.

The regional policies are the way it is going forward and calculations are being made on that basis. According to him, calculations are not yet being made on an all-Island basis:

What they are talking about is sub-regional quantities in waste management. All the tonnage, all the calculations are done on an aggregation of those councils that are capable of co-operation together. It is not done on an island-wide basis. No one is calculating this on a broad island basis. They would if public opinion would tolerate a super incinerator somewhere in their area but they are not going to do that. So what they did was break it down and tried to localise it.

When questioned on what might block a North/South policy, this interviewee raised the question of incineration:

I think the obstacles there are political. They are not political in terms of the border politics but in terms of the number of installations the current waste management strategy required and the balance between that and public opinion. So I think more sites but smaller sites is the line of least resistance that has been identified. Now that means if there were more sites then you don't need to get involved in the cross-border or all-Ireland dimension in most cases. If there were no political aspects to incineration then we probably would be talking about a national facility somewhere. I think the political objection to the border would be relatively easy to overcome, so there is just the practical issue of the balance between public opinion and having the dump transported to a single location. Because at the end of the day this is a tiny island with 5 million of a population and there are European cities with twice that, but we're going to end up with a number of incineration plants because of the level of public opposition to incineration.

North/ South strategy has fallen foul of the political need to establish incinerators without a backlash or direct opposition, because 'the current strategy is one of minimising the public reaction by dispersing the incineration sites, to develop very strong arguments against landfill'.

4.2(e) Industrialists

The industrialists were extremely keen on developing North/South co-operation, indicating that there is 'vast potential'.

Cross-border policy would be a bonus for business development. The Irish market would be more effective if it could develop with waste management included. Currently legislation treats the business community as a small local Northern Irish market. There are a number of initiatives that could be developed which could service the whole idea of economic development. There is potential particularly within medium sized industrial estates to develop waste management initiatives. It would be easy for collection in small areas that have large numbers of small to medium businesses.

Key policy areas in need of immediate co-operation were seen to be legislation and currency.

An obstacle would be cross-border legislation. It would be unlikely that legislation could cover both. What needs to happen is co-ordinating policies between companies and legislation north and South.

While companies need to co-operate North and South a key problem blocking this at the moment was 'the currency problem'.

Attached to this is the North/South currency problem. Business would opt for the Euro where possible. It is inefficient and ultimately unprofitable to change currencies constantly. We are losing out on this. The divergence in the rates has an impact on this as well. Change is inevitable and I am sure that business will be at the forefront of the lobby...the current complexity of currency trading is unstable and will be sorted out.

According to them there needs to be government direction, support and research to help businesses on an all-Ireland scale and a cross border policy would be a bonus. One industrialist welcomed the possibility in these words:

There is a lot of potential for North/South co-operation in terms of waste management. If we can create a North/South overall market all the better. A joint policy strategy from the government on this would be very helpful. Anything that creates a market would be helpful.

4.2(f) Summary

In summary, the Northern interviewees seemed more interested in cross-border co-operation, better informed and more willing to discuss cross-border co-operation on waste management than the Southern interviewees. This is true in the sense that some of them not only strongly prioritised it as a way forward, but also were insistent that progress on waste management could *only* be made on an all-island basis. According to our respondents, there appear to be no significant party-political objections to North/South co-operation and there has been co-operation (albeit of a different nature) previously on proposals for an all-Ireland incinerator. As well, there is consideration of the EU 'Proximity Principle' that indicates that we should deal with waste management on an all-island basis. It was also felt that opposition to large incinerators had created a situation where many small ones would be built in the North and therefore there appeared to be no urgent reason for anything but small scale regional planning. Thus no one seemed to be actually working on developing all-island strategy and so North-South co-operation was not coming into play to any large extent. Areas in which there was seen to be considerable scope for co-operation would be developing markets for recycling, and in the sharing of information and data on waste management 'best practice'. The areas in which there was seen to be an immediate need for co-operation was in the 'levelling of the playing field' with regards to waste taxation policy.

4.3 Focus Groups

Focus Group discussions were held in the North and the South around the preliminary findings and perspectives that emerged from the in-depth interviews reported on above. These were designed to 'brain storm' the issues from the perspective of people who were already involved with waste management issues. The format was that of six people discussing for nearly two hours the issues emerging, facilitated by one of the researchers, while the other one transcribed and took notes.

In relation to the questions on 'the way forward', the focus group carried out in the South had the following to say:

And I'll tell you something else that we did as part of our campaign... we trawled the Internet ourselves for alternative technologies to incineration and we came up with several, one of which as a company called _____ (company name). We got them to come over to Ireland and we personally drove them down to the EPA with a view to letting them know that there were alternatives to incineration to solve the waste.

We believe in creating positive responses to waste management.

We're not proposing this as an alternative to incineration at all, there is no 'magic machine' or anything, but it is an alternative and incineration is not the only answer because _____ (company name) have alternatives that should be looked at, should be examined. We did that type of thing. We didn't say 'we don't want an incinerator in our backyard'. We said 'look here's what you can do instead'. We are very proactive and that is part of what we did. I mean... I took a day off work to bring these two visitors down to the EPA. So they certainly can't accuse us of NIMBYism.'

The focus group in the North had the following to say:

Perhaps the council could introduce some sort of filtration system for taking back various metals or the materials for making compost, paper, most of the stuff going out.

There is a need for more bottle banks and such like.

If there was a tax on rubbish. If you were allowed to put outside one back bag of rubbish. If everything over that if you were or had to pay £3 or £5 whatever this may go some way to solving the problem.

Small businesses, which do not really have the same lobby, have massive potential for creating jobs yet are standing on the sideline of the waste management debate. .

There is scope in this recycling. Look at the reprocessing of trees where 4 or 5 people could set up a business where wood can be reprocessed into bark chip or cat litter. Or else there are the insides of industrial packaging as a good example for small business start-ups to capture a market. The companies working in this field at the minute cannot cope with the capacity.

For the size of the six counties there would have to be a thirty-two county programme. There would be enough waste generally for it to be cost effective. There is the potential for developing this market for profit making organisations. Domestic waste is one thing; industrial waste is another, which has massive potential.

I don't know what the incentives are for government but it seems to be that it depends where they can make or save the most money. Short-term investment. A green waste management strategy would entail a long-term strategy. An incinerator would show instant returns whereas it would take some time to get positive returns with a green strategy.

Recycling which offers massive potential for jobs, indigenous industries, and profits coming into areas, but the amount of work that is going to have to go in from government is much more.

Certainly you could locate composing sites near local communities give them the option. People should be encouraged to separate their waste. It is the preserve of the middle classes. That is not to say that the working classes are not environmentally friendly but certainly there are other aspects that they are concerned with.

There is also material. The likes of Red or Dead have a high fashion range of garments based on a recyclable material. There are a lot of options.

In terms of a 'way forward' for waste management, the focus group in the Republic was keen to dispel the knee jerk label of 'NIMBYism' often launched by officials and so called experts when local groups mobilised to oppose incineration plans. Even if environmental campaigners did inevitably start up as local and particularistic reactions to incinerators for example, they often tended to broaden out. Access to the Internet has greatly extended the knowledge base of those involved at local level with waste management issues. The need to develop viable and sustainable alternatives to the status quo is also stressed to dispel any notion that they are just 'spoilers' or unthinking oppositionists.

In Northern Ireland focus group discussion, the issues raised were perhaps wider ranging as incinerators were not the unifying or dominant theme they are in the Republic. There is considerable scope for more and better recycling. The area of SME's (Small and Medium Enterprises) is seen as a possible growth area for sustainability practices. Recycling can and should lead to jobs. Northern Ireland needs to realise a sustainable waste management strategy.

5.1 Introduction

As shown in Chapter One it is now widely agreed that waste management, like other aspects of managing our increasing economic activity, must be sustainable. But there are multiple conceptions of sustainability, as there are many theories about what kinds of economic systems and policy systems will encourage or enable sustainability. Some of these discussions were covered in Chapter Two, on the issues and context of the problem. It is now time to return to sustainability in the context of the findings from interviews and focus groups; and to place the question of sustainable waste management within the broader framework of all-island social and economic structures.

5.2 Defining Sustainable Development

Sustainability is a slippery concept. It runs all the way from weak understandings that allow resource depletion and environmental degradation so long as an economy can continually produce technical ‘fixes’ for the problems of growth, to strong definitions where human activity does not progressively deteriorate any human or natural resource (Douthwaite 1999). The weakest conceptions allow for substituting new resources as old ones run out or become uneconomic and for partially repairing environmental damages from our activities (or even ignoring them if the time horizon of environmental damage is sufficiently long). These conceptions allow and perhaps even favour policies at the bottom end of the ‘waste management hierarchy’, such as recovery and disposal. The strongest conceptions of sustainability do not allow for resource depletion without renewal of the specific resource and they favour strategies at the ‘top’ end of the hierarchy: waste reduction, re-use of materials and, where necessary, recovery. Mere disposal is not an option.

Most conceptions of sustainability lie somewhere in between. Yet sustainability as an ideal has little meaning if it does not require us to strive toward ‘strong conceptions’ of non-depletion of resources and zero waste (that is, waste reduction with only re-use and environmentally sound recovery and no disposal). This may be an unattainable goal in practice but waste management strategies may only be considered to be sustainable if they encourage societies, institutions, and individuals to move toward waste reduction. They are unsustainable if, like many current practices, they impede the implementation of waste-reducing policies and practices by merely treating an increasing volume of waste. Lack of sustainability may be built into the very discourse that we use about waste; as the Northern environmentalist who we interviewed put it, ‘the fact that we use the language of waste management means we are only off the starting block; we must shift this to ‘material recovery’.’

An important factor in this regard is ‘path dependency’. Policies do not exist in a vacuum. They are interconnected. The introduction of a given policy may either encourage or discourage the subsequent introduction of other policies. Policies that ‘fix’ a problem for a time may encourage institutions or people to put off more sustainable practices like waste reduction. If this is so, they are unsustainable, even if they improve on previous practice, because they encourage policy makers or actors (institutions and individuals) to postpone sustainable practices. A waste management strategy that favours incineration, for example, even if the techniques were safe and reliable, might be considered unsustainable if, by ‘fixing’ the problem of landfill, it discouraged institutions and individuals from moving toward zero waste.

While many people are uncomfortable with strong conceptions of sustainability, on the basis that they are too restrictive of human potentials to develop a higher material standard of life, there would be wider agreement that strict sustainability is a desirable *ideal*. Policies that create path dependencies or tendencies pointing away from increasingly sustainable practices, like waste reduction, are unsustainable. Several of our interviews raised the concern that policy-makers may view incineration as a sort of ‘quick fix’ that relieves them of the responsibility for seeking more sustainable approaches to waste management, particularly waste reduction. Even the Northern civil servant, who generally favours incineration, stated that ‘I do not think that incineration is a good idea if it is the only option or if you use it to block other options’. He was concerned about suggestions that incineration should be used for twenty years, until a better option was developed, because ‘the only flaw is that at the end of twenty years people will not have the motive for change’. The Southern environmentalist spoke of how incineration was the most expensive option for waste management. Sinking large costs into incineration means that there must be a ‘return’ for the investment, which means that incineration is

guaranteed a primary role in waste management for a long period of years. As a result, 'if they're built, that's it, we're not going to look for another waste strategy'.

5.3 Democratic Participation

One of the clearest problems arising from the interviews in Chapters Three and Four and the legislative review (Chapter Two) is the deficit of democracy and participation in the construction and implementation of waste policy. The problem is not necessarily that people are excluded from the decision-making process overall, but that they are excluded at key stages. To be more precise, EU Directives are responsive to social concerns at the front (or top) end of the policy process, but then effective civil participation drops out until there is again a local response to policies that are introduced at local levels. By that time, EU Directives have been transformed into policies that local communities find unacceptable, both from a negative (NIMBY) and a positive (environmentalist) perspective. The response of authorities seems to be that such resistance is a nuisance that can hold up policy even though it does not reflect majority opinion at the local level. The Northern civil servant sees such local resistance as unreasonable 'pockets of resistance' while the Southern representative of Local Authorities claims that resistance is 'based on the people living around the landfill, or it is based on the Green party, not based on the majority of the people in that locality'. While greater participation at all stages of waste policy would not guarantee a more sustainable outcome, it is difficult to see how sustainability could be achieved without greater participation and consultation of communities at all stages of policy interpretation.

Some sociologists have analysed such a democratic deficit as the result of state efforts to 'filter' out the more threatening aspects of popular demands as they make policy. They view the state as a 'reform filter' where the political system 'filters demands and selects those of them that can be dealt with through the decision-making process' (Melucci 1996, p.265). Rather than deflecting popular demands, in this case the demands of environmental pressure groups for strong waste management policies, policy-makers 'filter' out those elements that pose the most fundamental challenges to powerful interest groups or political interests. Public demands enter the decision making process at the front end and are filtered through different levels of state governments and bureaucracies, to emerge at the end in much weaker and non-threatening forms. In the case of the present study, EU Directives that appear to be rather strict with respect to the demands of waste reduction and recovery are weakened as they move through federal, regional and local levels of governance.

States commonly use two strategies to turn radical demands into weaker, non-threatening policies. One is to individualise problems. Another is to turn them into 'market' problems that can be solved through conventional economic methods. Both of these aspects arose continually in the interviews for this study. The interviewees repeatedly presented waste management as a household problem, a problem of individual wasteful behaviour, even though household waste only accounts for less than ten percent of solid waste in Ireland. This is not to say that individual behaviour is not a problem or that popular education about recycling and waste reduction is not an important part of a waste management strategy, as many of our interviews and focus groups concluded. But the individualisation of the waste management problem by concentrating on household behaviour is all out of proportion to their share of the problem, and diverts attention from much larger sources of waste such as industry and agriculture. Moreover, the fact that waste from consumption is seen to be 'produced' by individual households instead of being the end part of the overall production process shifts the blame, and thus the target of policy, from producers such as corporations to consumers. For example, when the Southern scientific environmentalist spoke of an 'alternative waste management plan', he spoke primarily of 'how do you change peoples' behaviour...can we get peoples' behaviour changed and dump this 'let's just dump it in a waste bin' to 'how do we recycle and decrease our waste?'" Such individualist sentiments are often phrased in a positive way, such as the Northern environmental scientist's desire to get the community sector involved in programmes to educate people in recycling or the EPA representative's proposal to reward people for putting out less waste at the kerb. Yet, in contrast, the interviews lacked any sustained discussion of how corporations could reduce their production of waste.

5.4 Market Strategies

The other strategy, 'marketisation', is even more prevalent in the interviews. Some sociologists have argued that there is a tendency during the process of 'reform filtering' for environmental policies to be transformed from 'antigrowth' demands (like zero waste and sustainable development) into 'new opportunities for commercial ventures by 'pro-environment', profit-seeking corporations' (Buechler 2000, p.175). This 'economisation' of the problem of waste management is clear in all of our

interviews, from the environmental activists and 'radical' politicians to the civil servants and business interests. The economic discourses around waste management are rarely about regulating wasteful behaviour or even about making institutions or individuals pay for the environmental damages they create. Only the Northern environmental scientist briefly referred to sanctions, saying that companies that do not comply with a waste management strategy 'have to be penalised' and that 'penalties should be set at a proper rate'. Rather, the discourse is primarily about how to make more sustainable practices profitable. It is not just government ministers who call for greater participation by the private sector in providing 'waste management services'. Nor is it just business interests like the engineer for a large packaging firm who told us that 'if waste management becomes more profitable then the culture will change' and who thinks the main solution to waste management is 'to set up markets to take this waste and link us to it...send the waste to a larger system and let business sort it out'. The environmental scientists also speak of using 'fiscal incentives, grants and such like' to make it profitable for companies to move away from incineration into other options so that 'profitability becomes part of the equation' and so that waste management strategy 'completely shift(s) the emphasis from disposal'. And the Southern environmentally minded politician bemoans the fact that 'reuse and recycling is constantly turned down because it wouldn't be profitable...there should be a market [for reuse and recycling] and, if necessary, there should be subsidies to ensure material can be reused and recycled'. Although the emphases differed, this market discourse about making waste management profitable was probably the single most common sentiment that was expressed across all of the interviews.

Thus, there is a strongly conservative ideological 'filter' that has diverted even the more radical environmentalists into a discourse about profitability rather than one of responsibility and, where necessary, sanction and penalty. This is also where globalisation fits in. There is a strange contradiction between EU Directives on such things as waste management, which call for stricter regulation, and the increasingly deregulated global economy. The thrust of recent globalisation has been to decrease rather than increase barriers to business, including environmental barriers such as stricter regulations about the production and management of waste.

Another important element about the discourse on markets and making better waste management 'profitable' is that the discourse has a narrow definition of the economic actors involved. 'Markets' and 'subsidies' are usually aimed at corporations, where there may be other important levels or agents of economic activity that could contribute to waste management. Irish Travellers, for example, have been involved in recycling activities for some time, yet few experts or policy makers have much to say about how this community could be brought more effectively into the recycling economy. Community, non-profit and voluntary organisations may also be an important source of economic actors in waste management. With regard to composting, 'micro-enterprises' and households are the most important unit. It is therefore necessary that the economic language that is used around waste management should not be restricted to corporations and businesses, and that a broad array of social, community and household institutions should be given equal consideration as potential participants in any 'waste economy'. This is especially important if, as several interviews indicated, the concentration on big corporate waste management may lead to the most costly, least socially useful (e.g., in terms of job creation), and potentially harmful solutions (i.e., incineration).

Another aspect of 'marketising' the waste problem is surprisingly absent from the interviews, perhaps because it is anathema to many corporations. This is the alternative of internalising the costs of waste into the production function of corporations and other producers of waste. At the heart of the problem of conceptualising sustainability with regard to waste is the failure of the present economic system to value waste (negatively, as well as positively). Even from an orthodox economic perspective, there is a large body of work on how markets break down because of 'external diseconomies' or social damages that take place as a result of economic production. This literature speaks of the necessity of bringing such social costs of production back into the profit and loss decisions of corporations. A more rational analysis of the waste problem than we have discovered in our interviews, even with environmentalists, would go beyond the present 'political economy of rubbish' to fully recognise the negative value of waste in the process of production and consumption. Corporations *produce* waste not just in the production process but also in the form of packaging and the use of non-recoverable materials. Yet this is generally considered to be 'household waste' because it only becomes a problem after the household or individual consumes the product. A holistic and sustainable waste management policy should seek to reintroduce the negative value (costs) of waste back into the profit-loss accounting of corporations, rather than simply allowing present corporate activities to continue, and then trying to make management of the final waste product 'profitable'. While it may be desirable to subsidise beneficial

waste management projects that might otherwise be unprofitable, on the basis that their social value is greater than their market value, it may be equally desirable to reintroduce the costs of waste into the production function by taxing or penalising corporations for the waste they produce.

The combination of sanctions and penalties—essentially, regulation—should not be seen as an entirely negative aspect of waste management policy but, rather, as part of a holistic management policy. Yet in the present context of policy discourse that emphasises deregulation, corporations and other institutions are increasingly able to avoid their responsibilities for the damages they cause. This is especially true in both parts of Ireland, where environmental regulations are often considered to be a threat to business and something that will cause foreign companies to locate elsewhere.

It would be mistaken, however, to aspire for a solution to waste management that is entirely market-led, even if a way could be found to make companies internalise the true costs of their production in terms of environmental destruction. Other aspects of decision-making should be given equal or more weight than simple market decisions. Some policy outcomes have ‘social value’ that is not reflected in their market or exchange values, and these should be given a higher priority. The Northern environmentalist, who argued that the new dispensation following the Belfast Agreement and North-South co-operation offered new possibilities for ‘joined-up government and keeping social objectives closer to mind’, made this point most forcefully. For example, an environmentally responsible strategy for waste recovery would not only pay off socially in terms of better health and greener surroundings, but recycling and recovery would also create more jobs than incineration. And, as the Northern environmental scientist and the Southern environmentalist both argued, these are more likely to be stable jobs where the money will stay in the local economy rather than leave the area. With incinerators, on the other hand, ‘the jobs will be limited and the profits will leave the area to go to the multinationals’. Local stability and security certainly has social value, but its value has been little recognised in an Ireland that prioritises profits and investments, however unstable they may prove to be in the long run.

5.5 Partnerships

There was also a brief but interesting proposal from the Northern environmentalist that is not entirely market-led. She proposed that the culture of waste management could only be changed from disposal to reuse by setting up partnership arrangements between business and consumers. This would involve encouraging businesses to have waste minimisation programmes, while educating consumers ‘to purchase things that are sensitive to the environment’. Obviously, some businesses would be more energetic about such schemes than others. The Northern businessman who we interviewed, for example, was quite keen to promote any scheme that would promote the use of paper, ‘which has a zero waste potential’, over plastics in packaging applications. But, then, he was in the paper business and one would expect a very different response from plastics manufacturers.

Such real partnership is an important way of getting the communities back into the shaping and implementation of waste management strategy at all levels. There is a destructive irony in the democratic deficit between the front and back ends of waste policy in Ireland. Most of the experts we interviewed agreed that EU Directives, more than anything else, drive waste policy throughout the island of Ireland. Some, such as the Northern environmentalist, go further and speak of the degrees to which civil society, public opinion and environmental movements have mobilised for decades to make EU Directives responsive to ‘alternative’ concerns about sustainability. Yet once the Directives filter through national and regional government agencies down to the local level, which is clearly seen to be most important in implementing waste policy, this alternative emphasis on sustainability is lost and we are faced with government agencies that simply want to fulfil Directives and avoid sanctions and problems. This creates a motivation to seek easy ways out that do not threaten powerful interests in society, most importantly the corporate interests on which both the Northern and Southern economic strategies so crucially depend. In other words, once EU Directives hit the initial ‘policy filter’ at the Southern and Northern Irish state levels, certain options are removed without recourse to consultation with communities or even environmental experts. Most importantly, anything that can be construed as putting unnecessary regulation on business is eliminated because this would endanger the most important element of Northern and Southern economic policy: attracting foreign investments. Successive studies have shown that one of the most important prerequisites for attracting foreign investments is a liberal non-regulatory government regime without a lot of red tape. State managers of the economy clearly worry that effective environmental regulations, including closer regulation of waste, will discourage foreign investment. This sentiment was not expressed directly by civil servants

or other mainstream respondents in this study; they preferred to avoid the subject of regulation altogether. Only the environmentally minded politician raised the subject directly, with the Southern politician stating that 'the main political parties are beholden to the commercial interests...and therefore not implementing measures that would force manufacturers and retailers to drastically cut down on a lot of the waste created'. The Southern environmentalist also stated that 'IBEC are totally against any change, they're against green taxes because they just don't see it'.

Thus, certain options for waste reduction are avoided because of a perceived threat to industry and investment, to the 'Celtic tiger' in the south and the 'peace dividend' in the North. By the time the weakened policies make their way to localities, usually as plans for incinerators, they face strong local reaction. The irony is that policy is partly driven at the front end (EU Directives) by 'civil society' and that policy implementation is (often militantly) opposed at the local level by the same elements of civil society with many of the same environmental concerns that drove policy in the first place.

There is a clear need to increase public participation at all levels of waste management policymaking and implementation. Some Northern experts, particularly the civil servants, emphasised the degree to which they have incorporated consultation procedures into their policy structures, particularly since the Belfast Agreement. There is a degree of smugness among Northern civil servants in general about their consultation procedures. Yet community activists are quite sceptical of 'consultation' because it is superficial and usually employed either to gain community support for or to identify likely areas of resistance to policies that have already been decided. The Northern environmentally minded politician, for example, complained that 'consultation consists largely of producing a plan, then asking citizens to comment on it, then defending the plan against those comments'. He and the Northern environmental scientist both speak of the need to involve the community sector more directly in waste management initiatives.

5.6 All-island Policy Implementation

Regardless of whether there is a need for regulation, there is widespread agreement about the need to make waste management more effective and more profitable. One of the most important elements of this is to enable the operation of different waste management techniques at the most efficient scale. Some things are clearly done best at an all-island level, such as the recycling of plastics, which according to the Northern environmental scientist, requires just one plant for the whole island. This and other studies identify two important elements for scale economies to be enabled. First, policy makers must recognise the interconnectedness of waste management and other spatial policies for population growth, industrial placement, physical infrastructure and other socio-economic factors. Second, artificial barriers to efficient waste management practices must be removed, particularly those that arise from the different legal, administrative and taxation regimes on either side of the border. The Northern civil servant, who feels that 'the whole North/South thing is where [waste management] is going to happen', put it succinctly when asked 'what is the best way forward for waste management?' 'There are two things that are fundamental,' he replied, 'one is scale and the other one is working together.'

A recent study by the Irish Academy of Engineering gives a framework for a spatial development plan for the island of Ireland as it approaches a population of 6 million (IAE: 2000). The study proposes that development should be planned within the framework of 15 nodal catchment areas with a radius of 65 km around urban centres. One striking aspect of the report is the interconnectedness of different aspects of development, from population growth to transport and communications, electricity and gas supply, provision of health and education, and waste treatment. Another striking element is the common sense of planning such catchment areas without recognising the border. The planning of nodal catchment areas around Dundalk, Enniskillen, Sligo and Derry requires a series of commonalities on both sides of the border.

The problem of rationalising practices across the border is especially apparent with respect to waste management. The IAE report identifies four nodal areas with 'critical' problems of solid waste disposal and two of these (Sligo and Enniskillen) are border regions. In addition, one of the four areas that the IAE report considers 'marginal' with respect to remaining landfill life is a border area (Derry).

The spatial planning of waste management is clearly interconnected with plans for transport, population growth, industrial placement, and so on. Many of the interviews in the present study reflect the same philosophies of interconnectedness and cross-border rationalisation of taxes, incentives and regulations not only pertaining to waste but also to other things that affect the efficiency of waste

management facilities, such as freight transport. Setting up an all-island recycling plant in Derry or Dublin, for example, would require improvements in the infrastructures for moving materials to the plant to be recycled. This has been facilitated to a degree by the end of customs regulations since 1992. But there are still severe inadequacies of the transport infrastructures for moving waste, particularly in the border regions, as well as discrepancies that raise transactions costs and other costs of freight transport across the border. As the Northern environmentalist put it, 'it is clear that if you are serious about cross-border co-operation in environmental issues it has to have an impact on the economy, it has to have consistence; this must be cross-departmental.' He goes on to cite the transport infrastructure as a major obstacle to all-island waste management, due to the problems of transporting waste from one part of the island to another for remanufacture.

Several of the experts that were interviewed for this report emphasised the additional importance of equalising the tax and incentive structures throughout the island in order to create a true all-island market. The Southern environmentalist, for example, calls for the creation of a 'level playing field' between North and south by co-operating to co-ordinate taxes, legislation and waste management policy. This would enable waste management operations to achieve the economies of scale and market access needed to improve their viability. The Northern industry engineer favours a joint North-south policy strategy by the two governments to create an all-island market. The Northern businessman also points to the difficulties that are raised by the failure of sterling to join the Euro, and says that 'the current complexity of currency trading [on the island] is unstable' and must be sorted out. But is North-south rationalisation enough? According to the Northern environmentalist these joint policies, including equalised incentives, grants and taxes, must fulfil another role: they 'must coincide with the environmental hierarchy...we cannot have a system that is existent in the UK where incentives make incineration the most viable option'.

5.7 Economies of Scale and the All-island Dimension

The questions of economies of scale, and appropriate scale for different waste management options, are a concern that requires much more research. Experts speak of the need to develop all-island markets for certain kinds of management, particularly in the recovery and recycling of certain materials where a single plant would be the best option in economic terms. Other projects, such as composting, are best done at the local and the 'micro' level, although subsidies, advice, and supplies for composting might be usefully organised at regional or higher levels. Other waste management projects might be best organised at the regional 'catchment' level, such as that identified by the IAE. Although some of these maximal scales of operation for waste management projects are not 'all-island', they require support structures that are best organised on an island-wide basis. A possible example mentioned by the Southern environmentalist is an all-island community-recycling network to facilitate recycling and composting. And while the appropriate level of reprocessing certain kinds of waste may be local, the products of reprocessing might benefit from an all-island marketing network. The radical Northern politician spoke of the possibility of recycling taking place on 'a regional model with resources island-wide being drawn toward those specialist treatment centres'. This, however, would require that policy makers and politicians overcome the present mindset, which is for a strictly sub-regional and mainly local approach to waste management.

There was widespread agreement among all levels of experts and concerned politicians, as well as the focus groups, about the importance of developing the all-island character of waste-management strategies and policies. The Northern environmental scientist claimed 'it does not make sense to look at waste management unless it is on an all-island basis'. The Southern EPA representative referred to the 'Proximity Principle' as the reason why there needs to be co-operation between North and south. And the Northern Ireland civil servant simply said with respect to waste management that 'the whole North/South thing is where it is going to happen'. Of course, even if all-island co-ordination is rational, this does not guarantee that it will overcome political opposition, especially from some Northern quarters. Yet several of the experts we interviewed did not see political opposition as a problem. One Southern politician argued that the environment in general is 'a reasonably soft issue in terms of cross-border co-operation' that 'offers no threat'. And the Northern environmental scientist claimed that 'even with the Unionists in the North, they know that it makes economic sense to share the burden'.

6.1 Introduction

On the basis of the issues outlined in Chapter One; the findings of Chapters Two and Three; and the analysis carried out in Chapter Four, we suggest the following summary conclusions and recommendations.

6.2 The Waste Hierarchy

The so-called *waste hierarchy* is widely accepted as a normative guide to best practice. However, we find that in practice the two states start at the bottom (incineration) and work upward (waste reduction) rather than the other way around. We feel that there is also need for a ‘user hierarchy’, as too often the individual consumer bears the brunt of criticism for bad practice, ignoring the far more significant issues of industrial and agricultural waste.

Furthermore, we recommend a clear distinction between what might be considered to be ‘urgent’ (e.g. meeting EU Directives now) and what is ‘important’ (moving towards sustainable practices). To put this another way, we must distinguish between short-term needs and long-term strategy.

We find that the market alone cannot be expected to deliver a sustainable waste management strategy. If the driver of good practice is sustainability and not profitability, we can expect the development of holistic and socially acceptable waste management strategy.

To move upwards in the waste hierarchy, for which there is considerable support from all sectors, we recommend the commissioning of further technical research, learning from international best practice but seeking where possible local solutions.

6.3 Waste: A ‘glocal’ Issue

Waste is a global issue, but also a local issue; it is a ‘*glocal*’ (at once global and local) problem. Campaigners around waste disposal issues (such as incineration) have developed intensive international contacts through the Internet. In the democratisation of knowledge that this entails, local communities have developed ready access to international best practice and campaigning resources. We find that state practices, for example in relation to incinerators, are practically bound to create local opposition.

We recommend the commissioning of further research so as to understand better the development of ‘glocal’ social movements around issues of waste management and sustainable development.

We further conclude that the national government no longer has a monopoly of information and political authority. A better understanding of ‘governance’ (see 6.4 below) is required.

6.4 The European Driver

It is widely accepted that *EU Directives* are the main drivers of waste management policy in Ireland. It is now felt that the Good Friday Agreement may provide an all-Ireland driver for it.

We find that ‘Europe’ has credibility in relation to waste management issues which national governments and local authorities lack. This ‘credibility gap’ (manifest in relation to other issues but particularly acute in terms of waste strategy) needs to be narrowed.

We recommend acceptance of the general ‘European’ principle of ‘*subsidiarity*’ whereby a process is driven at the ‘lowest’ level possible, that is to say starting at the local level. Waste management is a local (part of ‘glocal’) issue and solutions need to start at that level with *support* from national governments.

6.5 Towards Partnership

There is widespread acceptance, across the interest groups and professionals interviewed, that waste management strategy in Ireland is an issue of growing importance (particularly in the Republic). Our recommendation of further scientific research on waste management (5.1) and on its social, political, economic and legal context (5.7) must be matched by a reform of state practice in relation to:

Transparency- in all statements and practices to narrow the ‘credibility gap’ and improve trust in relation to waste management policy.

Consultation – to involve more than tokenism, to foment community development, to improve trust and better understanding.

Partnership – to go beyond business to include local communities, to be the structure through which consultation (and implementation) takes place, to be guided by the principle of transparency.

6.6 One Island

It is widely accepted that waste management is an *all-Ireland* (or island) issue and no political opposition was detected. We thus recommend that research on waste and sustainable development be conducted in an integrated all-island fashion. This requires not only research into how different sustainable waste management practices can be developed on an all-island basis, it also means research into other aspects of socio-economic development that are connected to waste (e.g., transport, money, taxes, etc.). We find great potential for development in this area. We believe it may help overcome the particular problems in each jurisdiction. Economies of scale point towards an all-island policy but so do the principles of political co-operation enshrined in the Good Friday agreement. The undoubted synergies at all levels, from the technical to the social, point in this direction. We only caution against the development of border areas as sites for dumps and incinerators far away from seats of government.

6.7 The Social Dimension

The *social* aspect of waste management is as important as the technical issues involved in developing the waste hierarchy. While we accept and recommend the development of a ‘green’ education programme, we do not accept that the individual household is the main problem. Without adequate facilities for recycling, for example, it is futile to preach at people. The accusation of ‘NIMBYism’ is not usually a fair one and most local communities soon pass from opposition to developing viable and sustainable waste management strategies.

We recommend further research into social attitudes towards waste management with a view to developing a more dynamic (and relevant) public education programme. We recommend, furthermore, that this education programme be directed towards not only household waste but also (with specific sub-programmes) towards industrial and agricultural waste.

6.8 Good Governance

A final, and most important issue, is that waste is a problem of *governance*. Governance recognises that the capacity to ‘get things done’ does not rest on the power of government to command or use its authority, and stresses the new tools needed to steer and guide. This principle of modern government stresses autonomous self-governing networks of people and communities.

We reiterate (as per 5.1) that waste management strategy needs to be driven by principles of sustainability and not profitability. We stress that a viable waste management strategy cannot be imposed and needs to generate widespread social and political consensus. This can only happen following the principles of good governance.

We recommend the setting up of an all-Ireland research unit on waste management and sustainable development to carry out research on the scientific/technical options (5.1) and also:

- Social context – what might make individuals and public or private organisations more likely to minimise waste and recycle? What are the factors (class, gender, age, etc) accounting for variation in attitudes? ;
- Political context – how does the principle of ‘subsidiarity’ square with an all-island strategy? How can the principles of good governance be developed in Ireland?
- Economic context – what incentives can be developed to encourage a move up the waste hierarchy? What scales of operation are economically most feasible for more sustainable waste management (or, recovery) practices, both in terms of production and in terms of marketing?;
- Legal context – how can the legal framework be developed to meet the challenge of EU Directives, implement them fully and monitor this process? How can North/South co-operation or integration on waste issues be facilitated in law?

REFERENCES

Tobin Environmental Services, *A Feasibility Study For Biological Treatment of Waste In the Dublin Region*. Dublin: Department of the Environment and Local Government, 1999.

Sustainable Development: A Strategy for Ireland, Dublin: Department of the Environment, 1997.

Waste Management – A Strategy For Dublin, Dublin: Department of the Environment and Local Government, 1999.

Buechler, S. M., *Social Movements in Advanced Capitalism*, New York: Oxford University Press, 2000.

Curry, R. *Recycling: Developing the Market*, Belfast: Arena Network, 2000.

Waste Management: Changing our Ways, Dublin: Department of the Environment and Local Government, 1998.

Dempsey, Noel T.D., Speech by Minister for the Environment, at the launch of ‘*Waste Management: Changing Our Ways*’, Customs House, 1st October, 1998.

An Overview of the Waste Management Act 1996. Dublin: Department of the Environment and Local Government, 1998.

Douthwaite, Richard, ‘Is it possible to build a sustainable world?’ pp. 157-77 in

Dublin Waste Management: Key Findings. Lansdowne Market Research ,1999.

Environmental Protection Agency. *National Waste Database Summary*, 1998.

Environmental Protection Agency. *Proposed National Hazardous Waste Management Plan Summary*, 1999

European Commission, *EU Focus on Waste Management*, Luxembourg: European Communities, 1999.

European Environment Agency, *Environment in the European Union at the Turn of the Century*, Luxembourg: EC Publications, 1999.

Evening Herald. 2001. ‘Locals bid to Dispose of Superdump’. By Isobel Hurley 6th January 2001: pp12-13

Global Citizenship and the Environment. An ESRC funded research project. (www.lancaster.ac.uk/sociology.html)

IAE, *Towards and Island Population of Six Million: Implications for Spatial Development* ,Dublin: Irish Academy of Engineering, 2000.

Irish Independent. 2001. ‘Call for national waste authority.’ By Treacy Hogan, 30th December 2000:p 4

Irish Times. 2001. ‘Fear of dioxins getting into food chain at heart of opposition to waste incinerators’. By Dick Ahlstrom, 8th January, 2001: p6

Irish Times. 2001. ‘Push to recycle as cost of throwaway society soars’. By Frank McDonald, 8th January 2001:p6

Irish Times. 2201. ‘Group looks to Nova Scotia for lesson on treating waste’. By Chris Dooley, 9th January 2001: p9

- Lehane, M. (ed). *Environment in Focus – A Discussion Document on Key Environmental Indicators*. Environmental Protection Agency
- Making Waste Work: A Strategy for Sustainable Waste Management in England and Wales*, Department of Environment and the Welsh Office, UK, 1995.
- M C O’Sullivan *et al.* *Feasibility study For Thermal Treatment Of Waste For The Dublin Region*. Department of the Environment and Local Government, 1999.
- Melucci, *Challenging Codes: Collective Action in the Information Age* (Cambridge: Cambridge University Press, 1996).
- Munck, Ronaldo and Denis O’Hearn (eds.), *Critical Development Theory* (London: Zed, 1999).
- Murray, R. *Creating Wealth from Waste*, London: Demos, 1999.
- Scottish Environmental Protection Agency (2000) *National Waste Strategy Scotland*, Edinburgh: Scottish Environmental Protection Agency.
- Northern Ireland Waste Management Strategy* (2000) Belfast: Department of the Environment for Northern Ireland.
- O’Brien, M (1999) ‘Rubbish Values: Reflections on the Political Economy of Waste’, *Science as Culture*, Vol. 8, No. 3.
- Robertson, J. 1999. *The New Economics of Sustainable Development – a Briefing for Policy Makers*. Forward Studies Series - Office for Official Publications of the European Communities: London
- Shearer, I.A. 1994. *Starkes International Law*. Butterworths: London
- Stapleton, L.(ed.) 1996. *State of the Environment in Ireland* (Wexford: Environmental Protection Agency)
- Stoker, G (1998) ‘Governance as theory: five propositions’, *Journal of International Social Science*, No. 155 (March).
- Sunday Times (2000) ‘Don’t dump in my backyard’ by J Burns and P Colgan, October 29th, p.14.
- The Northern Ireland Environment 1999*, Environment and Heritage Service, Belfast: Central Statistics and Research Branch, 1999.
- A Feasibility Study For Biological Treatment of Waste In the Dublin Region . Waste Management – A Strategy For Dublin*. Dublin: Department of the Environment and Local Government, 1999.
- The Northern Ireland Environment 1999*, Environment and Heritage Service, Belfast: Central Statistics and Research Branch.
- Towards Sustainability: A European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development*, Commission of the European Communities, 1993.
- Waste Strategy 2000: England and Wales*, London: Department of the Environment, Transport and the Regions, 2000.
- Zero Waste Strategy*, Debate of the Northern Ireland Assembly, 23 October 2000.

A1.1 European Union Legislation

The following Directives are of particular relevance to Irish and UK government policy:

Council Directive 75/442/EEC – July 1975

Main provisions:

- Member States must encourage steps that prevent and minimise waste flows. These include recycling and the extraction of raw materials and energy for re-use of waste (Article 3).
- Member States must ensure that waste is disposed of ‘without endangering human health and without harming the environment, and in particular: - without risk to water, soil, and plants and animals, without causing a nuisance through noise or odours, without adversely affecting the countryside or places of special interest’ (Article 4).
- The Community as a whole and Member States individually, must aim towards self-sufficiency in waste disposal (Article 5, **Council Directive 91/156/EEC, March 1991**, amendment to **Directive 75/442/EEC**).
- A competent authority must be established in order to plan, authorise and supervise waste disposal operations (Article 5). The plan must include the type and quantity of waste, suitable disposal sites, costs, and ‘appropriate measures to encourage rationalisation, of the collection, sorting and treatment of waste’ (Article 6). The authority will issue permits to those who store or tip waste on behalf of a third party (Article 8), and ensure the conditions of the permit are fulfilled thereafter.
- Waste costs should be in accordance with the ‘polluter pays’ principle (Article 11).

Implementation:

Southern Ireland – Environmental Protection Agency Act 1992; Waste Management Act 1996 (amended – 1998); Waste Management (Licensing) Regulations 1997
 Northern Ireland – S.I. 1994/1056, The Waste Management Licensing Regulations 1994; S.I. 1997/2778 (N.I. 19) The Waste and Contaminated Land (NI) Order 1997

Council Directive 94/67/EC – December 1994

Main provisions:

- Member States should provide for measures that prevent or reduce the negative effects from the incineration of hazardous waste (Article 1).
- A competent authority, shall, in the course of issuing a permit, ensure that an incineration plant ‘...is designed, equipped and will be operated in such a manner that the appropriate preventative measures against environmental pollution will be taken...’ (Article 3).

Implementation:

Southern Ireland – Waste Management Hazardous Waste (Regulations) 1998
 Northern Ireland –

Council Directive 94/62/EC – December 1994

Main provisions:

- All companies that supply packaged goods are obliged to divert this packaging waste towards recycling. Specific targets are the recovery of 50-60% of packaging waste by 2001, including the recycling of 25-45%, with a minimum of 15% for each material (Article 6).

Implementation:

Southern Ireland – Waste Management (Packaging) Regulations 1997

Northern Ireland – S.I. 1997/648, The Producer Responsibility obligations (Packaging Waste) Regulations; S.R. 1999/115, The Producer Responsibility Obligations (Packaging Waste) Regulations (Northern Ireland) 1999 SR 1999/ 115

Council Directive 1999/31/EC – April 1999

Main provisions:

- Member States should provide for measures that prevent or reduce the negative effects from the landfilling of waste, ‘...during the whole life-cycle of the landfill’ (Article 1).
- Member States shall set up a national strategy in order to implement the reduction of biodegradable waste going to landfills. This must include an undertaking to reduce biodegradable municipal waste to 75% within 5 years, to 50% within 8 years, and to 35% within 15 years.(Article 5).
- Existing landfills operating prior to this Directive will only be allowed to continue provided they comply with the provisions of Article 14, which includes the presentation of a conditioning plan to the competent authority within 1 year of this Directive coming into force.

A1.2 Southern and Northern Ireland - Comparative Legislation

The main legislation in Ireland covering the provisions set out in the Council Directive 75/442/EEC and subsequent amendments are:

Southern Ireland - Waste Management Act 1996

Northern Ireland – The Waste and Contaminated Land (NI) Order 1997, S.I. 1997/2778 (N.I. 19)

Waste Management Act 1996

- The Act aims to create more effective and defined roles for the Minister, the Environmental Protection Agency (EPA) and local authorities in relation to waste management. It aims to introduce measures in order to improve national performance in the prevention, minimisation and the recycling or recovery of wastes. It also provides a regulatory framework in response to EU legislation and national waste management requirements.
- The Act is designed to facilitate the development of the private waste industry.
- The Act provides for the ‘recoupment’ of costs relating to regulatory functions, and the application of the ‘polluter pays’ principle.
- The Act provides for regulatory measures in order to impose obligations on persons involved in industry, agriculture and commercial activities that will minimise waste. This includes ‘product design’.
- The Act gives the Minister for the Environment powers of policy direction in certain aspects of waste management. The Act also gives the Minister wide ranging regulatory powers in relation to the prevention, minimisation, and recycling of waste. The Act allows for ‘penalties of up to £10 million and/ or ten years imprisonment for offences (Section 10).

The Waste and Contaminated Land (NI) Order 1997, S.I. 1997/2778 (N.I. 19)

- In this Order waste and contaminated land includes ‘commercial waste’ ‘from premises used wholly or mainly for the purposes of a trade or business or the purposes of sport, recreation or entertainment’ with exclusions, ‘associated waste in relation to pipes’, ‘controlled waste’, the Department of the Environment, ‘domestic property’, ‘industrial waste’, and general pollution of the environment. It is the most comprehensive legislation on waste management in the North of Ireland.
- It puts a prohibition on ‘unauthorised or harmful deposit, treatment or disposal, etc., of waste’ (Part II, 4). It also addresses the interference with waste sites and receptacles for waste, special provisions and powers to prohibit, public registers, exclusion from registers, ‘duty to produce authority to transport controlled waste’, the ‘seizure and disposal of vehicles used for illegal waste disposal’, legal proceedings and civil liability, radioactive substances.
- In relation to contaminated land Part III of the Order deals with the identification of contaminated land, designated sites, the referral of site decisions, the duty of enforcing authority, the ‘determination of the appropriate person to bear responsibility for remediation, compensation and rights of reference, liability, special sites designation, radioactivity. Part IV deals with supervision

and enforcement. The appended Statutory Instrument 1997 No.2778 (N.I. 19), Schedule 3, Article 19 (3) (a) defines 'objectives for the purposes of the waste strategy'. This states:

1. Ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment and, in particular, without –
 - (a) risk to water, air, soil, plants or animals;
 - (b) causing nuisance through noise or odours; or
 - (c) adversely affecting the countryside or places of special interest.
2. Establishing an integrated and adequate network of waste disposal installations, taking account of the best available technology not involving excessive costs.
3. Ensuring that the network referred to in paragraph 2 enables –
 - (a) the European Community as a whole to become self-sufficient in waste disposal, and the Member States individually to move towards that aim, taking into account geographical circumstances or the need for specialised installations for certain types of waste; and
 - (b) waste to be disposed of in one of the nearest appropriate installations, by means of the most appropriate methods and technologies in order to ensure a high level of protection for the environment and public health.
4. Encouraging the prevention or reduction of waste production and its harmfulness, in particular by –
 - (a) the development of clean technologies more sparing in their use of natural resources;
 - (b) the technical development and marketing of products designed so as to make no contribution or to make the smallest possible contribution, by the nature of their manufacture, use or final disposal, to increase the amount or harmfulness of waste and pollution hazards; and
 - (c) the development of appropriate techniques for the final disposal of dangerous substances contained in waste destined for recovery.
5. Encouraging –
 - (a) the recovery of waste by means of recycling, reuse or reclamation or any other process with a view to extracting secondary raw materials; and
 - (b) the use of waste as a source of energy.'

In addition to existing legislation, both jurisdictions have set forth the following key policy statements which sets out existing policy positions, as well as incorporating the targets set out in the Council Directive 1999/31/EC on landfills.

Southern Ireland - Policy Statement 'Waste Management: Changing Our Ways'
(September 1998)

- In his Policy Statement aimed chiefly at local authorities, the Minister, Mr. Noel Dempsey, T.D., states that Ireland's waste management policy will be set firmly in the waste hierarchy of prevention, minimisation, reuse, recycling, energy recovery and the environmentally sustainable disposal of waste which cannot be prevented or recovered.
- The priority is to reduce the reliance by Ireland on landfill as a disposal option. Pre-empting the 1999 EU Landfill Directive and fulfilling existing Government policy, the Minister sets out targets to be achieved over a 15-year period. These are - to divert 50% of overall household waste from landfill, reduce by 65% the amount of biodegradable waste that goes to landfill, develop waste recovery facilities as an alternative to landfill, recycle 35% of municipal waste, to recycle at least 85% of construction and demolition waste, to steadily reduce the number of landfills, and reduce methane emissions by 80%
- The private sector must be encouraged to participate more fully in waste management.
- The 'polluter pays' principle should mean ensuring that the waste generator pays directly and fully the costs of waste collection, treatment and disposal. The application of costs provides more scope for private investment on infrastructure, focuses public attention on the implications of waste generation, and becomes an incentive to reduce waste. Charging should therefore vary according to usage.

Northern Ireland - Department of the Environment - Waste Management Strategy (NI) (March 2000)

A key target will be a two-thirds reduction in waste sent to landfill in Northern Ireland. This means providing new and better ways of recovering, re-using and getting value from up to 600,000 tonnes of household waste a year. It is expected that the Strategy will create 1500 new jobs in the recycling and manufacture using recovered materials.

- To put the scale of waste into context, Belfast City Council alone collects 200 tonnes of litter every week. It spends £8 million per year, 10% of its budget, on collecting that litter and keeping the streets clean.

The Strategy has four key objectives:

- To reduce the amount of waste generated
- To make best use of the waste that is generated
- To minimise the risk of environmental damage or harm to human health
- To move practices towards re-use, recycling and recovery - with landfill disposal as a last resort.

A1.3 Policy Implementation Mechanisms:

Southern Ireland:

- The **Waste Management Act 1997** assigns to the EPA responsibility for the licensing of all significant waste recovery and disposal activities, and for the planning, management and control in relation to hazardous waste. In addition, the EPA is required to formulate a national hazardous waste plan. The plan must reflect the EU waste hierarchy. The EPA will oversee the licensing system for waste recovery and disposal facilities, including local authority facilities. The Act provides for public consultation and objections to licensing.
- The Act also states that County Councils and County Borough Corporations are responsible for waste management planning in relation to non-hazardous wastes, the authorisation of commercial waste activities, the collection, recovery and disposal of household wastes, and the control of waste movements. Local authorities may introduce by-laws that require 'the segregation and separate collection of recyclable wastes'. In addition, local authorities are required to formulate detailed waste management plans, either individually or regionally. These plans must reflect the EU waste hierarchy.
- The **policy statement 'Waste Management: Changing Our Ways'** makes it clear that waste management planning should include effective public consultation and participation. Local authorities have a vital role to play in educating the public in waste minimisation and recovery. The Minister recognises that local communities give a generally negative reception to new waste management facilities, but also recognises that public involvement in waste recovery and minimisation is crucial.

Northern Ireland:

- Within the **Waste and Contaminated Land (NI) Order 1997**, there are provisions for The Department of the Environment to require '...waste to be accepted, treated, disposed of or delivered', and also 'powers to require the removal of waste unlawfully deposited'.
- There are further provisions that cover the granting of waste management licences, supervision, revocation and suspension of licences, compensation, appeals, the 'collection of controlled waste', receptacles for household waste, receptacles for commercial or industrial waste, waste management plans by district councils, payments for recycling and disposal of waste.
- In addition, the public consultation element of policy implementation is recognised in the **'Waste Management Strategy (NI)'**. In mapping the way forward George Howarth said: 'To encourage stakeholders, and to guide and accelerate change, the Department will establish a non-executive Advisory Board representative of all key sectors. The Board will perform a vital role by acting as a conduit between Government and stakeholders. In addition, it will take an accurate pulse of how the sectors are performing, enabling us to build on strengths and address any weaknesses.'

A1.4 Cross Border Legislative Initiatives.

Strand Two of the Good Friday Agreement, the North/South Ministerial Council:

- Article 1 – [both jurisdictions will] ‘...develop consultation, co-operation and action within the island of Ireland - including through implementation on an all-island and cross-border basis - on matters of mutual interest within the competence of the Administrations, North and South.’
- Article 5 – [the Council is] ‘(i) to exchange information, discuss and consult with a view to co-operating on matters of mutual interest within the competence of both Administrations, North and South; (ii) to use best endeavours to reach agreement on the adoption of common policies, in areas where there is a mutual cross-border and all-island benefit, and which are within the competence of both Administrations, North and South...’
- Article 17 - ‘The Council is to consider the European Union dimension of relevant matters, including the implementation of EU policies and programmes and proposals under consideration in the EU framework. Arrangements to be made to ensure that the views of the Council are taken into account and represented appropriately at relevant EU meetings.’
- The Annex specifically names Waste Management as one of the possible areas for co-operation and implementation.

A2.1 Life Cycle Analysis and Assessment (LCA)

LCA and its derivatives are set to become the main vehicle for assessing new and exciting technologies. It is the best way, at the moment, of connecting environmental, social and economic imperatives. The detailed examination of the life cycle of a product or process can reveal its inherent resource costs and environmental implications. LCA involves collection and interpretation of data to provide an overall reference for comparison of products or processes, and can be used in the development of eco-labelling schemes, the formulation of legislation, product improvement and decision-making by purchasers.

LCA involves measurement of environmental costs from mining of the raw materials, transport, manufacture, distribution, use, re-use, recycling and final disposal, and involves energy and raw materials use, and waste arisings at each stage of the product or process' life.

Some problems with LCA include international standardisation of interpretation of the data, and establishment of limits e.g. whether a product's 'life' ends when it is recycled, and the need to make clumsy comparisons such as whether a large amount of a pollutant is more or less harmful than a small amount of a very toxic substance. Such studies may be resolved by assessing specific environmental impacts separately. Other problems involve commercial confidentiality and the reluctance of a company to reveal its own product's shortcomings.

LCA can be utilised at product design stage to evaluate procedures and raw materials sourcing so that a product can minimise its overall environmental impact, and it can assist in making purchasing choices.

A specific 'sustainability' target is for legislation to force producers to take responsibility for their waste and products from 'cradle to grave' by including costs of disposal and recycling in the purchase price. LCA would lend itself to this, and seems likely to lead to design for durability, repair, easy reuse, and recycling.

A2.2 Landfill

More waste is disposed of by landfill than by any other route. There is concern about the availability of sites for future landfill and the increased impacts of transportation of waste to sites increasingly remote from centres of population. Landraisings i.e. the deposition of waste materials at ground level with the intention of eventual landscaping to create a 'hill', are considered to be an option for brownfield land and for old landfill sites when suitable holes in the ground become scarce.

Landfill is cheap in the UK and Ireland compared with other countries but is becoming expensive as environmental concerns become more urgent, and Landfill Tax and tightened monitoring programmes increase costs. The Landfill Tax was introduced at a level that stimulated a rise in incineration but was not high enough to encourage reuse and recycling.

Restrictions on materials suitable for landfilling, and taxation designed to redirect certain materials away from landfill are discussed in sections 6.15 and 7.3. Landfill will have an important long-term role for unrecyclable or uncompostable wastes, which will generally be pre-treated. Although at the bottom of the waste hierarchy, landfill will still represent the BPEO (Best Practicable Environmental Option) for many wastes until new technologies make recycling a realistic option. There is also debate as to whether landfilling of non-putrescibles may still be preferable to incineration if pollution controls are effective.

New landfill sites are subject to stringent environmental monitoring and controls such as capping and lining to prevent emissions of methane and leachate into the environment. Landfill sites account for about a fifth of methane emissions (after agriculture and mining). Leaks can release chemicals, heavy metals, bacteria and nutrients into the soil and associated water courses, resulting in long-term environmental contamination and human health problems.

Hazardous Waste Landfill (HWL) Sites are specifically for hazardous wastes. Possibly research could identify such sites from their emissions and leachate. The waste management industry regards information

regarding materials dumped to be commercially confidential. FOE (Friends of the Earth) is challenging the laws that allow such secrecy.

A 1991 EC Directive (in force 1994) led to the reduction of quantities of harmful materials in batteries e.g. alkaline batteries now contain no more than 0.025% Hg. FOE have called for the reduction of production of toxic wastes to half their present amount by 2005, and have called for health monitoring around landfill sites, and detailed inventories of all toxic chemical data released from industry (Toxic Tips, 1998b).

Scientists from the London School of Hygiene and Tropical Medicine found that children whose mothers lived within 1.8 miles of 21 industrial landfill sites in the UK, Denmark, Belgium, France and Italy were 33% more likely to have birth defects than children whose mothers lived between 1.8 and 4.2 miles from the sites. Those living further away were progressively less at risk. Possible causes were thought to be gas emissions, dust particles or contaminated water supplies.

Other research has revealed low birth weight and pre-term births associated with women living near a municipal waste landfill in Montreal. Gaseous emissions from a Montreal landfill, including those of volatile organic compounds were studied and indicated elevated levels of cancer among men and women living close to the site.

A FOE study Toxic Tips (FOE 1998b) which surveyed 100 landfill sites, revealed that over 33% of sites were contaminating surface or ground water. FOE claims that incinerator ash is more prone to leaching of toxins compared with the original material.

Landfill may be the only practical disposal route (i.e. the BPEO) for some wastes e.g. incinerator residues and other, inert, materials where means are not yet available for their reclamation. Developing suitable replacement raw materials to replace those which generate unreclaimable or toxic materials at the end of their useful life is likely to be a growth area.

Landfill will always remain, whatever option is chosen, until everything is biodegradable – this is probably impossible.

A2.3 Incineration

Incineration with energy recovery, now called Energy from Waste (EfW), accounts for 5% of MSW. Oversized items are removed from the incoming waste, which is combusted on an agitated grate. The heat is transferred to a boiler for steam generation, and electricity is generated via steam turbine. Energy conversion efficiency is approximately 20% but can be 60% in a Combined Heat and Power (CHP) system, where waste heat is utilised to heat nearby industrial buildings and houses.

Non-combustible material and ash is usually deposited in landfill after magnetic removal of ferrous metals. The use of this 'bottom ash', as it is called, in the construction industry is a growing research area. 'Fly ash' contains a high proportion of toxic chemicals such as heavy metals, furans and dioxins. It occurs in the waste gases of the combustion process and is captured in the emission control process before being sealed in drums as 'special waste' for controlled disposal to landfill. Concern has been voiced over the efficiency of the pollution abatement equipment and the permitted levels of toxins released. New EC regulations will enforce more stringent emissions standards. It seems likely that research will be necessary in this area for the foreseeable future.

Incinerators which use fluidised bed technology screen metals and glass out of the waste which is then shredded, resulting in a material with increased surface area and which burns more efficiently, producing fewer pollutants.

A study by the UK Environmental Authority reveals incineration as the biggest source of dioxin release, accounting for 20-40% of total output into the environment. Smelting of recycled metals accounts for a further 8-30%. According to the US Environmental Protection Agency, dioxins are probably associated with cancer, hormonal effects, reduced fertility and reduced immunity, and some synergistic effects may occur. Heavy metals cause lung and kidney disease and nerve system damage among other things. Dust and acid gases exacerbate lung and heart diseases. In addition to these, pollutants from incineration cause widespread ecosystem damage.

Bottom ash is usually deposited in landfill where, it is claimed by the industry, it occupies 10% of the space of the equivalent amount of unburned waste, thus saving on Landfill Tax liability. FOE challenge this because landfilled unburned waste is compacted by heavy machinery to about 20% of its former volume, which means that bottom ash actually occupies 40-50% of the volume of the compacted waste (about 25% by weight). This has important implications for the economics of incineration when compared with landfill.

Toxic chemicals in the bottom ash (most are captured in the fly ash) are said to be more likely to leach into groundwater from ash than from the unburned waste (Making Waste Work, 1995). Ash residues, particularly of fly ash, are considered to have more potential for environmental damage than ash from coal firing because of heavy metals content. A great deal of research has been undertaken on handling and management of ash residues from EfW eg. knowledge of elemental speciation is required in order to model leaching, ageing, and long term stability of the residue (WRF, 1998). High landfill charges and limits on the disposal of organic materials to landfill are prompting research into treatment of ash residues. Future Landfill Tax rises will increase these costs. A mass burn incinerator consuming one tonne of MSW will typically produce 300kg of grate ash, 5kg of grate siftings (riddlings), 5kg of boiler ash, 20kg of fly ash, and 12kg of APC residue (collected from the air pollution control technology), and may release about 0.05kg of particulate matter into the atmosphere.

Anions and cations of inorganic salts such as Na, K, Ca, NH₄, Cl, SO₃, SO₄, S and Br have been found in MSW incinerator ash residues. Many of them are highly soluble and can degrade groundwater if leaching occurs. The extent to which these salts affect clay liners of landfill sites is not fully known. Polychlorinated di-benzo para dioxins (dioxins) and polychlorinated di-benzo furans (furans) are present in all MSW ash residues in parts per billion in fly ash and scrubber residues, and parts per trillion in bottom ash. They are considered to be highly insoluble in water, but co-disposal with solvents may lead to their mobilisation.

In Denmark, size fractioned and processed bottom ash has been used for development of a granular sub-base for car parks, tracks and roads, and in Germany bottom ash has been used as a granular sub-base for paving. In the USA bottom ash is being considered for use in building construction, reef development and paving, and also for daily or final cover for landfill sites.

Ash residue that cannot be economically or safely utilised is disposed of utilising dry storage, or containment with leachate collection, controlled contaminant release, or uncontrolled leaching.

High combustion temperatures in the presence of adequate oxygen are accepted as being able to destroy dioxins in the waste, but they can be re-created as the combustion gases cool, a process which can be minimised by reduction of the time the gases are held at the critical temperature of most rapid dioxin production (200-450°C), and by separation from fly ash. Pressure groups have called for elimination of chlorine-rich components of the waste stream as an attempt to restrict dioxin production, but the chlorine present in nearly all materials is vastly in excess of the amount that may be incorporated into new dioxins, and this strategy is considered by the industry to be ineffective as a control measure.

US limits for dioxin emissions are 1,000 times more stringent than those of the UK, an indication that, perhaps, emissions standards may continue to rise in the future. New EU emissions standards contained in the draft Waste Incineration Directive will be considerably more stringent (Waste Incineration, EA 1996). The costs of retrofitting pollution abatement equipment to existing incinerators to meet the new limits are estimated to increase incineration costs to £21 t⁻¹ (The Waste Manager, 1994). The EC expect the new emissions standards will increase the costs of incineration by £8 t⁻¹ (EC 1997).

Other possible future costs for incineration may include the extension of Landfill Tax to cover incineration, or a new Incineration Tax (ERTC, 1998), those from litigation by local residents with damaged health, and the withdrawal of support from NFFO. Increased taxation of landfill and incineration would have the effect of moving waste up the 'waste hierarchy'.

Incinerators necessitate frequent and large deliveries of waste, which can be from a very wide area in the case of a large incinerator, and usually involve heavy lorries that are not liked by the local population, and also have implications for energy efficiency since they use significant amounts of fossil fuel, contributing to local and global pollution problems. Recent suggestions have featured the use of

the canal system to transport wastes for processing; a move that would remove some of these objections.

In the USA a movement to build incinerators peaked in 1988 but, since 1985, 137 projects have been cancelled or put on hold. In Europe, Flanders, The Hague, and Amsterdam have cancelled incinerators, as confidence in the technology is increasingly questioned.

A2.4 Community Recycling

In the face of hugely expensive options for handling domestic recyclables, community-recycling projects, where they exist, generally provide a cheaper and better service, and deliver higher recycling rates in partnership with the local people and local authorities. The Community Recycling Network (CRN) is an umbrella organisation representing nearly 200 community-based waste management projects and businesses in the UK. It employs 500 staff and 3,000 volunteers, and offers services to 4.5 million households, 11,500 businesses and 2,000 schools and colleges. They also undertake waste analysis for local authorities and businesses.

The largest members of this organisation are 'not-for-profit' recycling companies, where a community aspect and development of co-operation between householders and the recycling organisation is the single most important component in a successful kerbside recycling programme.

A2.5 Composting

The government sees composting, in the form of centralised schemes or back garden composting, as an important component of waste management for the putrescible fraction of Municipal Solid Waste as well as for agricultural wastes. Composting is a relatively cheap option, utilising 30-35 kWh t⁻¹. The encouragement of composting requires measures to ensure separation of the putrescible fraction, as well as financial incentives and the development of markets to make the industry profitable. Research potential includes development of methods of successful source segregation, efficient composting technologies for the production of a range of compost types of consistent quality, and the development of markets for finished composts. Many local authorities are setting up centralised composting schemes for source-segregated waste and from green waste from civic amenity sites. The compost is utilised in council work or sold to the public. Many councils distribute, free or discounted, compost bins or worm bins (for vermicomposting).

APPENDIX 3: RESEARCH METHODOLOGY

The field work for this research report was carried out in the last quarter of 2000 and involved a range of qualitative research methods as well as desk-based or documentary research:

Phase One

Involved the collection and systematic analysis of all basic available documentary data on waste management in Ireland, North and South. This, in particular, involved a review and accounts of existing legislation at national and European levels. This legislative framework (summarised in Appendix 2 above) sets the parameters of our study. This information was supplemented by a series of informal meetings with 'key' people who helped us approach Phase 2 in a better-informed mode.

Phase 2

The semi-structured interviews that followed were designed to get an in-depth view of the issues from well-informed individuals from a number of categories. We chose to interview one person in the North and South from each of the following categories: Department of the Environment and Environmental Protection Agency, environmental scientist, environmental activist, environmentally minded politician, environmental engineer and an industrialist. Certainly, many more people could have been interviewed (and would be in a full-scale study) but these individuals provided us with some of the main angles or 'takes' on the waste management issue on which we needed to build a picture. It could be said that these individuals are not 'representative' of a whole social or professional category. That is true in a statistical sense of course but we believe (given our much wider informal data collection) that their views are valid and within the mid-range spectrum of their group. At any rate they were instrumental in sensitising us to the issues and in providing the nuance that only informed and engaged actors in the waste management issue could.

Phase 3

Once we had established the basic parameters of the issue following our four key lead questions we proceeded to our focus groups. This methodological tool is designed to 'test out' already established views or hypotheses. Thus, we constituted two focus groups of people who were *already* sensitised to waste management issues and politics who could engage in 'brain-storming' around the issues. What we put to them were the main views coming out of Phase 2 along with several hypotheses of our own on waste management strategies. To facilitate discussion a rolling interview guide was used which looked at the four main questions. The data gathered is qualitative and this is different from what would have been gathered from a random statistical survey. This tool probably would have to be used in a large-scale study to establish, for example, which methods of waste management would be most socially acceptable. At this stage, we found the focus groups extremely promising as a research methodology, basically confirming the results of Phase 2. We would recommend further focus group work.